



**Program Directory for
Hardware Configuration Definition and
Hardware Configuration Manager for z/VM**

function level 540

Program Number 5741-A07

for Use with
z/VM version 6 release 1

Document Date: October 2009

GI11-2895-01

Note

Before using this information and the product it supports, be sure to read the general information under “Notices” on page 45.

This program directory, dated October 2009, applies to IBM® Hardware Configuration Definition and Hardware Configuration Manager for z/VM® (HCD/HCM for z/VM), function level 540, Program Number 5741-A07.

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1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information that corresponds to the material and procedures for installation and service of Hardware Configuration Definition and Hardware Configuration Manager for z/VM® (HCD/HCM for z/VM).

Note: It is recommended that you review this program directory in its entirety before you install or service this program, then keep this document for future reference.

The program directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for HCD/HCM for z/VM.
- 3.0, “Program Support” on page 6 describes the IBM support available for HCD/HCM for z/VM.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) incorporated into HCD/HCM for z/VM.
- 5.0, “Installation and Migration Requirements and Considerations” on page 9 identifies the resources and considerations for installing, migrating and using HCD/HCM for z/VM.
- 6.0, “Installation Instructions” on page 14 provides detailed installation instructions for HCD/HCM for z/VM.
- 7.0, “Service Instructions” on page 20 provides detailed servicing instructions for HCD/HCM for z/VM.
- Appendix A, “Applying a Recommended Service Upgrade (RSU) for HCD/HCM for z/VM” on page 29 provides detailed Recommended Service Upgrade instructions for HCD/HCM for z/VM.
- Appendix B, “Moving HCD/HCM for z/VM to SFS Directories and Creating a PPF Override” on page 37 describes how to move HCD/HCM for z/VM into the SFS and how to create a Product Parameter File (PPF) override.
- Appendix C, “Copy of HCD/HCM for z/VM Sample Files” on page 43 describes how to copy supplied sample files for HCD/HCM for z/VM.

Obtaining Updated Planning Information

Before you install HCD/HCM for z/VM, read 3.1, “Preventive Service Planning” on page 6. This section describes how to obtain any updates to the information and procedures presented within this program directory.

1.1 Program Description

HCD/HCM for z/VM brings a new way of performing I/O configuration tasks to z/VM customers. Using HCD/HCM for z/VM is optional.

z/VM HCD is an I/O configuration definition tool which validates channel subsystem and operating system definition at data-entry time. All I/O configuration settings are stored in a new optional I/O configuration repository called I/O Definition File (IODF). z/VM HCD is responsible for creating and maintaining the IODF. When using z/VM HCD support, z/VM Control Program (CP) reads its I/O configuration settings from the IODF during IPL. z/VM HCD allows for changing the I/O configuration dynamically by setting a new IODF active, without having to IML or IPL your VM system.

| z/VM HCD supports I/O configuration for all hardware which is supported by z/VM version 6 release 1, z/VM version 5 release 4, z/VM version 5 release 3 and z/VM version 5 release 2. z/VM HCD checks a broad range of I/O configuration rules. In particular, control unit and device specific rules are checked. z/VM HCD creates valid IOCDs from the IODF by running IOCP. When using z/VM HCD support, there is no need for z/VM customers to run IOCP directly.

HCD/HCM for z/VM contains Hardware Configuration Manager (HCM) which is a Graphical User Interface (GUI) running on a Windows™ PC workstation. HCM is a client program which needs a running z/VM HCD server on a z/VM system. z/VM HCD and HCM communicate via a TCP/IP connection mediated by the z/VM HCD TCP/IP dispatcher for HCM. In addition, z/VM HCD contains several REXX programs for accomplishing I/O configuration tasks.

2.0 Program Materials

An IBM program is identified by a program number. The program number for Hardware Configuration Definition and Hardware Configuration Manager for z/VM function level 540 is 5741-A07.

The z/VM program announcement materials provide detailed information about the features supported by HCD/HCM for z/VM. If you have not already received a copy of this information, contact your IBM marketing representative.

The following sections identify:

- basic and optional program materials that are applicable to this program
- publications useful during installation and service.

2.1 Basic Machine-Readable Material

| Hardware Configuration Definition and Hardware Configuration Manager for z/VM (HCD/HCM for z/VM) is distributed pre-installed on the z/VM version 6 release 1 System deliverables. Refer to the z/VM version 6 release 1 Software Announcement for information on ordering z/VM and its features.

2.2 Optional Machine-Readable Material

There are no features or optional machine-readable materials associated with HCD/HCM for z/VM.

2.3 Program Publications

The following sections identify the basic and optional publications associated with HCD/HCM for z/VM.

2.3.1 Basic Program Publications

One copy of the following publication is included when you order HCD/HCM for z/VM.

Figure 1. Basic Material: Unlicensed Publications

Publication Title	Form Number
Program Directory for Hardware Configuration Definition and Hardware Configuration Manager for z/VM	GI11-2895

2.3.2 Base Program Publications

Figure 2 identifies the base program publications associated with HCD/HCM for z/VM.

Figure 2. Program Publications - New Editions

Publication Title	Form Number
z/VM: I/O Configuration	SC24-6198
z/OS® and z/VM: Hardware Configuration Manager User's Guide	SC33-7989
z/OS and z/VM: Hardware Configuration Definition Messages	SC33-7986

2.3.3 Softcopy Publications

The HCD/HCM for z/VM publications are supplied softcopy as part of the *IBM Online Library: z/VM Collection* in BookManager® and Adobe™ Portable Document Format (PDF). One copy of the *IBM Online Library: z/VM Collection on DVD* is included when you order the basic materials for z/VM. HCD/HCM for z/VM publications, except the Program Directory, are also available in the z/VM Information Center web site:

<http://publib.boulder.ibm.com/infocenter/zvm/v6r1/index.jsp>

In addition, the HCD/HCM for z/VM softcopy publications, including this program directory, are available in Adobe Portable Document Format from the z/VM internet library home page on the World Wide Web; the URL for this home page is:

www.ibm.com/eserver/zseries/zvm/library

The z/VM publications can be ordered separately, for a fee, using the specific publication number through the IBM Publication Center at:

www.ibm.com/shop/publications/order

The Publications Center is a world wide central repository for IBM product publications and marketing material. Furthermore, a large number of publications are available online in various file formats (e.g. Adobe PDF), which can currently be downloaded free of charge.

2.4 Program Source Materials

No program source materials or viewable program listings are provided with HCD/HCM for z/VM.

2.5 Publications Useful During Installation and Service

The publications listed in Figure 3 may be useful during the installation and servicing of HCD/HCM for z/VM. To order copies, visit the IBM Publications Center web site (url above) or contact your IBM representative.

Figure 3. Publications Useful During Installation / Service

Publication Title	Form Number
z/VM: I/O Configuration	SC24-6198
z/OS and z/VM: Hardware Configuration Manager User's Guide	SC33-7989
z/OS and z/VM: Hardware Configuration Definition Messages	SC33-7986
z/VM: VMSES/E Introduction and Reference	GC24-6243
z/VM: Service Guide	GC24-6232
z/VM: CP Planning and Administration	SC24-6178
z/VM: CMS Commands and Utilities Reference	SC24-6166
z/VM: CMS File Pool Planning, Administration, and Operation	SC24-6167
z/VM: Other Components Messages and Codes	GC24-6207
z/VM: CMS and REXX/VM Messages and Codes	GC24-6161
z/VM: CP Messages and Codes	GC24-6177
z/VM: Reusable Server Kernel Programmer's Guide and Reference	SC24-6220
z/VM: TCP/IP Planning and Customization	SC24-6238
z/VM: TCP/IP User's Guide	SC24-6240

3.0 Program Support

This section describes the IBM support available for HCD/HCM for z/VM.

3.1 Preventive Service Planning

Before you install HCD/HCM for z/VM, check with your IBM Support Center or use IBMLink™ (ServiceLink) to determine if Preventive Service Planning (PSP) information is available that you should know. To obtain this information, specify the appropriate UPGRADE and SUBSET values listed in Figure 4:

Figure 4. PSP Upgrade and Subset ID

RETAIN®				
COMPID	Release	Upgrade	Subset	Component Name
568411219	540	ZVMHCD540	ZVMHCD/540	HCD/HCM for z/VM
568411219	540	ZVMHCD540	yynnRSU	RSU Service Recommendations

RSU-BY-LVL information can be obtained from the z/VM service RSU web site at this URL:

www.ibm.com/eserver/zseries/zvm/service/rsu

3.2 Statement of Support Procedures

With HCD/HCM for z/VM you are entitled to support under the basic warranty for z/VM version 6. Also note that the z/VM Software Subscription and Support is *automatically* added to your z/VM order. This provides zSeries® service to which you are likely accustomed. If you do not want the z/VM Software Subscription and Support, then you must take specific action to decline it when ordering z/VM.

Report any difficulties you have using this program to your IBM Support Center.

When working with HCD/HCM for z/VM support personnel on problems associated with an active Problem Management Record (PMR), diagnostic information may occasionally be requested. In such cases, the support staff will work with you to determine how to provide them with the required documentation.

Figure 5 identifies IBM RETAIN information - the Component ID (COMPID), RETAIN Release, and Field Engineering Service Number (FESN) - that corresponds to HCD/HCM for z/VM.

Figure 5. Component IDs

RETAIN			
COMPID	Release	Component Name	FESN
568411219	540	HCD/HCM for z/VM	0409974

4.0 Program and Service Level Information

This section identifies the program level and any relevant service levels of HCD/HCM for z/VM. In this context *program level* refers to APAR fixes incorporated within the HCD/HCM for z/VM program; *service level* refers to PTFs that are supplied with this product. Information about the HCD/HCM for z/VM cumulative service tape is provided as well.

4.1 Program Level Information - HCD/HCM for z/VM

The following APAR fixes against the previous release of HCD/HCM for z/VM have been incorporated into the base of this release:

VM63869 VM63878 VM63960 VM64005 VM64018 VM64020 VM64044 VM64080
VM64131 VM64164 VM64294

4.2 Service Level Information

The service level of HCD/HCM for z/VM is that which is shipped on the z/VM System Deliverable plus any RSU that you may have installed during initial z/VM installation that has service on it for HCD/HCM for z/VM.

| APAR VM64579 (PTF UM32654) is applied on z/VM V6.1 for HCD/HCM for z/VM

Before you install and configure HCD/HCM for z/VM, you should review the ZVMHCD540 PSP (Preventive Service Planning) "bucket" for updated installation information that you should be aware of, or for information about PTFs that should be installed. Specify upgrade and subset values of **ZVMHCD540** and **ZVMHCD/540**, respectively, when you request or obtain this information.

4.3 Cumulative Service (RSU) Information

Cumulative service for HCD/HCM for z/VM, function level 540 is available through a periodic, preventive service deliverable, referred to as a Recommended Service Upgrade (RSU). The RSU is used to provide service updates for multiple z/VM components (including HCD/HCM for z/VM) and is often referred to as the *stacked* RSU. It will contain service for all of the components, features or products, in VMSES/E format, that are pre-installed on the z/VM System deliverable.

| The stacked RSU can be obtained by ordering PTF UM97vr0; where *v* indicates the version and *r*
| indicates the release of z/VM you are running. For example, if you are running z/VM V6.1 then the RSU
| PTF number is UM97610.

Current RSU status and content information is available at the z/VM RSU home page on the World Wide Web; the URL for this home page is:

www.ibm.com/eserver/zseries/zvm/service/rsu

5.0 Installation and Migration Requirements and Considerations

The following sections identify the system requirements for installing HCD/HCM for z/VM.

5.1 Hardware Requirements

A PC workstation is required to install and run the Hardware Configuration Manager (HCM) part of HCD/HCM for z/VM. Refer to the *z/OS and z/VM: Hardware Configuration Manager User's Guide* for details. All data exchange between z/VM HCD and HCM is based on the TCP/IP protocol. Refer to the Program Directory for TCP/IP for z/VM for hardware requirements for TCP/IP.

5.2 Program Considerations

The following sections list the programming considerations for installing and activating HCD/HCM for z/VM.

5.2.1 Operating System Requirements

HCD/HCM for z/VM requires the following VM operating system:

- z/VM version 6 release 1

A PC workstation with a Windows NT™, Windows™ 2000 or Windows™ XP operating system is required to install and run the Hardware Configuration Manager (HCM). Refer to the *z/OS and z/VM: Hardware Configuration Manager User's Guide* for details.

5.2.2 Other Program Product Requirements

5.2.2.1 Other Program Product Requirements - HCD/HCM for z/VM

High Level Assembler for MVS™ & VM & VSE V1.4 (HLASM V1.4), or higher is required to migrate (convert) a file containing I/O configuration (IOCP) statements into an existing work IODF (using CBDSMIGR command). For more information see *z/VM: I/O Configuration*.

Note: Be aware that the High Level Assembler earlier than V1R5M0 is restricted to 255 characters for any keyword value. IOCP statements, however, may contain keywords with a value greater than 255 characters. Therefore, the High Level Assembler for MVS & VM & VSE V1.5 (HLASM V1.5) is recommended.

5.2.2.2 Other Program Product Requirements - HCM

For using the Hardware Configuration Manager (HCM) as a Graphical User Interface (GUI) to HCD/HCM for z/VM, the following program products are required:

- TCP/IP for z/VM, level 610 must be installed and configured on your z/VM system. Refer to the Program Directory for TCP/IP for z/VM for details.
- The TCP/IP network protocol must be installed and configured on your PC workstation. Refer to the *z/OS and z/VM: Hardware Configuration Manager User's Guide* for details.

5.2.3 Migration Considerations

5.2.3.1 IODF Migration

With z/VM V5.2, HCD/HCM for z/VM started using the new version 5 (V5) IODF format. Existing V4 format IODFs, created on earlier releases of HCD/HCM for z/VM, can be read/viewed, IPLed or dynamically activated on z/VM V5.2 or higher without being permanently upgraded to the new format. HCD/HCM for z/VM detects the back level IODF format and upgrades the IODF temporarily in storage.

A permanent IODF upgrade to a V5 IODF is required before any change action is applied to the V4 IODF. The upgrade can be accomplished

- by using the COPY IODF function under HCM
- OR
- by running the CBDSCOPY exec

thereby copying the V4 IODF to a new IODF or doing a replace.

On HCD/HCM for z/VM releases prior to z/VM V5.2 limited read-only access to V5 IODFs is enabled when the compatibility APAR VM63721 is installed.

For details on upgrading the IODF to the new format refer to the *z/OS and z/VM: Hardware Configuration Manager User's Guide* or Chapter 5, section 'The New IODF Version 5 Format' and the COPY IODF function CBDSCOPY in the *z/VM: I/O Configuration*.

5.2.3.2 Customizable Parts

There have been no changes to the customizable parts for HCD/HCM for z/VM except for part CBDSDPRF SAMPPROF, in which a SFS directory name was changed between HCD/HCM for z/VM, FL440 and HCD/HCM for z/VM, FL520. Therefore, if you are migrating from HCD/HCM for z/VM, FL520 you can migrate your existing customized files to the new z/VM release with no changes needed. If you are migrating from HCD/HCM for z/VM, FL440, you will have to update the SFS directory name in the PROFILE EXEC for CBDIODSP.

If you use the migration procedure documented in the *z/VM: Guide for Automated Installation and Service* to migrate HCD/HCM for z/VM from a z/VM V5.2, a z/VM V5.3 or a z/VM V5.4 system, the customizable files will be migrated to z/VM version 6 release 1, where possible. If the customizable files have been changed on the new level of HCD/HCM for z/VM and you have made changes to them on your current

z/VM version 5 system, you will be told to rework your changes. The HCD/HCM for z/VM production build disks (default 300 and 400) will be migrated. Also, the CBDIODSP 191 disk will be migrated.

5.2.3.3 Increased Virtual Machine Size for z/VM HCD TCP/IP Dispatcher

With z/VM V5.2, and higher, the default storage size for the z/VM HCD TCP/IP dispatcher user ID, CBDIODSP, is defined as 256M, with a maximum size of 999M, in order to satisfy an increased storage requirement to run the IOCP program. If you migrate your CP user directory from a release of VM before z/VM V5.2 then you will need to make this change.

5.2.4 Program Installation and Service Considerations

This section describes items that should be considered before you install or service HCD/HCM for z/VM.

- HCD/HCM for z/VM is pre-installed on the z/VM System deliverable.
- VMSES/E is required to install and service this product.
- If multiple users install and maintain licensed products on your system, you may encounter problems when you attempt to gain write access to the Software Inventory (MAINT 51D) minidisk. Write access contention to this minidisk can be eliminated by converting the Software Inventory to use CMS Shared File System (SFS) directories instead of minidisks. See the *z/VM: VMSES/E Introduction and Reference*, section "Changing the Software Inventory to an SFS Directory", for information about how to make this change.
- An RSU deliverable will be supplied as necessary. Service between RSUs can be obtained through CORrective service.

5.3 DASD Storage and User ID Requirements

Figure 6 on page 12 lists the user IDs, minidisks and default SFS directory names that are used to install and service HCD/HCM for z/VM.

Important Installation Notes:

- The user IDs necessary for installing and using HCD/HCM for z/VM have been defined as part of the installed z/VM System deliverable. Likewise, all required minidisks have been defined. The resources are listed in Figure 6 on page 12 so you are aware of the resources that will be allocated on your behalf.

Note: The installation and set up of HCD/HCM for z/VM on the z/VM System deliverables is a standard setup. If you:

- need to set up security using an external security manager (like RACF®)
- customize
- need to review the directory entry for the z/VM HCD TCP/IP dispatcher service virtual machine (default is CBDIODSP)

please refer to Chapter 2 'Installing HCM' in the *z/OS and z/VM: Hardware Configuration Manager User's Guide* for more information. (For security, also take note of the section on 'Setting up Security').

- If you choose to move HCD/HCM for z/VM from minidisk to the SFS (Shared File System), if you did not do it at initial z/VM install time, or if you want to change from the default SFS file pool or directories, then you will need to follow the steps in Appendix B, "Moving HCD/HCM for z/VM to SFS Directories and Creating a PPF Override" on page 37. These steps will have you create the SFS directories, move the files to the SFS directories and create a PPF override.

Note - z/VM Automated Service Procedure

If you modify any of the IBM-supplied default user IDs, minidisk addresses, or SFS directory names associated with HCD/HCM for z/VM and you plan on using the z/VM automated service procedure (the **SERVICE** and **PUT2PROD** commands) to maintain your z/VM system, then you must create a PPF override for the **SERPVP2P \$PPF** file.

You must also use the **VMFUPDAT** command to update the VM SYSSUF Software Inventory file so that your PPF override for SERVP2P is used for automated service processing instead of the SERVP2P PPF. For more information about PPF overrides, see the *z/VM: VMSES/E Introduction and Reference*.

Figure 6 (Page 1 of 2). DASD Storage Requirements for Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		SFS 4K Blocks (2*)	Usage
		DASD	CYLS (1*)		Default SFS Directory Name
5VMHCD40	2B2	3390	110	19800	Contains all the base code shipped with HCD/HCM for z/VM VMSYS:5VMHCD40.VMHCD.OBJECT
5VMHCD40	2C2	3390	3	540	Contains sample files and user local modifications for HCD/HCM for z/VM VMSYS:5VMHCD40.VMHCD.LOCAL
5VMHCD40	2D2	3390	160	28800	Contains serviced files VMSYS:5VMHCD40.VMHCD.DELTA

Notes:

1. Cylinder values defined in this table are based on a 4K block size.
2. For installation to SFS directories, a total of **125,820** 4K blocks are required.
3. This minidisk **CANNOT** be defined in SFS. Also this minidisk **MUST** be formatted with a 4K blksize.
4. Additional storage space may need to be allocated for the z/VM TCP/IP dispatcher virtual machine's 191 disk to accommodate the size of your I/O configuration, the logging of tracing or other activities.
5. IODF files must reside on a minidisk that is formatted with a blksize of 4K.

Figure 6 (Page 2 of 2). DASD Storage Requirements for Target Minidisks

Minidisk owner (user ID)	Default Address	Storage in Cylinders		SFS 4K Blocks (2*)	Usage
		DASD	CYLS (1*)		Default SFS Directory Name
5VMHCD40	2A6	3390	2	360	Contains AUX files and software inventory tables that represent the test service level of HCD/HCM for z/VM VMSYS:5VMHCD40.VMHCD.APPLYALT
5VMHCD40	2A2	3390	2	360	Contains AUX files and software inventory tables that represent the service level of HCD/HCM for z/VM that is currently in production. VMSYS:5VMHCD40.VMHCD.APPLYPROD
5VMHCD40	300	3390	180	32400	Test build disk. This code will be copied to production disk 400. VMSYS:5VMHCD40.VMHCD.BUILDST
5VMHCD40	400	3390	180	32400	Production build disk. VMSYS:5VMHCD40.VMHCD.BUILDPRD
5VMHCD40	29D	3390	12	2160	Help file disk. This code will be copied to a production disk, (e.g. MAINT 19D) so the production disk will also require this amount of free space. VMSYS:5VMHCD40.VMHCD.BUILDHLP
5VMHCD40	191	3390	50	9000	5VMHCD40 user ID's 191 minidisk VMSYS:5VMHCD40
CBDIODSP	191	3390	120	N/A (3*)	z/VM HCD TCP/IP dispatcher machine's 191 minidisk(4*)(5*)

Notes:

1. Cylinder values defined in this table are based on a 4K block size.
2. For installation to SFS directories, a total of **125,820** 4K blocks are required.
3. This minidisk **CANNOT** be defined in SFS. Also this minidisk **MUST** be formatted with a 4K blksize.
4. Additional storage space may need to be allocated for the z/VM TCP/IP dispatcher virtual machine's 191 disk to accommodate the size of your I/O configuration, the logging of tracing or other activities.
5. IODF files must reside on a minidisk that is formatted with a blksize of 4K.

6.0 Installation Instructions

This chapter describes the installation methods and the step-by-step procedures to complete the installation and activate HCD/HCM for z/VM.

HCD/HCM for z/VM was pre-installed, using VMSES/E, on the z/VM System deliverables.

6.1 Place HCD/HCM for z/VM Into Production

6.1.1 Setting up Security for HCD/HCM for z/VM

You can exploit native CP methods to set up security or you can use an external security manager.

To set up security with native CP, go to section 6.1.1.1, “Setting Up Security with native CP.”

To set up security using an External Security Manager, go to section 6.1.1.2, “Setting Up Security with RACF/VM External Security Manager” on page 15. This section will use RACF/VM as an example.

For further information on using security with HCD/HCM for z/VM refer to Chapter 2 'Installing HCM' in the *z/OS and z/VM: Hardware Configuration Manager User's Guide* manual.

6.1.1.1 Setting Up Security with native CP

To use native CP for security the following things need to do done.

- 1** The file CBDCONF NAMES needs to have the following entry:
:SECURITY.CP
This is the default shipped in the file.
- 2** In the CP directory entry for the dispatcher service virtual machine, user CBDIODSP, you need to add the directory statement:
OPTION DIAG88
- 3** Make sure the password for the dispatcher service virtual machine, user CBDIODSP, in the CP directory entry, is set according to your company's security rules.

Proceed with section 6.1.2, “Install Hardware Configuration Manager (HCM)” on page 17.

6.1.1.2 Setting Up Security with RACF/VM External Security Manager

To use RACF/VM as the ESM, perform the following procedure to authorize virtual machines to issue RACROUTE requests. For more information, refer to *z/VM: Security Server RACROUTE Macro Reference*.

Note: RACF must be enabled and running on your system in order to perform this procedure.

- 1** The file CBDCONF NAMES needs to have the following entry:
:SECURITY.ESM
- 2** Identify the RACF/VM service machine to which RACROUTE requests will be sent. Make sure the z/VM HCD TCP/IP dispatcher service virtual machine (CBDIODSP) has access to the RACF SERV Mach file. See the *z/VM: RACF Security Server System Programmer's Guide* for more information.
- 3** Give the z/VM HCD TCP/IP dispatcher permission to perform password validation using DMSPASS (which uses DIAGNOSE X'88').

Note: If you do not enable RACF profile protection for Diagnose X'88', the z/VM HCD TCP/IP dispatcher service virtual machine (CBDIODSP) must be defined with OPTION DIAG88 in its directory entry.

- a** Define a RACF profile called DIAG088 in class VMCMD, if it does not already exist, and ensure that profile DIAG088 has a UACC of NONE.

```
rac rdefine vmcmd diag088 uacc(none)
```

- b** Authorize the z/VM HCD TCP/IP dispatcher (CBDIODSP) to use DIAGNOSE X'88' by giving it READ access to the DIAG088 profile.

```
rac permit diag088 class(vmcmd) id(cbdiodsp) access(read)
```

- c** If the VMCMD class is not already active, use the SETROPTS commands to activate it.

```
rac setropts classact(vmcmd)
```

- d** Make sure that the protection of DIAGNOSE X'88' is active. It is active by default, if the installation has not changed the setting in the currently active VMXEVENT profile.

- 1** Check to see if active by issuing

rac setevent list

DIAG088 should say CONTROL if it is active

2 If DIAG088 is not currently active, then activate it

rac ralter vmxevent events1 delmem(diag088/noctl)
rac setevent refresh events1

4 Make sure the z/VM HCD TCP/IP dispatcher (CBDIODSP) has IUCV authorization by performing one of these two steps.

- Update the RACF/VM service machine's (RACFVM is default) CP directory by adding IUCV ALLOW to provide global IUCV authorization, so that any user in the system can connect to the RACF/VM service machine.

- OR -

- Give IUCV authorization to the z/VM HCD TCP/IP dispatcher. Update the CBDIODSP CP USER directory by adding the following IUCV statement that specifies the RACF/VM service machine with which the RACROUTE issuer will be communicating.

IUCV RACFVM PRIORITY MSGLIMIT 255

See *z/VM:CP Planning and Administration* for more information.

5 RACF-authorize a connection to the RACF/VM service machine.

a Log on to a user ID that has RACF system-SPECIAL attribute.

b Create a profile named ICHCONN in the FACILITY class.

rac rdefine facility ichconn uacc(none)

c Give UPDATE access authority to CBDIODSP

rac permit ichconn class(facility) id(cbdiodsp) access(update)

d Activate the FACILITY class (if not already active)

rac setropts classact(facility)

- e In the PROFILE EXEC for CBDIODSP (z/VM HCD TCP/IP dispatcher) initialize the connection to the RACF/VM virtual machine by removing the comment characters in the line /* RPIUCMS INIT */. To look like:
RPIUCMS INIT

Proceed with section 6.1.2, "Install Hardware Configuration Manager (HCM)."

6.1.2 Install Hardware Configuration Manager (HCM)

Install the Hardware Configuration Manager (HCM) part of HCD/HCM for z/VM using the following instructions. For your convenience these instructions can also be found in 'Chapter 2. Installing HCM' in the the *z/OS and z/VM: Hardware Configuration Manager User's Guide*.

- 1 Log on to the installation user ID, 5VMHCD40
- 2 Download to the PC, in binary mode, the install shield file EEQINSTX EXEBIN. This file is on the 5VMHCD40 production disk, 400, or SFS directory, VMSYS:5VMHCD40.VMHCD.BUILDPRD. Use a transfer program of your choice. The file must be executable on the PC therefore you need to make sure it has an extension of EXE when you download it.
- 3 Invoke the HCM install utility that now resides on your workstation, e.g. choose the RUN option in the START menu. This will install HCM. The HCM installation creates an entry in your START menu, that you can use to launch HCM.

6.1.3 Activate HCD/HCM for z/VM

Following are instructions for starting and stopping the z/VM HCD TCP/IP dispatcher service virtual machine in order to communicate between z/VM HCD and HCM. For your convenience these commands are also provided in *z/OS and z/VM: Hardware Configuration Manager User's Guide*.

- 1 Log on to the z/VM HCD TCP/IP dispatcher for HCM service virtual machine. The default user ID is CBDIODSP.

Notes:

- a. If the name of your TCP/IP service virtual machine is not equal to TCP/IP, then you must change the TCP START command in the PROFILE RSK file (on CBDIODSP 191 A-disk). Refer to the *z/VM: Reusable Server Kernel - Programmers Guide and Reference* for information on the TCP START command.
- b. The z/VM HCD TCP/IP dispatcher, CBDIODSP, uses 51107 as its default port. You should reserve this port in TCP/IP's PROFILE TCP/IP. You should add the following entries to the PORT section of TCP/IP's PROFILE TCP/IP.

```
PORT
51107 TCP CBDIODSP ; HCD server
51107 UDP CBDIODSP ; HCD server
```

c. Recycle TCP/IP.

Note that you can change the port to something else. If you do, update the CBDCONF NAMES file on the A-disk of the CBDIODSP user ID as well as the PROFILE TCPIP.

- 2** Start the z/VM HCD TCP/IP dispatcher for HCM by issuing the command CBDSDISP in CMS while logged on to the CBDIODSP user ID. Wait for text messages and verify that all services started correctly. Following are messages that you will see after issuing CBDSDISP:

```
IBM VM/ESA® Reusable Server Kernel
(C)Copyright 1993,1994,1995,1996,1997,1998
International Business Machines Corporation.
All Rights Reserved.
RSK>
SUBCOM BKWSCM0000I Operation completed OK.
SUBCOM BKWSCM0000I Operation completed OK.
CONSOLE BKWCNS0000I Operation completed OK.
CONSOLE BKWCNS0000I Operation completed OK.
TCP BKWTCP0000I Operation completed OK.
CBDD200I z/VM 5.4.0 HCD TCP/IP dispatcher for HCM successfully started.
TCP BKWTCP0000I Operation completed OK.
SUBCOM BKWSCM0000I Operation completed OK.
CONSOLE BKWCNS0000I Operation completed OK.
```

You may disconnect this machine at this time.

- 3** On your workstation, start HCM. This can be done either by starting the executable or by double-clicking with the left mouse button on one of your saved HCM configuration files in Windows Explorer. In the latter case, the configuration is loaded as soon as HCM is running. The Product Information window of the Hardware Configuration Manager (HCM) program is displayed.
- 4** Enter the z/VM HCD TCP/IP dispatcher service virtual machine user ID, default is CBDIODSP, and its password. Use the z/VM TCP/IP hostname or IP address, of the system where HCD is installed, and your port number (51107 is the default).
- 5** Optionally, you can switch on the HCD trace, if needed.
- 6** Work with HCM. Refer to the 'Getting Started' chapter in the *z/OS and z/VM: Hardware Configuration Manager User's Guide*.

7 Exit from HCM on your workstation.

8 Stop the z/VM HCD TCP/IP dispatcher for HCM by issuing the command 'SERVER STOP' on the CBDIODSP console. If you disconnected the dispatcher user ID then you need to log back on to issue the command. You should see the following:

```
SERVER STOP
RSK>
SERVER BKWSRV0300I Shutdown initiated.
CBDD210I z/VM 5.4.0 HCD TCP/IP dispatcher for HCM stopped.
Ready;
```

Note: The dispatcher can be started again using step 2 on page 18 above; there is no need to logoff and logon again.

HCD/HCM for z/VM is now installed and ready to use on your system. To use HCD/HCM for z/VM go to the *z/VM: I/O Configuration* and *z/OS and z/VM: Hardware Configuration Manager User's Guide* publications.

7.0 Service Instructions

Note - z/VM Automated Service Procedure

The **preferred** method for installing service to HCD/HCM for z/VM is to use the z/VM automated service procedure (use of the **SERVICE** and **PUT2PROD** commands).

If you have chosen to use the automated procedure to apply preventive (RSU) and CORrective service to your z/VM system, you need to follow the service instructions documented in the *z/VM: Guide for Automated Installation and Service* manual instead of those presented here.

RSU Note

If applying a HCD/HCM for z/VM RSU go to the instructions in Appendix A, "Applying a Recommended Service Upgrade (RSU) for HCD/HCM for z/VM" on page 29. You will return to a step in this chapter, as specified in that appendix.

This section of the Program Directory contains the procedure to install CORrective service to HCD/HCM for z/VM. VMSES/E is used to install service for HCD/HCM for z/VM.

To become more familiar with service using VMSES/E, you should read the introductory chapters in the *z/VM: VMSES/E Introduction and Reference*. This manual also contains the command syntax for the VMSES/E commands listed in the procedure.

Note: Each step of the service instructions must be followed. Do not skip any step unless directed to do so. All instructions showing accessing of disks assume the use of default minidisk addresses. If different minidisk addresses are used, or if using a shared file system, change the instructions appropriately.

7.1 VMSES/E Service Process Overview

The following is a brief description of the main steps in servicing HCD/HCM for z/VM using VMSES/E.

- Setup Environment
Access the software inventory disk. Use the VMFSETUP command to establish the correct minidisk access order.
- Merge Service
Use the VMFMRDSK command to clear the alternate apply disk before receiving new service. This allows you to remove the new service if a serious problem is found.
- Receive Service
The VMFREC command receives service from the delivery media and places it on the Delta disk.

- Apply Service

The VMFAPPLY command updates the version vector table (VVT), which identifies the service level of all the serviced parts. In addition, AUX files are generated from the VVT for parts that require them.

- Reapply Local Service (if applicable)

All local service (mods) must be entered into the software inventory to allow VMSES/E to track the changes and build them into the system. Refer to Chapter 5 in the *z/VM: Service Guide* for this procedure.

- Build New Levels

The build task generates the serviced level of an object and places the new object on a test BUILD disk.

- Place the New Service into Production

Once the service is satisfactorily tested it should be put into production by copying the new service to the production disk.

7.2 Servicing HCD/HCM for z/VM

7.2.1 Prepare to Receive Service

Electronic Service (envelope file)

If you have received the service electronically or on CD-ROM, follow the appropriate instructions to retrieve and decompress the envelope file to your A-disk. The decompression is currently done by using the DETERSE MODULE (shipped with VMSES/E).

The documentation envelope and the service (PTF) envelope files must have a file type of SERVLINK. Make note of the file names that you are using as you will need to enter them in place of the variable *envfilename* on the VMFREC commands that follow.

The *ppfname* used throughout these servicing instructions is **5VMHCD40**, which assumes you are using the PPF supplied by IBM for HCD/HCM for z/VM. If you have your own PPF override file for HCD/HCM for z/VM, you should use your file's *ppfname* instead of **5VMHCD40**. The *ppfname* you use should be used **throughout** the rest of this procedure, unless otherwise stated.

1 Logon to HCD/HCM for z/VM service user ID **5VMHCD40**

2 If the Software Inventory disk (51D) was accessed R/O (read only) then establish write access to the Software Inventory disk.

Note: If the MAINT 51D minidisk was accessed R/O because someone else has it R/W, you will need to have the user that has it accessed R/W link it R/O. You then can issue the following commands to obtain R/W access to it.

**link MAINT 51d 51d mr
access 51d d**

The 51D minidisk is the default minidisk where the VMSES/E Software Inventory files and other product dependent files reside.

If your VMSES/E Software Inventory is on a different minidisk or in shared file (SFS), use that address or SFS directory name instead.

3 Have the HCD/HCM for z/VM CORrective service tape mounted and attached to **5VMHCD40**. If you have a CORrective service envelope (SERVLINK) file make sure that is it available on the A-disk or any minidisk or SFS directory accessed as C.

4 Receive the documentation.

a If receiving the service from **tape**

vmfrec info

The INFO option loads the documentation (including the product service memo) to the 191 disk and displays a list of products on the tape.

b If receiving the service from an **envelope** file

vmfrec info (env *envfilename*

envfilename is the file name of the documentation envelope (SERVLINK) file.

The INFO option loads the documentation (including the product service memo) to the 191 disk and displays a list of products in the envelope.

5 Check the receive message log (\$VMFREC \$MSGLOG) for warning and error messages.

vmfview receive

Also make note of which products and components have service. To do this, use the PF5 key to show all status messages which identify the products with service.

6 Read the product memo (5VMHCD40 MEMO) before going on.

7 Setup the correct product access order.

vmfsetup 5VMHCD40 {VMHCD | VMHCDSFS}

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

- 8** Merge previously applied service to ensure that you have a clean alternate APPLY disk for new service.

vmfmrdsk 5VMHCD40 {VMHCD | VMHCDSFS} apply

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

This command clears the alternate APPLY disk.

- 9** Review the merge message log (\$VMFMRD \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate *z/VM: Messages and Codes*, or use on-line HELP.

vmfview mrd

7.2.2 Receive the Service

Note: If you are installing multiple service tapes, you can receive all of the service for this prodid before applying and building it.

For **each** service tape or electronic envelope you want to receive, do the following:

- 1** Receive the service.
 - a** If receiving the service from **tape**

vmfrec ppf 5VMHCD40 {VMHCD | VMHCDSFS}

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

This command receives service from your service tape. All new service is loaded to the DELTA disk.

- b** If receiving the service from an **envelope** file

vmfrec ppf 5VMHCD40 {VMHCD | VMHCDSFS} (env envfilename

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

envfilename is the file name of the service (PTF) envelope (SERVLINK) file.

This command receives service from your service envelope. All new service is loaded to the DELTA disk.

- 2** Review the receive message log (\$VMFREC \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate *z/VM: Messages and Codes*, or use on-line HELP.

vmfview receive

7.2.3 Apply the Service

- 1** Apply the new service.

vmfapply ppf 5VMHCD40 {VMHCD | VMHCDSFS}

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

This command applies the service that you just received. The version vector table (VVT) is updated with all serviced parts and all necessary AUX files are generated on the alternate APPLY disk.

Note: If you receive a return code of 4 this may indicate that you have local modifications that need to be reworked so make sure you review the VMFAPPLY message log as documented in the next step.

- 2** Review the apply message log (\$VMFAPP \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate *z/VM: Messages and Codes*, or use on-line HELP.

vmfview apply

Note

If you get the message VMFAPP2120W you must re-work any local modifications before building the new HCD/HCM for z/VM. Refer to Chapter 7, 'Reworking Local Service and Modifications', in the *z/VM: Service Guide*. Follow the steps that are applicable to your local modification.

The following substitutions need to be made:

- **zvm** should be **5VMHCD40**
- *compname* should be **VMHCD** or **VMHCDSFS** (minidisk or SFS)
- *fm-local* should be the fm of 2C2
- *localmod* should be **local**

If you have changed any of the installation parameters through a PPF override, you need to substitute your changed values where applicable.

Keep in mind that when you get to the "Return to the Appropriate Section to Build Remaining Objects" or "Rebuild Remaining Objects" step in the *z/VM: Service Guide*, you should return back to this program directory at 7.2.4, "Update the Build Status Table."

7.2.4 Update the Build Status Table

- 1 Update the Build Status Table with serviced parts.

vmfbld ppf 5VMHCD40 {VMHCD | VMHCDSFS} (status

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

This command updates the Build Status Table.

Note

If the \$PPF files have been serviced you will get the following prompt:

```
VMFBLD2185R The following source product parameter files have been
serviced:
VMFBLD2185R 5VMHCD40 $PPF
VMFBLD2185R When source product parameter files are serviced, all
product parameter files built from them must be recompiled
using VMFPPF before VMFBLD can be run.
VMFBLD2185R Enter zero (0) to have the serviced source product
parameter files built to your A-disk and exit VMFBLD so
you can recompile your product parameter files with VMFPPF.
VMFBLD2185R Enter one (1) to continue only if you have already
recompiled your product parameter files with VMFPPF.
```

0

Enter a 0 and complete the following steps before you continue.

```
VMFBLD2188I Building 5VMHCD40 $PPF
on 191 (A) from level $PFnnnnn
```

vmfppf 5VMHCD40 *

Note: If you've created your own PPF override then use your PPF name instead of 5VMHCD40.

**copy 5VMHCD40 \$PPF a = d (oldd replace
erase 5VMHCD40 \$PPF a**

Note: Do not use your own PPF name in place of 5VMHCD40 for the COPY and ERASE commands.

vmfbld ppf 5VMHCD40 {VMHCD | VMHCDSFS} (status

1

Re-issue VMFBLD to complete updating the build status table. If you have your own PPF name then you should use it on the VMFBLD command.

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories. When you receive the prompt that was previously displayed, enter a 1 to continue.

2 Use VMFVIEW to review the build status messages, and see what objects need to be built.

vmfview build

7.2.5 Build Serviced Objects

- 1 Rebuild HCD/HCM for z/VM serviced parts.

vmfbld ppf 5VMHCD40 {VMHCD | VMHCDSFS} (serviced

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

Note: If your software inventory disk (51D) is not owned by the MAINT user ID then make sure the VMSESE PROFILE reflects the correct owning user ID.

- 2 Review the build message log (\$VMFBLD \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate *z/VM: Messages and Codes*, or use on-line HELP.

vmfview build

7.3 Place the New HCD/HCM for z/VM Service Into Production

7.3.1 Copy the New HCD/HCM for z/VM Serviced Files Into Production

- 1 Logon to **5VMHCD40** to put HCD/HCM for z/VM code on the 'production' build disk.

- a If installed using minidisks

access 300 e

access 400 f

vmfcopy * * e = f (prodid 5VMHCD40%VMHCD olddate replace

The VMFCOPY command will update the VMSES PARTCAT file on the 400 disk.

- b If installed using Shared File System

access VMSYS:5VMHCD40.VMHCD.BUILDST e The VMFCOPY command will update the VMSES
access VMSYS:5VMHCD40.VMHCD.BUILDPRD f PARTCAT file on the 400 disk.
vmfcopy * * e = = f (prodid 5VMHCD40%VMHCD olddate replace

2 Logon to **MAINT** if you plan to put HCD/HCM for z/VM help files on the system AMENG Help (MAINT's 19D) disk.

a If installed using minidisks

link 5VMHCD40 29d 29d rr The VMFCOPY command will update the VMSES
access 29d e PARTCAT file on the AMENG Help (MAINT 19D)
acc 19d f disk.

vmfcopy * * e = = f (prodid 5VMHCD40%VMHCD olddate replace

b If installed using Shared File System

access VMSYS:5VMHCD40.VMHCD.BUILDHLP e The VMFCOPY command will update the VMSES
acc 19d f PARTCAT file on the AMENG Help (MAINT 19D)
disk.

vmfcopy * * e = = f (prodid 5VMHCD40%VMHCD olddate replace

3 Re-build the CMS HELP logical saved segment, to include HCD/HCM for z/VM's help files from the AMENG Help (MAINT's 19D) disk. See the "Placing (Serviced) Components into Production" section of the *z/VM: Service Guide* for detailed information about how these segments should be saved on your system. (Note that you will need to use (**all** instead of (**serviced** on the VMSES/E VMFBLD command when re-building any segments.)

7.3.2 Copy the new Serviced HCM Install Utility file Into Production

If you received message VMFBDC2250W during build processing, then the HCM install utility file, EEQINSTX EXEBIN, was serviced. You need to follow the instructions at 6.1.2, "Install Hardware Configuration Manager (HCM)" on page 17 to make this new code available.

7.3.3 Re-activate HCD/HCM for z/VM TCP/IP Dispatcher

You need to re-activate the HCD/HCM for z/VM TCP/IP Dispatcher service virtual machine (CBDIODSP). Follow the instructions in section 6.1.3, "Activate HCD/HCM for z/VM" on page 17 to stop the server (step 8 on page 19) and start it again.

You have finished servicing HCD/HCM for z/VM.

Appendix A. Applying a Recommended Service Upgrade (RSU) for HCD/HCM for z/VM

Note - z/VM Automated Service Procedure

The **preferred** method for installing service to HCD/HCM for z/VM is to use the z/VM automated service procedure (use of the **SERVICE** and **PUT2PROD** commands).

If you have chosen to use the automated procedure to apply preventive (RSU) and CORrective service to your z/VM system, you need to follow the service instructions documented in the *z/VM: Guide for Automated Installation and Service* manual, instead of those presented here.

The RSU is structured to install all PTFs included on the RSU deliverable plus the files containing the preapplied service and prebuilt objects. All PTF-related files are loaded to the DELTA disk. The file containing the preapplied service, i.e. containing the results of VMFAPPLY, is loaded to the alternate APPLY disk and the contents of the files containing prebuilt objects are loaded to the appropriate build disks.

Points to consider about using the Product Service Upgrade procedure are:

- This process will not alter any of your tailored flat files (files serviced full part replacement only) in any way. Local modifiable files you may have updated will have to be re-worked to include any new service to these files.
- Planning must be done (such as determining disk sizes, and determining what service, if any, on your existing system is not contained on the RSU) prior to actually loading the service from the RSU. These tasks will be discussed.

The following is an overview of what tasks need to be performed during the Preventive Service procedure (PSU) using the RSU:

- Prepare System

In this task, you will receive the documentation contained on the RSU and determine the DASD required to install the RSU.

- Merge Service

Use the VMFMRDSK command to clear the alternate APPLY disk before receiving the RSU. This allows you to remove the new service if a serious problem is found.

- Receive Service

The VMFINS command receives service from the RSU and places it on the DELTA disk.

- Apply Additional Service

The VMFAPPLY command updates the version vector table (VVT), which identifies the service level of all the serviced parts. In addition, AUX files are generated from the VVT for parts that require them.

These steps are used to reapply service that was not contained on the RSU that was already installed for HCD/HCM for z/VM.

- Reapplying Local Modifications (if applicable)

All local modifications must be entered into the software inventory to allow VMSES/E to track the changes and build them into the system.

- Building New Levels

The build tasks generates the serviced level of an object and places the new object on a BUILD disk.

- Placing the New Service into Production

Once the service is satisfactorily tested it should be put into production by copying the new service to the production disk, re-saving the NSS (Named Saved System) or DCSS (Discontiguous Saved Segments), etc.

A.1 Apply HCD/HCM for z/VM RSU

A.1.1 Prepare Your System for Service Refresh

The *ppfname* used throughout these instructions is **5VMHCD40**, which assumes you are using the PPF supplied by IBM for HCD/HCM for z/VM. If you have your own PPF override file for HCD/HCM for z/VM you should use your file's *ppfname* instead of **5VMHCD40**. The *ppfname* you use should be used **throughout** the rest of this procedure.

Electronic Service (envelope file)

If you have received the RSU as an envelope file or on CD-ROM, follow the appropriate instructions to retrieve and decompress the envelope file(s) to your A-disk. The decompression is currently done by using the DETERSE MODULE (shipped with VMSES/E).

The service (RSU PTF) envelope files must have a file type of SERVLINK. Make note of the file names that you are using as you will need to enter them in place of the variable *envfilename* on the VMFINS commands the follow.

The documentation envelope file will be a readable flat file after DETERSE is run against it. It will not get used in the following RSU application instructions.

- 1** Read through the latest RSU information hard copy memo.
- 2** Logon to the z/VM HCD service user ID 5VMHCD40
- 3** If the Software Inventory disk (51D) was accessed R/O (read only) then establish write access to the Software Inventory disk.

Note: If the MAINT 51D minidisk was accessed R/O because someone else has the minidisk R/W, you will need to have the user who has it linked R/W link it as R/O. You then can issue the following commands to obtain write access to it. Do not use *mw* mode.

**link MAINT 51d 51d mr
access 51d d**

The MAINT 51D disk is the default VMSES/E Software Inventory disk. If you use a different minidisk or SFS directory, you should use that address or SFS directory name here.

4 Mount the RSU tape on the tape drive as virtual device 181. You must use 181. If you have a CORrective service envelope (SERVLINK) file make sure that is it available on the A-disk or any minidisk or SFS directory accessed as C.

5 Receive the documentation

Receive the documentation on the RSU. This step will also load the cumulative Apply Status Table (SRVAPPS) which identifies all preapplied service contained on the tape. These files are loaded to the 51D disk.

a If receiving the RSU from **tape**

vmfins install info (nomemo

b If receiving the RSU from an **envelope** file

vmfins install info (nomemo env *envfilename*

envfilename is the file name of service (RSU PTF) envelope file (SERVLINK) that represents volume 1 of the RSU.

6 Determine DASD sizes for disks to receive service.

In order to receive the service from the RSU, you need to have adequate space available on the alternate APPLY and DELTA disks. The required sizes are identified in the HCD/HCM for z/VM documentation (5VMHCD40 MEMO D) received in the previous step.

7 Setup the correct minidisk access order

vmfsetup 5VMHCD40 {VMHCD | VMHCDSFS}

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

8 Merge the APPLY disks for HCD/HCM for z/VM.

Next, you must prepare your system to receive the service from the RSU. To do this, you must first clear the alternate APPLY disk for receipt of the service from the RSU.

Enter the VMFMRDSK command to merge the alternate apply disk to the APPLY disk. This will clear the alternate APPLY disk.

vmfmrdsk 5VMHCD40 {VMHCD | VMHCDSFS} apply

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

9 You can obtain additional information about the service on the RSU and how it will affect your local modifications by invoking the VMFPSU command. This command creates an output file, **appid PSUPLAN**, which you can review. See *z/VM: Service Guide* for an explanation of this file.

vmfpsu 5VMHCD40 {VMHCD | VMHCDSFS}

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

This command produces an output file that contains information about the service on the RSU compared against the service and local modifications on your system. The file name is **appid PSUPLAN**, where **appid** is specified in the PPF file.

A.1.2 Receive the Preapplied, Prebuilt Service

1 Refresh the HCD/HCM for z/VM service disks by loading new service from the RSU.

a If receiving the RSU from **tape**

vmfins install ppf 5VMHCD40 {VMHCD | VMHCDSFS} (nomemo link

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

b If receiving the RSU from an **envelope** file

vmfins install ppf 5VMHCD40 {VMHCD | VMHCDSFS} (nomemo link env *envfilename*

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

If you have more than one envelope for the RSU then you need to enter the file name of volume 1 of the RSU. You will be prompted for the others when needed.

```
VMFINS2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2601R Do you want to create an override for :PPF 5VMHCD40
             VMHCD :PRODID 5VMHCD40%VMHCD?
             Enter 0 (No), 1 (Yes) or 2 (Exit)
0
VMFINS2603I Processing product :PPF 5VMHCD40 VMHCD :PRODID
             5VMHCD40%VMHCD
VMFREQ2805I Product :PPF 5VMHCD40 VMHCD :PRODID 5VMHCD40%VMHCD
             has passed requisite checking
VMFINT2603I Installing product :PPF 5VMHCD40 VMHCD :PRODID
             5VMHCD40%VMHCD
VMFSET2760I VMFSETUP processing started for 5VMHCD40 VMHCD
VMFUTL2205I Minidisk|Directory Assignments:
             String   Mode   Stat  Vdev  Label/Directory
VMFUTL2205I LOCAL     E     R/W   2C2   HCD2C2
VMFUTL2205I APPLY    F     R/W   2A6   HCD2A6
VMFUTL2205I          G     R/W   2A2   HCD2A2
VMFUTL2205I DELTA    H     R/W   2D2   HCD2D2
VMFUTL2205I BUILD0   I     R/W   300   HCD300
VMFUTL2205I BUILD2   J     R/W   29D   HCD29D
VMFUTL2205I BASE1    K     R/W   2B2   HCD2B2
VMFUTL2205I SYSTEM   L     R/O   493   MNT493
VMFUTL2205I ----- A     R/W   191   HCD191
VMFUTL2205I ----- B     R/O   5E5   MNT5E5
VMFUTL2205I ----- D     R/W   51D   MNT51D
VMFUTL2205I ----- S     R/O   190   MNT190
VMFUTL2205I ----- Y/S   R/O   19E   MNT19E
VMFSET2760I VMFSETUP processing completed successfully
VMFREC2760I VMFREC processing started
VMFREC1852I Volume 1 of 1 of INS TAPE yynn
:
VMFREC2760I VMFREC processing completed successfully
VMFINT2760I VMFINST processing completed successfully
VMFINS2760I VMFINS processing completed successfully
Ready;
```

2 Check the receive message log (\$VMFREC \$MSGLOG) for warning and error messages. If necessary, correct any problems before going on. For

information about handling specific receive messages, see the appropriate *z/VM: Messages and Codes*, or use online HELP.

vmfview install

A.1.3 Process Additional Service

1 Apply additional service

The VMFAPPLY command is used to reapply service that was not contained on the refresh tape that was already installed for the component.

Applying service with preapplied, prebuilt service will reapply any reach-ahead service that may be on the system **or** indicate that there are no reach-ahead PTFs to be applied.

vmfapply ppf 5VMHCD40 {VMHCD | VMHCDSFS}

Use **VMHCD** for installing on minidisks or **VMHCDSFS** for installing in Shared File System directories.

Messages VMFAPP2122E and VMFAPP2109R will be displayed only if you have reach-ahead service that needs to be reapplied. If you receive these messages, enter **1** in reply to VMFAPP2109R to reapply the reach-ahead service (as shown in the example below).

VMFAPP2122E The set of PTFs in the Apply Status Table (5VMHCD40 SRVAPPS) on the 2A2 (G) disk is not a subset of the PTFs in the highest Level Apply Status Table on the 2A6 (F) disk. This is an inconsistent state.

VMFAPP2109R VMFAPPLY will automatically correct the problem identified by message 2122E by including the missing PTFs in the current Apply List. Enter (1) to continue; (0) to quit.

1

If you receive these messages, enter **1** for VMFAPPLY to reapply the reach-ahead service.

2 Check the apply message log (\$VMFAPP \$MSGLOG) for warning and error messages. If necessary, correct any problems before going on. For information about handling specific apply messages, see the appropriate *z/VM: Messages and Codes*, or use online HELP.

vmfview apply

3 If necessary, rework **local modifications**.

The output from the VMFPSU command (which was run in an earlier step), *appid* **PSUPLAN** file, can be used to indicate what local service or mods are affected by the RSU Tape. If a PTF is applied and it contains service to a part for which you have a local modification, you will need to rework the local modification. Refer to the *z/VM: Service Guide*.

A.1.4 Build the New Service Level and Place Into Production

To rebuild all objects that were affected by reach-ahead service that was reapplied and local modifications, **continue** with the instructions in 7.2.4, “Update the Build Status Table” on page 25. You need to complete all of the remaining steps in that section, which include placing HCD/HCM for z/VM into production.

A.1.5 Determine RSU Service Level

The service contained on each RSU constitutes a new service level. Use this service level when ordering corrective service. The service level is updated in the system inventory when the RSU is installed.

To find out the current service level for HCD/HCM for z/VM you can use the VMFSIM QUERY command or if you use the automated service procedures you can use SERVICE command with the STATUS operand.

The following is an example using VMFSIM to query the current RSU service level.

vmfsim query vm sysrecs tdata :ppf *ppfname* :stat The output from this command is similar to the following console log. The last part of the status line indicates the RSU service level: 0901

```
VMFSIP2408I RESULTS FOR
          TDATA :PPF 5VMHCD40 :STAT
:PPF 5VMHCD40 VMHCD
:STAT RECEIVED.mm/dd/yy.hh:mm:ss.userid.RSU-0901
```

The following is an example of using the SERVICE command to query the current RSU service level. You should use this command if you service HCD/HCM for z/VM using the automated service commands (SERVICE and PUT2PROD).

service vmhcd status

The output from this command is similar to the following console log. The last part of message VMFSRV1225I indicates the RSU service level: 0901

```
VMFSRV2760I SERVICE processing started
VMFSRV1225I VMHCD (5VMHCD40%VMHCD) status:
VMFSRV1225I   Service Level   RSU-0901
VMFSRV1225I   Production Level RSU-0901
VMFSRV2760I SERVICE processing completed successfully
```

Appendix B. Moving HCD/HCM for z/VM to SFS Directories and Creating a PPF Override

By default, z/VM HCD is installed to minidisks, as part of the z/VM System deliverables, unless you choose to install HCD/HCM for z/VM to SFS during the initial z/VM installation. However, you can move some of the HCD/HCM for z/VM minidisks to SFS directories after installation. Refer to Figure 6 on page 12 to see which minidisks can reside in SFS. You can use either the default file pool, VMSYS, or a file pool of your choice.

A summary of the steps that are needed to place HCD/HCM for z/VM into SFS are:

- Allocate space in the user-defined file pool
- Provide the installation user ID, 5VMHCD40, access to the file pool
- Create the necessary HCD/HCM for z/VM subdirectories
- Copy files from the minidisks to the new SFS subdirectories
- Create a PPF override, if not using the default file pool or subdirectory names.

Where to next

You need to do one of the following:

- If you want to place HCD/HCM for z/VM into SFS directories **using the defaults defined in the 5VMHCD40 PPF file** you should use the MOVE2SFS command, as documented in the *z/VM: CP Commands and Utilities Reference*.
- If you want to place HCD/HCM for z/VM into your **own user-defined file pool or SFS directories**, continue with the instructions in B.1, "Setup SFS File Pool and Directories" on page 38.
- If you **only need to create a PPF override**, continue with the instructions in B.3, "Create Product Parameter File (PPF) Override" on page 40.

If you were pointed to this appendix from another section and you have completed the steps required (whether provided in this appendix or in the *z/VM: CP Commands and Utilities Reference*) you should now return to your original section to continue.

B.1 Setup SFS File Pool and Directories

Notes:

1. The steps that follow help you determine the HCD/HCM for z/VM file pool space requirements, file pool enrollment, and SFS directory definitions. If not all of these steps are required - for example, you are changing only SFS directory or subdirectory names - adapt these instructions as needed for your environment.
2. The steps that follow assume that a user-defined SFS file pool name is being used. If you will be using the VM default VMSYS file pool name, substitute it in any place you see 'user-defined file pool' or *userfilepool*.
3. For more information about planning for, generating and managing a file pool and server, see *z/VM: File Pool Planning, Administration and Operation*.

- 1** Determine the number of 4k blocks that are required for SFS directories by adding up the 4K blocks required for each SFS directory you plan to use.

If you intend to use all of the default HCD/HCM for z/VM SFS directories, the 4K block requirements for each directory are summarized in Figure 6 on page 12.

This information is used when enrolling the user ID 5VMHCD40 to the user-defined file pool.

- 2** Enroll user 5VMHCD40 and CBDIODSP in the user-defined file pool using the ENROLL USER command:

```
ENROLL USER 5VMHCD40 userfilepool: (BLOCKS blocks)  
ENROLL USER CBDIODSP userfilepool:
```

where *blocks* is the number of 4k blocks that you calculated in the previous step.

Note: This must be done from a user ID that is an administrator for the user-defined file pool.

- 3** Determine if there are enough blocks available in the file pool to install HCD/HCM for z/VM. This information can be obtained from the QUERY FILEPOOL STORGRP command. The output from this command is a list of storage groups in the file pool and the number of 4K blocks free. If the number of 4K blocks free is smaller than the total 4K blocks needed to install HCD/HCM for z/VM you need to add space to the file pool. See *z/VM: File Pool Planning, Administration, and Operation* manual for information on adding space to a file pool.

- 4 Create the necessary subdirectories using the CREATE DIRECTORY command.

Note: All of the HCD/HCM for z/VM subdirectories are shown in the create directory commands. If you are not planning on creating them all then just enter the commands for the ones you plan to create.

A complete list of default HCD/HCM for z/VM SFS directories is provided in Figure 6 on page 12.

```
set filepool userfilepool:  
create directory userfilepool:5VMHCD40.VMHCD  
create directory userfilepool:5VMHCD40.VMHCD.object  
create directory userfilepool:5VMHCD40.VMHCD.applyalt  
create directory userfilepool:5VMHCD40.VMHCD.applyprd  
create directory userfilepool:5VMHCD40.VMHCD.delta  
create directory userfilepool:5VMHCD40.VMHCD.local  
create directory userfilepool:5VMHCD40.VMHCD.buildtst  
create directory userfilepool:5VMHCD40.VMHCD.buildprd  
create directory userfilepool:5VMHCD40.VMHCD.buildhlp
```

If you have changed any of the default SFS directory names then use your new name in place of the old name in the create directory command.

If necessary, see the *z/VM: CMS Commands and Utilities Reference* manual for more information about the CREATE DIRECTORY command.

- 5 Give the z/VM HCD TCP/IP dispatcher service machine, CBDIODSP, READ authority to the HCD/HCM for z/VM production code using the GRANT AUTHORITY command.

```
grant auth userfilepool:5VMHCD40.vmhcd.buildprd to CBDIODSP (read newread  
grant auth userfilepool:5VMHCD40.vmhcd.buildtst to CBDIODSP (read newread  
grant auth userfilepool:5VMHCD40.vmhcd.local to CBDIODSP (read newread
```

If necessary, see the *z/VM: CMS Commands and Utilities Reference* manual for more information about the GRANT AUTHORITY command.

- 6 If you intend to use an SFS directory as the work space for the 5VMHCD40 user ID, include the following IPL control statement in the 5VMHCD40 directory entry:

```
IPL CMS PARM FILEPOOL userfilepool
```

This will cause CMS to automatically access 5VMHCD40's top directory as file mode A.

B.2 Copy Minidisk (or SFS) Files to SFS Directories

- 1 Copy the files from the HCD/HCM for z/VM minidisks (or from the VMSYS file pool, if HCD/HCM for z/VM is already installed there) to your new user-defined SFS file pool and directories using the VMFCOPY command.

Note: Repeat the ACCESS and VMFCOPY commands, that follow, for each disk or SFS directory you need to copy. Refer to Figure 6 on page 12 for the default minidisk and SFS directory names for HCD/HCM for z/VM.

access *vdev* e

access *dirid* f

vmfcopy * * e = = f (prodid 5VMHCD40%VMHCD olddate replace

Where

- *vdev* is the minidisk you are copying files from. If you are copying from SFS then substitute in the SFS directory name in place of *vdev*.
- *dirid* is the name of the (target) SFS directory that you are copying files to.
- 5VMHCD40%VMHCD is the PRODID defined within the 5VMHCD40 PPF file for the minidisk and SFS HCD/HCM for z/VM components.

The VMFCOPY command will update the VMSES PARTCAT file on the target directory.

B.3 Create Product Parameter File (PPF) Override

This section provides information to help you create a product parameter file (PPF) override. The example used in this section is how to change the shared file system (SFS) file pool where HCD/HCM for z/VM files reside. Refer to the *z/VM: VMSES/E Introduction and Reference* for more information on PPF overrides.

Note: Do **not** modify the product supplied 5VMHCD40 \$PPF or 5VMHCD40 PPF files to change the VMSYS file pool name or any other installation parameters. If the 5VMHCD40 \$PPF file is serviced, the existing \$PPF file will be replaced, and any changes to that file will be lost. By creating your own \$PPF override, your updates will be preserved.

The following process describes changing the default file pool name, "VMSYS" to "MYPOOL":

1 Create a new \$PPF override file or edit an existing override file.

xedit *overname* \$PPF *fm2*

overname is the PPF override file name (such as "myvmhcd") that you want to use.

fm is an appropriate file mode. If you create this file yourself, specify a file mode of A.

If you modify an existing override file, specify a file mode of A or D, based on where the file currently resides (A being the file mode of a R/W 191 minidisk, or equivalent; D, that of the MAINT 51D minidisk or whatever minidisk or SFS directory contains the VMSES/E Software Inventory.

2 Create (or modify as required) the Variable Declarations (:DCL.) section for the VMHCDSFS override area so that it resembles the :DCL. section as shown below.

Notes:

- a. If you service by using the automated service commands, SERVICE, PUT2PROD and LOCALMOD, then you will want to make sure you create an override to the SERVP2P \$PPF for the VMHCDSFS and VMHCDSFSP2P components. To do this you will follow the example below with the following changes:

- The OVERLST statement should be:
:OVERLST. VMHCDSFS VMHCDSFSP2P
- The :VMHCDSFS statement should be:
:VMHCDSFS. VMHCDSFS SERVP2P
- Repeat the DCL update but change the :VMHCDSFS to be
:VMHCDSFSP2P. VMHCDSFSP2P SERVP2P

```
:OVERLST. VMHCDSFS
*
*****
:VMHCDSFS. VMHCD 5VMHCD40
*****
:DCL. UPDATE
&INS191 DIR MYPOOL:5VMHCD40 * VMSES/E WORK DISK
&LOCAL DIR MYPOOL:5VMHCD40.VMHCD.LOCAL * LOCAL DISK
&BASIZ DIR MYPOOL:5VMHCD40.VMHCD.OBJECT * BASE DISK
```

```

&DELTZ DIR MYPOOL:5VMHCD40.VMHCD.DELTA * HCD VM SERVICE FILES
&APPLX DIR MYPOOL:5VMHCD40.VMHCD.APPLYALT * AUX AND INVENTORY FILE
&APPLZ DIR MYPOOL:5VMHCD40.VMHCD.APPLYPROD * AUX AND INVENTORY FILE
&BLD0Z DIR MYPOOL:5VMHCD40.VMHCD.BUILDSTST * TEST DISK
&BLD1Z DIR MYPOOL:5VMHCD40.VMHCD.BUILDPRD * PRODUCTION DISK
&BLD2Z DIR MYPOOL:5VMHCD40.VMHCD.BUILDHLP * HELP FILES
&BLD3Z LINK MAINT 493 493 MR * BKWLIB TXTLIB
&DSP191 LINK CBDIODSP 191 291 MR * DISPATCHER 191 DISK
&HCDID1 USER 5VMHCD40
&RSKSRV USER CBDIODSP
:EDCL.
:END.
*=====
*

```

This override will replace the **:DCL.** section of the VMHCDSFS override area of the 5VMHCD40 \$PPF file.

- 3** If your \$PPF override file was created at file mode A, copy it to the Software Inventory minidisk (MAINT 51D). The default filemode is D.

file

copyfile *overname* \$PPF *fm* = = d (olddate)

- 4** Compile your changes to create the usable *overname* PPF file.

vmfppf *overname* *

where *overname* is the file name of your \$PPF override file.

Now that the *overname* PPF file has been created, you should specify *overname* instead of 5VMHCD40 as the PPF name to be used for any VMSES/E commands that require a PPF name.

If you service by using the automated service commands, e.g. SERVICE, PUT2PROD, you need to update the VM SYSSUF Software Inventory table. If you created a PPF override to the SERVP2P \$PPF file then you need to make sure that the override name you created is reflected in the PPF tags for HCD/HCM for z/VM in the VM SYSSUF table. You will use the new PPF override name with the VMHCDSFS component name twice and the new PPF override name with the VMHCDSFSP2P component name once in the change to the VM SYSSUF table. You can use the VMFUPDAT SYSSUF command to view and change the VM SYSSUF table PPF information.

Appendix C. Copy of HCD/HCM for z/VM Sample Files

This appendix documents copying the supplied sample files from the sample minidisk or SFS directory to the appropriate execution disk or directory. It is shown here in case you lose or need to replace the files as they were shipped on the z/VM System deliverables. Refer to the *z/VM: I/O Configuration* and *z/OS and z/VM: Hardware Configuration Manager User's Guide* manuals for detailed information on the samples files.

- 1 Logon to z/VM HCD TCP/IP dispatcher, **CBDIODSP**, to put sample files on the A-disk.

- a If installing using minidisks

```
link 5VMHCD40 2C2 2C2 rr
access 2C2 b
```

- b If installing using Shared File System

```
access VMSYS:5VMHCD40.VMHCD.LOCAL b
```

- 2 Copy the sample HCD/HCM for z/VM profile to the A-disk of user CBDIODSP:

```
copyfile CBDSDFPF SAMPPROF B HCD PROFILE A
```

The COPYFILE command will create an initial HCD/HCM for z/VM profile on the A-disk of user CBDIODSP.

- 3 For using the Hardware Configuration Manager (HCM) as Graphical User Interface (GUI) to HCD/HCM for z/VM, perform the following steps:

- a Copy the sample PROFILE EXEC to the A-disk of user CBDIODSP.

```
copyfile CBDSDFPF SAMPPROF B PROFILE EXEC A
```

- b Copy the sample PROFILE RSK to the A-disk of user CBDIODSP.

```
copyfile CBDSDFPF SAMPPROF B PROFILE RSK A
```

- c** Copy the sample USERID MAP to the A-disk of user CBDIODSP. If you want to restrict the HCM instances allowed to connect to HCD/HCM for z/VM, you may want to adapt this file.

copyfile CBDSUID SAMPMAP B USERID MAP A

- d** Copy the sample SGP FILE to the A-disk of user CBDIODSP.

copyfile CBDSDSGP FILE B SGP FILE A

- e** Copy the sample NAMES file to the A-disk of user CBDIODSP. The names file is not on the sample disk or directory but instead it is on the test or production build disk or directory. This file can be modified by the customer to change default values.

- 1** If installing using minidisks

link 5VMHCD40 300 300 rr
access 300 b
copyfile CBDCONF NAMES B = = A

- 2** If installing using Shared File System

access VMSYS:5VMHCD40.VMHCD.BUILDST b
copyfile CBDCONF NAMES B = = A

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	1	2	3	4	5	N
Ease and time required to finish the install of the product						
Contents of program directory						
Readability and organization of program directory tasks						
Necessity of all installation tasks						
Accuracy of the definition of the installation tasks						
Technical level of the installation tasks						
Ease of customizing the product						
Ease of migrating the product from a previous release						
Ease of putting the system into production after installation						
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Thank you for your participation.

Please send the completed form to the following address, or give to your IBM representative who will forward it to the z/VM HCD Development group:

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