z/VM

IBM

Guide for Automated Installation and Service

version 6 release 1

z/VM

Guide for Automated Installation and Service

version 6 release 1

Contents

Figures

Tables

About This Document

This document guides anyone installing or servicing version 6 release 1 of IBM® z/VM® through step-by-step installation and service procedures. The procedures cover installation of a z/VM system first-level (on a processor) or second-level (as a guest operating system hosted by z/VM) from tape or DVD source.

You may treat each task in this document independently, but within each task read and follow the procedures in the order presented. For instance, if installing from tape, follow Part 1, "z/VM System DDR Installation," on page 1. If installing from DVD, follow Part 2, "z/VM System Image DVD Installation," on page 57. If migrating customized files and service for products pre-installed on z/VM installation media, follow Part 3, "Post z/VM System Installation," on page 129. For information about customizing or configuring certain licensed products and features, follow Part 3, "Post z/VM System Installation," on page 129. For service, follow Part 4, "Service Procedure," on page 183.

Note: See *z/VM: General Information* for a list of the processors supported by z/VM and the guest operating systems hosted by z/VM.

Intended Audience

This information is intended for anyone responsible for installing or servicing z/VM.

A general knowledge of what z/VM does and an understanding of virtual machine concepts is required for getting the most out of this information. You should also have a general understanding of z/VM and System z™ data processing techniques and z/VM commands.

Conventions and Terminology

Various conventions are used to depict what you should type and what system responses you might see. Procedures will use the following conventions:

- The procedures in this document are in a two-column format. The left column shows the representative sequence of user entries and system responses, the right column contains explanatory comments and instructions about the entries shown in the left column.

  Example:

  attach *tapeaddr* *** 181**
  ```
  TAPE tapeaddr ATTACHED TO userID 181
  Ready; T=n.nn/n.nn hh:mm:ss
  ```

  tapeaddr
      is the address of the tape drive where the z/VM system DDR tape will be mounted.

  userID
      is the first-level user ID logged on to in the previous substep.

- Normal font indicates system responses and requests.

  Example: The following shows a system response:
  ```
  HCPIPX8475I THE PRODUCTS YOU SELECTED TO LOAD TO MINIDISK ARE:
              VM  RSCS  TCPIP  OSA  ICKDSF DIRM RACF
              PERFTK  VMHCD
  ```

- Bold font indicates exactly what you should type.

  Example: The following shows a command you would type:
  ```
  disconnect
  ```

- Italic font indicates variable input or output, which can occur in commands you type or in system output.

  Examples: The following are examples in which italics indicate variable input or output:

- In the following, you would need to supply the address of a tape drive for *tapeaddr*:

  attach *tapeaddr* *** 181**
- In the following, the system would supply a tape address for *tapeaddr* and *userID* in its response:

  `TAPE` *tapeaddr* `ATTACHED TO` *userID* `181`
- Reverse type indicates special keys you must press.

  Example: The following indicates you must press Enter:

  `ENTER`
- A vertical bar (|) indicates you will receive or enter one of the values within the braces ({}).

  Example: The following indicates sample output where you might receive one of two responses:

  `{MDREST|ECKDREST}:  WROTE  nnnn {BLOCKS|TRACKS}  ON addr, RC=0`

  In this example, you would actually receive *one* of the following two responses:

  ```
  MDREST: WROTE  nnnn BLOCKS ON addr, RC=0
  ECKDREST: WROTE nnnn TRACKS ON addr, RC=0
  ```

Where to Find More Information

This document includes all updates available at the time of publication. Any updates to this document will be reflected in the copy available in the z/VM Internet Library: www.ibm.com/eserver/zseries/zvm/library/.

For information about related documents, see "Bibliography" on page 227.

Links to Other Online Documents

If you are viewing the Adobe® Portable Document Format (PDF) version of this document, it might contain links to other documents. A link to another document is based on the name of the requested PDF file. The name of the PDF file for an IBM document is unique and identifies the edition. The links provided in this document are for the editions (PDF names) that were current when the PDF file for this document was generated. However, newer editions of some documents (with different PDF names) might exist. A link from this document to another document works only when both documents reside in the same directory.

How to send your comments to IBM

We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

Use one of the following methods to send us your comments:

1. Send an e-mail to mhvrcfs@us.ibm.com
2. Visit the z/VM reader's comments Web page at www.ibm.com/systems/z/os/zvm/zvmforms/webqs.html
3. Mail the comments to the following address:
    IBM Corporation
    Attention: MHVRCFS Reader Comments
    Department H6MA, Mail Station P181
    2455 South Road
    Poughkeepsie, NY 12601-5400
    U.S.A.
4. Fax the comments to us as follows:
    From the United States and Canada: 1+845+432-9405
    From all other countries: Your international access code +1+845+432-9405

Include the following information:
- Your name and address
- Your e-mail address
- Your telephone or fax number
- The publication title and order number:
    z/VM V6R1 Guide for Automated Installation and Service
    GC24-6197-00
- The topic and page number related to your comment
- The text of your comment

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you.

IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you submit to IBM.

If you have a technical problem

Do not use the feedback methods listed above. Instead, do one of the following:
- Contact your IBM service representative.
- Contact IBM technical support.
- Visit the z/VM support Web page at www.vm.ibm.com/service/
- Visit the IBM mainframes support Web page at www.ibm.com/systems/support/z/

Summary of Changes

This document contains terminology, maintenance, technical, and editorial changes. Some program updates might be provided through z/VM service by program temporary fixes (PTFs) for authorized program analysis reports (APARs), which also might be available for some prior releases.

For general installation changes in previous releases of z/VM, see Installation, Migration, and Service in *z/VM: Migration Guide*.

GC24-6197-00, z/VM Version 6 Release 1

This edition supports the general availability of z/VM V6.1.
- German is no longer an available default system language.
- The following new releases are preinstalled.
  - Directory Maintenance Facility, function level 610 (disabled)
  - Performance Toolkit for VM™, function level 610 (disabled)
  - RACF Security Server for z/VM, function level 610 (disabled)
  - RSCS Networking for z/VM, function level 610 (disabled)
  - TCP/IP, function level 610

Part 1. z/VM System DDR Installation

Part 1 contains procedures for installing z/VM from tape distribution media. If you are installing z/VM from DVD distribution media, use Part 2, "z/VM System Image DVD Installation," on page 57.

In this part, you will:

- Plan your installation from tape.
- Fill in worksheets.
- Install the z/VM System image from tape.

z/VM System DDR Installation

Chapter 1. Plan Your DDR Installation

In this chapter, you will

- Plan your installation.
- Fill in the installation worksheet and the TCP/IP configuration worksheet.

Step 1. Review and Comply with the Requirements

Before you install z/VM version 6 release 1, you must satisfy the following requirements:

1. z/VM media deliverable
   - Be sure you have both the installation tape and the latest RSU tape(s).
     – If installing first-level, you cannot use electronic or CD-ROM service until after you have completed your installation. You need to install the RSU provided on tape.
     – If installing second-level and the RSU (or COR) service is electronic or on CD-ROM, you need to receive the service files to a minidisk attached to your installation user ID on your first-level system before IPLing your second-level system. Follow the instructions included with the electronic or CD-ROM service files to receive and restore the service files to a minidisk that can be temporarily attached to your second-level system.

2. General
   - A processor supported by z/VM version 6 release 1. For a list of processors supported by z/VM, see *z/VM: General Information*.
   - A local non-SNA 3270 terminal or equivalent, configured with at least 24 lines, or an integrated 3270 console.
   - For instructions on how to receive up-to-date service, see the Program Directory for z/VM.
   - For up-to-date information affecting installation, see the "installation information" section in the CP subset of the zvm610 upgrade PSP bucket.
   - If you plan to migrate from another z/VM system, review *z/VM: Migration Guide*.
   - If you plan to deploy Linux® on z/VM, see *z/VM: Getting Started with Linux on System z* for important planning information about Linux virtual servers.

3. First-level installation
   - At least 256 MB of real storage. Note that storage required for installation is not necessarily the amount you should have assigned for running production workloads. See *z/VM: CP Planning and Administration* for information on determining production storage requirements.
   - The function to change the installation pack labels cannot be used on a first-level installation from tape.

4. Second-level installation
   - You must IPL the z/VM Initial Installation System (IIS) using the same installation user ID you used to run INSTPLAN and INSTIIS.
   - The installation user ID must meet the following requirements:
     – At least 64 MB of virtual storage.
     – Privilege classes B and G.
     – Write access to a 191 minidisk with at least 500 4-KB blocks of available space. A shared file system directory cannot be used.
     – To change installation DASD labels, the installation user ID must be able to issue the DEFINE MDISK command. The IBM default privilege class for this command is class A. The DEFINE MDISK command also requires the user ID to have DEVMAINT on the OPTION directory statement in its directory entry.

Step 2. Complete the Installation and Basic IP Connectivity Worksheets

1. Determine the installation method you will use.
   - Choose first-level installation if no supported z/VM system is running on the processor or LPAR on which you are installing.
   - Choose second-level installation if you are installing in a virtual machine on a supported z/VM system.

2. Record the selected installation method (first-level or second-level) on the installation worksheet (Table 1 on page 7).

3. Determine which products you will load into the VMSYS file pool and which products you will load to minidisks only. Each product on the z/VM system DDR allows VMSYS file pool directories to be used in place of some minidisks. Record your choices under the Install To column on the installation worksheet (Table 1 on page 7).

4. Select your system default language and record your choice in the installation worksheet (Table 1 on page 7). The choices are:
   - Mixed Case English (AMENG)
   - Uppercase English (UCENG)
   - Kanji (KANJI)

5. Select the DASD model you will use to install, either 3390 Model 3 or 3390 Model 9, and record the DASD model in the installation worksheet (Table 1 on page 7). For performance reasons, if installing to 3390 Model 9, IBM recommends using emulated 3390 Model 9s instead of real 3390 Model 9s.

   Notes:

   a. DASD size is not checked during installation.

   b. If you select 3390 Model 3, installation uses the first 3338 cylinders on each DASD and ignores any cylinders beyond 3338.

   c. If you select 3390 Model 9, installation uses the first 10017 cylinders on each DASD and ignores any cylinders beyond 10017.

6. Estimate the number of DASD volumes required to install. If you choose:
   - 3390 Model 3, you will need five volumes.
   - 3390 Model 9, you will need three volumes.

   If you selected to install products to a combination of the VMSYS file pool and minidisks in substep 3, you might need an extra volume depending on where you choose to install each product.

   Note: INSTPLAN, which is run early in the installation procedure, will tell you exactly how many volumes are required.

7. Record the address for each DASD under the *DASD Address* column on the installation worksheet (Table 1 on page 7). Record the first address in the row with the label 610RES and continue recording addresses corresponding to each label. Disregard any DASD labels that you do not need.

8. If you are changing a default installation DASD label, record the new label in the *New Label* column on the installation worksheet (Table 1 on page 7).The 610RES label cannot be changed.

   Notes:

   a. Installation DASD labels cannot be changed on a first-level installation from tape.

   b. To change installation DASD labels, the installation user ID must be able to issue the DEFINE MDISK command. The IBM default privilege class for this command is class A. The DEFINE MDISK command also requires the user ID to have DEVMAINT on the OPTION directory statement in its directory entry.

Complete the Installation and Basic IP Connectivity Worksheets

9. If, after you install z/VM, you want to establish a minimal TCP/IP configuration that establishes basic connectivity to your IP network, fill in the IP worksheets beginning with Table 2 on page 8 and then return here.

What to do next

Base your choice on the installation method that fits your situation.

If you chose the. . .	Then see. . .
First-level installation method	Chapter 2, "First-Level DDR Installation Method," on page 11
Second-level installation method	Chapter 3, "Second-Level DDR Installation Method," on page 35

Worksheets

Table 1. DDR Installation Worksheet

Installation method (first-level or second–level):		_____			
Install To column: record an "M" if you will load the product to a minidisk or an "F" if you will load the product to the VMSYS file pool.					

Install To	*Product*	*Install To*	*Product*	*Install To*	*Product*
	VM		OSA		PERFTK
	VMHCD		RACF®		DIRM
	RSCS		ICKDSF		TCPIP

System default language:		_____			
DASD type and model:		_____			

Pack Type	*DASD Label*	*New Label*	*DASD Address*
RES	610RES	610RES	
SPOOL	610SPL		
PAGE	610PAG		
USER1	610W01		
USER2	610W02		
USER3	610W03		

Note: Installation DASD labels cannot be changed on a first-level installation from tape.

Complete the Installation and Basic IP Connectivity Worksheets

After you have completed your z/VM installation, you can optionally create a minimal TCP/IP configuration that establishes basic connectivity to your IP network. If you choose to perform this configuration, you must gather the following information from your network system administrator and record the information in Table 2 and the appropriate interface worksheet. In these worksheets, a number in parentheses following a field description, for example Host name (20), is the maximum length for that field.

Note: The IP configuration wizard supports real network devices only. If you plan on using virtual network devices for TCP/IP, they must be configured manually. See *z/VM: TCP/IP Planning and Customization*.

Table 2. DDR Installation TCP/IP Configuration Worksheet

z/VM user ID of the z/VM TCP/IP stack virtual machine: (Default value is TCPIP. If you change this user ID, you must define the user ID in your user directory before running IPWIZARD.)	
Host name (20):	
Domain name (40):	
DNS IP address (up to three addresses):	1) _____ 2) _____ 3) _____
Gateway IP address :	
Interface name (16):	
Device number:	
IP address:	
IPv4 subnet mask (15) or IPv6 prefix length (3):	
Path MTU discovery (IPv4 interfaces):	__ Enabled __ Disabled
Choose the interface you will be using (check one):	__ QDIO __ LCS __ HiperSockets __ CLAW __ CTC See the appropriate interface worksheet to record more information. IPv6 is available only for QDIO and HiperSockets devices.

Table 3. QDIO Interface Worksheet (DDR Installation)

Network type (select one):	__ Ethernet __ Token Ring IPv6 is not available for Token Ring adaptors.
Port name (optional) (8):	
Router type (select one):	__ Primary __ Secondary __ None
Maximum transmission unit (MTU) size:	

Table 3. QDIO Interface Worksheet (DDR Installation) (continued)

Router advertisements (IPv6 only):	__ On __ Off
Port number (optional):	

Table 4. LCS Interface Worksheet (DDR Installation)

Network type (select one):	__ Ethernet __ Token Ring __ FDDI
Port/adapter number:	
Maximum transmission unit (MTU) size:	

Table 5. HiperSockets Interface Worksheet (DDR Installation)

Maximum frame size (MFS): (in kilobytes)	
Router advertisements (IPv6 only):	__ On __ Off

Table 6. CLAW Interface Worksheet (DDR Installation)

CLAW host name (8): (This name must match the host-name configured on the CLAW device)	
CLAW adapter name (8): (This name must match the device-name configured on the CLAW device)	
Maximum transmission unit (MTU) size:	

Table 7. CTC Interface Worksheet (DDR Installation)

Write channel device number (select one):	__ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel. __ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel plus 1.
Maximum transmission unit (MTU) size:	
Peer IP address:	

Complete the Installation and Basic IP Connectivity Worksheets

Chapter 2. First-Level DDR Installation Method

In this chapter, you will:
- Use step-by-step procedures to install the first-level z/VM system DDR in a new system environment.

Step 1. Restore the Initial Installation System (IIS)

> **In this step, you will:**
> - Mount the z/VM system DDR tape on a tape drive.
> - Initialize, CP format, and relabel the DASD.
> - Load IIS from the z/VM system DDR.
>
> **Notes:**
> 1. The IPLable Device Support Facilities (ICKDSF) program in tape file 1 of the z/VM system DDR might not be at the latest service level. Use this copy of the program for installation only.
> 2. Make sure that any DASD with the same labels you are using for installation are not attached to your system.

1. Before you begin, fill out the installation worksheet (Table 1 on page 7) in Chapter 1, "Plan Your DDR Installation."

2. Ensure all DASD addresses listed on the installation worksheet (Table 1 on page 7) are available for use. Follow the operation manual specific to your hardware.

   Attention: Make sure any unused DASD with the label 610RES, 610SPL, 610PAG, or 610W0n are not attached to your system. Such DASD might be brought online when you IPL IIS in "Step 3. Restore the Initial Installation System (IIS)" on page 40. You can remove these DASD now or use the ICKDSF to relabel them. If you choose to relabel them, wait until substep 7 on page 13, which explains how to use ICKDSF to relabel DASD.

3. Mount the z/VM system DDR tape on a tape drive.

4. If you are installing from an integrated 3270 console, see Appendix I, "Using an Integrated 3270 Console for Installation," on page 215.

5. IPL the tape drive to load ICKDSF. Specify a LOADPARM of CNSL*ccuu*, where *ccuu* is the address of your system console (for example, 0020). For more information on performing a hardware IPL, see your processor's hardware operation manuals.

   If you are using the integrated 3270 console, return to Appendix I, "Using an Integrated 3270 Console for Installation," on page 215.

   Note: For more information about ICKDSF, see *Device Support Facilities: User's Guide and Reference*.

6. Wait approximately 60 seconds for the IPL to complete. If you receive no messages, press Enter to create an interrupt. If you do not receive a response, you pressed Enter before the IPL was complete. Reset the keyboard. Wait approximately 60 seconds and press Enter again.

   `ENTER`

   `CLEAR SCREEN WHEN READY`

   `RESET`   Press the key which corresponds to the reset function to unlock the keyboard.

   `CLEAR`   Depending on how your console is defined, you might not have to clear your screen.

```
ICK005E DEFINE INPUT DEVICE, REPLY
        'DDDD,CUU' OR 'CONSOLE'
ENTER INPUT/COMMAND:

console
CONSOLE
ICK006E DEFINE OUTPUT DEVICE, REPLY
        'DDDD,CUU' or 'CONSOLE'
ENTER INPUT/COMMAND:
console
CONSOLE
ICKDSF - SA/XA/ESA DEVICE SUPPORT FACILITIES
  nn.n TIME:hh:mm:ss mm/dd/yy    PAGE 1
ENTER INPUT/COMMAND:
```

ICK005E indicates ICKDSF is loaded and ready.

7. If you do not have any DASD labeled 610RES, 610SPL, 610PAG, or 610W0n on your system or if all DASD labeled 610RES, 610SPL, 610PAG, and 610W0n are going to be used for installation, skip to substep 8. Otherwise, use ICKDSF to relabel of any DASD volumes that are not being used for the installation. If there is more than one DASD to relabel, relabel one at a time. Repeat this substep for each DASD to be relabeled.

```
cpvolume label unit(dasdaddr) novfy volid(volid)
ICK00700I DEVICE INFORMATION FOR dasdaddr IS
        CURRENTLY AS FOLLOWS:
        PHYSICAL DEVICE = xxxx.
        STORAGE CONTROLLER = xxxx
        STORAGE CONTROL DESCRIPTOR = xx
        DEVICE DESCRIPTOR = xx
   ⋮
ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
        ELSE T
ENTER INPUT/COMMAND:
u
   ⋮
ENTER INPUT/COMMAND:
```

dasdaddr
    Address of the DASD to relabel.

volid
    New label for *dasdaddr*.

8. If you have already initialized your DASD for this installation, skip to substep 9 on page 14 to format and label them. Otherwise, use the INSTALL command to initialize the DASD. If there is more than one uninitialized DASD, initialize one DASD at a time. Repeat this substep for each DASD to be initialized.

Note: Do not run the INSTALL command if using IBM System Storage™ DASD. IBM System Storage DASD are initialized when setup.

```
install unit(dasdaddr) novfy
```

dasdaddr
    Address of the DASD to initialize. This value is recorded on the installation worksheet (Table 1 on page 7).

```
ICK00700I DEVICE INFORMATION FOR dasdaddr IS
        CURRENTLY AS FOLLOWS:
        PHYSICAL DEVICE = xxxx.
        STORAGE CONTROLLER = xxxx
        STORAGE CONTROL DESCRIPTOR = xx
        DEVICE DESCRIPTOR = xx
   ⋮
ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
        ELSE T
ENTER INPUT/COMMAND:
```

Restore the Initial Installation System (IIS)

```
u
   .
   .
   .
ENTER INPUT/COMMAND:
```

The system takes at least 20 to 40 minutes to inspect and initialize a DASD. You will get a series of ICK messages that describe the status of the device being initialized at the point that the initialization is almost complete.

9. If you have already CP formatted your DASD for this installation using ICKDSF or CPFMTXA, skip to substep 10 to label them. Otherwise, format and label each DASD listed on your installation worksheet (Table 1 on page 7). Repeat this substep for each DASD to be formatted and labeled.

   After all DASD have been formatted and labeled, continue with substep 11.

   cpvolume format unit(*dasdaddr***) novfy volid(***volid***) mode(esa) nofiller**

   dasdaddr
   > Address of the DASD to format. This value is recorded on the installation worksheet.

   volid
   > Volume identifier. This value (**DASD Label**) is recorded on the installation worksheet.

   ```
      .
      .
      .
   ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
            ELSE T
   ENTER INPUT/COMMAND:
   u
      .
      .
      .
   ENTER INPUT/COMMAND:
   ```

10. If you have already CP formatted and labeled your DASD in substep 9, skip to 11. Otherwise, label each DASD listed on the installation worksheet (Table 1 on page 7). Repeat this substep for each DASD to be labeled.

    ```
    cpvolume label unit(dasdaddr) novfy volid(volid)
    ICK00700I DEVICE INFORMATION FOR dasdaddr IS
              CURRENTLY AS FOLLOWS:
              PHYSICAL DEVICE = xxxx.
              STORAGE CONTROLLER = xxxx
              STORAGE CONTROL DESCRIPTOR = xx
              DEVICE DESCRIPTOR = xx
       .
       .
       .
    ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
              ELSE T
    ENTER INPUT/COMMAND:
    u
    ENTER INPUT/COMMAND:
       .
       .
       .
    ```

    dasdaddr
    > Address of the DASD to relabel. This value is recorded on the installation worksheet.

    volid
    > Volume identifier. This value (**DASD Label**) is recorded on the installation worksheet.

11. IPL the tape drive to load the DDR program. Specify a LOADPARM of *ccuu*, where *ccuu* is the address of your system console (for example, 0020). You do not have to exit ICKDSF. For more information on performing a hardware IPL, see your processor's hardware operation manuals.

    If you are using the integrated 3270 console, return to Appendix I, "Using an Integrated 3270 Console for Installation," on page 215.

Load parameter specified

If a console address is used, the DDR program will appear on the specified console.

Load parameter not specified

If no console address is used, you will need to wait approximately 60 seconds for the IPL to complete. You will receive no messages. Press Enter to create an interrupt. If you do not receive a response, you pressed Enter before the IPL was complete. Reset the keyboard. Wait approximately 60 seconds and press Enter again.

`ENTER`

CLEAR SCREEN WHEN READY

`RESET`   Press the Reset key to unlock the keyboard.

`CLEAR`   Depending on how your console is defined, you might not have to clear your screen.

---

12. Answer the following prompts from the DDR program to load IIS from the z/VM system DDR to 610RES and 610SPL.

```
z/VM DASD DUMP/RESTORE PROGRAM
ENTER CARD READER ADDRESS OR CONTROL STATEMENTS
ENTER:
sysprint cons
ENTER:
input tapeaddr tape (skip 1 leave
ENTER:
```
tapeaddr
     Address of the tape drive where you mounted the z/VM system DDR tape.

     By typing **tape**, the tape device type is automatically identified by the DDR program.

```
output dasdaddr dasd 610RES
```
dasdaddr
     Address of 610RES. This value is recorded on the installation worksheet (Table 1 on page 7).

     The DDR program verifies the DASD label is 610RES.

```
ENTER:
restore all
HCPDDR725D SOURCE DASD DEVICE WAS (IS) LARGER THAN OUTPUT DEVICE
DO YOU WISH TO CONTINUE?  RESPOND YES OR NO:
yes
RESTORING 610RES

DATA DUMPED mm/dd/yy
  AT hh.mm.ss GMT FROM 610RES
  RESTORED TO 610RES
```

You might receive message HCP725D. If you do, it is not a problem. Respond **yes** and continue.

Notes:

1. GMT means Greenwich Mean Time.

2. The exact cylinder extents vary according to the device type.

Restore the Initial Installation System (IIS)

```
      INPUT CYLINDER EXTENTS        OUTPUT CYLINDER EXTENTS
            START        STOP             START        STOP
               0         158                 0         158
             399         685               399         685

       END OF RESTORE
      BYTES RESTORED nnnnnnnnnn
      ENTER:
      input tapeaddr tape (rew
      ENTER:




      output dasdaddr dasd 610SPL




      ENTER:
      restore all
      HCPDDR725D SOURCE DASD DEVICE WAS (IS) LARGER THAN OUTPUT DEVICE
      DO YOU WISH TO CONTINUE?  RESPOND YES OR NO:
      yes
      RESTORING 610SPL


      DATA DUMPED mm/dd/yy AT hh.mm.ss GMT FROM 610SPL
        RESTORED TO 610SPL



      INPUT CYLINDER EXTENTS        OUTPUT CYLINDER EXTENTS
            START        STOP             START        STOP
               0         199                 0         199

       END OF RESTORE
      BYTES RESTORED nnnnnnnnnn

      ENTER:
       ENTER
      END OF JOB
```

tapeaddr
> Address of the tape drive where you mounted the z/VM system DDR tape.

By typing **tape**, the tape device type is automatically identified by the DDR program.

dasdaddr
> Address of 610SPL. This value is recorded on the installation worksheet (Table 1 on page 7).

The DDR program verifies the DASD label is 610SPL.

You might receive message HCP725D. If you do, it is not a problem. Respond **yes** and continue.

Notes:

1. GMT means Greenwich Mean Time.
2. The exact cylinder extents vary according to the device type.

Note: Give the tape time to rewind after the restore is complete.

Press Enter to end the program.

13. IPL the tape drive to load ICKDSF. Specify a LOADPARM of CNSL*ccuu*, where *ccuu* is the address of your system console (for example, 0020). For more information on performing a hardware IPL, see your processor's hardware operation manuals.

    If you are using the integrated 3270 console, return to Appendix I, "Using an Integrated 3270 Console for Installation," on page 215.

    Note: After the DDR program completes the restore, the tape is rewound to the beginning. If you have problems IPLing the tape, you might need to remount it.

14. Wait approximately 60 seconds for the IPL to complete. If you receive no messages, press Enter to create an interrupt. If you do not receive a response, you pressed Enter before the IPL was complete. Reset the keyboard. Wait approximately 60 seconds and press Enter again.

`ENTER`
CLEAR SCREEN WHEN READY

`RESET`   Press the Reset key to unlock the keyboard.

`CLEAR`   Depending on how your console is defined,
                                                     you might not have to clear your screen.

```
ICK005E DEFINE INPUT DEVICE, REPLY
        'DDDD,CUU' OR 'CONSOLE'
ENTER INPUT/COMMAND:
console
CONSOLE
ICK006E DEFINE OUTPUT DEVICE, REPLY
        'DDDD,CUU' or 'CONSOLE'
ENTER INPUT/COMMAND:
console
CONSOLE
ICKDSF - SA/XA/ESA DEVICE SUPPORT FACILITIES
  nn.n TIME:hh:mm:ss mm/dd/yy  PAGE 1
ENTER INPUT/COMMAND:
```
                                                     ICK005E indicates ICKDSF is loaded and
                                                     ready.

15. Allocate the 610SPL and 610PAG DASD.

cpvolume alloc unit(_dasdaddr_**) novfy type (SPOL, 200,** _endcyl_**)**

                                         dasdaddr
                                         Address of 610SPL. This value is
        recorded on the installation worksheet
        (Table 1 on page 7).

     endcyl
        The last cylinder to allocate. The values
        are 3338 for a 3390 Model 3 and 10016
        for a 3390 Model 9.

```
   .
   .
   .
ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
        ELSE T
ENTER INPUT/COMMAND:
u

   .
   .
   .
ENTER INPUT/COMMAND:
cpvolume alloc unit(dasdaddr) novfy type (PAGE, 1, endcyl)
```

     dasdaddr
        Address of 610PAG. This value is
        recorded on the installation worksheet
        (Table 1 on page 7).

    endcyl
        The last cylinder to allocate. The values
        are 3338 for a 3390 Model 3 and 10016
        for a 3390 Model 9.

```
   .
   .
   .
ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
ELSE T
ENTER INPUT/COMMAND:
u
   .
   .
   .
```

Restore the Initial Installation System (IIS)

16. If you selected to install on a 3390 Model 3, skip this substep. Otherwise, if you selected to install
    on a 3390 Model 9, allocate the 610RES DASD, increasing the allocation to the end of the volume.

```
cpvolume alloc unit(dasdaddr) novfy
     ⋮
ICK003D REPLY U TO ALTER VOLUME dasdaddr CONTENTS,
        ELSE T
ENTER INPUT/COMMAND:
u
     ⋮
ENTER INPUT/COMMAND:
```

dasdaddr
    Address of 610RES. This value is
    recorded on the installation worksheet
    (Table 1 on page 7).

Step 2. IPL z/VM IIS

> **In this step, you will:**
> - IPL z/VM IIS first-level.

1. IPL the initial system you restored. In the hardware Load panel, enter the real address of the 610RES volume, which you can find in the installation worksheet (Table 1 on page 7). Specify a LOADPARM of *ccuu*, where *ccuu* is the address of your system console (for example, 0020). For more information on performing a hardware IPL, see your processor's hardware operation manuals.

   If you are using the integrated 3270 console, return to Appendix I, "Using an Integrated 3270 Console for Installation," on page 215.

   The Stand Alone Program Loader panel is displayed on the specified operator console.

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

DEVICE NUMBER:   dasdaddr   MINIDISK OFFSET:   nnnnnnnn   EXTENT:  1

MODULE NAME:    CPLOAD     LOAD ORIGIN:      1000

-------------------------------IPL PARAMETERS-------------------------------
cons=consaddr


----------------------------------COMMENTS----------------------------------



---------------------------------------------------------------------------


9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 1. Sample Stand Alone Program Loader Panel

2. Move the cursor to the IPL PARAMETERS field and type:

   cons=*consaddr*

   consaddr
   > Virtual console address. Spaces are not allowed around the equal sign. If you are using the integrated 3270 console, *consaddr* is SYSG.

3. Press F10 to load.

`F10`

```
hh:mm:ss z/VM V6 R1.0 SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss *******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss *******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nnn through nnn.
   ⋮
```

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Note: If you receive informational message HCPIIS954I, you have duplicate volumes with the same label and must correct this error before continuing. Make a note of the duplicate DASD addresses.

To correct the duplicate volume error:

1. At the start prompt, enter SHUTDOWN.
2. Change the label of each DASD that is not to be used (see "Step 1. Restore the Initial Installation System (IIS)" on page 12, substeps 3 through 7).
3. IPL the system again (see "Step 2. IPL z/VM IIS" on page 19, substep 1).

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
         (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
```
cold drain noautolog

Because there is no data or accounting information to recover, use COLD DRAIN to request a cold start. Include NOAUTOLOG because you do not need the servers and all user IDs logged on.

4. If the time-of-day (TOD) clock is not already set, use standard operating procedures to set it. For more information, see *z/VM: System Operation*.

```
NOW hh:mm:ss {EST|EDT} weekday yyyy-mm-dd
Change TOD clock (yes|no)
```
{yes|no}

You will see this message if the TOD clock has already been set.

Answer **yes** to reset the TOD clock, **no** to keep the current setting.

    Set date MM/DD/YY   Type in the month, day, and year, separated
                                                by slash marks.

    Set time HH:MM:SS   Type in the hours, minutes, and seconds,
                                                  separated by colons.

    Press "TOD ENABLE SET" key at designated instant   If you are using a multiprocessor, you might
    NOW *hh:mm:ss* {EST|EDT} *weekday mm/dd/yy*   receive a message concerning the clocks of
    Change TOD clock (Yes|No)   the different processor images. If you do,
    no   see *z/VM: System Operation* for information
                                                about resetting the clocks.

└───┘

                                             CP logs on the primary system operator user
                                             ID (OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
          has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available      {nnnn|NONE}
```

Note: Depending on the type of spool files available, you might receive the following prompt:

```
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files on offline volumes       {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with I/O errors          {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with control errors      {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files to be discarded          {nnnn|NONE}
hh:mm:ss HCPWRS2513I                                      -------
hh:mm:ss HCPWRS2513I Total files to be deleted             nnnn
hh:mm:ss HCPWRS2511A
hh:mm:ss HCPWRS2511A Spool files will be deleted because of
                      COLD start.
hh:mm:ss HCPWRS2511A No files have been deleted yet.
hh:mm:ss HCPWRS2511A To continue COLD start and delete files,
                      enter GO.
hh:mm:ss HCPWRS2511A To stop COLD start without deleting
                      files, enter STOP.
```

    go   The opportunity is given to stop the cold
                                            start and save your spool files. Since you
                                            do not need to save any spool files at this
                                            time, answer **go**.

└───┘

hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss DASD *nnnn* dump unit CP IPL pages *nnnn*
hh:mm:ss HCPAAU2700I System gateway ZVMV6R10 identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES: NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT *hh:mm:ss* EDT *DAY mm/dd/yy*
hh:mm:ss GRAF *nnnn* LOGON AS OPERATOR USERS = *n*
hh:mm:ss HCPIOP952I *nnnn*M system storage
hh:mm:ss FILES: *nnnnnnnn* RDR, *nnnnnnnn* PRT,   NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulated for userid DISKACNT

5. Disconnect from the OPERATOR user ID.

   disconnect
   DISCONNECT AT hh:mm:ss {EST|EDT} *weekday mm/dd/yy*

   Press enter or clear key to continue
    `ENTER`

6. Log on as MAINT.

    `ENTER`   The default password for MAINT is MAINT.

   logon maint
   z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
   built on IBM Virtualization Technology
   There is no logmsg data
   FILES: NO RDR,   NO PRT,   NO PUN
   LOGON AT *hh:mm:ss* EDT *DAY mm/dd/yy*
   DMSIND2015W Unable to access the Y-disk. File mode Y (19E) not accessed
   z/VM V6 R1.0   *yyyy-mm-dd hh:mm*
    `ENTER`
   DMSACP113S B(5E5) not attached or invalid device address
   DMSACP113S D(51D) not attached or invalid device address
   Ready; T=*n.nn/n.nn hh:mm:ss*

                                                          Message DMS113S is not a problem at this
                                                          time.

Step 3. Run INSTPLAN

> **In this step, you will:**
> * Run INSTPLAN.

1. Run INSTPLAN.

```
instplan
**** NOW EXECUTING INSTPLAN EXEC ON date AT time ****
```

```
                    *** z/VM INSTALLATION PLANNING ***

Mark the product(s) selected to be installed into the VMSYS filepool with an
"F" and those selected to be installed to minidisks with an "M"

Install To   Product      Install To   Product      Install To   Product
----------   ---------    ----------   ---------    ----------   ---------
    M        VM               M        OSA              M        PERFTK
    M        VMHCD            M        RACF             M        DIRM
    M        RSCS             M        ICKDSF           M        TCPIP

Place a nonblank character in front of the System Default Language you would
like for your system.

    _ AMENG        _ UCENG         _ KANJI

Place a nonblank character in front of the DASD model onto which your
z/VM system will be loaded.  Only one model may be selected.

    _ 3390 Mod 3      _ 3390 Mod 9

    PF1 = HELP   PF3/PF12 = QUIT    PF5 = Process   ENTER = Refresh
```

   a. See the installation worksheet (Table 1 on page 7) and enter:
  * "M" in the **Install To** column for each product you selected to be installed onto minidisks.
  * "F" in the **Install To** column for each product you selected to be installed into the VMSYS file pool.

   b. Place a nonblank character next to the system default language you selected for your system (see the installation worksheet, Table 1 on page 7).

   c. Place a nonblank character in front of the DASD model that matches *DASD type and model* recorded on the installation worksheet (Table 1 on page 7).

   d. Press F5 to process your selections.

Run INSTPLAN

> **Note:** The output you see might vary depending on your planning choices.

F5

```
HCPIPX8475I THE PRODUCTS YOU SELECTED TO LOAD TO MINIDISK ARE:
            VM  RSCS  TCPIP  OSA ICKDSF
              DIRM  RACF PERFTK  VMHCD

            THE PRODUCTS YOU SELECTED TO LOAD TO SFS ARE:
            NONE

            THE SYSTEM DEFAULT LANGUAGE SELECTED:
            AMENG

            THE DASD TYPE YOU SELECTED TO LOAD ON IS:
            3390 model

            THE DASD NEEDED TO LOAD z/VM ARE:
            610RES 610SPL 610PAG...

HCPINP8392I INSTPLAN EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 4. Run INSTVM

> **In this step, you will:**
>
> • Run INSTVM to build the directory for your system and load the items from the z/VM system DDR.
>
> **Note:** Running the INSTVM requires a full screen terminal with at least 24 lines.

1. IPL CMS to verify the CMS saved system is available.

```
ipl cms
DMSIND2015W Unable to access the Y-disk. File mode Y (19E) not accessed
z/VM V6.1.0    yyyy-mm-dd hh:mm
 ENTER

DMSWSP100W Shared Y-STAT not available
DMSACP113S B(5E5) not attached or invalid device address
DMSACP113S D(51D) not attached or invalid device address
Ready; T=n.nn/n.nn hh:mm:ss
```

> **Note:** If the CMS saved system does not exist, there is a problem with spool space. You must resolve the problem before continuing.

2. Select a free tape drive and mount the z/VM DDR tape. Attach the tape drive where the z/VM system DDR tape is mounted. The tape drive must be attached at address 181.

```
attach tapeaddr * 181
TAPE tapeaddr ATTACHED TO MAINT 181
Ready; T=n.nn/n.nn hh:mm:ss
```

tapeaddr
Real address of the tape drive.

3. Run INSTVM to install the z/VM system DDR.

```
instvm tape
****  NOW EXECUTING INSTVM EXEC ON date AT time  ****
The minidisks with the END option specified in this directory will not be
included in the following DISKMAP file.

File USER DISKMAP A has been created.
CPRELEASE request for disk A scheduled.
HCPZAC6730I CPRELEASE request for disk A completed.
DASD 0CF1 DETACHED
CPACCESS request for mode A scheduled.
HCPZAC6732I CPACCESS request for MAINT's 0CF1 in mode A completed.
HCPIND8392I INSTDIR EXEC ENDED SUCCESSFULLY

z/VM USER DIRECTORY CREATION PROGRAM - VERSION 6 RELEASE 1.0
EOJ DIRECTORY UPDATED AND ON LINE
HCPDIR494I User directory occupies nn disk pages.
HCPWIN8381I CHECKING TAPE VOLUME NUMBER FOR DRIVE 181
```

```
┌─ Messages repeated for each disk restored (until total percent loaded reaches 100%) ─┐
  HCPWIN8428I TOTAL PERCENT LOADED -> nn%
  HCPWIN8380I RESTORING MINIDISK nnn TO volid
  HCPDDR725D SOURCE DASD DEVICE WAS (IS) LARGER THAN OUTPUT DEVICE
  RESTORING volid
  DATA DUMPED   mm/dd/yy AT hh.mm.ss  GMT FROM volid RESTORED TO SCRATCH
  INPUT CYLINDER EXTENTS      OUTPUT CYLINDER EXTENTS
       START        STOP          START         STOP
    nnnnnnnn   nnnnnnnn       nnnnnnnn      nnnnnnnn

  END OF RESTORE
   BYTES RESTORED nnnnnnnn
  END OF JOB
```

```
  HCPPLD8338I NOW EXECUTING ALLOCATION OF SYSTEM RESIDENCE PACK
  HCPPLD8338I NOW EXECUTING UPDATE OF $MOVE$ $FILE$ C
  HCPPLD8341I POSTLOAD FUNCTION "INSTALLATION CLEANUP" COMPLETED SUCCESSFULLY
  HCPPLD8338I NOW EXECUTING DIRECTORY CLEANUP
  HCPPLD8341I POSTLOAD FUNCTION "DIRECTORY CLEANUP AND ADD HELP DISK  LINKS" COMPLETED SUCCESSFULLY
  HCPPLD8338I NOW EXECUTING THE DIRECTXA COMMAND TO BRING THE UPDATED
  HCPPLD8341I POSTLOAD FUNCTION "BRING UPDATED DIRECTORY ONLINE" COMPLETED SUCCESSFULLY

  HCPPLD8392I POSTLOAD EXEC ENDED SUCCESSFULLY
  DMSACC724I 2CC replaces C (2CC)
  HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVU
  AUTO LOGON  ***        VMSERVU  USERS = n
  HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the IPL
    command processor.
  VMSERVU : z/VM V6.1.0    yyyy-mm-dd hh:mm
  VMSERVU : DMSACP723I B (193) R/O
  VMSERVU : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
  VMSERVU : DMSWFV1121I VMSERVU DMSPARMS A1 will be used for FILESERV processing
  VMSERVU : DMSWFV1121I VMSYSU POOLDEF A1 will be used for FILESERV processing
  VMSERVU : DMS5BB3045I Ready for operator communications

  HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVR
  AUTO LOGON  ***        VMSERVR  USERS = n
  HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
    command processor.
  VMSERVR : z/VM V6.1.0    yyyy-mm-dd hh:mm
  VMSERVR : DMSACP723I B (193) R/O
  VMSERVR : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
  VMSERVR : DMSWFV1121I VMSERVR DMSPARMS A1 will be used for FILESERV processing
  VMSERVR : DMSWFV1121I VMSYSR POOLDEF A1 will be used for FILESERV processing
  VMSERVR : DMS6LG3335I CRR log recovery begins at mm-dd-yy hh:mm:ss
  VMSERVR : DMS6LG3335I CRR log recovery completes at mm-dd-yy hh:mm:ss
  VMSERVR : DMS5BB3045I Ready for operator communications
```

Extra messages received if all products were loaded to minidisks

```
DASD 0804 DETACHED
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***        VMSERVS  USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = CONTROL
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = CONTROL
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00001
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00001
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00002
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00002
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG1
VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG1
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG2
VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG2
VMSERVS : DMS5FD3032I File pool server has terminated
VMSERVS : DMSWFV1120I File VMSYS POOLDEF A1 created or replaced
VMSERVS : DMSWFV1117I FILESERV processing ended at hh:mm:ss on dd month yyyy
RDR FILE nnnn SENT FROM VMSERVS  PUN WAS 0001 RECS 0004 CPY  001 A NOHOLD NOKEEP
VMSERVS : File FILESERV VALID A3 sent to MAINT at ZVMV6R10 on mm/dd/yy hh:mm:ss
VMSERVS : Ready; T=n.nn/n.nn hh:mm:ss

HCPQCS150A User VMSERVS has issued a VM read
VMSERVS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn.nn TOTCPU= nnn:nn.nn
VMSERVS : LOGOFF AT hh:mm:ss timezone day mm/dd/yy BY MAINT
USER DSC   LOGOFF AS  VMSERVS  USERS = n     FORCED BY MAINT
DASD 0804 DETACHED
```

```
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***        VMSERVS  USERS = n

HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMSWFV1121I VMSYS POOLDEF A1 will be used for FILESERV processing
VMSERVS : DMS5BB3045I Ready for operator communications
```

You might not receive one or more of the following messages

```
HCPIDV8338I UPDATING SYSTEM TABLES AND CLEANING UP FILEPOOL DIRECTORIES
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
```

```
HCPIFP8392I INSTPOOL EXEC ENDED SUCCESSFULLY
HCPIVM8392I INSTVM EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Run INSTVM

After this point, when you IPL the system, you should use the default IPL parameters and should no longer use COLD DRAIN NOAUTOLOG.

You are now finished with the z/VM system installation tape.

Step 5. Run SERVICE

> **In this step, you will:**
> • Run SERVICE to install the recommended service upgrade (RSU) and corrective service (COR).

1. Log on as MAINT.

   ENTER   The default password for MAINT is MAINT.
   ```
   logon maint
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid     Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1          2                 n               n-nn%          nn%
   userid2          2                 n               n-nn%          nn%
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Attach a tape drive and mount the RSU tape.

   a. Attach a tape drive to MAINT as 181.

   ```
   attach tapeaddr * 181
   TAPE tapeaddr ATTACHED TO MAINT 181
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   b. Mount volume 1 of the RSU on the tape drive attached at address 181.

   If the RSU has multiple volumes, either stack the RSU volumes on 181 or attach additional tape drives and mount each volume.

4. IPL CMS.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Run SERVICE.

   a. If the volumes are mounted on 181, run SERVICE with no parameters.

   ```
   service
   VMFSRV2760I SERVICE processing started
   ⋮
   VMFSRV2760I SERVICE processing completed
   successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   b. If the volumes are mounted on multiple tape drives, run SERVICE with the following parameters:

Run SERVICE

```
service all tapeaddr1 tapeaddr2 ...
VMFSRV2760I SERVICE processing started
:
VMFSRV2760I SERVICE processing completed
successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

List the addresses of each tape volume.

tapeaddr1
    Address of the tape drive where tape volume 1 is mounted.

tapeaddr2 ...
    Address of the tape drive where tape volume 2 is mounted, and so on.

6. View the SERVICE messages log (VMFVIEW SERVICE) and handle any nonzero return codes. Base your actions on the following table:

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW SERVICE.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Go to "Step 6. Run PUT2PROD" on page 31.
A return code greater than 4	1. Issue VMFVIEW SERVICE and check for warning and error messages.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Restart by issuing the SERVICE command as displayed in the message VMFSRV2310W.
	5. If you receive a nonzero return code, repeat substep 6.
	6. Go to "Step 6. Run PUT2PROD" on page 31.

Note: You can ignore the following messages and their associated VMF1966W message.

- `DMSLIO201W The following names are undefined:` ISPLINK ARIPRDI
- `DMSLIO201W The following names are undefined:` DMSDSCSC
- `DMSLIO201W The following names are undefined:` DMSUSRX1 DMSUSRX2
- `DMSLIO202W Duplicate identifier` (Associated with object IOACMAIN MODULE.)
- `DMSLKD004W Warning messages issued` (Associated with objects ILBONBL, ILBONTR, ILBOREC, ILBORNT, ILBOSND, ILBOSNT, and ILBOSSN.)
- `VMFSRV1221W The Stand Alone Dump Utility must be rebuilt.`

7. Use the VMFUPDAT SYSMEMO command to review any memos that were received with this service.

8. If the PSP bucket contains COR service that should be applied at install, repeat "Step 5. Run SERVICE" on page 29 to install the service using COR in place of RSU.

Step 6. Run PUT2PROD

In this step, you will:

- Run PUT2PROD to place the product into production.

---

1. Log on as MAINT.

   ENTER   The default password for MAINT is MAINT.
   ```
   logon maint
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid     Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1         2                 n                n-nn%          nn%
   userid2         2                 n                n-nn%          nn%
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. IPL CMS and access the VMSES/E test build disk.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   ```
   access 5E6 b
   Ready;
   ```

4. Run PUT2PROD.

   ```
   put2prod
   VMFP2P2760I PUT2PROD processing started
      ⋮
   VMFP2P2760I PUT2PROD processing completed successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Handle a nonzero return code. Base your action on the following table.

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW PUT2PROD.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.

Run PUT2PROD

If you received . . .	Then . . .
A return code greater than 4	1. Issue VMFVIEW PUT2PROD and check for warning and error messages. 2. Ignore any warning messages listed in the note below in this table. Take appropriate actions based on other warning messages you receive. 3. Correct all errors reported in the error messages. 4. Issue IPL CMS. 5. Issue PUT2PROD. 6. If you receive a nonzero return code, repeat substep 5 on page 31.

Note: You can ignore the following messages.

- `DMSDCS1083E Saved segment $$DMY$$ does not exist`
- `DMSWLG292W Text data will be loaded at '20000'x in user area; user data may be overwritten.`
- `DTCPRD3043W File` *fn ft fm* `has been updated; It's contents should be reviewed for changes that may affect your use of this file.`
- `TCPMSM0002W File TCPIP DATA cannot be located`
- `TCPMSM0002W TCP/IP appears not to have been configured`

Step 7. Shut Down and Re-IPL the System

In this step, you will:

- Shut down the V6.1 system.
- IPL the V6.1 system using the new CP nucleus.

1. Shut down and re-IPL the V6.1 system.

```
shutdown reipl
SYSTEM SHUTDOWN STARTED
Ready; T=n.nn/n.nn hh:mm:ss
```
The shut down message is displayed on all enabled consoles.

The real system console shows a disabled PSW wait state.

```
HCPWRP963I STARTING SHUTDOWN STEP . . .
⋮
HCPWRP962I VM SHUTDOWN COMPLETED IN nn SEC
HCPWRP9277I SYSTEM TERMINATION COMPLETE,
            ATTEMPTING RESTART
```
HCP963I, HCP962I, and HCP9277I will appear on the operator's console.

```
hh:mm:ss HCPWRP9277I SYSTEM TERMINATION COMPLETE.
         ATTEMPTING RESTART
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL
hh:mm:ss z/VM V6 R1.0
                 SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss ******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*  *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983, *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.             *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE         *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                         *
hh:mm:ss *                                        *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS  *
hh:mm:ss *   MACHINES                             *
hh:mm:ss ******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume volid (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xx through xx.
   ⋮
```
Attention: If you receive informational message HCPIIS954I, you have duplicate DASD with the same label and *must correct* this error before continuing.

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available     {nnnn|none}
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
   ⋮

hh:mm:ss FILES:     nnn RDR,     nnn PRT,     nnn PUN
hh:mm:ss LOGON AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
   ⋮

hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnn RDR, nnnnnnn PRT,      NO PUN
```

Shut Down and Re-IPL the System

Message HCP952I tells you the amount of storage available.

The FILES message refers to operator spool files.

CP automatically disconnects from the primary system operator user ID (OPERATOR).

```
hh:mm:ss HCPUSO967I Disconnect OPERATOR - system
          restarted SHUTDOWN and system console
          not VM operator console
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
hh:mm:ss DISCONNECT AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
hh:mm:ss Press enter or clear key to continue
```

ENTER
Press Enter or Clear to continue.

2. Log on as MAINT.

```
logon maint
  .
  .
  .
Ready; T=n.nn/n.nn hh:mm:ss
```

The password for MAINT is MAINT.

What to do next

See Part 3, "Post z/VM System Installation," on page 129.

Chapter 3. Second-Level DDR Installation Method

In this chapter, you will:

Use step-by-step procedures to install the z/VM system DDR second-level on an existing z/VM system.

Step 1. Load the Installation Tools from the z/VM System DDR

In this step, you will

- Log on to a first-level user ID.
- Mount the z/VM system DDR tape.
- Load the installation tools.
---

1. Before you begin, fill out the installation worksheet (Table 1 on page 7) in Chapter 1, "Plan Your DDR Installation."

2. From your current operating system, log on to the first-level user ID that you will use to install z/VM version 6 release 1. This user ID must meet the following requirements:
   - 64 MB virtual storage.
   - Privilege classes B and G.
   - Write access to a 191 minidisk with at least 500 4-KB blocks of available space. A shared file system directory cannot be used.
   - To change installation pack labels, the installation user ID must be able to issue the DEFINE MDISK command. The IBM default privilege class for this command is class A. The DEFINE MDISK command also requires the user ID to have DEVMAINT on the OPTION directory statement in its directory entry.
   - You must IPL the z/VM IIS ("Step 4. IPL z/VM IIS" on page 42) on the same user ID you used to run INSTPLAN and INSTIIS.

3. Verify you have both the installation tape and the latest RSU tape(s).
   - If the RSU (or COR) service is electronic or on CD-ROM you need to receive the service files to a minidisk attached to your installation user ID on your first-level system *before* IPLing your second-level system. Follow the instructions included with the electronic or CD-ROM service files to receive and restore the service files to a minidisk that can be temporarily attached to your second-level system.

   Note: You must preserve the file attribute of FIXED BINARY 1024 through all intermediary transports.

4. Access your 191 minidisk as A. It must be 191 and it must be a minidisk, not an SFS directory. The installation tools will be loaded to the A disk. Files are created on this disk that are accessed by installation execs in a later step. Verify there are at least 500 4-KB blocks of space available (BLKS LEFT).

   ```
   access 191 a
   Ready; T=n.nn/n.nn hh:mm:ss

   query disk a
   LABEL   VDEV  M  STAT  CYL  TYPE  BLKSZ  FILES  BLKS USED-(%)  BLKS LEFT  BLK   TOTAL
   lbl191  191   A  R/W   nn   3390  4096   nnn        nnnn-nn        500          nnnn

   Ready;
   ```

5. Choose the address of your tape drive. A tape drive is needed for one volume.

   To display all available tape drives on your system, enter:

   ```
   query tape free
   ```

6. Attach an available tape drive as 181.

```
attach tapeaddr *  181
TAPE tapeaddr ATTACHED TO userID 181
Ready; T=n.nn/n.nn hh:mm:ss
```

tapeaddr
   Address of the tape drive where
   the z/VM system DDR tape will be
   mounted.

userID
   First-level user ID you logged on to
   in substep 2 on page 36.

7. Mount the z/VM system DDR tape on the tape drive attached as 181.

8. Load the installation tools from the z/VM system DDR to your (191) A-disk.

```
rewind 181
Ready; T=n.nn/n.nn hh:mm:ss

vmfplc2 fsf 4
Ready; T=n.nn/n.nn hh:mm:ss

vmfplc2 load * * a
 Loading ...
    :
    :
 End-of-file or end-of-tape
Ready; T=n.nn/n.nn hh:mm:ss

rew 181
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 2. Run INSTPLAN

> **In this step, you will:**
> * Run INSTPLAN.

1. Run INSTPLAN.

```
instplan
**** NOW EXECUTING INSTPLAN EXEC ON date AT time ****
```

```
                   *** z/VM INSTALLATION PLANNING ***

   Mark the product(s) selected to be installed into the VMSYS filepool with an
   "F" and those selected to be installed to minidisks with an "M"

   Install To   Product     Install To   Product     Install To   Product
   ----------   ---------   ----------   ---------   ----------   ---------
       M        VM              M        OSA             M        PERFTK
       M        VMHCD           M        RACF            M        DIRM
       M        RSCS            M        ICKDSF          M        TCPIP

   Place a nonblank character in front of the System Default Language you would
   like for your system.

      _ AMENG        _ UCENG         _ KANJI

   Place a nonblank character in front of the DASD model onto which your
   z/VM system will be loaded.  Only one model may be selected.

      _ 3390 Mod 3        _ 3390 Mod 9

      PF1 = HELP   PF3/PF12 = QUIT   PF5 = Process   ENTER = Refresh
```

Figure 2. Installation Planning Panel

a. See the installation worksheet (Table 1 on page 7) and enter:
   * "M" in the **Install To** column for each product you selected to be installed onto minidisks.
   * "F" in the **Install To** column for each product you selected to be installed into the VMSYS file pool.

b. Place a nonblank character next to the *System Default Language* you selected for your system in the installation worksheet (Table 1 on page 7).

c. Place a nonblank character in front of the DASD model that matches the *DASD type and model* recorded on the installation worksheet (Table 1 on page 7).

d. Press F5 to process your selections.

Note: The output you see may be different due to your planning choices.

`F5`

```
HCPIPX8475I THE PRODUCTS YOU SELECTED TO LOAD TO MINIDISK ARE:
            VM  RSCS  TCPIP  OSA ICKDSF
            DIRM  RACF PERFTK  VMHCD

            THE PRODUCTS YOU SELECTED TO LOAD TO SFS ARE:
            NONE

            THE SYSTEM DEFAULT LANGUAGE SELECTED:
            AMENG

            THE DASD TYPE YOU SELECTED TO LOAD ON IS:
            3390 model

            THE DASD NEEDED TO LOAD z/VM ARE:
            610RES 610SPL 610PAG...

HCPINP8392I INSTPLAN EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 3. Restore the Initial Installation System (IIS)

> **In this step, you will:**
> - Format the DASD.
> - Load IIS from the z/VM system DDR.

1. See the installation worksheet (Table 1 on page 7). Attach all the DASD listed in the worksheet that are not already attached. Enter the following ATTACH command for each DASD:

   ```
   attach dasdaddr   *
   DASD dasdaddr ATTACHED TO userID dasdaddr
     ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   dasdaddr
       Address of the DASD.

   userID
       First-level user ID logged on to previously.

   Attention: Issue the QUERY DASD ATTACH * command to verify there are no DASD attached to your user ID with the same label as those being used for installation. You must detach any duplicate-labeled DASD from your user ID to prevent bringing them online.

2. Run INSTIIS to format and label your installation DASD and to restore the IIS.

   ```
   instiis
   ```

```
          *** z/VM INSTALLATION DASD FORMAT/RESTORE ***



PACK    DASD        DASD            VIRTUAL TAPE       DO NOT
TYPE    LABEL       ADDRESS           ADDRESS       FORMAT DASD
=====================================================================
RES     610RES      ____              ___              __
SPOOL   610SPL      ____
PAGE    610PAG      ____
USER    610W01      ____
USER    610W02      ____
USER    610W03      ____




  PF1 = HELP     PF3/PF12 = QUIT     PF5 = Process    ENTER = Refresh
```

Figure 3. Installation DASD Format and Restore Panel (3390 Model Layout)

   a. If you want to change the labels of the SPOOL, PAGE, or USER DASD, fill in the DASD LABEL field with the new labels. You cannot change the 610RES label. To use the function to change the installation DASD labels, the user ID must be able to issue the DEFINE MDISK command. The IBM default privilege class for this command is class A. The DEFINE MDISK command also requires the user ID to have DEVMAINT on its OPTION directory statement.

   b. Fill in the DASD addresses using the information from the installation worksheet (Table 1 on page 7). For more information and help, press F1.

   c. Fill in the tape address (181) where z/VM system DDR tape is mounted.

d. Place a nonblank character in the DO NOT FORMAT DASD column only if you have already CP formatted your DASD for this installation using ICKDSF or CPFMTXA. The DASD will be labeled, but not formatted.

e. Press F5 to process.

[F5]

```
HCPIIX8381I CHECKING TAPE VOLUME NUMBER FOR DRIVE 181

HCPIIX8377R YOU HAVE SELECTED TO FORMAT THE FOLLOWING DASD:

HCPIIX8483R YOU HAVE SELECTED NOT TO FORMAT YOUR DASD.
            THIS ASSUMES YOU HAVE ALREADY FORMATTED THE
            DASD AND THIS EXEC WILL ONLY RELABEL AS
            FOLLOWS
```

Depending on whether you chose to format your DASD, you will receive either message HCPIIX8377R or HCPIIX8483R.

```
610RES dasdaddr
lblspl dasdaddr
lblpag dasdaddr
lblw01 dasdaddr
lblw02 dasdaddr
lblw03 dasdaddr

DO YOU WANT TO CONTINUE ? (Y|N)
y

HCPIIX8490I NOW FORMATTING|LABELING DASD dasdaddr
HCPIIX8490I NOW FORMATTING|LABELING DASD dasdaddr
HCPIIX8490I NOW FORMATTING|LABELING DASD dasdaddr
:
HCPIIX8380I RESTORING IIS TO 610RES and lblspl

RESTORING 610RES
DATA DUMPED   mm/dd/yy AT hh.mm.ss  GMT FROM 610RES RESTORED TO 610RES
INPUT CYLINDER EXTENTS        OUTPUT CYLINDER EXTENTS
   START        STOP            START        STOP
      0         158                0         158
    399         685              399         685

END OF RESTORE
 BYTES RESTORED nnnnnnnnnn

HCPDDR717D DATA DUMPED FROM 610SPL
TO BE RESTORED TO spllabel
```

You will receive this message if you changed the label for the 610SPL pack.

```
RESTORING 610SPL
DATA DUMPED   mm/dd/yy AT hh.mm.ss  GMT FROM 610SPL RESTORED TO lblspl
INPUT CYLINDER EXTENTS        OUTPUT CYLINDER EXTENTS
   START        STOP            START        STOP
      0         199                0         199
   END OF RESTORE
 BYTES RESTORED nnnnnnnnnn

END OF JOB
HCPIIX8490I NOW ALLOCATING DASD dasdaddr (RES PACK)
HCPIIX8490I NOW ALLOCATING DASD dasdaddr (SPOOLING)
HCPIIX8490I NOW ALLOCATING DASD dasdaddr (PAGING)
HCPINI8392I INSTIIS EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 4. IPL z/VM IIS

> **In this step, you will:**
>
> - IPL the z/VM IIS.
>
> **Note:** You must IPL the z/VM IIS on the same user ID you used to run INSTPLAN and INSTIIS.

1. Reset your virtual machine and make sure the z/VM system will recognize your terminal as a 3277, 3278, or 3279.

   ```
   system clear
   Storage cleared - system reset.

   terminal conmode 3270
   ```

2. Verify you have 64 MB of virtual storage. If you have less than 64 MB of virtual storage, issue the DEFINE command to set your virtual storage to 64 MB.

   ```
   query virtual storage
   STORAGE = nnnnM

   define storage 64M
   STORAGE =   64M
   Storage cleared - system reset
   ```

3. Set the virtual machine mode to ESA.

   ```
   set machine esa
   ```

4. Query the console to determine the virtual console address (*consaddr*). This address is required in the next substep.

   ```
   query console
   CONS consaddr ON LDEV nnnn    TERM START
        consaddr CL T NOCONT NOHOLD COPY 001    READY FORM STDN
        consaddr TO userid    dev DIST nnnn     FLASHC 000 DEST OFF
        consaddr FLASH      CHAR      MDFY      0 FCB       LPP OFF
        consaddr 3270   NOEOF OPEN nnnn NOKEEP NOMSG NONAME
        consaddr SUBCHANNEL = nnnn
   ```

5. IPL the IIS you loaded to the system residence device (610RES).

   ```
   ipl dasdaddr clear loadparm consaddr
   ```

   dasdaddr
     Address of the system residence device (610RES).

   consaddr
     Virtual console address determined in substep 4.

   The Stand Alone Program Loader panel displays after issuing the IPL command.

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

DEVICE NUMBER:   dasdaddr   MINIDISK OFFSET:    nnnnnnnn   EXTENT:  1

MODULE NAME:    CPLOAD     LOAD ORIGIN:       1000

-------------------------------IPL PARAMETERS-------------------------------
cons=consaddr


---------------------------------COMMENTS----------------------------------




----------------------------------------------------------------------------



 9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 4. Sample Stand Alone Program Loader Panel

6. Move the cursor to the IPL PARAMETERS field and type

      cons=*consaddr*

consaddr
    Virtual console address determined in substep 4 on page 42. Spaces are not allowed around the equal sign.

7. Press F10 to load.

    F10

```
hh:mm:ss z/VM V6 R1.0 SERVICE LEVEL 0000 (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss ******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *    MACHINES                             *
hh:mm:ss ******************************************

hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nnn through nnn.
    ⋮
```

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Note: If you receive informational message HCPIIS954I, you have duplicate volumes with the same label. You must return to the first-level CP environment by entering SHUTDOWN at the next prompt. Detach the duplicate volumes and then go back to substep 1 on page 42.

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
         (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
cold drain noautolog
```

Because there is no data or accounting information to recover, use COLD DRAIN to request a cold start. Use NOAUTOLOG at this point because you cannot have the servers and all user IDs logged on.

```
NOW hh:mm:ss {EST|EDT} weekday yyy-mm-dd
Change TOD clock (yes|no)
no
```

CP logs on the primary system operator user ID (OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available    nnnn
```

Note: Depending on the type of spool files available, you might receive the following prompt:

Spool Files Prompt

```
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files on offline volumes    {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with I/O errors        {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with control errors    {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files to be discarded        {nnnn|NONE}
hh:mm:ss HCPWRS2513I                                    -------
hh:mm:ss HCPWRS2513I Total files to be deleted           nnnn
hh:mm:ss HCPWRS2511A
hh:mm:ss HCPWRS2511A Spool files will be deleted because of
                     COLD start.
hh:mm:ss HCPWRS2511A No files have been deleted yet.

hh:mm:ss HCPWRS2511A To continue COLD start and delete files,
                     enter GO.
hh:mm:ss HCPWRS2511A To stop COLD start without deleting
                     files, enter STOP.
go
```

The system gives you an opportunity to stop the cold start and save your spool files. You do not need to save any spool files at this time; answer **go**.

```
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss DASD nnnn dump unit CP IPL pages nnnn
hh:mm:ss HCPAAU2700I System gateway ZVMV6R10 identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES:   NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT hh:mm:ss EDT DAY mm/dd/yy
hh:mm:ss GRAF   nnnn LOGON  AS  OPERATOR USERS = n
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnnn RDR, nnnnnnnn PRT,     NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
```

8. Disconnect from the OPERATOR user ID.

> **disconnect**
> DISCONNECT AT hh:mm:ss {EST|EDT} *weekday mm/dd/yy*
>
> Press enter or clear key to continue

   ENTER

9. Log on as MAINT.

   ENTER   The default password for MAINT is MAINT.

> **logon maint**
> z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
> built on IBM Virtualization Technology
> There is no logmsg data
> FILES: *nnnn* RDR,   NO PRT,   NO PUN
> LOGON AT *hh:mm:ss* EDT *DAY mm/dd/yy*
> DMSIND2015W Unable to access the Y-disk. File mode Y (19E) not accessed
>
> z/VM V6.1.0   *yyyy-mm-dd hh:mm*
>   **ENTER**
> DMSACP113S B(5E5) not attached or invalid device address
> DMSACP113S D(51D) not attached or invalid device address

                                            Message DMSACP113S is not a problem at this
                                            time.

> Ready; T=*n.nn/n.nn hh:mm:ss*

Step 5. Run INSTVM

> **In this step, you will:**
>
> • Run INSTVM to build the directory for your system and load the items from the z/VM system DDR.
>
> **Note:** Running the INSTVM requires a full screen terminal with at least 24 lines.

1. IPL CMS to verify the CMS saved system is available.

   ```
   ipl cms
   DMSIND2015W Unable to access the Y-disk. File mode Y (19E) not accessed
   z/VM V6.1.0   yyyy-mm-dd hh:mm
    ENTER

   DMSWSP100W Shared Y-STAT not available
   DMSACP113S B(5E5) not attached or invalid device address
   DMSACP113S D(51D) not attached or invalid device address
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   Note: If the CMS saved system does not exist, there is a problem with spool space. You must resolve the problem before continuing.

2. Attach the tape drive on which the z/VM system DDR tape is mounted to your second-level system at address 181. The tape drive was previously attached to your first-level user ID at address 181.

   ```
   attach 181 * 181
   TAPE 181 ATTACHED TO MAINT 181
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. If the z/VM system DDR tape is not already mounted, mount the tape on the drive.

4. Run INSTVM to install the z/VM system DDR.

   ```
   instvm tape
   ****  NOW EXECUTING INSTVM EXEC ON date AT time  ****
   DASD 0199 DETACHED
   The minidisks with the END option specified in this directory will not be
   included in the following DISKMAP file.

   File USER DISKMAP A has been created.
   CPRELEASE request for disk A scheduled.
   HCPZAC6730I CPRELEASE request for disk A completed.
   DASD 0CF1 DETACHED
   CPACCESS request for mode A scheduled.
   HCPZAC6732I CPACCESS request for MAINT's 0CF1 in mode A completed.
   HCPIND8392I INSTDIR EXEC ENDED SUCCESSFULLY

   z/VM USER DIRECTORY CREATION PROGRAM - VERSION 6 RELEASE 1.0
   EOJ DIRECTORY UPDATED AND ON LINE
   HCPDIR494I User directory occupies nn disk pages.
   HCPWIN8381I CHECKING TAPE VOLUME NUMBER FOR DRIVE 181
   ```

Messages repeated for each disk restored (until total percent loaded reaches 100%)

```
HCPWIN8428I TOTAL PERCENT LOADED -> nn%
HCPWIN8380I RESTORING MINIDISK nnn TO volid
HCPDDR725D SOURCE DASD DEVICE WAS (IS) LARGER THAN OUTPUT DEVICE
RESTORING volid
DATA DUMPED   mm/dd/yy AT hh.mm.ss  GMT FROM volid RESTORED TO SCRATCH
INPUT CYLINDER EXTENTS      OUTPUT CYLINDER EXTENTS
     START        STOP         START         STOP
  nnnnnnnn   nnnnnnnn      nnnnnnnn    nnnnnnnn


END OF RESTORE
 BYTES RESTORED nnnnnnnn
END OF JOB
```

```
  HCPPLD8338I NOW EXECUTING ALLOCATION OF SYSTEM RESIDENCE PACK
  HCPPLD8338I NOW EXECUTING UPDATE OF $MOVE$ $FILE$ C
  HCPPLD8341I POSTLOAD FUNCTION "INSTALLATION CLEANUP" COMPLETED SUCCESSFULLY
  HCPPLD8338I NOW EXECUTING DIRECTORY CLEANUP
  HCPPLD8341I POSTLOAD FUNCTION "DIRECTORY CLEANUP AND ADD HELP DISK LINKS" COMPLETED SUCCESSFULLY
  HCPPLD8338I NOW EXECUTING THE DIRECTXA COMMAND TO BRING THE UPDATED USER DIRECTORY ONLINE
  HCPPLD8341I POSTLOAD FUNCTION "BRING UPDATED DIRECTORY ONLINE" COMPLETED SUCCESSFULLY

  HCPPLD8392I POSTLOAD EXEC ENDED SUCCESSFULLY
  DMSACC724I 2CC replaces C (2CC)
  HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVU
  AUTO LOGON  ***        VMSERVU  USERS = n
  HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the IPL
    command processor.
  VMSERVU : z/VM V6.1.0    yyyy-mm-dd hh:mm
  VMSERVU : DMSACP723I B (193) R/O
  VMSERVU : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
  VMSERVU : DMSWFV1121I VMSERVU DMSPARMS A1 will be used for FILESERV processing
  VMSERVU : DMSWFV1121I VMSYSU POOLDEF A1 will be used for FILESERV processing
  VMSERVU : DMS5BB3045I Ready for operator communications

  HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVR
  AUTO LOGON  ***        VMSERVR  USERS = n
  HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
    command processor.
  VMSERVR : z/VM V6.1.0    yyyy-mm-dd hh:mm
  VMSERVR : DMSACP723I B (193) R/O
  VMSERVR : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
  VMSERVR : DMSWFV1121I VMSERVR DMSPARMS A1 will be used for FILESERV processing
  VMSERVR : DMSWFV1121I VMSYSR POOLDEF A1 will be used for FILESERV processing
  VMSERVR : DMS6LG3335I CRR log recovery begins at mm-dd-yy hh:mm:ss
  VMSERVR : DMS6LG3335I CRR log recovery completes at mm-dd-yy hh:mm:ss
  VMSERVR : DMS5BB3045I Ready for operator communications
```

Run INSTVM

```
┌─ Extra messages received if all products were loaded to minidisks ─────────┐
│  DASD 0804 DETACHED                                                         │
│  HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS                                   │
│  AUTO LOGON  ***        VMSERVS  USERS = n                                  │
│  HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
│    command processor.                                                       │
│  VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm                                  │
│  VMSERVS : DMSACP723I B (193) R/O                                          │
│  VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
│  VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
│  VMSERVS : DMS4PD3400I Initializing begins for DDNAME = CONTROL            │
│  VMSERVS : DMS4PD3400I Initializing ends for DDNAME = CONTROL              │
│  VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00001           │
│  VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00001             │
│  VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00002           │
│  VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00002             │
│  VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG1               │
│  VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG1                 │
│  VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG2               │
│  VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG2                 │
│  VMSERVS : DMS5FD3032I File pool server has terminated                     │
│  VMSERVS : DMSWFV1120I File VMSYS POOLDEF A1 created or replaced           │
│  VMSERVS : DMSWFV1117I FILESERV processing ended at hh:mm:ss on dd month yyyy
│  RDR FILE nnnn SENT FROM VMSERVS  PUN WAS 0001 RECS 0004 CPY  001 A NOHOLD NOKEEP
│  VMSERVS : File FILESERV VALID A3 sent to MAINT at ZVMV6R10 on mm/dd/yy hh:mm:ss
│  VMSERVS : Ready; T=n.nn/n.nn hh:mm:ss                                      │
│                                                                             │
│  HCPQCS150A User VMSERVS has issued a VM read                              │
│  VMSERVS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn.nn TOTCPU= nnn:nn.nn          │
│  VMSERVS : LOGOFF AT hh:mm:ss timezone day mm/dd/yy BY MAINT               │
│  USER DSC   LOGOFF AS  VMSERVS  USERS = n      FORCED BY MAINT             │
│  DASD 0804 DETACHED                                                         │
└─────────────────────────────────────────────────────────────────────────────┘
```

```
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***        VMSERVS  USERS = n

HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMSWFV1121I VMSYS POOLDEF A1 will be used for FILESERV processing
VMSERVS : DMS5BB3045I Ready for operator communications
```

```
┌─ You might not receive one or more of the following messages ──────────────┐
│  HCPIDV8338I UPDATING SYSTEM TABLES AND CLEANING UP FILEPOOL DIRECTORIES   │
│  RC=0 from EXEC OPENVM UNMOUNT /                                            │
│  RC=0 from EXEC OPENVM UNMOUNT /                                            │
│  RC=0 from EXEC OPENVM UNMOUNT /                                            │
│  RC=0 from EXEC OPENVM UNMOUNT /                                            │
│  RC=0 from EXEC OPENVM UNMOUNT /                                            │
└─────────────────────────────────────────────────────────────────────────────┘
```

```
HCPIFP8392I INSTPOOL EXEC ENDED SUCCESSFULLY
HCPIVM8392I INSTVM EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

After this point, when you IPL the system, you should use the default IPL parameters and should no longer use COLD DRAIN NOAUTOLOG.

You are now finished with the z/VM system installation tape.

Step 6. Run SERVICE

> **In this step, you will:**
>
> • Run SERVICE to install the recommended service upgrade (RSU) and corrective service (COR).

1. Log on as MAINT.

   `ENTER`   The default password for MAINT is MAINT.
   ```
   logon maint
     ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid     Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1         2                n               n-nn%            nn%
   userid2         2                n               n-nn%            nn%
     ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. If the RSU is not on tape, skip to substep 4 on page 51. Otherwise, apply the RSU service from tape.

   a. Attach a tape drive to MAINT as 181.

   ```
   attach tapeaddr * 181
   TAPE tapeaddr ATTACHED TO MAINT 181
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   b. Mount volume 1 of the RSU on the tape drive attached at address 181.

   If the RSU has multiple volumes, either stack the RSU volumes on 181 or attach additional tape drives and mount each volume.

   c. IPL CMS.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   `ENTER`
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   d. If the volumes are mounted on 181, run SERVICE with no parameters.

   ```
   service
   VMFSRV2760I SERVICE processing started
     ⋮
   VMFSRV2760I SERVICE processing completed
   successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   e. If the volumes are mounted on multiple tape drives, run SERVICE with the following parameters:

```
service all tapeaddr1 tapeaddr2 ...
VMFSRV2760I SERVICE processing started
:
VMFSRV2760I SERVICE processing completed
successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

List the addresses of each tape volume.

tapeaddr1
 Address of the tape drive where tape volume 1
 is mounted.

tapeaddr2 ...
 Address of the tape drive where tape volume 2
 is mounted, and so on.

4. If the RSU is not electronic or on CD-ROM, skip to substep 5 on page 52. Otherwise, apply the
   electronic or CD-ROM RSU service.

   a. Attach and access the minidisk containing the service files to the MAINT user ID on your
      second-level system.

      Requirement: The service files must be already loaded to minidisk *diskaddr*, attached to your
      first-level user ID. If the service files have not been loaded, you must load the provided RSU tape
      by following substep 3 on page 50.

      ```
      attach diskaddr * diskaddr
      Ready;

      access diskaddr z
      Ready;
      ```

   b. Obtain the file names of the RSU envelopes on the minidisk (*diskaddr*).

      ```
      listfile * * z
      610xRSUn envft z
      610xRSUn envft z
      ```

      x   RSU number.

      n   Volume number.

   c. Copy the service files to the MAINT 500 disk and decompress the VMSES/E envelope file.

      ```
      access 500 c
      Ready;
      deterse  610xRSUn envft z = servlink c
      ```

      You need to enter the DETERSE command for every
      envelope file you receive with your order.

   d. IPL CMS.

      ```
      ipl cms
      z/VM V6.1.0    yyyy-mm-dd hh:mm
      ```

      `ENTER`

      ```
      Ready; T=n.nn/n.nn hh:mm:ss
      ```

   e. Access the 500 minidisk containing the servlink.

      ```
      access 500 c
      Ready;
      ```

   f. Run SERVICE.

Run SERVICE

```
service all envfn1 envfn2 ...
VMFSRV2760I SERVICE processing started
:
VMFSRV2760I SERVICE processing completed
successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

List the file names of each PTF or RSU envelope. You can specify more than one envelope file if the RSU is a multivolume only.

envfn1
    File name for the first envelope.

envfn2 ...
    File name for the second envelope, and so on.

5. View the SERVICE messages log (VMFVIEW SERVICE) and handle any nonzero return codes. Base your actions on the following table:

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW SERVICE.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Go to "Step 7. Run PUT2PROD" on page 53.
A return code greater than 4	1. Issue VMFVIEW SERVICE and check for warning and error messages.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Restart by issuing the SERVICE command as displayed in the message VMFSRV2310W.
	5. If you receive a nonzero return code, repeat substep 5.
	6. Go to "Step 7. Run PUT2PROD" on page 53.

Note: You can ignore the following messages and their associated VMF1966W message.

- `DMSLIO201W The following names are undefined: ISPLINK ARIPRDI`
- `DMSLIO201W The following names are undefined: DMSDSCSC`
- `DMSLIO201W The following names are undefined: DMSUSRX1 DMSUSRX2`
- `DMSLIO202W Duplicate identifier` (Associated with object IOACMAIN MODULE.)
- `DMSLKD004W Warning messages issued` (Associated with objects ILBONBL, ILBONTR, ILBOREC, ILBORNT, ILBOSND, ILBOSNT, and ILBOSSN.)
- `VMFSRV1221W The Stand Alone Dump Utility must be rebuilt.`

6. Use the VMFUPDAT SYSMEMO command to review any memos that were received with this service.

7. If the PSP bucket contains COR service that should be applied at install, repeat "Step 6. Run SERVICE" on page 50 to install the service using COR in place of RSU.

Step 7. Run PUT2PROD

> **In this step, you will:**
> - Run PUT2PROD to place the product into production.

1. Log on as MAINT.

   `ENTER`   The default password for MAINT is MAINT.
   logon maint
     ⋮
   Ready; T=*n.nn/n.nn hh:mm:ss*

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you
   need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid      Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1          2                  n              n-nn%           nn%
   userid2          2                  n              n-nn%           nn%
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. IPL CMS and access the VMSES/E test build disk.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   `ENTER`
   Ready; T=*n.nn/n.nn hh:mm:ss*

   ```
   access 5E6 b
   Ready;
   ```

4. Run PUT2PROD.

   ```
   put2prod
   VMFP2P2760I PUT2PROD processing started
     ⋮
   VMFP2P2760I PUT2PROD processing completed successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Handle a nonzero return code. Base your action on the following table.

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW PUT2PROD. 2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.

Run PUT2PROD

If you received . . .	Then . . .
A return code greater than 4	1. Issue VMFVIEW PUT2PROD and check for warning and error messages. 2. Ignore any warning messages listed in the note below in this table. Take appropriate actions based on other warning messages you receive. 3. Correct all errors reported in the error messages. 4. Issue IPL CMS. 5. Issue PUT2PROD. 6. If you receive a nonzero return code, repeat substep 5 on page 53.

Note: You can ignore the following messages.

- `DMSDCS1083E Saved segment $$DMY$$ does not exist`
- `DMSWLG292W Text data will be loaded at '20000'x in user area; user data may be overwritten.`
- `DTCPRD3043W File `*fn ft fm*` has been updated; It's contents should be reviewed for changes that may affect your use of this file.`
- `TCPMSM0002W File TCPIP DATA cannot be located`
- `TCPMSM0002W TCP/IP appears not to have been configured`

Step 8. Shut Down and Re-IPL the System

> **In this step, you will:**
>
> - Shut down the V6.1 system.
> - IPL the V6.1 system using the new CP nucleus.

1. Shut down and re-IPL the V6.1 system.

```
shutdown reipl
SYSTEM SHUTDOWN STARTED
Ready; T=n.nn/n.nn hh:mm:ss


HCPWRP963I STARTING SHUTDOWN STEP . . .
 ⋮
HCPWRP962I VM SHUTDOWN COMPLETED IN nn SEC
HCPWRP9277I SYSTEM TERMINATION COMPLETE,
           ATTEMPTING RESTART


hh:mm:ss HCPWRP9277I SYSTEM TERMINATION COMPLETE.
         ATTEMPTING RESTART
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL
hh:mm:ss z/VM V6 R1.0
                  SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss ******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss ******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume volid (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xx through xx.
 ⋮

hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available     {nnnn|none}
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
 ⋮

hh:mm:ss FILES:     nnn RDR,     nnn PRT,     nnn PUN
hh:mm:ss LOGON AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
 ⋮

hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnn RDR, nnnnnnn PRT,     NO PUN
```

The shut down message is displayed on all enabled consoles.

HCP963I, HCP962I, and HCP9277I will appear on the operator's console.

Attention: If you receive informational message HCPIIS954I, you have duplicate DASD with the same label and *must correct* this error before continuing.

Shut Down and Re-IPL the System

Message HCP952I tells you the amount of storage available.

The FILES message refers to operator spool files.

CP automatically disconnects from the primary system operator user ID (OPERATOR).

```
hh:mm:ss HCPUSO967I Disconnect OPERATOR - system
            restarted SHUTDOWN and system console
            not VM operator console
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
hh:mm:ss DISCONNECT AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
hh:mm:ss Press enter or clear key to continue
```
`ENTER`   Press Enter or the Clear key to continue.

2. Log on as MAINT.

```
logon maint                                The password for MAINT is MAINT.
    :
Ready; T=n.nn/n.nn hh:mm:ss
```

What to do next

See Part 3, "Post z/VM System Installation," on page 129.

Part 2. z/VM System Image DVD Installation

Part 2 contains procedures for installing z/VM from DVD distribution media. If you are installing z/VM from tape distribution media, use Part 1, "z/VM System DDR Installation," on page 1.

In this part, you will:

- Plan your installation from DVD.
- Fill in worksheets.
- Install the z/VM System image from DVD.

z/VM System image Installation

Chapter 4. Plan Your DVD Installation

In this chapter, you will

- Plan your installation.
- Fill in the installation worksheet and the TCP/IP configuration worksheet.

Step 1. Review and Comply with the Requirements

Before you install V6.1, you must satisfy the following requirements:

1. z/VM media deliverable

   - Be sure you have both the installation DVD and the RSU DVD.
   - If the RSU (or COR) service is electronic or on CD-ROM you need to receive the service files to a minidisk attached to your installation user ID before IPLing your second-level system. Follow the instructions included with the electronic or CD-ROM service files to receive and restore the service files to a minidisk that can be temporarily attached to your second-level system.

2. General

   - A processor supported by z/VM version 6 release 1. For a list of processors supported by z/VM, see *z/VM: General Information*.
   - For instructions on how to receive up-to-date service, see the Program Directory for z/VM.
   - For up-to-date information affecting installation, see the "installation information" section in the CP subset of the zvm610 upgrade PSP bucket.
   - If you plan to migrate from another z/VM system, review *z/VM: Migration Guide*.
   - If you plan to deploy Linux on z/VM, see *z/VM: Getting Started with Linux on System z* for important planning information about Linux virtual servers.
   - The z/VM FTP installation procedure complies with the FTP client protocol standards described in RFC 959 and RFC 1123. Passive FTP data transfers are used in order to minimize the affects of intervening firewall systems, so your FTP server must support the PASV command.

3. Installation methods

   - **First-level installation** can be done from a DVD drive attached to the Hardware Management Console (HMC), a DVD drive connected through an FTP server, or from an FTP server where the files from the DVD have been placed in an FTP accessible directory.

     – Hardware requirements

       - Exclusive access to your processor's service element (SE) in order to load your z/VM starter system to RAM.
       - Access to the integrated 3270 console on the HMC (CONS=SYSG) for use as the console during first-level install.
       - At least 768 MB of real storage assigned to the LPAR where z/VM will be installed.

       Note: The storage required for installation is not necessarily the amount you should have assigned for running production workloads. See *z/VM: CP Planning and Administration* for information on determining production storage requirements.

     – FTP server requirements

       - The server must comply with RFC 959 and RFC 1123.
       - The server must be able to communicate with both the HMC and primary SE of the LPAR where you will install. This means that both the HMC and primary SE must be enabled for TCP/IP communication, including any required firewall authorizations, and authorized to use FTP.
       - The server must be able to access a DVD drive or a directory where the contents of the DVD will be stored.
       - If installing from an FTP server directory, the server must have at least 3 GB of available space to store the contents of the z/VM system DVD and the RSU DVD. The contents of the z/VM system DVD and the RSU DVD must be stored in same directory.

     – HMC and support element considerations

       - If you wish to use a HMC's DVD drive, then the HMC must communicate with the desired support element. HMCs can only communicate with support element versions that are equal

to or lower than themselves. For example, an HMC version 1.8.0 can communicate with a support element at version 1.7.3, or 1.8.0, but it can not communicate with a support element at version 1.8.2.

- **Second-level installation** can be done from a DVD drive connected through an FTP server, from an FTP server where the files from the DVD have been placed in an FTP accessible directory, or from a VM minidisk.

  To install using the DVD drive installation method, you must use a DVD drive connected through an FTP server. To install using the FTP server directory installation method, you must upload the contents of the DVD to a directory on the server. To install using the VM minidisk installation method, you must upload the contents of the DVD to a minidisk that is CMS-formatted and can be accessed by your installation user ID.

  – Hardware requirements

    - A first-level system running at least z/VM V5.
    - Access to a local non-SNA 3270 terminal, or equivalent, configured with at least 24 lines, or an integrated 3270 console.

  – FTP server requirements

    - The server must comply with RFC 959 and RFC 1123.
    - The server must have a TCP/IP communication path to the system you are using to install.
    - The server must be able to access a DVD drive or a directory where the contents of the DVD will be stored.
    - If installing from an FTP server directory, the server must have at least 3 GB of available space to store the contents of the z/VM system DVD and the RSU DVD. The contents of the z/VM system DVD and the RSU DVD must be stored in same directory.

  – User ID requirements

    - Access to the INSTPIPE module on your current system. The module is shipped on the MAINT 2CC disk.
    - Privilege classes of at least B and G.
    - At least 64 MB of virtual storage.
    - A 191 read/write minidisk accessed as file mode A.
    - A 2222 read/write minidisk, matching the supported DASD type of your installation DVD, that is exactly:
      - 5 cylinders (3390) or
      - 7200 512-KB blocks (fba)
    - A 22CC read/write minidisk, matching the supported DASD type of your installation DVD, that is exactly:
      - 5 cylinders (3390) or
      - 7200 512-KB blocks (fba)
    - A 2CF1 read/write minidisk, matching the supported DASD type of your installation DVD, that is exactly:
      - 120 cylinders (3390) or
      - 172800 512-KB blocks (fba)
    - If installing from a VM minidisk, access to a CMS-formatted minidisk that is at least 4500 cylinders of 3390 DASD.

Step 2. Complete the Installation and Basic IP Connectivity Worksheets

1. Determine the installation method you will use.
   - Choose first-level installation if no supported z/VM system is running on the processor or LPAR on which you are installing.
   - Choose second-level installation if you are installing in a virtual machine on a supported z/VM system.

2. Record the installation method you selected to use to install z/VM in the installation worksheet (Table 8 on page 64). Your choices are first-level or second-level.

3. Determine which products you will load into the VMSYS file pool and which products you will load to minidisks only. Each product on the z/VM system DVD allows VMSYS file pool directories to be used in place of some minidisks. Record your choices in the installation worksheet (Table 8 on page 64).

4. Select your system default language and record your choice in the installation worksheet (Table 8 on page 64). The choices are:
   - Mixed Case English (AMENG)
   - Uppercase English (UCENG)
   - Kanji (KANJI)

5. Select the DASD type and model you will use to install, and record the DASD information on the ″DASD Type and Model″ line in the installation worksheet (Table 8 on page 64). If you are using the:
   - FBA (SCSI) DVD, record FBA for the DASD model.
   - 3390 DVD, record either 3390 Model 3 or 3390 Model 9.

   For performance reasons, IBM recommends using emulated 3390 Model 9s instead of real 3390 Model 9s.

   Notes:
   a. DASD size is not checked during installation.
   b. If you select 3390 Model 3, installation uses the first 3338 cylinders on each DASD and ignores any cylinders beyond 3338.
   c. If you select 3390 Model 9, installation uses the first 10017 cylinders on each DASD and ignores any cylinders beyond 10017.
   d. If you select FBA DASD, installation uses up to the size entered on the INSTPLAN panel.

6. Estimate the number of DASD volumes required to install. If you choose:
   - 3390 DASD, you will need:
     - 3390 Model 3, five volumes.
     - 3390 Model 9, three volumes.

   If you selected to install products to a combination of the VMSYS file pool and minidisks in substep 3, you might need an extra volume depending on where you choose to install each product.
   - FBA (SCSI), you will need:
     - One volume each for 610PAG and 610SPL. These volumes can be any size (minimum of 1 GB) and will be fully allocated.
     - One volume for 610RES. This volume should be an FBA disk with a minimum of 3.5 GB of space.
     - Up to two volumes for 610W01 and 610W02 depending on the size of 610RES. These volumes should be at least as large as 610RES because the installation programs assumes they are all the same size.

Notes:

a. INSTPLAN, which is run early in the installation procedure, will tell you exactly how many volumes are required.

b. INSTPLAN will ask for the 610RES FBA disk size. The size must be at least 3.5 GB. If you are using a disk larger than 10 GB, installation will use up to 10 GB only. IBM suggests that you do not use any left over space on 610RES. Record the size on the "SCSI Disk Size" line of the installation worksheet (Table 8 on page 64).

7. If you are using FBA (SCSI) disks, and they are already defined, you need only the DASD addresses of the volumes and can continue to the next substep. If they are not already defined, you need to know the WWPN and LUN address for each disk, as well as either the valid FCP address(es) or the channel path (CHPID) they belong to. Record each LUN and its corresponding WWPN in the SCSI Device Definition Worksheet (Table 9 on page 64). Also make a note of the valid FCP address(es) or CHPID.

8. Record the DASD addresses for each DASD you selected in the installation worksheet (Table 8 on page 64) under the *DASD Address* column. Record your first address in the row with the label "610RES" and continue recording addresses corresponding to the labels. If you need fewer than all the DASD labels in the table, disregard the extra labels.

9. If you are changing the installation pack labels, record the new pack labels in the installation worksheet (Table 8 on page 64).

   For each default label you wish to change, record the new label in the installation worksheet (Table 8 on page 64) under the *New Label* column. The label, 610RES, cannot be changed.

10. If, after you install z/VM, you want to establish a minimal TCP/IP configuration that establishes basic connectivity to your IP network, fill in the IP worksheets beginning with Table 10 on page 65 and then return here.

What to do next

Base your choice on the installation method that fits your situation.

If you chose the. . .	Then see. . .
First-level installation method	Chapter 5, "First-Level DVD Installation Method," on page 67
Second-level installation method	Chapter 6, "Second–Level DVD Installation Method," on page 91

Worksheets

Table 8. DVD Installation Worksheet

Installation method (first-level or
second–level): _____

Install To column: record an "M" if you will load the product to a minidisk or an "F" if you will load the product to the
VMSYS file pool.

Install To	Product	Install To	Product	Install To	Product
	VM		OSA		PERFTK
	VMHCD		RACF		DIRM
	RSCS		ICKDSF		TCPIP

System default language: _____

DASD type and model: _____

SCSI disk size: _____ GB

Pack Type	DASD Label	New Label	DASD Address
RES	610RES	610RES	
SPOOL	610SPL		
PAGE	610PAG		
USER1	610W01		
USER2	610W02		
USER3	610W03		

DVD/FTP directory path name: _____

Address of VM minidisk to upload
DVD: _____

Table 9. SCSI Device Definition Worksheet (DVD Installation)

DASD	edevice address	fcp address	WWPN	LUN
610RES				
610SPL				
610PAG				
610W01				
610W02				
610W03				

Channel path (CHPID): _____

Valid FCP addresses: _____

After you have completed your z/VM installation, you can optionally create a minimal TCP/IP configuration that establishes basic connectivity to your IP network. If you choose to perform this configuration, you must gather the following information from your network system administrator and record the information in Table 10 and the appropriate interface worksheet. In these worksheets, a number in parentheses following a field description, for example "Host name (20)," is the maximum length for that field.

Note: The IP configuration wizard supports real network devices only. If you plan on using virtual network devices for TCP/IP, they must be configured manually. See *z/VM: TCP/IP Planning and Customization*.

Table 10. DVD Installation TCP/IP Configuration Worksheet

z/VM user ID of the z/VM TCP/IP stack virtual machine: (Default value is TCPIP. If you change this user ID, you must define the user ID in your user directory before running the IPWIZARD.)	
Host name (20):	
Domain name (40):	
DNS IP address (up to three addresses) :	1) _____ 2) _____ 3) _____
Gateway IP address :	
Interface name (16):	
Device number:	
IP address:	
IPv4 subnet mask (15) or IPv6 prefix length (3):	
Path MTU discovery (IPv4 interfaces):	__ Enabled __ Disabled
Choose the interface you will be using (check one):	__ QDIO (layer 3) __ QDIO (layer 2) __ LCS __ HiperSockets __ CLAW __ CTC Refer to the appropriate worksheet to record more information. IPv6 is available only for QDIO and HiperSockets devices.

Table 11. QDIO Interface Worksheet (DVD Installation)

Network type (select one):	__ Ethernet __ Token Ring IPv6 is not available for Token Ring adaptors.
Port name (optional) (8):	

Complete the Installation and Basic IP Connectivity Worksheets

Table 11. QDIO Interface Worksheet (DVD Installation) (continued)

Router type (select one):	__ Primary __ Secondary __ None Router type is not available for layer 2 transport.
Maximum transmission unit (MTU) size:	
Router advertisements (IPv6 only):	__ On __ Off
Port number (optional):	

Table 12. LCS Interface Worksheet (DVD Installation)

Network type (select one):	__ Ethernet __ Token Ring __ FDDI
Port/adapter number:	
Maximum transmission unit (MTU) size:	

Table 13. HiperSockets Interface Worksheet (DVD Installation)

Maximum frame size (MFS): (in kilobytes)	
Router advertisements (IPv6 only)	__ On __ Off

Table 14. CLAW Interface Worksheet (DVD Installation)

CLAW host name (8): (This name must match the host-name configured on the CLAW device)	
CLAW adapter name (8): (This name must match the device-name configured on the CLAW device)	
Maximum transmission unit (MTU) size:	

Table 15. CTC Interface Worksheet (DVD Installation)

Write channel device number (select one):	__ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel. __ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel plus 1.
Maximum transmission unit (MTU) size:	
Peer IP address:	

Chapter 5. First-Level DVD Installation Method

> **In this chapter, you will:**
> - Use step-by-step procedures to install the first-level z/VM System Image DVD in a new system environment.

Step 1. Load the RAMDISK

In this step, you will:

- Load the RAM disk from DVD.
- Start the RAMDISK system.

Note: Make sure that any DASD with the same labels you are using for installation are not attached to your system.

Before you begin: You need to complete the installation worksheet (Table 8 on page 64).

1. Prepare to access the installation files.

   If installing from a:
   - HMC DVD drive, load the z/VM system DVD in the HMC DVD drive.
   - FTP server DVD drive, load the z/VM system DVD in the FTP connected DVD drive.
   - FTP server directory, upload the contents of both the z/VM system DVD and the RSU DVD to a new directory on the FTP server.

     a. Create a new directory on the FTP server. The maximum length of the directory path name is 40 characters. The FTP server will need at least 3 GB of free space.

     b. Upload the contents of each DVD to the directory. After the contents of the z/VM system DVD have been uploaded, upload the contents of the RSU DVD to the same directory, overwriting any duplicate flies.

2. On the HMC, open an integrated 3270 console for the LPAR you are going to use for installation.

   a. In the Hardware Management Console Workplace window, double-click the **Groups** icon in the Views pane.

   b. In the Groups Work Area pane, double-click the **CPC Images** icon.

   c. In the CPC Images Work Area pane, select the LPAR you are going to use for installation.

   d. In the Recovery pane, double-click the **Integrated 3270 Console** icon. The Integrated 3270 Console window for that LPAR opens. Messages are displayed in the Integrated 3270 Console window when the system IPLs.

3. Access the primary SE for the LPAR you are going to use for installation.

   a. In the Hardware Management Console Workplace window, double-click the **Groups** icon in the Views pane.

   b. In the Groups Work Area pane, double-click the **Defined CPCs** icon.

   c. In the Defined CPCs Work Area pane, select the processor you are going to use for installation.

   d. In the Recovery pane, double-click the **Single Object Operations** icon. The Single Operation Task Confirmation prompt is displayed.

   e. Click **Yes** to continue. The Primary Support Element Workplace window opens. You now have control of the primary SE.

4. On the primary SE, select the icon labeled either **Load from CD-ROM, DVD or Server** or **Load from Removable Media or Server** in the Recovery pane for the LPAR you are going to use for installation.

   a. In the Primary Support Element Workplace window, double-click the **Task List** icon in the Views pane.

   b. In the Task List Work Area pane, double-click the **CPC Recovery** icon.

c. In the Views pane, double-click the **Groups** icon.

d. In the Groups Work Area pane, double-click the **Images** icon.

e. In the Images Work Area pane, select the LPAR you are going to use for installation.

f. In the Recovery pane, double-click the icon labeled either **Load from CD-ROM, DVD or Server** or **Load from Removable Media or Server**. The Task Confirmation prompt is displayed.

g. Click **Yes** to continue.

5. In the task window, select one of the following:
   - Hardware Management Console CD-ROM / DVD
   - FTP Source

   If you are installing from the HMC DVD drive, select **Hardware Management Console CD-ROM / DVD**. Otherwise, if you are installing from an FTP server DVD drive or from an FTP server directory, select **FTP Source**.

   Note: If you are installing from an FTP server directory, both the z/VM system DVD and the RSU DVD must have been copied into the same directory on the FTP server.

6. Fill in the fields in the task window.
   - If you selected **Hardware Management Console CD-ROM / DVD**, enter /CPDVD as the file location.
   - If you selected **FTP Source** and you are using an FTP server DVD drive:
     – Specify the FTP connection information for the server.
     – Enter the drive letter for the FTP server DVD drive, followed by /CPDVD, as the file location.
   - If you selected **FTP Source** and you are using an FTP server directory:
     – Specify the FTP connection information for the server.
     – Enter the path to the directory where you uploaded the z/VM system DVD and RSU DVD as the file location.

   Note: If using a DVD drive, wait until the light on the drive goes out or stops blinking before continuing.

7. Load the RAMDISK.
   a. In the task window, select the Software to Load window, select **610VM.ins**, and click **Continue**. The Confirm the Action prompt is displayed.
   b. Click **Yes** to continue.
   c. Messages indicating the status of the load are displayed in the task progress window. When a message is displayed indicating the load is successful, click **OK** to close the window and return to the Integrated 3270 Console window for the LPAR you are going to use for installation.

8. The RAMDISK IPLs and the system loads with the MAINT user ID logged on. System messages are displayed in the Integrated 3270 Console window.

Load the RAMDISK

```
hh:mm:ss z/VM V6 R1.0
          SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
          LOADED FROM $RAMD$
hh:mm:ss *******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss *******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume $RAMD$ (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on blocks xxx through xxx.
```
                                              The system logs on the MAINT user ID.
```
hh:mm:ss The directory on volume $RAMD$ at address nnnn
          has been brought online.

hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss No dump unit - Dump function is SET OFF
hh:mm:ss HCPAAU2700I System gateway IBMVMRAM identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES:   NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT hh:mm:ss EDT DAY mm/dd/yy
hh:mm:ss SYSG LOGON AS MAINT USERS = n
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnnn RDR, nnnnnnnn PRT,     NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid OPERACCT
hh:mm:ss HCPCRC8082I EREP records are accumulating for userid OPERACCT

DMSIND2015W Unable to access the Y-disk. File mode Y (19E) not accessed
DMSWSP327I The installation saved segment could not be loaded
z/VM V6.1.0    yyyy-mm-dd hh:mm
DMSDCS1083E Saved segment CMSPIPES does not exist
DMSDCS1083E Saved segment CMSPIPES does not exist
DMSDCS1083E Saved segment CMSVMLIB does not exist
Ready; T=n.nn/n.nn hh:mm:ss
```

9. Log off the primary SE.

   In the Primary Support Element Workplace window, click the **X** in the upper-right corner to log off.

Step 2. Run INSTPLAN

> **In this step, you will:**
> • Run INSTPLAN.

1. Run INSTPLAN.

```
instplan
**** NOW EXECUTING INSTPLAN EXEC ON date AT time ****
```

```
                  *** z/VM INSTALLATION PLANNING ***

Mark the product(s) selected to be installed into the VMSYS filepool with an
"F" and those selected to be installed to minidisks with an "M"

Install To    Product     Install To    Product     Install To    Product
----------    ---------   ----------    ---------   ----------    ---------
    M         VM              M         OSA             M         PERFTK
    M         VMHCD           M         RACF            M         DIRM
    M         RSCS            M         ICKDSF          M         TCPIP

Place a nonblank character in front of the System Default Language you would
like for your system.

    _ AMENG        _ UCENG        _ KANJI

Place a nonblank character in front of the DASD model onto which your
z/VM system will be loaded.  Only one model may be selected.

    _ 3390 Mod 3       _ 3390 Mod 9       _ FBA DASD 3.5

    PF1 = HELP    PF3/PF12 = QUIT    PF5 = Process    ENTER = Refresh
```

Figure 5. Installation Planning Panel

a. See the installation worksheet (Table 8 on page 64) and enter:
   • An "M" in the **Install To** column for each product you selected to be installed onto minidisks.
   • An "F" in the **Install To** column for each product you selected to be installed into the VMSYS file pool.

b. Place a nonblank character next to the System Default Language you selected for your system (see the installation worksheet, Table 8 on page 64).

c. Place a nonblank character in front of the DASD model that matches the *DASD type and model* recorded on the installation worksheet (Table 8 on page 64). If you are installing to FBA (SCSI), the size of the FBA disk must be at least 3.5 GB.

d. Press F5 to process your selections.

Run INSTPLAN

> **Note:** The output you see may be different due to your planning choices.

`F5`

```
HCPIPX8475I THE PRODUCTS YOU SELECTED TO LOAD TO MINIDISK ARE:
            VM  RSCS  TCPIP  OSA ICKDSF
              DIRM  RACF PERFTK  VMHCD

            THE PRODUCTS YOU SELECTED TO LOAD TO SFS ARE:
            NONE

            THE SYSTEM DEFAULT LANGUAGE SELECTED:
            AMENG

            THE DASD TYPE YOU SELECTED TO LOAD ON IS:
            type

            THE DASD NEEDED TO LOAD z/VM ARE:
            610RES 610SPL 610PAG...

HCPINP8392I INSTPLAN EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

2. Make sure the number of DASD selected on the installation worksheet (Table 8 on page 64) matches the number of DASD listed in the HCPIPX8475I message.

Step 3. Verify the Volumes Needed for Installation are Available

> **In this step, you will:**
> - Attach the volumes needed for installation.

1. If you are installing to 3390 skip to substep 7 on page 74.

2. See the installation worksheet (Table 8 on page 64) and query each DASD address to verify it is not already defined for a different device (see example below). If the address is already in use, choose a different *dasdaddr* and verify that address does not exist.

   For each DASD address:

   ```
   query dasdaddr
   HCPQVD040E Device dasdaddr does not exist
   Ready(00040);
   ```

   Record each verified DASD address in the DASD Address column of the installation worksheet (Table 8 on page 64) and in the "edevice" column of the SCSI device definition worksheet (Table 9 on page 64).

3. To define the SCSI disks, you need to know which FCP addresses are valid for your SCSI disks.

   If you know the FCP addresses associated with your SCSI disk addresses skip to substep 4.

   If only the channel path id is known, issue the Query CHPID command to display all FCP addresses associated with the path. For example, if the channel path is X'66', issue:

   ```
   query chpid 66
   Path 66 online to devices 517C 5319 550D 8100 8101 8102 8103 8104
   Path 66 online to devices 8105 8106 8107 8108 8109 810A 810B 810C
   Path 66 online to devices 810D 810E 810F 8110 8111 8112 8113 8114
   Path 66 online to devices 8115 8116 8117 8118 8119 811A 811B 811C
   Path 66 online to devices 811D 811E 811F
   ```

4. To define the SCSI disks, use the information recorded in the installation worksheet (Table 8 on page 64) and SCSI device definition worksheet (Table 9 on page 64).

   For each DASD:

   a. Select and record a free FCP address for each *edevice*. You should use one FCP device for the 610RES and a different (or multiple different) FCPs for the other disks.

   ```
   query fcp free
   ```

   Choose a device from the output. Record a FCP address for each edevice in the FCP Address column of the SCSI Device Definition Worksheet (Table 9 on page 64).

   b. Define the device address.

   ```
   set edevice dasdaddr type fba attr scsi fcp_dev fcpn wwpn www lun lll
   ```

Verify the Volumes Needed for Installation are Available

dasdaddr
> The edevice address from Table 9 on page 64.

fcpn
> FCP address (you should use one FCP device for the 610RES and a different, or multiple different, FCPs for the other disks).

www
> World Wide port number.

lll   LUN address.

5. Vary on the SCSI disks. Repeat for each disk.

   vary on *dasdaddr*

6. Note the following change needed in the SYSTEM CONFIG file for future IPLs.

   - When performing a first-level installation to SCSI disk, INSTDVD updates the SYSTEM CONFIG file to include EDEV statements that define the SCSI disks you used to install. If you are going to IPL these disks second-level, the EDEV statements need to be commented out of the SYSTEM CONFIG file before attempting to IPL second-level.

   For information on updating the SYSTEM CONFIG file, see *z/VM: CP Planning and Administration*.

7. Attach all the DASD listed in the installation worksheet (Table 8 on page 64) that are not already attached. Enter the following ATTACH command for each DASD.

```
attach dasdaddr  *
DASD dasdaddr ATTACHED TO userID dasdaddr
   ⋮
Ready; T=n.nn/n.nn hh:mm:ss
```

dasdaddr
> Address of the DASD.

Step 4. Run INSTDVD

> **In this step, you will:**
> - Run INSTDVD.

1. Run INSTDVD to restore the image files to DASD.

    instdvd
    **** NOW EXECUTING INSTDVD EXEC ON *date* AT *time* ****

```
        *** z/VM DVD INSTALL FORMAT/RESTORE PANEL ***


 PACK     DASD         DASD             DO NOT
 TYPE     LABEL       ADDRESS         FORMAT DASD
 =====================================================
 RES      610RES       ____               _
 SPOOL    610SPL       ____
 PAGE     610PAG       ____
 USER     610W01       ____
 USER     610W02       ____



  PF1 = HELP    PF3/PF12 = QUIT    PF5 = Process    ENTER = Refresh
```

Figure 6. z/VM DVD Install Format and Restore Panel (3390 Model Layout)

a. If you want to change the labels of the SPOOL, PAGE, or USER packs, fill in the DASD LABEL field with the new labels. You cannot change the 610RES label. If you are installing second-level and you wish to change installation pack labels, the installation user ID must be able to issue the DEFINE MDISK command. The IBM default privilege class for this command is class A. The DEFINE MDISK command also requires the user ID to have DEVMAINT on the OPTION directory statement in its directory entry.

b. Fill in the DASD addresses using the information from the installation worksheet (Table 8 on page 64). For more information and help, press F1.

c. Place a nonblank character in the DO NOT FORMAT DASD column only if you have already CP formatted your DASD for this installation using ICKDSF or CPFMTXA. The DASD will be labeled, but not formatted.

d. Press F5 to process.

    `F5`

    HCPDCX8377R YOU HAVE SELECTED TO FORMAT THE FOLLOWING DASD:

    HCPDCX8483R YOU HAVE SELECTED NOT TO FORMAT YOUR DASD.
                THIS ASSUMES YOU HAVE ALREADY FORMATTED THE
                DASD AND THIS EXEC WILL ONLY RELABEL AS
                FOLLOWS

    > Depending on whether you chose to format your DASD, you will receive either message HCPDCX8377R or HCPDCX8483R.

Run INSTDVD

```
610RES dasdaddr
lblspl dasdaddr
lblpag dasdaddr
lblW01 dasdaddr

DO YOU WANT TO CONTINUE ? (Y|N)
y

HCPDCX8490I NOW {FORMATTING|LABELING} DASD dasdaddr
HCPDCX8490I NOW {FORMATTING|LABELING} DASD dasdaddr
   .
   .
   .
HCPDCX8380I RESTORING IIS TO 610RES and lblspl
DVDLOAD: LOADING FILE '{FBAIIS00 | CKDIIS00} IMAGE *'
DVDLOAD: RC=0
{ECKDREST|MDREST}: WROTE nnnn {TRACKS|BLOCKS} ON addr, RC=0
HCPDCX8341I LOAD OF THE SYSTEM IIS COMPLETED SUCCESSFULLY

DVDLOAD: LOADING FILE '{FBASPL00 | CKDSPL00} IMAGE *'
   .
   .
   .
DVDLOAD: LOADING FILE '{FBASPLnn | CKDSPLnn} IMAGE *'
DVDLOAD: RC=0
{ECKDREST|MDREST}: WROTE nnnn {TRACKS|BLOCKS} ON addr, RC=0
HCPDCX8341I LOAD OF THE SYSTEM SPOOL SPACE COMPLETED SUCCESSFULLY

HCPDCX8490I NOW ALLOCATING DASD addr (RES PACK)
HCPDCX8490I NOW ALLOCATING DASD addr (SPOOLING)
HCPDCX8490I NOW ALLOCATING DASD addr (PAGING)
The minidisks with the END option specified in this directory will not be included
in the following DISKMAP file.

File USER DISKMAP A has been created.
HCPIND8392I INSTDIR EXEC ENDED SUCCESSFULLY
HCPIDV8341I CREATION OF USER DIRECTORY COMPLETED SUCCESSFULLY
```

Messages received for each minidisk loaded

```
HCPILB8440I NOW LOADING {FBAcuu | CKDcuu}, DISK xxx  OF yyy
DVDLOAD: LOADING FILE '{FBAcuu00 | CKDcuu00} IMAGE *'
   .
   .
   .
DVDLOAD: LOADING FILE '{FBAcuunn|CKDcuunn} IMAGE *'
DVDLOAD: RC=0
{ECKDREST|MDREST}: WROTE nnnn {TRACKS|BLOCKS} ON addr, RC=0
```

If the install fails while processing disks in this box, enter INSTDVD to retry. INSTDVD will resume
where processing failed.

HCPIRU8484R PLEASE PLACE THE SYSTEM RSU DVD IN
            THE DRIVE, THEN TYPE GO TO CONTINUE
            OR TYPE EXIT TO QUIT.

If you are using an RSU on DVD, place the DVD in the DVD drive and wait until the light on the DVD drive goes out or stops blinking, then enter GO.

go

If installing from an FTP server, where both the product and RSU DVD contents have been loaded, enter GO.

If you enter EXIT to quit, your installation will not complete successfully. You will need to run the INSTDVD command and enter GO to load the RSU files before you can continue with the installation procedures.

If the install fails while loading the RSU, enter INSTDVD to retry.

```
DVDLOAD: LOADING FILE '{FBA500000|CKD50000} IMAGE *'
   ⋮
DVDLOAD: LOADING FILE '{FBA500nn|CKD500nn} IMAGE *'
DVDLOAD: RC=0
{ECKDREST|MDREST}: WROTE nnnn {TRACKS|BLOCKS} ON addr, RC=0


z/VM USER DIRECTORY CREATION PROGRAM - VERSION 6 RELEASE 1.0
EOJ DIRECTORY UPDATED
HCPDIR494I User directory occupies nn disk pages
HCPSAL6798I VOLUME ID IS 610RES
HCPSAL6797I MINIDISK VOLID AT OFFSET nn IS MNTCF1
HCPIDV8341I SALIPL COMMAND HAS COMPLETED SUCCESSFULLY
hh:mm:ss  DASD nnnn ATTACHED TO SYSTEM 610RES BY MAINT
HCPIWF8338I NOW EXECUTING COPY CF1 and 2CC STEP
hh:mm:ss  DASD nnnn DETACHED SYSTEM BY MAINT
hh:mm:ss  DASD nnnn ATTACHED TO MAINT nnnn BY MAINT WITH DEVCTL
HCPIDV8376I INSTDVD EXEC ENDED SUCCESSFULLY
Ready;
```

Step 5. IPL the new z/VM System

> **In this step, you will:**
> - IPL the new z/VM system.

1. On the HMC, IPL the new z/VM system you loaded to 610RES.

   a. In the Hardware Management Console Workplace window, double-click the **Groups** icon in the Views pane.

   b. In the Groups Work Area pane, double-click the **CPC Images** icon.

   c. In the CPC Images Work Area pane, select the LPAR you are using for installation.

   d. In the Recovery pane, double-click the **Load** icon.

   e. In the Load window:
      - If installing on 3390:
         1) Select **Normal**.
         2) In the **Load address** field, enter the address of 610RES.
         3) In the **Load parameter** field, enter SYSG.
         4) Click **OK**.
      - If installing on FBA (SCSI):
         1) Select **SCSI**.
         2) In the **Load address** field, enter the address of the FCP (that is, the FCP address not the EDEV address) used to define 610RES.
         3) In the **Load parameter** field, enter SYSG.
         4) In the **Worldwide port name** field, enter the name used to define 610RES.
         5) In the **Logical unit number** field, enter the 16 character LUN address of 610RES.
         6) In the **Boot program selector** field, enter 0 (zero).
         7) In the **Boot record logical block address** field, enter the 16 character value 00000000000000C8.
         8) Click **OK**.

      The Load task Confirmation prompt is displayed.

   f. Click **Yes** to continue.

   g. Messages indicating the status of the load are displayed in the Load Progress window. When a message is displayed indicating the load is successful, click **OK** to close the window and return to the Integrated 3270 Console window for the LPAR you are using for installation.

   The Stand Alone Program Loader panel displays on the integrated 3270 console after issuing the IPL command.

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

DEVICE NUMBER:   dasdaddr   MINIDISK OFFSET:   nnnnnnnn   EXTENT:  1

MODULE NAME:    CPLOAD     LOAD ORIGIN:     2000

------------------------------IPL PARAMETERS-------------------------------
cons=sysg pdvol=edevaddr


-------------------------------COMMENTS------------------------------------




---------------------------------------------------------------------------



9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 7. Sample Stand Alone Program Loader Panel

2. Move the cursor to the IPL PARAMETERS field and enter:

cons=sysg pdvol=_edevaddr_

Note: If using 3390, do not use **pdvol=**_edevaddr_.

dasdaddr
> Device address of 610RES (as shown in Figure 7) for 3390 or the FCP address for the SCSI (FBA).

edevaddr
> Device address of 610RES for SCSI (FBA).

3. Press F10 to load.

`F10`

```
hh:mm:ss z/VM V6 R1.0
          SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
          LOADED FROM 610RES
hh:mm:ss *****************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*  *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.           *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE         *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                        *
hh:mm:ss *                                       *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS  *
hh:mm:ss *   MACHINES                            *
hh:mm:ss *****************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on blocks/cylinders xxx through xxx.
```

IPL the new z/VM system

.
.
.

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Note: If you receive informational message HCPIIS954I for your 610RES volume (for example, DASD 5016 VOLID 610RES IS A DUPLICATE OF DASD 5516), you can ignore this message and proceed. For any other occurrence of HCPIIS954I, you have duplicate volumes with the same label. Make note of the duplicate volumes and enter SHUTDOWN at the next prompt. Relabel the duplicate volumes and then go back to substep 1 on page 78.

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
         (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
```
cold drain noautolog

Because there is no data or accounting information to recover, use COLD DRAIN to request a cold start. Use NOAUTOLOG at this point because you cannot have the servers and all user IDs logged on.

```
NOW hh:mm:ss {EST|EDT} weekday yyyy-mm-dd
Change TOD clock (yes|no)
```
no

CP logs on the primary system operator user ID (OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available    nnnn
```

Note: Depending on the type of spool files available, you might receive the following prompt:

Spool files prompt

```
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files on offline volumes      {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with I/O errors         {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with control errors     {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files to be discarded         {nnnn|NONE}
hh:mm:ss HCPWRS2513I                                     -------
hh:mm:ss HCPWRS2513I Total files to be deleted             nnnn
hh:mm:ss HCPWRS2511A
hh:mm:ss HCPWRS2511A Spool files will be deleted because of
                     COLD start.
hh:mm:ss HCPWRS2511A No files have been deleted yet.

hh:mm:ss HCPWRS2511A To continue COLD start and delete files,
                     enter GO.
hh:mm:ss HCPWRS2511A To stop COLD start without deleting
                     files, enter STOP.
```
go

The system gives you an opportunity to stop the cold start and save your spool files. You do not need to save any spool files at this time; answer GO.

```
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss DASD nnnn dump unit CP IPL pages nnnn
hh:mm:ss HCPAAU2700I System gateway ZVMV6R10 identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES:   NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT hh:mm:ss EDT DAY mm/dd/yy
hh:mm:ss GRAF  nnnn LOGON  AS  OPERATOR USERS = n
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnnn RDR, nnnnnnnn PRT,      NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT.
```

4. Disconnect from the OPERATOR user ID.

> **disconnect**
> DISCONNECT AT hh:mm:ss {EST|EDT} *weekday mm/dd/yy*
>
> Press enter or clear key to continue

> `ENTER`

5. Log on as MAINT.

> `ENTER`   The default password for MAINT is MAINT.
> **logon maint**
>
> HCPLNM102E 080D DASD force R/O; R/W by operator
> HCPLNM101E 080E DASD force R/O; R/O by operator
>
> z/VM Version 6 Release 1.0, Service Level 0000 (*64*-bit),
> built on IBM Virtualization Technology
> There is no logmsg data
> FILES: *nnnn* RDR,   NO PRT,   NO PUN
> LOGON AT *hh:mm:ss* EDT *DAY mm/dd/yy*
>
> z/VM V6.1.0   *yyyy-mm-dd hh:mm*

> `ENTER`
> Ready; T=*n.nn/n.nn hh:mm:ss*

Step 6. Run INSTVM

> **In this step, you will:**
>
> • Run INSTVM with the DVD option to complete installation tasks.
>
> **Note:** Running the INSTVM requires a full screen terminal with at least 20 lines.

1. IPL CMS to verify the CMS saved system is available.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER

   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   Note: If the CMS saved system does not exist, there is a problem with spool space, resolve the problem before you attempt to continue.

2. Run INSTVM to complete the installation of z/VM from DVD.

   ```
   instvm dvd
   ****  NOW EXECUTING INSTVM EXEC ON date AT time  ****
   HCPPLD8338I  NOW EXECUTING ALLOCATION OF SYSTEM RESIDENCE PACK
   HCPPLD8338I NOW EXECUTING UPDATE OF $MOVE$ $FILE$ C
   HCPPLD8341I POSTLOAD FUNCTION "INSTALLATION CLEANUP" COMPLETED SUCCESSFULLY
   HCPPLD8338I NOW EXECUTING DIRECTORY CLEANUP
   HCPPLD8341I POSTLOAD FUNCTION "DIRECTORY CLEANUP AND ADD HELP DISK LINKS" COMPLETED SUCCESSFULLY
   HCPPLD8338I NOW EXECUTING THE DIRECTXA COMMAND TO BRING THE UPDATED USER DIRECTORY ONLINE
   HCPPLD8341I POSTLOAD FUNCTION "BRING UPDATED DIRECTORY ONLINE" COMPLETED SUCCESSFULLY

   HCPPLD8392I POSTLOAD EXEC ENDED SUCCESSFULLY
   DMSACC724I 2CC replaces C (2CC)
   HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVU
   AUTO LOGON  ***        VMSERVU  USERS = n
   HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the IPL
     command processor.
   VMSERVU : z/VM V6.1.0    yyyy-mm-dd hh:mm
   VMSERVU : DMSACP723I B (193) R/O
   VMSERVU : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
   VMSERVU : DMSWFV1121I VMSERVU DMSPARMS A1 will be used for FILESERV processing
   VMSERVU : DMSWFV1121I VMSYSU POOLDEF A1 will be used for FILESERV processing
   VMSERVU : DMS5BB3045I Ready for operator communications
   HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVR
   AUTO LOGON  ***        VMSERVR  USERS = n
   HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
     command processor.
   VMSERVR : z/VM V6.1.0    yyyy-mm-dd hh:mm
   VMSERVR : DMSACP723I B (193) R/O
   VMSERVR : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
   VMSERVR : DMSWFV1121I VMSERVR DMSPARMS A1 will be used for FILESERV processing
   VMSERVR : DMSWFV1121I VMSYSR POOLDEF A1 will be used for FILESERV processing
   VMSERVR : DMS6LG3335I CRR log recovery begins at mm-dd-yy hh:mm:ss
   VMSERVR : DMS6LG3335I CRR log recovery completes at mm-dd-yy hh:mm:ss
   VMSERVR : DMS5BB3045I Ready for operator communications
   ```

Extra messages received if all products were loaded to minidisks

```
DASD 0804 DETACHED
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***        VMSERVS  USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = CONTROL
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = CONTROL
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00001
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00001
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00002
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00002
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG1
VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG1
VMSERVs : DMS4PD3400I Initializing begins for DDNAME = LOG2
VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG2
VMSERVS : DMS5FD3032I File pool server has terminated
VMSERVS : DMSWFV1120I File VMSYS POOLDEF A1 created or replaced
VMSERVS : DMSWFV1117I FILESERV processing ended at hh:mm:ss on dd month yyyy
RDR FILE nnnn SENT FROM VMSERVS  PUN WAS nnnn RECS nnnn CPY  001 A NOHOLD NOKEEP
VMSERVS : File FILESERV VALID A3 sent to MAINT at ZVMV6R10 on mm/dd/yy hh:mm:ss
VMSERVS : Ready; T=n.nn/n.nn hh:mm:ss

HCPQCS150A User VMSERVS has issued a VM read
VMSERVS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn.nn TOTCPU= nnn:nn.nn
VMSERVS : LOGOFF AT hh:mm:ss timezone day mm/dd/yy BY MAINT
USER DSC   LOGOFF AS  VMSERVS  USERS = 2     FORCED BY MAINT
DASD 0804 DETACHED
```

```
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***        VMSERVS  USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMSWFV1121I VMSYS POOLDEF A1 will be used for FILESERV processing
VMSERVS : DMS5BB3045I Ready for operator communications
```

You might not receive one or more of the following messages

```
HCPIDV8338I UPDATING SYSTEM TABLES AND CLEANING UP FILEPOOL DIRECTORIES
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
```

```
HCPIFP8392I INSTPOOL EXEC ENDED SUCCESSFULLY
HCPIVM8392I INSTVM EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Run INSTVM

After this point, when you IPL the system, you should use the default IPL parameters and should no longer use COLD DRAIN NOAUTOLOG.

Step 7. Run SERVICE

> **In this step, you will:**
>
> • Load the service files from the recommended service upgrade (RSU) servlink.

1. Log on as MAINT.

   <kbd>ENTER</kbd>   The default password for MAINT is MAINT.
   logon maint
       ⋮
   Ready; T=*n.nn/n.nn hh:mm:ss*

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid      Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1         2               n                n-nn%             nn%
   userid2         2               n                n-nn%             nn%
       ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. IPL CMS.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   <kbd>ENTER</kbd>
   Ready; T=*n.nn/n.nn hh:mm:ss*

4. Access the disk containing the RSU servlink as C.

   ```
   access 500 c
   DMSACC724I 500 replaces C (2CC)
   Ready;
   ```

5. Get the file names of the RSU envelopes on the 500 disk.

   listfile * servlink c
   610*x*RSU*n* servlink c   *x*   RSU number.
   610*x*RSU*n* servlink c
                                              n   Volume number.

6. Run SERVICE.

   service all *envfn1 envfn2 ...*
   VMFSRV2760I SERVICE processing started   *envfn1*
       ⋮   File name for the first envelope 610*x*RSU1.
   VMFSRV2760I SERVICE processing completed
   successfully   *envfn2 ...*
   Ready; T=*n.nn/n.nn hh:mm:ss*   File name for the second envelope 610*x*RSU2,
                                                    and so on.

7. View the SERVICE messages log (VMFVIEW SERVICE) and handle any nonzero return code, if necessary. Base your action on the following table.

Run SERVICE

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW SERVICE.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Go to "Step 8. Run PUT2PROD" on page 87.
A return code greater than 4	1. Issue VMFVIEW SERVICE and check for warning and error messages.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Restart by issuing the SERVICE command as displayed in the message VMFSRV2310W.
	5. If you receive a nonzero return code, repeat substep 7 on page 85.
	6. Go to "Step 8. Run PUT2PROD" on page 87.

Note: You can ignore the following messages and their associated VMF1966W message.

- `DMSLIO201W The following names are undefined: ISPLINK ARIPRDI`
- `DMSLIO201W The following names are undefined: DMSDSCSC`
- `DMSLIO201W The following names are undefined: DMSUSRX1 DMSUSRX2`
- `DMSLIO202W Duplicate identifier` (Associated with object IOACMAIN MODULE.)
- `DMSLKD004W Warning messages issued` (Associated with objects ILBONBL, ILBONTR, ILBOREC, ILBORNT, ILBOSND, ILBOSNT, and ILBOSSN.)
- `VMFSRV1221W The Stand Alone Dump Utility must be rebuilt.`

8. Use the VMFUPDAT SYSMEMO command to review any memos that were received with this service.

Step 8. Run PUT2PROD

> **In this step, you will:**
> • Run PUT2PROD to place the product into production.

1. Log on as MAINT.

   ENTER   The default password for MAINT is MAINT.
   ```
   logon maint
       .
       .
       .
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid     Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1          2                    n              n-nn%        nn%
   userid2          2                    n              n-nn%        nn%
       .
       .
       .
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. IPL CMS and access the VMSES/E test build disk.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   ```
   access 5E6 B
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Run PUT2PROD.

   ```
   put2prod
   VMFP2P2760I PUT2PROD processing started
       .
       .
       .
   VMFP2P2760I PUT2PROD processing completed successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Handle a nonzero return code. Base your action on the following table.

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW PUT2PROD.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.

Run PUT2PROD

If you received . . .	Then . . .
A return code greater than 4	1. Issue VMFVIEW PUT2PROD and check for warning and error messages.
	2. Ignore any warning messages listed in the note below in this table. Take appropriate actions based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Issue IPL CMS.
	5. Issue PUT2PROD.
	6. If you receive a nonzero return code, repeat substep 5 on page 87.

Note: You can ignore the following messages.

- DMSDCS1083E Saved segment $$DMY$$ does not exist
- DMSWLG292W Text data will be loaded at '20000'x in user area; user data may be overwritten.
- DTCPRD3043W File *fn ft fm* has been updated; It's contents should be reviewed for changes that may affect your use of this file.
- TCPMSM0002W File TCPIP DATA cannot be located
- TCPMSM0002W TCP/IP appears not to have been configured

Step 9. Shut Down and Re-IPL the System

In this step, you will:

- Shut down the V6.1 system.
- IPL the V6.1 system using the new CP nucleus.

1. Shut down and re-IPL the V6.1 system.

```
shutdown reipl
SYSTEM SHUTDOWN STARTED
Ready; T=n.nn/n.nn hh:mm:ss
```

The shut down message is displayed on all enabled consoles.

The real system console shows disabled PSW wait state.

```
HCPWRP963I STARTING SHUTDOWN STEP . . .
⋮
HCPWRP962I VM SHUTDOWN COMPLETED IN n SEC
HCPWRP9277I SYSTEM TERMINATION COMPLETE,
           ATTEMPTING RESTART
```

HCP963I, HCP962I, and HCP9277I will appear on the operator's console.

```
hh:mm:ss HCPWRP9277I SYSTEM TERMINATION COMPLETE.
           ATTEMPTING RESTART
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL
hh:mm:ss z/VM V6 R1.0
           SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
           LOADED FROM 610RES
hh:mm:ss ******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*  *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983, *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.             *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE         *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                         *
hh:mm:ss *                                        *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS  *
hh:mm:ss *   MACHINES                             *
hh:mm:ss ******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume volid (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xx through xx.
   ⋮
```

Note: If you receive informational message HCPIIS954I for your 610RES volume (for example, DASD 505A VOLID 610RES IS A DUPLICATE OF DASD 5516), you can ignore this message and proceed. For any other occurrence of HCPIIS954I, you have duplicate DASD with the same label and must correct this error before continuing.

```
hh:mm:ss The directory on volume 610RES at address nnnn
           has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available      {nnnn|none}
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
   ⋮
hh:mm:ss FILES:     nnn RDR,      nnn PRT,      nnn PUN
hh:mm:ss LOGON AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
   ⋮
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnn RDR, nnnnnnn PRT,      NO PUN
```

Shut Down and Re-IPL the System

Message HCP952I tells you the amount of storage available.

The FILES message refers to operator spool files.

CP automatically disconnects from the primary system operator user ID (OPERATOR).

```
hh:mm:ss HCPUSO967I Disconnect OPERATOR - system
            restarted SHUTDOWN and system console
            not VM operator console
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
hh:mm:ss DISCONNECT AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
hh:mm:ss Press enter or clear key to continue
```

ENTER　　　　　　　　　　　　　　　　　Press Enter or the Clear key to continue.

2. Log on as MAINT.

ENTER　　　　　　　　　　　　　　　　　The password for MAINT is MAINT.

```
logon maint
   .
   .
   .
Ready; T=n.nn/n.nn hh:mm:ss
```

┌─ **What to do next** ───┐
See Part 3, "Post z/VM System Installation," on page 129.
└───┘

Chapter 6. Second–Level DVD Installation Method

> **In this chapter, you will:**
> - Set up the user ID for installation.
> - Run the DVDPRIME EXEC.

Base your choice on which source you will use to perform a second-level installation.

If you chose to install from a . . .	Then see . . .
DVD drive	"From a DVD Drive" on page 92
FTP server directory	"From an FTP Server Directory" on page 96
VM minidisk	"From a VM Minidisk" on page 100

From a DVD Drive

Step 1. Set up the User ID for Installation

┌─ **In this step, you will** ───┐

• Complete the installation worksheet.

• Load the z/VM system DVD in the DVD drive.

• Log on to your first-level user ID.

└──┘

1. Complete the installation worksheet (Table 8 on page 64) in Chapter 4, "Plan Your DVD Installation," on page 59.

2. Load the z/VM system DVD in the DVD drive of the FTP server you are using for installation. Wait until the light on the DVD drive goes out or stops blinking to continue.

3. Log on to the first-level user ID that you will use to install V6.1.

4. Make sure your user ID meets the "second-level installation user ID requirements" on page 61.

5. Spool the console to make sure it is empty and started.

    ```
    spool console close start *
    RDR FILE filenum  SENT FROM userid  CON WAS nnnn RECS nnnn CPY  nnn T NOHOLD NOKEEP
    Ready;
    ```

6. Verify you have a 2222 read/write minidisk with exactly 5 cylinders if installing to 3390 or 7200 512-KB blocks if installing to FBA.

    ```
    query v 2222
    DASD 2222 3390 xxxxxx  R/W           5 CYL ON DASD  nnnn SUBCHANNEL = nnnn
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

7. Access the disk that contains INSTPIPE module. The INSTPIPE module is shipped on the MAINT 2CC minidisk.

    ```
    access 2CC c
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

8. Copy the files needed to run DVDPRIME from the DVD to the 2222 minidisk.

    ```
    instpipe
    Ready; T=n.nn/n.nn hh:mm:ss
    pipe ftpget -h host -u userID -p password -d ftpdir/CPDVD
    -v BEF -DVDEOF -f ddd222* |UNPACK| restcmd 2222
    ```

host
> IP address or FTP host name.

userID
> User ID used to log on to the FTP server.

password
> Password for the user ID used to log on to the FTP server.

ftpdir
> Path to the DVD drive with /CPDVD appended to the end of the path.

ddd
> CKD for 3390 or FBA for FBA. These must be entered in uppercase.

restcmd
> ECKDREST for 3390 or MDREST for FBA.
> **Note:** In the above PIPE command you may use a different stage separator by including the **stagesep** keyword. For example:
> **pipe (stagesep !) ftpget -h** *host* **-u** *userID* **-p** *password* **-d** *ftpdir***/CPDVD -v BEF -DVDEOF -f** *ddd***222* !UNPACK!** *restcmd* **2222**

```
{FBA222* | CKD222*}
DMSRXS1408W File TCPIP DATA * not found          You might not receive this message.
{MDREST|ECKDREST}: WROTE nnn {BLOCKS|TRACKS} ON 2222, RC=0
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 2. Run DVDPRIME

```
┌─ In this step, you will: ──────────────────────────────────────────┐
│  • Run the DVDPRIME to load the 22CC and 2CF1 disks.               │
└────────────────────────────────────────────────────────────────────┘
```

1. IPL CMS to remove the old INSTPIPE module from storage.

   > **ipl cms**
   > z/VM V6.1.0   *yyyy-mm-dd hh:mm*

   ENTER
   > Ready; T=*n.nn/n.nn hh:mm:ss*

2. Access the 2222 disk as C.

   > **access 2222 c**
   > Ready; T=*n.nn/n.nn hh:mm:ss*

3. Verify the first occurrence of INSTPIPE MODULE is on disk C. Remove or rename all other copies.

   > **listfile instpipe module ***
   > INSTPIPE MODULE C1
   > Ready; T=*n.nn/n.nn hh:mm:ss*

4. Run DVDPRIME with the *dasdtype* you are using to install.

   > **dvdprime** *dasdtype* **(dvd**
   >   *dasdtype*
   >   3390 or FBA.
   > **** NOW EXECUTING DVDPRIME EXEC ON *date* AT *time* ****

5. Complete the DVDPRIME PANEL by filling in the information for your FTP server.

```
┌──────────────────────────────────────────────────────────────────────┐
│                    *** DVDPRIME PANEL ***                              │
│                                                                        │
│   Enter information in empty fields and press PF5 to process.          │
│                                                                        │
│  HOSTNAME OR IP ADDRESS:        _____       │
│                                                                        │
│  FTP USERID:                    _____       │
│                                                                        │
│  FTP PASSWORD:                  _____       │
│                                                                        │
│  DVD PATHNAME:                  _____       │
│                                                                        │
│       PF1 = HELP   PF3/PF12 = QUIT   PF5 = Process   ENTER = Refresh    │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 8. Installation Planning Panel

> **HOSTNAME OR IP ADDRESS:**
>
> > This field should be filled in with the IP ADDRESS or HOSTNAME of your z/VM system. A host name must begin with a letter, and may contain only alphanumeric characters (A-Z,a-z,0-9) or hyphens (-). For example: **MyOrg-VM01**
> >
> > Specify an IP address in dotted-decimal form for your IP version 4 interface. For example: **129.42.16.99**
>
> **FTP USERID:**

User ID used to log on to the FTP server. Must be 40 or less alphanumeric characters.

FTP PASSWORD:

Password used to log on to the FTP server. Must be 40 or less alphanumeric characters.

DVD PATHNAME:

Enter the path to the DVD drive according to the conventions used by your server and append CPDVD to the end of your path. The maximum length is 40 characters. For example:

```
mydvddrive/CPDVD
cpdvd
e:/cpdvd
vmftpdir/CPDVD
```

6. Press F5 to process.

> **F5**

```
HCPDVP8440I NOW LOADING 22CC DISK
{FBA222* | CKD222*}
DMSRXS1408W File TCPIP DATA * not found          You might not receive this message.


{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 22CC, RC=0

HCPDVP8440I NOW LOADING 2CF1 DISK
{FBACF1* | CKDCF1*}
DMSRXS1408W File TCPIP DATA * not found          You might not receive this message.


PROCESSING {FBACF100 | CKDCF100}
    .
    .
    .
PROCESSING  {FBACF10n | CKDCF10n}
{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF1, RC=0

HCPDVP8392I DVDPRIME EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

What to do next

See Chapter 7, "Load the System Image," on page 107.

From an FTP Server Directory

Step 1. Set up the User ID for Installation

> **In this step, you will**
> * Complete the installation worksheet.
> * Upload the contents of the z/VM system DVD and the RSU DVD to an FTP server directory.
> * Log on to your first-level user ID.

1. Complete the installation worksheet (Table 8 on page 64) in Chapter 4, "Plan Your DVD Installation," on page 59.

2. Upload the contents of the DVD to the FTP server directory.

   a. Create a new directory on the FTP server. The maximum length of the directory path name is 40 characters. The FTP server will need at least 3 GB of free space.

   b. Upload the contents of each DVD to the directory. After the contents of the z/VM system DVD have been uploaded, upload the contents of the RSU DVD to the same directory, overwriting any duplicate files.

3. Log on to the first-level user ID that you will use to install V6.1.

4. Make sure your user ID meets the "second-level installation user ID requirements" on page 61.

5. Spool the console to make sure it is empty and started.

   ```
   spool console close start *
   RDR FILE filenum  SENT FROM userid  CON WAS nnnn RECS nnnn CPY  nnn T NOHOLD NOKEEP
   Ready;
   ```

6. Verify you have a 2222 read/write minidisk with exactly 5 cylinders if installing to 3390 or 7200 512-KB blocks if installing to FBA.

   ```
   query v 2222
   DASD 2222 3390 xxxxxx  R/W         5 CYL ON DASD  nnnn SUBCHANNEL = nnnn
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

7. Access the disk that contains INSTPIPE module. The INSTPIPE module is shipped on the MAINT 2CC minidisk.

   ```
   access 2CC c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

8. Copy the files needed to run DVDPRIME from the FTP server to the 2222 minidisk.

   ```
   instpipe
   Ready; T=n.nn/n.nn hh:mm:ss
   pipe ftpget -h host -u userID -p password -d ftpdir
    -v BEF -DVDEOF -f ddd222* |UNPACK| restcmd 2222
   ```

host
> IP address or FTP host name.

userID
> User ID used to log on to the FTP server.

password
> Password for the user ID used to log on to the FTP server.

ftpdir
> Path to the FTP server directory.

ddd
> CKD for 3390 or FBA for FBA. These must be entered in uppercase.

restcmd
> ECKDREST for 3390 or MDREST for FBA.
> **Note:** In the above PIPE command you may use a different stage separator by including the **stagesep** keyword. For example:
> **pipe (stagesep !) ftpget -h** *host* **-u** *userID* **-p** *password* **-d** *ftpdir* **-v BEF -DVDEOF -f** *ddd***222* !UNPACK!** *restcmd* **2222**

```
{FBA222* | CKD222*}
DMSRXS1408W File TCPIP DATA * not found                You might not receive this message.
{MDREST|ECKDREST}: WROTE nnn {BLOCKS|TRACKS} ON 2222, RC=0
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 2. Run DVDPRIME

> **In this step, you will:**
> - Run the DVDPRIME to load the 22CC and 2CF1 disks.

1. IPL CMS to remove the old INSTPIPE module from storage.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   `ENTER`
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Access the 2222 disk as C.

   ```
   access 2222 c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Verify the first occurrence of INSTPIPE MODULE is on disk C. Remove or rename all other copies.

   ```
   listfile instpipe module *
   INSTPIPE MODULE C1
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Run DVDPRIME with the *dasdtype* you are using to install.

   ```
   dvdprime dasdtype (server
   ```
   dasdtype
   3390 or FBA.
   ```
   **** NOW EXECUTING DVDPRIME EXEC  ON date AT time ****
   ```

5. Complete the DVDPRIME panel by filling in the information for your FTP server.

```
                   *** DVDPRIME PANEL ***

  Enter information in empty fields and press PF5 to process.

HOSTNAME OR IP ADDRESS:        _____

FTP USERID:                    _____

FTP PASSWORD:                  _____

DVD PATHNAME:                  _____

     PF1 = HELP   PF3/PF12 = QUIT   PF5 = Process   ENTER = Refresh
```

Figure 9. DVDPRIME Panel

HOSTNAME OR IP ADDRESS:

> This field should be filled in with the IP ADDRESS or HOSTNAME of your z/VM system. A host name must begin with a letter, and may contain only alphanumeric characters (A-Z,a-z,0-9) or hyphens (-). For example: **MyOrg-VM01**

> Specify an IP address in dotted-decimal form for your IP version 4 interface. For example: **129.42.16.99**

FTP USERID:

User ID used to log on to the FTP server. Must be 40 or less alphanumeric characters.

FTP PASSWORD:

Password used to log on to the FTP server. Must be 40 or less alphanumeric characters.

DVD PATHNAME:

Enter the path to the FTP server directory according to the conventions used by your server. The maximum length is 40 characters. For example:

```
mydvddrive/ftpdir
e:/dirname
vmftpdir
```

6. Press F5 to process.

F5

```
HCPDVP8440I NOW LOADING 22CC DISK
{FBA222* | CKD222*}
DMSRXS1408W File TCPIP DATA * not found          You might not receive this message

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 22CC, RC=0

HCPDVP8440I NOW LOADING 2CF1 DISK
{FBACF1* | CKDCF1*}
DMSRXS1408W File TCPIP DATA * not found          You might not receive this message.

PROCESSING {FBACF100 | CKDCF100}
   :
PROCESSING  {FBACF10n | CKDCF10n}
{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF1, RC=0

HCPDVP8392I DVDPRIME EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

What to do next

See Chapter 7, "Load the System Image," on page 107.

From a VM Minidisk

Step 1. Set up the User ID for Installation

> **In this step, you will**
> - Complete the installation worksheet.
> - Log on to your first-level user ID.
> - Copy the contents of the z/VM system DVD and the RSU DVD to a VM minidisk.
> - Restore the DVDPRIME files to the 2222 minidisk.

1. Complete the installation worksheet (Table 8 on page 64) in Chapter 4, "Plan Your DVD Installation," on page 59.

2. Log on to the first-level user ID that you will use for installation.

3. Make sure your user ID meets the "second-level installation user ID requirements" on page 61.

4. Link to the minidisk to be used to contain the image files.

5. Access the minidisk address as W.

   ```
   access diskaddr w
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   diskaddr
   > Address of the CMS-formatted minidisk where the DVD files are to be copied.

6. Copy the contents of the z/VM system DVD to a VM minidisk accessed as W. The minidisk needs to have the equivalent of at least 4500 cylinders of available 3390 DASD. The minidisk must not contain any other IMAGE files.

   Note: If you have an FTP server with access to a DVD drive, continue with this substep. If you do not have an FTP server with access to a DVD drive, use the upload function of your terminal emulator to copy the contents of the z/VM system DVD and the RSU DVD to the minidisk. See Appendix J, "Using a Terminal Emulator to Upload Files from a DVD," on page 219. After uploading the files using your terminal emulator, continue with substep 9 on page 103.

   a. Load the z/VM system DVD in the DVD drive of the FTP server you are using for installation. Wait until the light on the DVD drive goes out or stops blinking before continuing.

   b. Access the TCPIP client code disk.

   ```
   link tcpmaint 592 592 rr
   Ready; T=n.nn/n.nn hh:mm:ss

   access 592 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   c. Copy the files from the z/VM system DVD.

   ```
   terminal more 1 1
   Ready;

   ftp
   VM TCP/IP FTP Level nnn
   OPEN (name of foreign host):
   ```

host

Connecting to *host*
220 FTP Server ready...
USER (identify yourself to the host):
userID

>>>USER *userID*
331 User name okay, need password.
Password:
password

>>>PASS ********
230 User logged in, proceed
Command:
cd *ftpdir***/CPDVD**

>>>CWD *ftpdir*/CPDVD
250 Directory changed to *ftpdir*/CPDVD
Command:
lcd w

Local directory mode is 'W'

Command:
binary f 1028
>>>TYPE i
200 Type set to I.
Command:
mget *ddd*＊

>>>TYPE a
200 Type set to A
>>>PORT*host*
200 PORT Command successful.
>>>NLST *ddd*＊
150 Opening ASCII mode data connection for /bin/ls.
226 Transfer complete.
>>>TYPE i
200 Type set to I.

host
    IP address or FTP host name.

userID
    User ID used to log on to the FTP server.

password
    Password for the user ID used to log on to the
    FTP server.

ftpdir
    Path to the DVD drive with /CPDVD appended to
    the end of the path. For example, e:/CPDVD.

ddd
    CKD for 3390 or FBA for FBA. These must be
    entered in uppercase.

The following is repeated for each file transferred

```
>>>PORT host
200 PORT Command successful.
>>>RETR dddnnnnn
150 Opening BINARY mode data connection for dddnnnnn (nnnnnnn Bytes).
nnnnnnn bytes transferred.
226 Transfer complete.
nnnnnnn bytes transferred in nn.nnn seconds. Transfer rate nnn.nn Kbytes/sec.
```

Command:
quit
>>>QUIT
221 Goodbye!
Ready;

From a VM Minidisk - Set up the User ID for Installation

7. If you used your terminal emulator to upload the contents of the RSU DVD, skip to substep 9 on page 103. Otherwise, copy the contents of the RSU DVD to the same VM minidisk used for the z/VM system DVD.

   a. Load the RSU DVD in the DVD drive of the FTP server you are using for installation. Wait until the light on the DVD drive goes out or stop blinking before continuing.

   b. Copy the RSU files from the DVD.

```
ftp
VM TCP/IP FTP Level nnn
OPEN (name of foreign host):
host

Connecting to host
220 FTP Server ready...
USER (identify yourself to the host):
userID

>>>USER userID
331 User name okay, need password.
Password:
password

>>>PASS ********
230 User logged in, proceed.
Command:
cd ftpdir/CPDVD

>>>CWD ftpdir/CPDVD
250 Directory changed to ftpdir/CPDVD
Command:
lcd w
Local directory mode is 'W'

Command:
binary f 1028
>>>TYPE i
200 Type set to I.
Command:
mget ddd* (replace



>>>TYPE a
200 Type set to A
>>>PORT host
200 PORT Command successful.
>>>NLST ddd*
150 Opening ASCII mode data connection for /bin/ls.
226 Transfer complete.
>>>TYPE i
200 Type set to I.
```

host
   IP address or FTP host name.

userID
   User ID used to log on to the FTP server.

password
   Password for the user ID used to log on to the FTP server.

ftpdir
   Path to the DVD drive with /CPDVD appended to the end of the path. For example, e:/CPDVD.

ddd
   CKD for 3390 or FBA for FBA. These must be entered in uppercase.

```
  ┌─ The following is repeated for each file transferred ──────────────┐
  │ >>>PORT host                                                       │
  │ 200 PORT Command successful.                                       │
  │ >>>RETR dddnnnnn                                                   │
  │ 150 Opening BINARY mode data connection for dddnnnnn (nnnnnnn Bytes).│
  │ nnnnnnn bytes transferred.                                         │
  │ 226 Transfer complete.                                             │
  │ nnnnnnn bytes transferred in nn.nnn seconds. Transfer rate nnn.nn Kbytes/sec.│
  └────────────────────────────────────────────────────────────────────┘

  Command:
  quit
  >>>QUIT
  221 Goodbye!
  Ready;
```

8. The MGET command copied the files with a file type of $DEFAULT. The file type needs to be renamed to IMAGE.

   ```
   terminal more 50 10
   Ready;

   rename * $default w = image =
   Ready;
   ```

9. Spool the console to make sure it is empty and started.

   ```
   spool console close start *
   RDR FILE filenum  SENT FROM userid  CON WAS nnnn RECS nnnn CPY  nnn T NOHOLD NOKEEP
   Ready;
   ```

10. Access the disk that contains INSTPIPE module. The INSTPIPE module is shipped on the MAINT 2CC minidisk.

    ```
    access 2CC c
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

11. Verify you have a 2222 read/write minidisk of exactly 5 cylinders if installing to 3390 or 7200 512-KB blocks if installing to FBA .

    ```
    query v 2222
    DASD 2222 3390 xxxxxx  R/W        5 CYL ON DASD  nnnn SUBCHANNEL = nnnn
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

12. Verify the image file has a **fixed** (F) file format and a logical record length (LRECL) of **1028**.

    If the file format or logical record length is incorrect, the image file was copied incorrectly. Erase the image file off the minidisk and copy the image file again using the correct parameters. Repeat the process starting with substep 6 on page 100.

    ```
    listfile *222* image w (alloc
    FILENAME FILETYPE FM FORMAT LRECL      RECS      BLOCKS
    xxx22200 IMAGE    W1 F       1028      xxxx      xxxx
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

From a VM Minidisk - Set up the User ID for Installation

13. Restore the files needed to run DVDPRIME to the 2222 minidisk.

```
instpipe
Ready; T=n.nn/n.nn hh:mm:ss

pipe dvddecod ddd222 image w |UNPACK| restcmd 2222

INVALID INPUT - RECORD LENGTH ERROR AT RECORD COUNT
{MDREST|ECKDREST}: WROTE nnn {BLOCKS|TRACKS} ON 2222, RC=0
Ready (00008); T=n.nn/n.nn hh:mm:ss
```

ddd
    CKD for 3390 or FBA for FBA. These must be entered in uppercase.

restcmd
    ECKDREST for 3390 or MDREST for FBA.
Note: In the above PIPE command you may use a different stage separator by including the **stagesep** keyword. For example:
pipe (stagesep !) dvddecod *ddd***222 image w !UNPACK!** *restcmd* **2222**

Step 2. Run DVDPRIME

In this step, you will:

• Run the DVDPRIME to load the 22CC and 2CF1 disks.

---

1. IPL CMS to remove the old INSTPIPE module from storage.

    ```
    ipl cms
    z/VM V6.1.0    yyyy-mm-dd hh:mm
    ```

    [ENTER]
    ```
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

2. Access the minidisk address that contains the image files as W.

    ```
    access diskaddr w
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

    > *diskaddr*
    > Address of the minidisk where the DVD image files were copied.

3. Access the 2222 disk as C.

    ```
    access 2222 c
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

4. Verify the first occurrence of INSTPIPE MODULE is on disk C. Remove or rename all other copies.

    ```
    listfile instpipe module *
    INSTPIPE MODULE C1
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

5. Run DVDPRIME with the *dasdtype* you are using to install.

    ```
    dvdprime dasdtype (disk
    ```

    > *dasdtype*
    > 3390 or FBA.

    ```
    **** NOW EXECUTING DVDPRIME EXEC  ON date AT time ****
    HCPDVP8440I NOW LOADING 22CC DISK
    DMSRXS1408W File TCPIP DATA * not found          You might not receive this message.
    {MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 22CC, RC=0
    HCPDVP8440I NOW LOADING 2CF1 DISK
    DMSRXS1408W File TCPIP DATA * not found          You might not receive this message.
    {MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF1, RC=0
    HCPDVP8392I DVDPRIME EXEC ENDED SUCCESSFULLY
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

What to do next
See Chapter 7, "Load the System Image," on page 107.

From a VM Minidisk - Run DVDPRIME EXEC

Chapter 7. Load the System Image

In this chapter, you will:

- Use INSTPLAN to enter your installation plan.
- Use INSTDVD to load the system image and RSU image files.
- IPL your new system.
- Use INSTVM to finish the install of z/VM.
- Use SERVICE and PUT2PROD to install RSU service.
- Configure TCP/IP (optional).
- Load the new CPLOAD module.
- Back up the z/VM system to tape or DASD.

Step 1. Run INSTPLAN

In this step, you will:

- Run INSTPLAN.

---

1. Access the minidisk with the new install code and run INSTPLAN.

   ```
   access 22CC c
   Ready;

   instplan
   **** NOW EXECUTING INSTPLAN EXEC ON date AT time ****
   ```

```
                  *** z/VM INSTALLATION PLANNING ***

Mark the product(s) selected to be installed into the VMSYS filepool with an
"F" and those selected to be installed to minidisks with an "M"

Install To    Product      Install To    Product      Install To    Product
----------    ---------    ----------    ---------    ----------    ---------
    M         VM               M         OSA              M         PERFTK
    M         VMHCD            M         RACF             M         DIRM
    M         RSCS             M         ICKDSF           M         TCPIP

Place a nonblank character in front of the System Default Language you would
like for your system.

   _ AMENG        _ UCENG         _ KANJI

Place a nonblank character in front of the DASD model onto which your
z/VM system will be loaded.  Only one model may be selected.

   _ 3390 Mod 3       _ 3390 Mod 9      _ FBA DASD 3.5

   PF1 = HELP   PF3/PF12 = QUIT   PF5 = Process   ENTER = Refresh
```

Figure 10. Installation Planning Panel

   a. See the installation worksheet (Table 8 on page 64) and enter:
      - An "M" in the **Install To** column for each product you selected to be installed onto minidisks.
      - An "F" in the **Install To** column for each product you selected to be installed into the VMSYS file pool.

   b. Place a nonblank character next to the System Default Language you selected for your system (see the installation worksheet, Table 8 on page 64).

   c. Place a nonblank character in front of the DASD model that matches the *DASD type and model* recorded on the installation worksheet (Table 8 on page 64). If you are installing to FBA (SCSI), the size of the FBA disk must be at least 3.5 GB.

   d. Press F5 to process your selections.

Note: The output you see may be different due to your planning choices.

F5

```
HCPIPX8475I THE PRODUCTS YOU SELECTED TO LOAD TO MINIDISK ARE:
             VM  RSCS  TCPIP  OSA ICKDSF
              DIRM  RACF PERFTK  VMHCD

             THE PRODUCTS YOU SELECTED TO LOAD TO SFS ARE:
             NONE

             THE SYSTEM DEFAULT LANGUAGE SELECTED:
             AMENG

             THE DASD TYPE YOU SELECTED TO LOAD ON IS:
             type

             THE DASD NEEDED TO LOAD z/VM ARE:
             610RES 610SPL 610PAG...

HCPINP8392I INSTPLAN EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

2. Make sure the number of DASD selected on the installation worksheet (Table 8 on page 64) matches the number of DASD listed in the HCPIPX8475I message.

Step 2. Verify the Volumes Needed for Installation are Available

> **In this step, you will:**
> • Attach the volumes needed for installation.

1. If you are installing to 3390 skip to substep 9 on page 111.

2. If the SCSI disks you are installing to are defined as minidisks on your installation user ID, skip to substep 8 on page 111.

3. If the SCSI disks you are installing to have already been defined using the SET EDEVICE command and are already online, skip to substep 8 on page 111. If they are defined but offline skip to substep 7 on page 111. If not yet defined continue with the next substep.

4. See the installation worksheet (Table 8 on page 64) and query each DASD address to verify it is not already defined for a different device (see example below). If the address is already in use, choose a different *dasdaddr* and verify that address does not exist.

   For each DASD address:

   ```
   query dasdaddr
   HCPQVD040E Device dasdaddr does not exist
   Ready(00040);
   ```

   Record each verified DASD address in the *DASD Address* column on the installation worksheet (Table 8 on page 64) and in the *edevice* column on the SCSI Device Definition Worksheet (Table 9 on page 64).

5. To define the SCSI disks, you need to know which FCP addresses are valid for your SCSI disks.

   If you know the FCP addresses associated with your SCSI disk addresses skip this substep.

   If only the channel path id is known, issue the Query CHPID command to display all FCP addresses associated with the path. For example, if the channel path is X'66', issue:

   ```
   query chpid 66
   Path 66 online to devices 517C 5319 550D 8100 8101 8102 8103 8104
   Path 66 online to devices 8105 8106 8107 8108 8109 810A 810B 810C
   Path 66 online to devices 810D 810E 810F 8110 8111 8112 8113 8114
   Path 66 online to devices 8115 8116 8117 8118 8119 811A 811B 811C
   Path 66 online to devices 811D 811E 811F
   ```

6. To define the SCSI disks, use the information recorded in the installation worksheet (Table 8 on page 64) and SCSI Device Definition Worksheet (Table 9 on page 64).

   For each DASD:

   a. Select and record a free FCP address for each *edevice*. You should use one FCP device for the 610RES and a different (or multiple different) FCPs for the other disks.

      ```
      query fcp free
      ```

      Choose a device from the output. Record a FCP address for each edevice in the FCP Address column of the SCSI Device Definition Worksheet (Table 9 on page 64).

   b. Define the device address.

      ```
      set edevice dasdaddr type fba attr scsi fcp_dev fcpn wwpn www lun lll
      ```

dasdaddr
> The edevice address from Table 9 on page 64.

fcpn
> FCP address (you should use one FCP device for the 610RES and a different, or multiple different, FCPs for the other disks).

www
> World Wide port number.

lll   LUN address.

7. Vary on the SCSI disks. Repeat for each disk.

   ```
   vary on dasdaddr
   ```

8. Note the following changes needed in the SYSTEM CONFIG file for future IPLs.

   - When performing a second-level installation to SCSI disk, the EDEV statements are added to the SYSTEM CONFIG as comments. If you want to IPL the system first-level, remove the '/*...*/' pairs from the EDEV statements in the SYSTEM CONFIG file.
   - If the SCSI disks you are installing to are defined as minidisks on your installation user ID, they cannot be IPLed first-level; therefore the SYSTEM CONFIG file is not updated to include any EDEV statements.

   For information on updating the SYSTEM CONFIG file, see *z/VM: CP Planning and Administration*.

9. Attach all the DASD listed in the installation worksheet (Table 8 on page 64) that are not already attached. Enter the following ATTACH command for each DASD.

   ```
   attach dasdaddr  *
   DASD dasdaddr ATTACHED TO userID dasdaddr
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   dasdaddr
   > Address of the DASD.

Step 3. Run INSTDVD

> **In this step, you will:**
> - Run INSTDVD.
---

1. Access the minidisk with the new install code.

   ```
   access 22CC c
   Ready;
   ```

2. If installing from a VM minidisk, access the minidisk that contains the image files as W.

   ```
   access diskaddr w
   Ready; T=n.nn/n.nn hh:mm:ss
   ```
       dasdaddr
           Address of the minidisk where the image files were copied.

3. Run INSTDVD to restore the image files to DASD.

   ```
   instdvd
   **** NOW EXECUTING INSTDVD EXEC ON date AT time ****
   ```

```
        *** z/VM DVD INSTALL FORMAT/RESTORE PANEL ***


PACK    DASD        DASD              DO NOT
TYPE    LABEL       ADDRESS           FORMAT DASD
 ===================================================
RES     610RES      ____                 __
SPOOL   610SPL      ____
PAGE    610PAG      ____
USER    610W01      ____
USER    610W02      ____



 PF1 = HELP    PF3/PF12 = QUIT    PF5 = Process    ENTER = Refresh
```
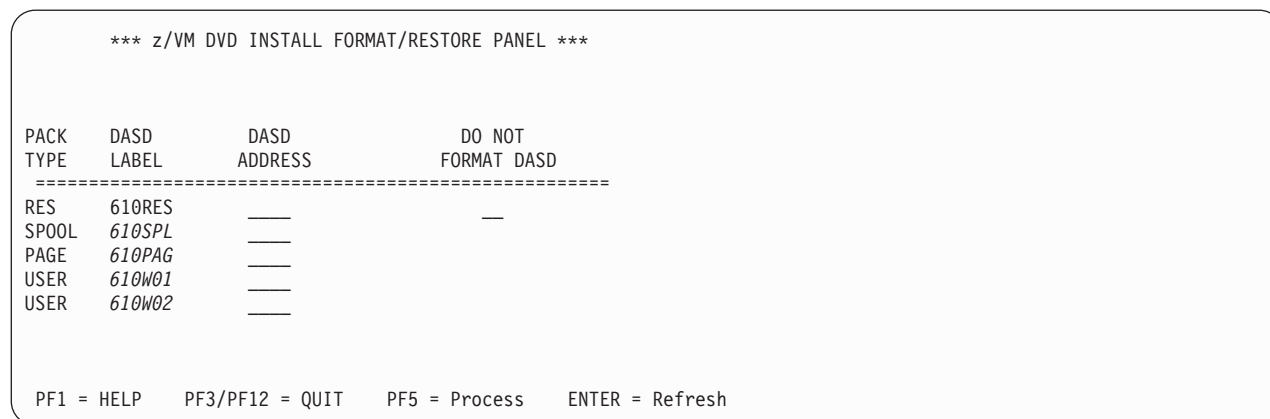
Figure 11. z/VM DVD Install Format and Restore Panel (3390 Model Layout)

  a. If you want to change the labels of the SPOOL, PAGE, or USER packs, fill in the DASD LABEL field with the new labels. You cannot change the 610RES label. If you are installing second-level and you wish to change installation pack labels, the installation user ID must be able to issue the DEFINE MDISK command. The IBM default privilege class for this command is class A. The DEFINE MDISK command also requires the user ID to have DEVMAINT on the OPTION directory statement in its directory entry.

  b. Fill in the DASD addresses using the information from the installation worksheet (Table 8 on page 64). For more information and help, press F1.

  c. Place a nonblank character in the DO NOT FORMAT DASD column only if you have already CP formatted your DASD for this installation using ICKDSF or CPFMTXA. The DASD will be labeled, but not formatted.

d. Press F5 to process.

F5

```
HCPDCX8377R YOU HAVE SELECTED TO FORMAT THE FOLLOWING DASD:

HCPDCX8483R YOU HAVE SELECTED NOT TO FORMAT YOUR DASD.
            THIS ASSUMES YOU HAVE ALREADY FORMATTED THE
            DASD AND THIS EXEC WILL ONLY RELABEL AS
            FOLLOWS
```
                                               Depending on whether you chose to format your
                                               DASD, you will receive either message
                                               HCPDCX8377R or HCPDCX8483R.

```
610RES dasdaddr
lblspl dasdaddr
lblpag dasdaddr
lblW01 dasdaddr

DO YOU WANT TO CONTINUE ? (Y|N)
y

HCPDCX8490I NOW {FORMATTING|LABELING} DASD dasdaddr
HCPDCX8490I NOW {FORMATTING|LABELING} DASD dasdaddr
   :
HCPDCX8380I RESTORING IIS TO 610RES and lblspl
{FBAIIS* | CKDIIS*}
```
                                               This message is not displayed if installing from VM
                                               minidisk.
```
DMSRXS1408W File TCPIP DATA * not found
```
                                               You might not receive this message.

```
{ECKDREST|MDREST}: WROTE nnnn {TRACKS|BLOCKS} ON addr, RC=0
HCPDCX8341I LOAD OF THE SYSTEM IIS COMPLETED SUCCESSFULLY

{FBASPL* | CKDSPL*}
```
                                               This message is not displayed if installing from VM
                                               minidisk.
```
DMSRXS1408W File TCPIP DATA * not found
```
                                               You might not receive this message.

```
PROCESSING {fbaspl00|ckdspl00}
```
                                               Processing messages are not displayed if installing
                                               from VM minidisk.
```
   :
PROCESSING {fbasplnn|ckdsplnn}
 {MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON addr, RC=0
HCPDCX8341I LOAD OF THE SYSTEM SPOOL SPACE COMPLETED SUCCESSFULLY

HCPDCX8490I NOW ALLOCATING DASD addr (RES PACK)
HCPDCX8490I NOW ALLOCATING DASD addr (SPOOLING)
HCPDCX8490I NOW ALLOCATING DASD addr (PAGING)

The minidisks with the END option specified in this directory will not be included
in the following DISKMAP file.

File USER DISKMAP A has been created.
HCPIND8392I INSTDIR EXEC ENDED SUCCESSFULLY
HCPIDV8341I CREATION OF USER DIRECTORY COMPLETED SUCCESSFULLY
```

Messages received for each minidisk loaded (DVD drive and FTP server directory)

```
HCPILB8440I NOW LOADING {FBAcuu | CKDcuu}, DISK xxx  OF yyy
{FBAcuu* | CKDcuu*}
DMSRXS1408W File TCPIP DATA * not found
PROCESSING {FBAcuu00|CKDcuu00}
    .
    .
    .
PROCESSING {FBAcuunn|CKDcuunn}
{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON addr, RC=0
```

If the installation fails while processing the disks loaded during DVD or FTP server directory installation, issue INSTDVD to try again. INSTDVD will resume where processing failed.

Messages received for each minidisk loaded (VM minidisk)

```
HCPILB8440I NOW LOADING {FBAcuu | CKDcuu}, DISK xxx  OF yyy
DMSRXS1408W File TCPIP DATA * not found

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON addr, RC=0
```

If the installation fails while processing the disks loaded during VM minidisk installation, and message HCP8342E was not received, then issue INSTDVD again. INSTDVD will resume where processing failed.
If message HCP8342E was received, indicating the PIPE DVDDECOD xxxnnn command failed with return code 3, then perform the following:

1) Verify the image files for the disk (xxxnnn) indicated in the message have a fixed (F) file format and a logical record length (LRECL) of 1028.

   If an image file has an incorrect file format or logical record length, the file was copied incorrectly. In this situation, you must erase the image files off the minidisk, copy the image files again using the correct parameters, access the minidisk as W, and issue INSTDVD again. To copy the image files again, see From a VM Minidisk, "Step 1. Set up the User ID for Installation" on page 100, and repeat substeps 6 through 9.

2) Verify all image files needed for the disk exist and the number of records for each are correct.
   - If the disk (xxxnnn) indicated in the message is the 500 disk, the correct number of records can be found in the file 610rsu.dvdimage on the RSU DVD.
   - For all other disks, the correct number of records can be found in the file 610prod.dvdimage on the z/VM system DVD.

   If an image file contains an incorrect number of records, the file was copied incorrectly. In this situation, you must erase any files with an incorrect number of records off the minidisk, copy the files using the correct parameters, access the minidisk as W, and issue INSTDVD again. To copy the image files again, see From a VM Minidisk, "Step 1. Set up the User ID for Installation" on page 100, and repeat substeps 6 through 9.

Messages received if installing from a DVD drive

```
HCPIRU8484R PLEASE PLACE THE SYSTEM RSU DVD        Place the RSU DVD in the DVD drive and wait
            IN THE DRIVE, THEN TYPE GO TO          until the light on the DVD drive goes out or stops
            CONTINUE OR TYPE EXIT TO QUIT.         blinking, then enter go.

go                                                 If you enter exit, your installation will not complete
                                                   successfully. You must run the INSTDVD
                                                   command and enter go to load the RSU files
                                                   before you can continue with the installation.

                                                   If the installation fails while loading the RSU DVD,
                                                   issue INSTDVD to try again.

{FBA500* | CKD500*}
DMSRXS1408W File TCPIP DATA * not found
{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON addr, RC=0
```

```
z/VM USER DIRECTORY CREATION PROGRAM - VERSION 6 RELEASE 1.0
EOJ DIRECTORY UPDATED
HCPDIR494I User directory occupies nn disk pages
HCPIDV8341I USER DIRECTORY HAS BEEN BROUGHT ONLINE SUCCESSFULLY
HCPSAL6798I VOLUME ID IS 610RES
HCPSAL6797I MINIDISK VOLID AT OFFSET nnnn IS MNTCF1
HCPIDV8341I SALIPL COMMAND HAS COMPLETED SUCCESSFULLY
{MDDUMP|ECKDDUMP}: {READ} nnnn {BLOCKS|TRACKS} FROM 2CF1, RC=0
{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON addr, RC=0
HCPIDV8341I {MDDUMP|ECKDDUMP} OF 2CF1 COMPLETED SUCCESSFULLY
HCPIWF8338I NOW EXECUTING COPY OF 22CC TO 2CC STEP
{MDDUMP|ECKDDUMP}: {READ} nnnn {BLOCKS|TRACKS} FROM 22CC, RC=0
{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON addr, RC=0
HCPIDV8341I {MDDUMP|ECKDDUMP} OF 22CC COMPLETED SUCCESSFULLY
HCPIDV8392I INSTDVD EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 4. IPL the new z/VM System

> **In this step, you will:**
>
> - IPL the new z/VM system.
>
>   **Note:** Contention for service by the devices on shared control units may result in this substep taking longer than it would when you are installing a first-level system.

1. Reset your virtual machine and make sure the z/VM system will recognize your terminal as a 3277, 3278, or 3279.

   ```
   system clear
   Storage cleared - system reset.

   terminal conmode 3270
   ```

   Attention: Issue the QUERY DASD ATTACH * command to make sure that any DASD with the same labels that you are using for installation are not already attached. You must detach any other DASD with these labels now to prevent bringing them online.

2. Verify you have 64 MB of virtual storage. If you have less than 64 MB of virtual storage, issue the DEFINE command to set your virtual storage to 64 MB.

   ```
   query virtual storage
   STORAGE = nnnnM

   define storage 64M
   STORAGE =   64M
   Storage cleared - system reset
   ```

3. Set the virtual machine mode to ESA.

   ```
   set machine esa
   ```

4. Query the console to determine the virtual console address (*consaddr*). This address is required in the next substep.

   ```
   query console
   CONS consaddr ON LDEV nnnn    TERM START
        consaddr CL T NOCONT NOHOLD COPY 001     READY FORM STDN
        consaddr TO userID    dev DIST nnnn        FLASHC 000 DEST OFF
        consaddr FLASH       CHAR       MDFY      0 FCB       LPP OFF
        consaddr 3270    NOEOF OPEN nnnn NOKEEP NOMSG NONAME
        consaddr SUBCHANNEL = nnnn
   ```

5. IPL the new z/VM system you loaded to the system residence device (610RES).

   ```
   ipl dasdaddr clear loadparm consaddr
   ```
   CLEAR is necessary. Do not omit it.

   dasdaddr
   > Address of the system residence device (610RES).

   consaddr
   > Virtual console address determined in substep 4.

   The Stand Alone Program Loader panel displays after issuing the IPL command.

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

DEVICE NUMBER:   dasdaddr   MINIDISK OFFSET:   nnnnnnnn   EXTENT:  1

MODULE NAME:    CPLOAD     LOAD ORIGIN:      2000

-----------------------------IPL PARAMETERS-------------------------------
cons=consaddr


----------------------------------COMMENTS--------------------------------




---------------------------------------------------------------------------



9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 12. Sample Stand Alone Program Loader Panel

6. Move the cursor to the IPL PARAMETERS field and type

   cons=*consaddr*

   dasdaddr
   > Address of the system residence device
   > (610RES).

   consaddr
   > Virtual console address determined in substep 4
   > on page 116. Spaces are not allowed around the
   > equal sign.

7. Press F10 to load.

   `F10`

```
hh:mm:ss z/VM V6 R1.0
         SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss ******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss ******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on blocks/cylinders xxx through xxx.
```

⋮

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Note: If you receive informational message HCPIIS954I for your 610RES volume (for example, DASD 5016 VOLID 610RES IS A DUPLICATE OF DASD 5516), you can ignore this message and proceed. For any other occurrence of HCPIIS954I, you have duplicate volumes with the same label. Make note of the duplicate volumes and enter SHUTDOWN at the next prompt. Detach the duplicate volumes and then go back to substep 1 on page 116.

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
         (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
```
cold drain noautolog

Because there is no data or accounting information to recover, use COLD DRAIN to request a cold start. Use NOAUTOLOG at this point because you cannot have the servers and all user IDs logged on.

```
NOW hh:mm:ss {EST|EDT} weekday yyyy-mm-dd
Change TOD clock (yes|no)
```
no

CP logs on the primary system operator user ID (OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available     nnnn
```

Note: Depending on the type of spool files available, you might receive the following prompt:

Spool Files Prompt

```
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files on offline volumes      {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with I/O errors         {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files with control errors     {nnnn|NONE}
hh:mm:ss HCPWRS2513I Spool files to be discarded         {nnnn|NONE}
hh:mm:ss HCPWRS2513I                                     -------
hh:mm:ss HCPWRS2513I Total files to be deleted            nnnn
hh:mm:ss HCPWRS2511A
hh:mm:ss HCPWRS2511A Spool files will be deleted because of
                     COLD start.
hh:mm:ss HCPWRS2511A No files have been deleted yet.

hh:mm:ss HCPWRS2511A To continue COLD start and delete files,
                     enter GO.
hh:mm:ss HCPWRS2511A To stop COLD start without deleting
                     files, enter STOP.
```
go

The system gives you an opportunity to stop the cold start and save your spool files. You do not need to save any spool files at this time; answer GO.

> *hh:mm:ss* HCPWRS2512I Spooling initialization is complete.
> *hh:mm:ss* DASD *nnnn* dump unit CP IPL pages *nnnn*
> *hh:mm:ss* HCPAAU2700I System gateway ZVMV6R10 identified.
> *hh:mm:ss* z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
> built on IBM Virtualization Technology
> *hh:mm:ss* There is no logmsg data
> *hh:mm:ss* FILES: NO RDR,   NO PRT,   NO PUN
> *hh:mm:ss* LOGON AT *hh:mm:ss timezone day mm/dd/yy*
> *hh:mm:ss* GRAF *nnnn* LOGON AS OPERATOR USERS = *n*
> *hh:mm:ss* HCPIOP952I *nnnn*M system storage
> *hh:mm:ss* FILES: *nnnnnnnn* RDR, *nnnnnnnn* PRT,   NO PUN
> *hh:mm:ss* HCPCRC8082I Accounting records are accumulating for userid DISKACNT.

8. Disconnect from the OPERATOR user ID.

> **disconnect**
> DISCONNECT AT hh:mm:ss {EST|EDT} *weekday mm/dd/yy*
>
> Press enter or clear key to continue

   `ENTER`

9. Log on as MAINT.

   `ENTER`   The default password for MAINT is MAINT.

> **logon maint**
> HCPLNM102E 080D DASD force R/O; R/W by operator
> HCPLNM101E 080E DASD force R/O; R/O by operator
> z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
> built on IBM Virtualization Technology
> There is no logmsg data
> FILES: *nnnn* RDR,   NO PRT,   NO PUN
> LOGON AT *hh:mm:ss timezone day mm/dd/yy*
> z/VM V6.1.0   *yyyy-mm-dd hh:mm*

   `ENTER`

> Ready; T=*n.nn/n.nn hh:mm:ss*

Step 5. Run INSTVM

> **In this step, you will:**
>
> • Run INSTVM with the DVD option to complete installation tasks.
>
> **Note:** Running the INSTVM requires a full screen terminal with at least 20 lines.

1. IPL CMS to verify the CMS saved system is available.

   ```
   ipl cms
   z/VM V6.1.0     yyyy-mm-dd hh:mm
   ```

   ENTER

   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   Note: If the CMS saved system does not exist, there is a problem with spool space. You must resolve the problem before continuing.

2. Run INSTVM to complete the installation of z/VM from DVD.

   ```
   instvm dvd
   **** NOW EXECUTING INSTVM EXEC ON date AT time ****
   HCPPLD8338I NOW EXECUTING ALLOCATION OF SYSTEM RESIDENCE PACK
   HCPPLD8338I NOW EXECUTING UPDATE OF $MOVE$ $FILE$ C
   HCPPLD8341I POSTLOAD FUNCTION "INSTALLATION CLEANUP" COMPLETED SUCCESSFULLY
   HCPPLD8338I NOW EXECUTING DIRECTORY CLEANUP
   HCPPLD8341I POSTLOAD FUNCTION "DIRECTORY CLEANUP AND ADD HELP DISK LINKS" COMPLETED SUCCESSFULLY
   HCPPLD8338I NOW EXECUTING THE DIRECTXA COMMAND TO BRING THE UPDATED USER DIRECTORY ONLINE
   HCPPLD8341I POSTLOAD FUNCTION "BRING UPDATED DIRECTORY ONLINE" COMPLETED SUCCESSFULLY

   HCPPLD8392I POSTLOAD EXEC ENDED SUCCESSFULLY
   DMSACC724I 2CC replaces C (2CC)
   HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVU
   AUTO LOGON  ***        VMSERVU  USERS = n
   HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the IPL
     command processor.
   VMSERVU : z/VM V6.1.0     yyyy-mm-dd hh:mm
   VMSERVU : DMSACP723I B (193) R/O
   VMSERVU : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
   VMSERVU : DMSWFV1121I VMSERVU DMSPARMS A1 will be used for FILESERV processing
   VMSERVU : DMSWFV1121I VMSYSU POOLDEF A1 will be used for FILESERV processing
   VMSERVU : DMS5BB3045I Ready for operator communications
   HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVR
   AUTO LOGON  ***        VMSERVR  USERS = n
   HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
     command processor.
   VMSERVR : z/VM V6.1.0     yyyy-mm-dd hh:mm
   VMSERVR : DMSACP723I B (193) R/O
   VMSERVR : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
   VMSERVR : DMSWFV1121I VMSERVR DMSPARMS A1 will be used for FILESERV processing
   VMSERVR : DMSWFV1121I VMSYSR POOLDEF A1 will be used for FILESERV processing
   VMSERVR : DMS6LG3335I CRR log recovery begins at mm-dd-yy hh:mm:ss
   VMSERVR : DMS6LG3335I CRR log recovery completes at mm-dd-yy hh:mm:ss
   VMSERVR : DMS5BB3045I Ready for operator communications
   ```

┌─ **Extra messages received if all products were loaded to minidisks** ─────────┐

```
DASD 0804 DETACHED
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***         VMSERVS  USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = CONTROL
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = CONTROL
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00001
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00001
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = MDK00002
VMSERVS : DMS4PD3400I Initializing ends for DDNAME = MDK00002
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG1
VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG1
VMSERVS : DMS4PD3400I Initializing begins for DDNAME = LOG2
VMSERVs : DMS4PD3400I Initializing ends for DDNAME = LOG2
VMSERVS : DMS5FD3032I File pool server has terminated
VMSERVS : DMSWFV1120I File VMSYS POOLDEF A1 created or replaced
VMSERVS : DMSWFV1117I FILESERV processing ended at hh:mm:ss on dd month yyyy
RDR FILE nnnn SENT FROM VMSERVS  PUN WAS nnnn RECS nnnn CPY  001 A NOHOLD NOKEEP
VMSERVS : File FILESERV VALID A3 sent to MAINT at ZVMV6R10 on mm/dd/yy hh:mm:ss
VMSERVS : Ready; T=n.nn/n.nn hh:mm:ss

HCPQCS150A User VMSERVS has issued a VM read
VMSERVS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn.nn TOTCPU= nnn:nn.nn
VMSERVS : LOGOFF AT hh:mm:ss timezone day mm/dd/yy BY MAINT
USER DSC   LOGOFF AS  VMSERVS  USERS = 2     FORCED BY MAINT
DASD 0804 DETACHED
```

└──┘

```
HCPIDV8493I ISSUING XAUTOLOG FOR VMSERVS
AUTO LOGON  ***         VMSERVS  USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
  command processor.
VMSERVS : z/VM V6.1.0    yyyy-mm-dd hh:mm
VMSERVS : DMSACP723I B (193) R/O
VMSERVS : DMSWFV1117I FILESERV processing begun at hh:mm:ss on dd month yyyy
VMSERVS : DMSWFV1121I VMSERVS DMSPARMS A1 will be used for FILESERV processing
VMSERVS : DMSWFV1121I VMSYS POOLDEF A1 will be used for FILESERV processing
VMSERVS : DMS5BB3045I Ready for operator communications
```

┌─ **You might not receive one or more of the following messages** ──────────────┐

```
HCPIDV8338I UPDATING SYSTEM TABLES AND CLEANING UP FILEPOOL DIRECTORIES
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
RC=0 from EXEC OPENVM UNMOUNT /
```

└──┘

```
HCPIFP8392I INSTPOOL EXEC ENDED SUCCESSFULLY
HCPIVM8392I INSTVM EXEC ENDED SUCCESSFULLY
Ready; T=n.nn/n.nn hh:mm:ss
```

Run INSTVM

After this point, when you IPL the system, you should use the default IPL parameters and should no longer use COLD DRAIN NOAUTOLOG.

Step 6. Run SERVICE

> **In this step, you will:**
> • Load the service files from the recommended service upgrade (RSU) servlink.

1. Log on as MAINT.

   <kbd>ENTER</kbd>   The default password for MAINT is MAINT.
   logon maint
   ⋮
   Ready; T=*n.nn/n.nn hh:mm:ss*

2. Make sure the file pool is available.

   If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

   ```
   query limits all
   Userid     Storage Group  4K Block Limit  4K Blocks Committed  Threshold
   userid1          2                 n              n-nn%           nn%
   userid2          2                 n              n-nn%           nn%
      ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. IPL CMS.

   ```
   ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   <kbd>ENTER</kbd>
   Ready; T=*n.nn/n.nn hh:mm:ss*

4. Access the disk containing the RSU servlink as C.

   ```
   access diskaddr c
   DMSACC724I diskaddr replaces C (2CC)
   Ready;
   ```

   diskaddr
       Address containing the RSU servlink. If you received and loaded a RSU or COR from IBM Support to a minidisk on your first-level user ID, specify that address. Otherwise, use address 500.

5. List the file names of the RSU envelopes on the minidisk accessed as C.

   ```
   listfile * servlink c
   610xRSUn servlink c
   610xRSUn servlink c
   ```

   x   RSU number.

   n   Volume number.

6. Run SERVICE.

```
service all envfn1 envfn2 ...
VMFSRV2760I SERVICE processing started
:
VMFSRV2760I SERVICE processing completed
successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

envfn1
    File name for the first envelope 610*x*RSU1.

envfn2 ...
    File name for the second envelope 610*x*RSU2,
    and so on.

7. View the SERVICE messages log (VMFVIEW SERVICE) and handle any nonzero return code, if necessary. Base your action on the following table.

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW SERVICE.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Go to "Step 7. Run PUT2PROD" on page 125.
A return code greater than 4	1. Issue VMFVIEW SERVICE and check for warning and error messages.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Restart by issuing the SERVICE command as displayed in the message VMFSRV2310W.
	5. If you receive a nonzero return code, repeat substep 7.
	6. Go to "Step 7. Run PUT2PROD" on page 125.

> **Note:** You can ignore the following messages and their associated VMF1966W message.
> - `DMSLIO201W The following names are undefined:` ISPLINK ARIPRDI
> - `DMSLIO201W The following names are undefined:` DMSDSCSC
> - `DMSLIO201W The following names are undefined:` DMSUSRX1 DMSUSRX2
> - `DMSLIO202W Duplicate identifier` (Associated with object IOACMAIN MODULE.)
> - `DMSLKD004W Warning messages issued` (Associated with objects ILBONBL, ILBONTR, ILBOREC, ILBORNT, ILBOSND, ILBOSNT, and ILBOSSN.)
> - `VMFSRV1221W The Stand Alone Dump Utility must be rebuilt.`

8. Use the VMFUPDAT SYSMEMO command to review any memos that were received with this service.

Step 7. Run PUT2PROD

> **In this step, you will:**
> - Run PUT2PROD to place the product into production.

1. Log on as MAINT.

    `ENTER`   The default password for MAINT is MAINT.

    logon maint
     ⋮
    Ready; T=*n.nn/n.nn hh:mm:ss*

2. Make sure the file pool is available.

    If you receive message DMS1153E, indicating the MAINT file pool is unavailable or unknown, you need to XAUTOLOG VMSERVS, VMSERVU, and VMSERVR.

    ```
    query limits all
    Userid     Storage Group  4K Block Limit  4K Blocks Committed  Threshold
    userid1           2                  n               n-nn%        nn%
    userid2           2                  n               n-nn%        nn%
       ⋮
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

3. IPL CMS and access the VMSES/E test build disk.

    ```
    ipl cms
    z/VM V6.1.0    yyyy-mm-dd hh:mm
    ```

    `ENTER`
    Ready; T=*n.nn/n.nn hh:mm:ss*

    ```
    access 5E6 B
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

4. Run PUT2PROD.

    ```
    put2prod
    VMFP2P2760I PUT2PROD processing started
       ⋮
    VMFP2P2760I PUT2PROD processing completed successfully
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

5. Handle a nonzero return code. Base your action on the following table.

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW PUT2PROD.
	2. Ignore any warning messages listed in the note below. Take appropriate actions based on other warning messages you receive.

Run PUT2PROD

If you received . . .	Then . . .
A return code greater than 4	1. Issue VMFVIEW PUT2PROD and check for warning and error messages.
	2. Ignore any warning messages listed in the note below in this table. Take appropriate actions based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Issue IPL CMS.
	5. Issue PUT2PROD.
	6. If you receive a nonzero return code, repeat substep 5 on page 125.

Note: You can ignore the following messages.

- DMSDCS1083E Saved segment $$DMY$$ does not exist
- DMSWLG292W Text data will be loaded at '20000'x in user area; user data may be overwritten.
- DTCPRD3043W File *fn ft fm* has been updated; It's contents should be reviewed for changes that may affect your use of this file.
- TCPMSM0002W File TCPIP DATA cannot be located
- TCPMSM0002W TCP/IP appears not to have been configured

Step 8. Shut Down and Re-IPL the System

> **In this step, you will:**
> - Shut down the V6.1 system.
> - IPL the V6.1 system using the new CP nucleus.

1. Shut down and re-IPL the V6.1 system.

```
shutdown reipl
SYSTEM SHUTDOWN STARTED
Ready; T=n.nn/n.nn hh:mm:ss


HCPWRP963I STARTING SHUTDOWN STEP . . .
⋮
HCPWRP962I VM SHUTDOWN COMPLETED IN n SEC
HCPWRP9277I SYSTEM TERMINATION COMPLETE,
           ATTEMPTING RESTART


hh:mm:ss HCPWRP9277I SYSTEM TERMINATION COMPLETE.
         ATTEMPTING RESTART
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL
hh:mm:ss z/VM V6 R1.0
         SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss *****************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.          *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE       *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                   *
hh:mm:ss *                          *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS  *
hh:mm:ss *   MACHINES                    *
hh:mm:ss *****************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume volid (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xx through xx.
   ⋮
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available     {nnnn|none}
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
   ⋮
hh:mm:ss FILES:      nnn RDR,      nnn PRT,     nnn PUN
hh:mm:ss LOGON AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
   ⋮
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnn RDR, nnnnnnn PRT,      NO PUN
```

The shut down message is displayed on all enabled consoles.

HCP963I, HCP962I, and HCP9277I will appear on the operator's console.

Note: If you receive informational message HCPIIS954I for your 610RES volume (for example, DASD 505A VOLID 610RES IS A DUPLICATE OF DASD 5516), you can ignore this message and proceed. For any other occurrence of HCPIIS954I, you have duplicate DASD with the same label and must correct this error before continuing.

Shut Down and Re-IPL the System

Message HCP952I tells you the amount of storage available.

The files message refers to operator spool files.

CP automatically disconnects from the primary system operator user ID (OPERATOR).

```
hh:mm:ss HCPUSO967I Disconnect OPERATOR - system
          restarted SHUTDOWN and system console
          not VM operator console
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
hh:mm:ss DISCONNECT AT hh:mm:ss {EST|EDT} weekday mm/dd/yy
hh:mm:ss Press enter or clear key to continue
```
ENTER   Press Enter or the Clear key to continue.

2. Log on as MAINT.

    ENTER   The password for MAINT is MAINT.

```
logon maint
   ⋮
Ready; T=n.nn/n.nn hh:mm:ss
```

What to do next

See Part 3, "Post z/VM System Installation," on page 129.

Part 3. Post z/VM System Installation

Part 3 contains the following:

- Procedures for configuring a basic TCP/IP network connection.
- Procedures for backing up the z/VM system.
- Procedures for creating IPLable utility tapes.
- Procedures for migrating customized files and service for products that are preinstalled on the z/VM installation media.
- Information about the licensed products and features that are preinstalled on the z/VM installation media.

Post z/VM System Installation

Chapter 8. Configure and Back Up the System

> **In this chapter, you will:**
>
> - Configure a basic TCP/IP network connection (optional).
> - Back up the z/VM system to tape or DASD.
> - Create IPLable utility tapes.

Step 1. Configure TCP/IP for an Initial Network Connection

In this step, you will:
- Configure a basic IP network connection (optional).

You can optionally configure TCP/IP after you have completed your z/VM installation. The TCP/IP configuration created in this step provides only a basic IP network connection for your z/VM host. In addition, this configuration is suitable for installations that employ only static (as opposed to dynamic) network routes.

Note: The IP configuration wizard supports real network devices only. If you plan on using virtual network devices for TCP/IP, they must be configured manually. See *z/VM: TCP/IP Planning and Customization*.

If you choose to configure a basic IP network connection for your z/VM host at this time, continue with this step. Otherwise, go to "Step 2. Back up the Named Saved Systems and Segments to Tape" on page 134.

For details about any DTCIPW messages you might receive while running IPWIZARD, see *z/VM: TCP/IP Messages and Codes*.

To establish a TCP/IP configuration that provides more comprehensive TCP/IP services, after you have completed your z/VM installation, see *z/VM: TCP/IP Planning and Customization*.

If you are going to use *z/VM: Getting Started with Linux on System z* to set up your Linux images, skip this step and go to "Step 2. Back up the Named Saved Systems and Segments to Tape" on page 134.

If you came to this step from *z/VM: Getting Started with Linux on System z*, continue with this step and then return to *z/VM: Getting Started with Linux on System z*.

Perform the following steps to configure TCP/IP for an initial network connection.

1. Gather the information from the TCP/IP configuration worksheet (Table 2 on page 8 or Table 10 on page 65).

2. Access minidisk 193.

```
access 193 e
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Run IPWIZARD.

```
ipwizard
```

```
              *** z/VM TCP/IP Configuration Wizard ***

    The items that follow describe your z/VM host.

    User ID of VM TCP/IP stack virtual machine: TCPIP___

    Host name: _____
    Domain name: _____

    Gateway IP address: _____

    DNS IP Addresses:
     1) _____
     2) _____
     3) _____
  .
  .
  .
    PF1 = HELP PF3 = QUIT PF8 = Continue ENTER = Refresh
```

4. Using the information you gathered in the TCP/IP configuration worksheet (Table 2 on page 8 or Table 10 on page 65), fill in the z/VM TCP/IP Configuration Wizard panel and press F8 to continue.

5. Fill in the General Interface Configuration Panel and press F8 to continue. The panel content will depend on whether IPv4 or IPv6 is to be used.

6. Fill in the Interface Configuration Panel and press F5 to process. The panel content will depend on which interface type is to be used.

7. IPWIZARD attempts to create the TCP/IP configuration files. If the TCPIP user ID is logged on, IPWIZARD asks if you want to restart TCP/IP and continue processing.

```
        DTCIPW2508I DTCIPWIZ EXEC is attempting to create the necessary
        DTCIPW2508I configuration files
        The TCP/IP stack (TCPIP) must be restarted as part of this procedure. Would
        you like to restart TCPIP and continue?
        Enter 0 (No), 1 (Yes)
```

If you continue, IPWIZARD tests the information you provided and returns any errors that occurred. If no errors are encountered, TCP/IP configuration files containing the network information you provided are created. For additional information on configuring TCP/IP, see *z/VM: TCP/IP Planning and Customization*.

Step 2. Back up the Named Saved Systems and Segments to Tape

> **In this step, you will:**
>
> • Back up all the named saved systems and segments, including CMS, to tape.

1. Attach a tape drive (*tapeaddr*) to MAINT at virtual device address 181.

   ```
   attach tapeaddr * 181
   TAPE 0181 ATTACHED
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Mount a tape, to be used for back up, on the tape drive attached at virtual device address 181.

3. Spool the console.

   ```
   spool console * start
   ```

4. Enter the SPXTAPE command to dump the named saved systems and segments to tape.

   ```
   spxtape dump tapeaddr sdf all run
   SPXTAPE DUMP   INITIATED ON VDEV tapeaddr
   Ready; T=n.nn/n.nn hh:mm:ss
   ```
   The operand RUN specifies that the SPXTAPE rewinds and unloads the tape after the operation.

   tapeaddr
   >   Address of the tape drive attached to MAINT.

   ```
   DUMPING  tapeaddr :         nnn  FILES,  PAGES    nnnn   nn% COMPLETE
      ⋮
   DUMPING  tapeaddr :         nnn  FILES,  PAGES    nnnn   nn% COMPLETE
   RDR FILE fileno1 SENT FROM MAINT   CON WAS fileno1 RECS nnnn CPY  001 T NOHOLD NOKEEP
   SPXTAPE DUMP COMMAND COMPLETED  ON VDEV tapeaddr
   TIME STARTED:        hh:mm:ss
   TIME ENDED:          hh:mm:ss
   TAPE COUNT:              nnn
   FILES PROCESSED:         nnn
   SPOOL PAGES:            nnnn
   RDR FILE fileno2 SENT FROM MAINT   CON WAS fileno2 RECS nnnn CPY  001 T NOHOLD NOKEEP
   ```
   The messages from SPXTAPE tell you that the files are being dumped to tape.

   fileno1
   >   File number of the volume log file. The volume log file records information about the files processed by the SPXTAPE DUMP command that are associated with a particular tape volume.

   fileno2
   >   File number of the command summary log file. The command summary log file records the progress and status of the SPXTAPE DUMP operation.

5. Store the tape for emergency use. If it is ever necessary, you can use this tape and the SPXTAPE command to restore the CMS system data file. For more information about the SPXTAPE command, see *z/VM: CP Commands and Utilities Reference*. For information on how to restore this tape to your system, see Appendix F, "Restore the Named Saved Systems and Segments from Tape," on page 207.

Step 3. Back up the z/VM System to Tape

> **In this step, you will:**
>
> - Load the DDRXA utility to tape.
> - Use DDRXA to back up the z/VM system to tape.
>
> **Notes:**
>
> 1. A complete z/VM system backup includes all of your installation volumes.
> 2. You should check your installation worksheet to make sure you have backed up each volume.
> 3. This procedure requires a full pack minidisk be defined in the CP directory, USER DIRECT, for each volume you are backing up.
> 4. If you do not have a tape drive or if you wish to back up to DASD, see "Step 4. Back up the z/VM System to DASD" on page 138.

1. Attach a tape drive (*tapeaddr*) to MAINT at virtual device address 181.

   ```
   attach tapeaddr * 181
   TAPE 0181 ATTACHED
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Mount a tape, to be used for back up, on the tape drive attached at virtual device address 181.

3. Access the 193 minidisk in read/write mode.

   ```
   access 193 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Load the DDRXA utility to tape.

   ```
   utility utiltape ddrxa
   Rewind complete
   HCPWUT8317I MOVING IPL DDRXA TO TAPE
   HCPWUT8318I THE IPL DDRXA PROGRAM IS
               ON TAPE FILE NUMBER 1
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Rewind the scratch tape on virtual device number 181.

   ```
   rewind 181
   Rewind complete
   ```

6. IPL the tape and answer the prompts from DDRXA. For information about DDRXA, see the *z/VM: CP Commands and Utilities Reference* and *z/VM: System Operation*.

   ```
   ipl 181 clear
   z/VM DASD DUMP/RESTORE PROGRAM
   ENTER CARD READER ADDRESS OR CONTROL STATEMENTS
   ENTER:
   ```
   CLEAR is necessary. Do not omit it.

   Wait a few moments for DDRXA to prompt you. If a prompt does not appear, press Enter.

   ```
   sysprint cons
   ENTER:
   ```
   This first control statement tells DDRXA that you want program messages sent to your console.

Back up the z/VM System to Tape

```
input devno dasd volid
ENTER:
```

The second control statement is the input control statement.

You must back up all your installation volumes, except the paging volume.

The full pack minidisk addresses for the default DASD are 122 (610SPL), 123 (610RES), 124 (610W01), 125 (610W02), ...

devno
    Full pack minidisk address of the volume you are backing up.

volid
    Volume label; for example 610RES.

```
output 181 tape (compact
ENTER:
```

This control statement specifies the device to which you are dumping the system. You can specify one alternate tape drive for additional tape volumes.

Example: If you had a tape attached to 181 and an alternate tape attached to 182, the OUTPUT control statement would be:

```
output 181 tape 182 (compact
```

If you are using a 3590 tape, you can use the leave option to dump multiple DASD on one tape volume. The output control statement would be:

```
output 181 tape (compact leave
```

```
dump all
DUMPING volid
DUMPING DATA mm/dd/yy
  AT hh.mm.ss GMT FROM volid
```

This control statement dumps the specified volume to the tape.

The informational messages that follow will vary according to your use of device types. GMT means Greenwich Mean Time.

The exact cylinder extents vary according to the device type.

```
INPUT CYLINDER EXTENTS          OUTPUT CYLINDER EXTENTS
     START       STOP                START       STOP
  nnnnnnnn    nnnnnnnn            nnnnnnnn    nnnnnnnn
     .
     .
     .
END OF DUMP
BYTES IN nnnnnnnnnn BYTES OUT nnnnnnnnnn
TRACKS NOT COMPACTED ON TAPE - nnnnnnnnnn
ENTER:
```

DDRXA prompts when finishes dumping the volume.

Note: When DDRXA encounters the end of a tape, and there is more data to dump, the program prompts you to mount the next tape.

- If you are using the same tape drive, mount the next tape and DDRXA continues.
- If you are using an alternate tape drive, DDRXA uses the alternate tape drive, then alternates between the tape drives for additional tapes. That is, if there are more than two tapes, you are prompted for the third tape on the first tape drive, the fourth tape on the second tape drive, and so forth.

7. If you have additional DASD volumes to back up, mount a new tape, if necessary, and repeat the INPUT, OUTPUT, and DUMP ALL statements for each volume.

8. Press Enter to end the program.

   ENTER

   ```
   END OF JOB
   ```

9. IPL CMS again.

   ```
   #cp ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER

   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   For information on how to restore your system from tape, see Appendix G, "Restore the z/VM System Backup from Tape," on page 209.

Step 4. Back up the z/VM System to DASD

In this step, you will:

- Use DDR to store a backup of the z/VM system to DASD.

Notes:

1. A complete z/VM system backup includes all of your installation volumes.
2. You should check your installation worksheet to make sure you have backed up each installation volume.
3. This procedure requires a full pack minidisk be defined in the CP directory, USER DIRECT, for each volume you are backing up.
4. If you wish to store a back up to tape, see "Step 3. Back up the z/VM System to Tape" on page 135.

---

1. If you have already stored a backup of your z/VM system on tape, skip to "Step 5. Create an IPLable DDR Utility Tape" on page 140.

2. Access the 193 minidisk in read/write mode.

   ```
   access 193 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Run DDR and answer the prompts. For information about DDR, see the *z/VM: CP Commands and Utilities Reference* and *z/VM: System Operation*.

   ```
   DDR
   z/VM DASD DUMP/RESTORE PROGRAM
   ENTER CARD READER ADDRESS OR CONTROL STATEMENTS
   ENTER:
   ```

   ```
   sysprint cons
   ENTER:
   ```
   This first control statement tells DDR that you want program messages sent to your console.

   ```
   input devno dasd volid
   ENTER:
   ```
   The second control statement is the input control statement.

   You must back up all your installation volumes, except the paging volume.

   The full pack minidisk addresses for the default DASD are 122 (610SPL), 123 (610RES), 124 (610W01), 125 (610W02), ...

   devno
     Full pack minidisk address of the volume you are backing up.

   volid
     Volume label; for example 610RES.

   ```
   output  devno dasd scratch
   ENTER:
   ```
   You need a separate volume for each volume you are backing up.

   devno
     Full pack minidisk address of the volume you are using to backup.

copy all	This control statement dumps the specified volume to the new DASD.
DUMPING *volid* DUMPING DATA *mm/dd/yy* AT *hh.mm.ss* GMT FROM *volid*	These are informational messages that will vary according to your use of device types. GMT means Greenwich Mean Time.
	The exact cylinder extents vary according to the device type.

```
INPUT CYLINDER EXTENTS          OUTPUT CYLINDER EXTENTS
      START       STOP                START       STOP
   nnnnnnnn    nnnnnnnn             nnnnnnnn    nnnnnnnn

     .
     .
     .
END OF DUMP
BYTES IN nnnnnnnnnn BYTES OUT nnnnnnnnnn
TRACKS NOT COMPACTED ON TAPE - nnnnnnnnnn
ENTER:
```

ENTER: — When DDR finishes dumping the volume, it prompts.

4. If you have any more DASD volumes to back up, repeat the INPUT, OUTPUT, and COPY ALL statements for each volume.

5. Press Enter to end the program.

ENTER

```
END OF JOB
```

Step 5. Create an IPLable DDR Utility Tape

You can optionally create an IPLable DDR utility tape. This tape can be used to IPL DDR stand-alone if you need to run DDR when CMS (and the DDR Module) is not available. If you choose to create the IPLable DDR utility tape, continue with this step. Otherwise, go to "Step 6. Create an IPLable ICKDSF Utility Tape" on page 141.

1. Attach a tape drive (*tapeaddr*) to MAINT at virtual device address 181.

   ```
   attach tapeaddr * 181
   TAPE 0181 ATTACHED
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Mount a tape, to be used for the IPLable DDR utility, on the tape drive attached at virtual device address 181.

3. Access the 193 minidisk in read/write mode.

   ```
   access 193 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Load the DDRXA utility to tape.

   ```
   utility utiltape ddrxa
   Rewind complete
   HCPWUT8317I MOVING IPL DDRXA TO TAPE
   HCPWUT8318I THE IPL DDRXA PROGRAM IS
               ON TAPE FILE NUMBER 1
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Rewind the scratch tape on virtual device number 181.

   ```
   rewind 181
   Rewind complete
   ```

6. IPL the tape and answer the prompts from DDRXA to verify the tape contents. For information about DDRXA, see *z/VM: CP Commands and Utilities Reference* and *z/VM: System Operation*.

   ```
   ipl 181 clear
   ```
   CLEAR is necessary. Do not omit it.

   Wait a few moments for DDRXA to prompt you. If a prompt does not appear, press Enter.

   ```
   z/VM DASD DUMP/RESTORE PROGRAM
   ENTER CARD READER ADDRESS OR CONTROL STATEMENTS
   ENTER:
   ```
   This message verifies that IPLable DDRXA has been written to the tape.

7. IPL CMS.

   ```
   #cp ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

8. Rewind the tape and store for future use.

   ```
   tape run
   ```

Step 6. Create an IPLable ICKDSF Utility Tape

You can optionally create an IPLable ICKDSF utility tape. This tape can be used to IPL ICKDSF stand-alone if you need to run ICKDSF when the ICKDSF module is not available. If you choose to create the IPLable ICKDSF utility tape. continue with this step. Otherwise, go to "Step 7. Create a Stand-alone Dump Tape" on page 143.

1. Attach a tape drive (*tapeaddr*) to MAINT at virtual device address 181.

   ```
   attach tapeaddr * 181
   TAPE    0181 ATTACHED
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Mount a tape, to be used for the IPLable ICKDSF utility, on the tape drive attached at virtual device address 181.

3. Access the 193 minidisk in read/write mode.

   ```
   access 193 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Load the ICKDSF utility to tape.

   ```
   utility utiltape dsf
   Rewind complete
   HCPWUT8317I MOVING IPL ICKDSF TO TAPE
   HCPWUT8318I THE IPL ICKDSF PROGRAM IS
               ON TAPE FILE NUMBER 1
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Rewind the scratch tape on virtual device number 181.

   ```
   rewind 181
   Rewind complete
   ```

6. IPL the tape and answer the prompts from ICKDSF to verify the tape contents. For information about ICKDSF, see *Device Support Facilities: User's Guide and Reference*.

   ```
   ipl 181 clear
   ```
   CLEAR is necessary. Do not omit it.

   Wait a few moments for ICKDSF to prompt you. If a prompt does not appear, press Enter.

   ```
   ICK005E DEFINE INPUT DEVICE, REPLY
           'DDDD,CUU' OR 'CONSOLE'
   ENTER INPUT/COMMAND:
   ```
   This message tells you that the Device Support Facilities (ICKDSF) is loaded and ready.

   ```
   console
   CONSOLE
   ICK006E DEFINE OUTPUT DEVICE, REPLY
           'DDDD,CUU' or 'CONSOLE'
   ENTER INPUT/COMMAND:

   console
   CONSOLE
   ICK006E DEFINE OUTPUT DEVICE, REPLY
           'DDDD,CUU' or 'CONSOLE'
   ENTER INPUT/COMMAND:
   ```

Create an IPLable ICKDSF Utility Tape

7. IPL CMS.

   ```
   #cp ipl cms
   z/VM V6.1.0    yyyy-mm-dd hh:mm
   ```

   ENTER

   ```
    Ready; T=n.nn/n.nn hh:mm:ss
   ```

8. Rewind the tape and store for future use.

   ```
   tape run
   ```

Step 7. Create a Stand-alone Dump Tape

z/VM includes a stand-alone dump utility that you tailor according to your installation's configuration, using CMS. After you generate z/VM, you should create the stand-alone dump utility and place it on tape or a DASD for emergency use. If, after a system failure, CP cannot create an abend dump, you can use the stand-alone dump on tape or DASD to dump all of storage.

For instructions on creating a stand-alone dump utility on tape, see chapter 13 in *z/VM: CP Planning and Administration*.

Note: Do not use a stand alone dump tape or DASD created from a previous release of z/VM to attempt to dump your V6.1 system. When the HCPSADMP utility asks if you want to create a new HCPSDC MODULE, be sure to answer YES to create a new one for V6.1.

Create a stand-alone dump tape

Chapter 9. Plan Your Migration

In this chapter, you will:

- Gain an understanding for planning your migration.
- Review migration requirements.
- Complete migration worksheets.

Migration Overview

Rather than starting from scratch when you upgrade from your current system, you probably want to transfer and adjust your current information for use on the new system. Migration is the transfer and adjustment of information required to upgrade from one release to another.

Information you might want to transfer includes:
- Customized files
- Local modifications
- Service
- User-created files
- Saved segment definitions
- Spool files
- User directory entries
- SFS file pool servers
- Application programs

The z/VM migration procedure automates the transfer of the following types of files from the current to new system:
- Customized files as defined in the product's migration part table (*prodid* MIGP*vrm*)
- Local modifications for all products
- Service for products that are at the same release level in the new z/VM deliverable
- User-created files that reside on selected disks as defined in the product's migration disks table (*prodid* MIGD*vrm*)

During the migration process, you will be informed of additional actions required to complete migration (such as reworking local modifications and customized parts) to reconcile differences between the two releases.

Additional tasks must be performed after this procedure completes in order to migrate the following:
- Parm disks
- User directory
- Networking and connectivity
- Segments
- Spool space
- Security manager databases
- Directory manager databases
- Products and databases not preinstalled on the z/VM installation media.

For more information, see *z/VM: Migration Guide* and product-specific program directories.

Step 1. Review and Comply with the Requirements

Restriction: The z/VM migration procedure supports only the components and products that comprise the z/VM deliverable and can be used only to transfer files from a V5.2 or later system. The procedure should be run immediately after completing your installation, prior to enabling or customizing any components on the new system. If you are not going to use this procedure or do not satisfy this restriction, skip to Chapter 13, "Preinstalled Licensed Products and Features," on page 179.

1. To use this migration procedure you must meet these requirements on your first-level V5.2 or later system (referred to as your current system).

   - General
     - Each customizable file must reside on the disk specified for that part in the product documentation.
     - Unless specifically documented to do otherwise, the VMSES/E local modification procedures must have been used to customize any IBM-supplied parts. The VMSES/E LOCALMOD command, which simplifies creation and reworking of local modifications, has been provided with past releases of z/VM to assist with such changes.
     - If you use a storage management tool (for example DFSMS™) you need to make sure that the auto-recall function is turned on so that stored files are available before running these procedures.
     - Have not removed any user IDs, minidisks, products, or components shipped with z/VM.
   - PPFs
     - The variable labels in the DCL section of a product's PPF must not be changed.
     - If you have changed a user ID, minidisk address, or SFS directory definition you must override all PPFs that contain the user ID, minidisk address, or SFS directory.
     - If you created PPF overrides for the preinstalled components, products or features of z/VM, then you must override the P2P component in the SERVP2P $PPF file. Your PPF override names must be in the VM SYSSUF software inventory file.
   - If any preinstalled products reside in SFS on your current system.
     - A TSAF collection will be used to allow file pool access.
     - If the user ID TSAFVM is running (either online or disconnected), then it will be used for the TSAF collection. If it is not running you will be prompted for a user ID to use for the TSAF collection.
     - The TSAF collection user ID must have a 191 minidisk, accessed as file mode A. An SFS directory cannot be used.

2. Requirements for the user ID on your current system where you will run these procedures.

   - The user ID must be MAINT or a user ID with privilege classes and authorizations equivalent to MAINT.
   - The VMSES/E software inventory disk needs to be linked (default is 51D).
   - The user ID must have a 191 minidisk, accessed as file mode A. An SFS directory cannot be used.
   - If any preinstalled products reside in SFS, the user ID must have SFS administration authority to all file pools that contains these products. Use the command QUERY ENROLL ADMIN *filepool* to determine which userids are enrolled as administrators for filepool *filepool.*

3. Considerations for the V6.1 system (referred to as your new system).

   - The new system must be running second level on the current system in order to run the migration tools.
   - If you have increased the size of any disk shipped on the z/VM installation media on the current system (unless instructed to do so by IBM Service), you might need to increase the size of that disk on the new system before migration.

Review and Comply with the Requirements

- Do not make any changes to your new system before using these migration procedures other than applying an RSU. Do not customize servers or file pools. Do not customize files or enable products or features on the new system before you use this migration procedure. The one exception is customizing files using the IPWIZARD.

4. To maintain migration compliance and be able to use the z/VM migration procedure in the future:

   - Always use the VMSES/E local modification procedures to alter, modify or customize any IBM-supplied parts, unless it is specifically documented to do otherwise. The LOCALMOD command, which simplifies the creation and reworking of local modifications, is supplied with VMSES/E to assist with making such changes.

   - If you want to use an IBM-supplied SFS for your own data, use VMSYSU. Do not use VMSYS or VMSYSR.

   - Additional minidisks should not be defined on the DASD volumes used for the installation defined packs. The default labels for:
     – z/VM V5.2 are 520RES, 520W01, and 520W02.
     – z/VM V5.3 are 530RES, 530W01, and 530W02.
     – z/VM V5.4 are 540RES, 540W01, and 540W02.
     – z/VM V6.1 are 610RES, 610W01, and 610W02.

Step 2. Complete the Migration Worksheet

1. Record the addresses of your V6.1 DASD.

2. Select the current system user ID you will use to run these procedures. Verify that this user ID meets the following requirements:

   - The user ID must be MAINT or a user ID with privilege classes and authorizations equivalent to MAINT
   - The user ID must have a 191 minidisk, accessed as file mode A. An SFS directory cannot be used.
   - If any preinstalled products reside in SFS on your current system, the first-level user ID must have SFS administration authority to all file pools that contain these products.

3. If no preinstalled products reside in SFS on your current system, record *no* in the table and skip to substep 4. Otherwise record *yes* and complete the SFS section of the Migration Table

4. If you use a storage management tool, record a *yes* in the table and complete the auto-recall question; otherwise record *no* in the table

Table 16. Migration Worksheet

V6.1 System DASD Addresses	_____	
Current system user ID you will use to run these procedures	_____	
SFS questions:		
Preinstalled products reside in SFS (yes or no)	_____	If yes, answer the remaining SFS questions.
TSAF collection user ID	_____	
TSAF user ID has a 191 (A) on minidisk not in SFS (yes or no)	_____	If no, a 191 disk must be defined before continuing.
Additional questions:		
Do you use a storage management tool? (yes or no)	_____	
If yes, is the auto-recall function turned on so that stored files are available? (yes or no)	_____	If no, the function must be turned on before continuing

Complete the migration worksheet

Chapter 10. Set Up for Migration

> **In this chapter, you will:**
>
> - IPL the new z/VM V6.1 system.
> - Run MIGSETUP.
> - Run MIGLINK.

Step 1. IPL the new z/VM System

1. Make sure you have completed the migration worksheet (Table 16 on page 149) and reviewed all requirements listed in Chapter 9, "Plan Your Migration," on page 145

2. Log on to the current system user ID you selected to use for the migration procedures.

3. Verify the user ID has met the migration requirements listed in Chapter 9, "Plan Your Migration," Step 1. Review and Comply with the Requirements, substep 2 on page 147.

4. Attach the DASD used to install the new z/VM V6.1 system.

   Enter the following ATTACH command for each DASD listed in the migration worksheet:

   ```
   attach dasdaddr *
   DASD dasdaddr ATTACHED TO userID dasdaddr
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. IPL the new z/VM V6.1 system.

   a. Reset your virtual machine and make sure the z/VM system will recognize your terminal as a 3277, 3278, or 3279.

   ```
   system clear
   Storage cleared - system reset.

   terminal conmode 3270
   ```

   b. Verify you have 64 MB of virtual storage. If you have less than 64 MB of virtual storage, issue the DEFINE command to set your virtual storage to 64 MB.

   ```
   query virtual storage
   STORAGE = nnnnM

   define storage 64M
   STORAGE =   64M
   Storage cleared - system reset
   ```

   c. Set the virtual machine mode to ESA.

   ```
   set machine esa
   ```

   d. Query the console to determine the virtual console address (*consaddr*). This address is required in the next substep.

   ```
   query console
   CONS consaddr ON LDEV nnnn    TERM START
        consaddr CL T NOCONT NOHOLD COPY 001    READY FORM STDN
        consaddr TO userID    dev DIST nnnn        FLASHC 000 DEST OFF
        consaddr FLASH       CHAR       MDFY      0 FCB       LPP OFF
        consaddr 3270    NOEOF OPEN nnnn NOKEEP NOMSG NONAME
        consaddr SUBCHANNEL = nnnn
   ```

e. IPL the new z/VM system that was loaded to 610RES.

ipl *dasdaddr* **clear loadparm** *consaddr*   CLEAR is necessary. Do not omit it.

dasdaddr
    Address of the system residence device
    (610RES).

consaddr
    Virtual console address determined in substep
    5d on page 152.

The Stand Alone Program Loader panel displays after issuing the IPL command.

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

DEVICE NUMBER:    dasdaddr    MINIDISK OFFSET:    nnnnnnnn    EXTENT:  1

MODULE NAME:    CPLOAD      LOAD ORIGIN:      1000

-------------------------------IPL PARAMETERS-------------------------------
cons=consaddr


----------------------------------COMMENTS----------------------------------




----------------------------------------------------------------------------


 9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 13. Sample Stand Alone Program Loader Panel

f. Move the cursor to the IPL PARAMETERS field and enter:

cons=consaddr

consaddr
    Virtual console address. Spaces are not allowed
    around the equal sign.

IPL the new z/VM system

g. Press F10 to load.

`F10`

```
hh:mm:ss z/VM V6 R1.0
         SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss *******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss *******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xxx through xxx.
  ⋮
```

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Attention: If you receive informational message HCPIIS954I, you have duplicate volumes with the same label. You must return to the first-level CP environment (enter SHUTDOWN at the next prompt) and detach the duplicate volumes. Then return to substep 5a on page 152.

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
         (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
force noautolog

NOW hh:mm:ss {EST|EDT} weekday yyyy-mm-dd
Change TOD clock (yes|no)
no
```

CP logs on the primary system operator user ID (OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available    nnnn
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss DASD nnnn dump unit CP IPL pages nnnn
hh:mm:ss HCPAAU2700I System gateway ZVMV6R10 identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES:  NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT hh:mm:ss EDT DAY mm/dd/yy
hh:mm:ss GRAF  nnnn LOGON  AS  OPERATOR USERS = n
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnnn RDR, nnnnnnnn PRT,      NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
```

h. Disconnect from the OPERATOR user ID.

```
disconnect
DISCONNECT AT hh:mm:ss timezone weekday mm/dd/yy

Press enter or clear key to continue
```

 ENTER

i. Log on as MAINT.

```
logon maint                                    The default password for MAINT is MAINT.
z/VM Version 6 Release 1.0, Service Level nnnn (64-bit),
built on IBM Virtualization Technology
There is no logmsg data
FILES: nnnn RDR,    nnnn PRT,    nnnn PUN
LOGON AT hh:mm:ss timezone weekday mm/dd/yy
z/VM V6 R1.0    yyyy-mm-dd hh:mm
```

 ENTER

```
Ready; T=n.nn/n.nn hh:mm:ss
```

Step 2. Run MIGSETUP

1. Run MIGSETUP to copy migration tools to the 191 disk of your current system user ID. If you receive any error messages during MIGSETUP processing, look up the message in *z/VM: CP Messages and Codes*, take the appropriate action, and run the command again.

   ```
   access 193 c
   DMSACC724I 193 replaces C(2CC)
   Ready;

   migsetup
   HCPMSU8392I MIGSETUP EXEC ENDED SUCCESSFULLY
   Ready;
   ```

2. Shut down the V6.1 system.

   ```
   shutdown
   SYSTEM SHUTDOWN STARTED
   HCPWRP963I STARTING SHUTDOWN STEP ...... -  ......
      ⋮
   HCPWRP963I STARTING SHUTDOWN STEP ...... -  ......

   HCPWRP962I VM SHUTDOWN COMPLETED IN n SEC
   HCPWRP963I STARTING SHUTDOWN STEP SVADV - DEACTIVATE TERMINATION SAVE AREAS
   HCPWRP961W SYSTEM SHUTDOWN COMPLETE
   HCPGIR450W CP entered; disabled wait PSW 00020000 00000000 00000000 00000961
   ```

3. IPL CMS on your current system user ID.

   ```
   ipl cms
   z/VM Vn.n.0
   ```

   ENTER

   ```
   Ready;
   ```

Step 3. Run MIGLINK

1. Access the VMSES/E system inventory disk.

   ```
   access 51D d
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Run MIGLINK to establish the appropriate minidisk or SFS environment on your current system. If you receive any error messages during MIGLINK processing, look up the message in *z/VM: CP Messages and Codes*, take the appropriate action, and run the command again.

   ```
   miglink
   (You get the following prompt only if products reside in
    SFS on your current system)

   HCPMLK8309R A TSAF COLLECTION NEEDS TO BE ESTABLISHED.
               ONLY ONE TSAF COLLECTION CAN BE ACTIVE AT A
               TIME. IF TSAF IS CURRENTLY RUNNING ON A
               USERID DIFFERENT THAN 'TSAFVM' YOU NEED TO
               ENTER THAT USERID.
               ENTER:

               0 TO QUIT
               1 TO USE TSAFVM
               OR
               YOUR TSAF USERID

          { 0 | 1 | userID}
   HCPMLK8392I MIGLINK EXEC ENDED SUCCESSFULLY
   Ready;
   ```

   Note: If you logoff your current system user ID at this point, when you log back on, you must attach your new system DASD and run MIGLINK again to establish your environment.

Step 4. IPL the new z/VM System

1. Reset your virtual machine and make sure the z/VM system will recognize your terminal as a 3277, 3278, or 3279.

   ```
   system clear
   Storage cleared - system reset.

   terminal conmode 3270
   ```

2. Verify you have 64 MB of virtual storage. If you have less than 64 MB of virtual storage, issue the DEFINE command to set your virtual storage to 64 MB.

   ```
   query virtual storage
   STORAGE = nnnnM

   define storage 64M
   STORAGE =    64M
   Storage cleared - system reset
   ```

3. Set the virtual machine mode to ESA.

   ```
   set machine esa
   ```

4. Query the console to determine the virtual console address (*consaddr*). This address is required in the next substep.

   ```
   query console
   CONS consaddr ON LDEV nnnn    TERM START
        consaddr CL T NOCONT NOHOLD COPY 001    READY FORM STDN
        consaddr TO userID    dev DIST nnnn       FLASHC 000 DEST OFF
        consaddr FLASH       CHAR       MDFY       0 FCB       LPP OFF
        consaddr 3270    NOEOF OPEN nnnn NOKEEP NOMSG NONAME
        consaddr SUBCHANNEL = nnnn
   ```

5. IPL the new z/VM system that was loaded to 610RES.

`ipl dasdaddr clear loadparm consaddr`	CLEAR is necessary. Do not omit it.

   dasdaddr
   > Address of the system residence device (610RES).

   consaddr
   > Virtual console address determined in substep 4.

   The Stand Alone Program Loader panel displays after issuing the IPL command.

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

DEVICE NUMBER:   dasdaddr   MINIDISK OFFSET:    nnnnnnnn   EXTENT:  1

MODULE NAME:     CPLOAD      LOAD ORIGIN:      1000

------------------------------IPL PARAMETERS-------------------------------
cons=consaddr


--------------------------------COMMENTS-----------------------------------




---------------------------------------------------------------------------



9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 14. Sample Stand Alone Program Loader Panel

6. Move the cursor to the IPL PARAMETERS field and enter:

cons=*consaddr*

consaddr
    Virtual console address. Spaces are not allowed around the equal sign.

7. Press F10 to load.

`F10`

```
hh:mm:ss z/VM V6 R1.0
          SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
          LOADED FROM 610RES
hh:mm:ss ******************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss ******************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xxx through xxx.
   .
   .
   .
```

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Attention: If you receive informational message HCPIIS954I, you have duplicate volumes with the same label. You must return to the first-level CP environment (enter SHUTDOWN at the next prompt) and detach the duplicate volumes. Then return to substep 1 on page 158.

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
          (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
```

IPL the new z/VM system

force drain noautolog

Use NOAUTOLOG because you cannot have the servers and all user IDs logged on.

```
NOW hh:mm:ss {EST|EDT} weekday yyyy-mm-dd
Change TOD clock (yes|no)
```
no

CP logs on the primary system operator user ID (OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available    nnnn
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss DASD nnnn dump unit CP IPL pages nnnn
hh:mm:ss HCPAAU2700I System gateway ZVMV6R10 identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES:   NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT hh:mm:ss EDT DAY mm/dd/yy
hh:mm:ss GRAF  nnnn LOGON  AS  OPERATOR USERS = n
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnnn RDR, nnnnnnnn PRT,      NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
```

8. Disconnect from the OPERATOR user ID.

   disconnect
   ```
   DISCONNECT AT hh:mm:ss timezone weekday mm/dd/yy
   ```

   ```
   Press enter or clear key to continue
   ```

   ENTER

9. Log on as MAINT.

   logon maint

   The default password for MAINT is MAINT.
   ```
   z/VM Version 6 Release 1.0 Service Level 0000 (64-bit),
   built on IBM Virtualization Technolog
   There is no logmsg data
   FILES: nnnn RDR,   NO PRT,   NO PUN
   LOGON AT hh:mm:ss timezone weekday mm/dd/yy
   ```

   ENTER
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

Chapter 11. Migrate

In this chapter, you will:
- Run MIGRATE.
- View the MIGRATE message log.

Step 1. Run MIGRATE

Run MIGRATE to move minidisk and shared file data for all preinstalled products.

```
migrate all vrm
Ready;
```

vrm

Current version, release, and modification level your are migrating from. For example, if you are migrating from V5.2, enter 520.

Messages received from MIGRATE are logged in the $VMFMIG $MSGLOG file.

If you receive a return code of zero, skip to Chapter 12, "Place Migrated Parts into Production," on page 165. Otherwise, continue with "Step 2. View the MIGRATE Message Log" on page 163.

Step 2. View the MIGRATE Message Log

View the MIGRATE message log and handle any nonzero return codes. Base your actions on the following table:

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW MIGRATE. You can ignore any warning messages that appear in the notes below. Take appropriate action based on other warning messages you receive. Messages are documented in *z/VM: Other Components Messages and Codes* or by issuing HELP on the message number.
	2. Go to Chapter 12, "Place Migrated Parts into Production," on page 165.
Return code 6	1. Issue VMFVIEW MIGRATE. You can ignore any warning messages that appear in the notes below. Take appropriate action based on other warning messages you receive. Messages are documented in *z/VM: Other Components Messages and Codes* or by issuing HELP on the message number.
	For messages VMFMGR2308I and VMFSUI2308W for CP local modification 99999, simply mark them reworked with the VMFUPDAT SYSLMOD command.
	2. Use the VMFUPDAT SYSLMOD command to see which customized parts and local modifications you need to rework. Rework the customized parts and local modifications that were identified. For more information, see *z/VM: VMSES/E Introduction and Reference*.
	3. After you complete the rework, use the VMFUPDAT SYSLMOD command to flag the customized parts and local modification as REWORKED.
	4. Return to "Step 1. Run MIGRATE" on page 162 and reissue the MIGRATE ALL command.
A return code greater than 6	1. Issue VMFVIEW MIGRATE and check for warning and error messages. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive. Messages are documented in *z/VM: Other Components Messages and Codes* or by issuing HELP on the message number.
	2. Correct all errors reported in the error messages.
	3. Return to "Step 1. Run MIGRATE" on page 162 and reissue the MIGRATE ALL command.

Note: You can ignore the following messages and their associated VMF1966W message:

- `DMSLIO201W The following names are undefined: ISPLINK ARIPRDI`
- `DMSLIO201W The following names are undefined: DMSDSCSC`
- `DMSLIO201W The following names are undefined: DMSUSRX1 DMSUSRX2`
- `DMSLIO202W Duplicate identifier` messages associated with object IOACMAIN MODULE.
- `DMSLKD004W Warning messages issued` messages associated with objects ILBONBL, ILBONTR, ILBOREC, ILBORNT, ILBOSND, ILBOSNT, and ILBOSSN.
- `DMSLIO994W Restrictive RMODE encountered in CSECT CEEM@VOU`
- `DMSLIO994W Restrictive RMODE encountered in CSECT CEEBLIIA`

View the MIGRATE message log

Chapter 12. Place Migrated Parts into Production

> **In this chapter, you will:**
> - Run PUT2PROD, MIGCLEAN, and MIGR51D.

Step 1. Run PUT2PROD

1. Log on as MAINT.

        `logon maint`   The default password for MAINT is MAINT.
          ⋮
        `Ready; T=n.nn/n.nn hh:mm:ss`

2. IPL CMS.

        `ipl cms`
        `z/VM V6.1.0    yyyy-mm-dd hh:mm`

        ENTER

        `Ready; T=n.nn/n.nn hh:mm:ss`

3. Run PUT2PROD.

        `put2prod`
        `VMFP2P2760I PUT2PROD processing started`
        ⋮
        `VMFP2P2760I PUT2PROD processing completed successfully`
        `Ready; T=n.nn/n.nn hh:mm:ss`

4. Handle a nonzero return code. Base your action on the following table:

If you received . . .	Then . . .
Return code 4	• Issue VMFVIEW PUT2PROD. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive.
A return code greater than 4	1. Issue VMFVIEW PUT2PROD and check for warning and error messages.
	2. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive.
	3. Correct all errors reported in the error messages.
	4. Issue IPL CMS.
	5. Issue PUT2PROD.
	6. If you receive a nonzero return code, repeat substep 4.

    Note: You can ignore the following:
- `DMSDCS1083E Saved segment $$DMY$$ does not exist`
- `DMSWLG292W Text data will be loaded at '20000'x in user area; user data may be overwritten.`

Step 2. Shut Down the new System

1. Shut down the system.

    shutdown
    SYSTEM SHUTDOWN STARTED

    HCPWRP963I STARTING SHUTDOWN STEP ...... - ......
    ⋮
    HCPWRP963I STARTING SHUTDOWN STEP ...... - ......

    HCPWRP962I VM SHUTDOWN COMPLETED IN *nn* SEC
    HCPWRP963I STARTING SHUTDOWN STEP SVADV - DEACTIVATE TERMINATION SAVE AREAS
    HCPWRP961W SYSTEM SHUTDOWN COMPLETE
    HCPGIR450W CP entered; disabled wait PSW 00020000 00000000 00000000 00000961

2. IPL CMS on your current system user ID.

    ipl cms
    z/VM V*n.n*.0   *yyyy-mm-dd hh:mm*

    `ENTER`

    Ready;

Step 3. Run MIGCLEAN

Run MIGCLEAN to establish your original minidisk and SFS environment.

If you receive any error messages during MIGCLEAN processing, look up the message in *z/VM: CP Messages and Codes*, take the appropriate action, and run the command again.

```
migclean
HCPMCL8392I MIGCLEAN EXEC ENDED SUCCESSFULLY
Ready;
```

Step 4. Access Current System Software Inventory Disk

1. Access to the current system software inventory (SI) disk is required. Link the SI disk if it is not.

    <table>
    <tr>
    <td>

    ```
    link maint 51d 51d rr
    Ready; T=n.nn/n.nn hh:mm:ss
    ```
    </td>
    <td>The default owner and disk address are MAINT and 51D. If your SI disk has a different user ID or address, substitute that user ID and address for MAINT and 51D respectively.</td>
    </tr>
    </table>

2. Your current SI disk must be defined as address FFF for a future step in the migration procedures.

    <table>
    <tr>
    <td>

    ```
    define 51D FFF
    DASD 0FFF DEFINED
    Ready; T=n.nn/n.nn hh:mm:ss
    ```
    </td>
    <td>If your SI disk has an address other than 51D, substitute that disk address for 51D.</td>
    </tr>
    </table>

Step 5. IPL the new System

1. Reset your virtual machine and make sure the z/VM system will recognize your terminal as a 3277, 3278, or 3279.

   ```
   system clear
   Storage cleared - system reset.

   terminal conmode 3270
   ```

2. Verify you have 64 MB of virtual storage. If you have less than 64 MB of virtual storage, issue the DEFINE command to set your virtual storage to 64 MB.

   ```
   query virtual storage
   STORAGE = nnnnM

   define storage 64M
   STORAGE =   64M
   Storage cleared - system reset
   ```

3. Set the virtual machine mode to ESA.

   ```
   set machine esa
   ```

4. Query the console to determine the virtual console address (*consaddr*). This address is required in the next substep.

   ```
   query console
   CONS consaddr ON LDEV nnnn    TERM START
        consaddr CL T NOCONT NOHOLD COPY 001    READY FORM STDN
        consaddr TO userID    dev DIST nnnn      FLASHC 000 DEST OFF
        consaddr FLASH        CHAR        MDFY        0 FCB        LPP OFF
        consaddr 3270    NOEOF OPEN nnnn NOKEEP NOMSG NONAME
        consaddr SUBCHANNEL = nnnn
   ```

5. IPL the new z/VM system that was loaded to 610RES.

   ```
   ipl dasdaddr clear loadparm consaddr
   ```
   CLEAR is necessary. Do not omit it.

   dasdaddr
   > Address of the system residence device (610RES).

   consaddr
   > Virtual console address determined in substep 4.

   The Stand Alone Program Loader panel displays after issuing the IPL command.

```
   STAND ALONE PROGRAM LOADER: z/VM VERSION 6 RELEASE 1.0

   DEVICE NUMBER:    dasdaddr   MINIDISK OFFSET:    nnnnnnnn   EXTENT:  1

   MODULE NAME:    CPLOAD     LOAD ORIGIN:      1000

   ------------------------------IPL PARAMETERS------------------------------
   cons=consaddr


   --------------------------------COMMENTS----------------------------------




   --------------------------------------------------------------------------



   9= FILELIST  10= LOAD  11= TOGGLE EXTENT/OFFSET
```

Figure 15. Sample Stand Alone Program Loader Panel

6. Move the cursor to the IPL PARAMETERS field and enter:

     cons=*consaddr*

consaddr
    Virtual console address determined in substep 4 on page 170. Spaces are not allowed around the equal sign.

7. Press F10 to load.

    `F10`

```
hh:mm:ss z/VM V6 R1.0
         SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss,
         LOADED FROM 610RES
hh:mm:ss ****************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*   *
hh:mm:ss * 5741-A07 (C) COPYRIGHT IBM CORP. 1983,  *
hh:mm:ss * 2009. ALL RIGHTS RESERVED.              *
hh:mm:ss * US GOVERNMENT USERS RESTRICTED RIGHTS - *
hh:mm:ss * USE, DUPLICATION OR DISCLOSURE          *
hh:mm:ss * RESTRICTED BY GSA ADP SCHEDULE CONTRACT *
hh:mm:ss * WITH IBM CORP.                          *
hh:mm:ss *                                         *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS   *
hh:mm:ss *   MACHINES                              *
hh:mm:ss ****************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume 610RES (device xxxx).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders xxx through xxx.
     ⋮
```

You might receive an informational message, HCPISU951I, about volumes not mounted. If you are not using those volume labels, ignore this message.

Attention: If you receive informational message HCPIIS954I, you have duplicate volumes with the same label. You must return to the first-level CP environment (enter SHUTDOWN at the next prompt) and detach the duplicate volumes. Then return to substep 1 on page 170.

```
hh:mm:ss Start ((Warm|Force|COLD|CLEAN) (DRain)
         (DIsable) (NODIRect) (NOAUTOlog)) or (SHUTDOWN)
```

force drain

```
NOW hh:mm:ss {EST|EDT} weekday yyyy-mm-dd
Change TOD clock (yes|no)
```
no

CP logs on the primary system operator user ID
(OPERATOR).

```
hh:mm:ss The directory on volume 610RES at address nnnn
         has been brought online.
hh:mm:ss HCPWRS2513I
hh:mm:ss HCPWRS2513I Spool files available     nnnn
hh:mm:ss HCPWRS2512I Spooling initialization is complete.
hh:mm:ss DASD nnnn dump unit CP IPL pages nnnn
hh:mm:ss HCPAAU2700I System gateway ZVMV6R10 identified.
hh:mm:ss z/VM Version 6 Release 1.0, Service Level 0000 (64-bit),
built on IBM Virtualization Technology
hh:mm:ss There is no logmsg data
hh:mm:ss FILES:   NO RDR,   NO PRT,   NO PUN
hh:mm:ss LOGON AT hh:mm:ss EDT DAY mm/dd/yy
hh:mm:ss GRAF  nnnn LOGON  AS  OPERATOR USERS = n
hh:mm:ss HCPIOP952I nnnnM system storage
hh:mm:ss FILES: nnnnnnnn RDR, nnnnnnnn PRT,      NO PUN
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
```

8. Disconnect from the OPERATOR user ID.

   disconnect
   ```
   DISCONNECT AT hh:mm:ss timezone weekday mm/dd/yy
   ```

   ```
   Press enter or clear key to continue
   ```

   [ENTER]

Step 6. Run MIGR51D

> **In this step, you will:**
> - Migrate your 51D disk from your current system.

1. Log on as MAINT.

   ```
   logon maint                                    The default password for MAINT is MAINT.
   z/VM Version 6 Release 1.0 Service Level 0000 (64-bit)
   built on IBB Virtualization Technology
   There is no logmsg data
   FILES: nnnn RDR,   NO PRT,   NO PUN
   LOGON AT hh:mm:ss timezone weekday mm/dd/yy
   ```

   `ENTER`
   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Create a backup copy of the your new system software inventory (SI) disk (default is 51D) using your site's normal backup procedures.

3. Access the SI disk (defined on your current system user ID as FFF) from your current system.

   ```
   attach FFF *
   Ready; T=n.nn/n.nn hh:mm:ss

   access FFF z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Access the new system 51D minidisk as file mode D.

   ```
   access 51D d
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Access the 493 minidisk as file mode W.

   ```
   access 493 w
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

6. Use MIGR51D to update the system SI files.

   ```
   migr51d
   HCPMIX8478R Please enter filemode letter of the
               Software Inventory Disk (51D) from
               the previous release.  Press enter
               to Exit.
   z
   ```

   The VM Software Inventory Disk (51D) Product and Segment Migration panel is displayed.

Run MIGR51D

```
            *** VM Software Inventory Disk (51D) Product Migration ***

Set action code AC to D =  Do Not Migrate  or to M =  Migrate  product.  Action
code I means product is already installed on new 51D and cannot be migrated.


AC Compname         Prodid   Status     Description
-- ---------------- -------- ---------- --------------------------------
D  SHELL            2VMVMZ30 APPLIED    Shell and Utilities for VM/ESA
                                        2.3.0
M  DITTO            5654029C NONE       DITTO/ESA VM 1.2.0

D                   5735NFSQ ENABLED

D  CMS              5VMCMS20 BUILT      CMS component for z/VM 5.2.0

D  CP               5VMCPR20 BUILT      CP component for z/VM 5.2.0

D  TCPIP            5VMTCP20 BUILT      TCP/IP LEVEL 520 - TCP/IP Feature

I  ICKDSF           5684042J BUILT      ICKDSF DEVICE SUPPORT FACILITIES
                                        R17 for CMS


                                                    Page 1 of 1

            PF1=HELP  PF3/PF12=Quit  PF5=Process  PF8=Forward
```

a. Enter an action code (AC) for each product listed. For information about the panel and action codes, press F1.

   Notes:

   1) This Product Migration panel is only a sample. Your panels will not list the same products, action codes, status, and description.

   2) Products that are preselected as **D** (Do Not Migrate) should not be changed.

   3) If a product is not supported on the new z/VM release, you should enter **D** (Do Not Migrate) for that product.

   4) Before you delete any product, you must determine whether any product that you intend to migrate is dependent on this product. You can use VMFINFO or VMFSIM SYSDEP to determine product dependencies.

b. Press F8 to select action codes for all Software Inventory Migration panels before continuing to the next step.

c. Press F5 to process the product migration information and display the Segment Migration panel. Depending on the size of your software inventory files, it may take several minutes to process.

```
              *** VM Software Inventory Disk (51D) Segment Migration ***

Set action code AC to D = ▐Do▌▐Not▌▐Migrate▌ or to M = ▐Migrate▌ segment. Action
code P means segment will be migrated due to product migration.  If ========
or ******** appears under Segname, enter a new name to change the segment
name upon migration ( ======== ▐Must▌ be changed, ******** ▐May▌ be changed ).

AC Segname         Prodid   Compname         Defparms         Bldparms
-- --------        --------  ---------------- ---------------- ----------------
D  CMSBAM   Old-> 5VMCMS20 CMS               B0D-B37 SR       PPF(ESA
           New-> 6VMCMS10 CMS               B0D-B37 SR       PPF(ZVM
   ******** Mig-> 6VMCMS10 CMS               B0D-B37 SR       PPF(ZVM
D  CMSDOS   Old-> 5VMCMS20 CMS               B00-B0C SR       PPF(ESA
           New-> 6VMCMS10 CMS               B00-B0C SR       PPF(ZVM
   ******** Mig-> 6VMCMS10 CMS               B00-B0C SR       PPF(ZVM
D  CMSFILES Old-> 5VMCMS20 CMS               1900-1BFF SR     PPF(ESA
           New-> 6VMCMS10 CMS               1900-1BFF SR     PPF(ZVM
   ******** Mig-> 6VMCMS10 CMS               1900-1BFF SR     PPF(ZVM
D  CMSPIPES Old-> 5VMCMS20 CMS               1800-18FF SR     PPF(ESA
           New-> 6VMCMS10 CMS               1800-18FF SR     PPF(ZVM
   ******** Mig-> 6VMCMS10 CMS               1800-18FF SR     PPF(ZVM
                                                             Page 1 of 4

          PF1=HELP   PF3/PF12=Quit   PF5=Process   PF8=Forward
```

d. Enter an action code for each segment listed. For information about the panel and action codes, press F1.

   This Segment Migration panel is only a sample. Your panels will not list the same segments, action codes, status, and description.

e. Press F8 to select action codes for all Software Inventory Segment Migration panels before continuing to the next step.

f. Press F5 to process. Depending on the size of your SI files, it may take several minutes to process.

7. MIGR51D updated the V6.1 VMSES/E system SI files on your new 51D disk to reflect the licensed products installed on your old system that you chose to migrate. You must now migrate all code, user IDs, minidisks, and segments associated with each licensed product reflected in the new system software inventory files. See the documentation for each licensed product for information on the code, user IDs, minidisks, and segments required.

   If the licensed product segments are built by VMSES/E, you must sign on to any one of the licensed product installation user IDs, or MAINT, and enter the following to update some of the other segment files on the system SI disk:

   a. Issue:

   ```
   vmfsgmap segbld esasegs segblist
   ```

   At this time, you can make further changes to any segment.

   b. On the first panel, enter:

   ```
   segmerge
   ```

   c. Press F5 to save your changes and exit from VMFSGMAP.

   The VMFSGMAP and SEGMERGE commands only need to be done once, from one user ID. At this point, the appropriate files on the system software inventory disk are updated.

   Now you can use the VMFBLD command to build the licensed product segments from the corresponding licensed product installation user IDs. Follow the information in the licensed product program directories.

Run MIGR51D

For example:

```
vmfbld ppf segbld esasegs segblist myseg (serviced
```

To rebuild the CMS segments, see the "Using the COR Service Procedure" chapter of *z/VM: Service Guide*, and follow "Rebuild the Saved Segments" under the "Place Your Serviced Components into Production" step.

For example:

```
vmfbld list segbld esasegs zvmsegs blddata (serviced
```

Note: You need to rebuild the segments on the new system to get the SYSTEM SEGID file updated.

You have now completed the automated migration procedure.

Additional Information

Additional migration information that you should be aware of:

1. In addition to the customizable files that were moved from your current system to your new V6.1 system, some minidisks were migrated. When a minidisk is migrated, all of the files that exist on the minidisk on your current system that did NOT exist on the minidisk on your new system are copied to the minidisk on the new system. When these files are migrated, message VMFMGR1319W is included in the migration message log, $VMFMIG $MSGLOG.

    The following are general guidelines for disk migration:

    *   Local and sample disks are migrated
    *   Help disks are not migrated
    *   Base disks are not migrated
    *   PARM disks (MAINTs CF1, CF2, CF3) are not migrated
    *   Apply and delta disks:
        *   If the product on the new system is the same release as the current system (OSASF, ICKDSF), the apply and delta disks are migrated
        *   If the product on the new system is a different release than the current system (CP/DV, CMS/REXX, DIRMAINT, GCS, LE, PERFTK, RACF, RSCS, TCPIP, TSAF/AVS, VMHCD, VMSES), the apply and delta disks are not migrated
    *   DirMaint™ database disks are not migrated
    *   RACF database disks are not migrated

2. Additional tasks must be performed after this procedure completes in order to migrate the following. See *z/VM: Migration Guide* and product-specific Program Directories for additional information on migration:

    *   Parm disks
    *   User directory
    *   Networking and connectivity
    *   Segments
    *   Spool space
    *   Security manager databases
    *   Directory manager databases
    *   Products and databases not preinstalled on the z/VM installation media

Additional Information

Chapter 13. Preinstalled Licensed Products and Features

Note: Some of the preinstalled product and features require additional installation steps. You must complete these steps for the product or feature to be completely installed.

The z/VM installation media was built incorporating the following licensed products and features.

Table 17. Preinstalled Licensed Products and Features

Product name	Release level	Program number	Is product or feature installed disabled or enabled?	Do I need to configure before using the product or feature?
Directory Maintenance Facility	6.1.0	5741-A07	Disabled[1]	Yes[2]
EREP	3.5.0	5654-260	Enabled	No
HCD and HCM for z/VM	5.4.0	5741-A07	Enabled	No[3]
ICKDSF	1.17.0	5684-042	Enabled	No
OSA/SF	4.4.0	5741-A07	Enabled	Yes[2]
Performance Toolkit for VM	6.1.0	5741-A07	Disabled[1]	Yes[2]
RACF Security Server for z/VM	6.1.0	5741-A07	Disabled[1]	Yes[2]
RSCS Networking for z/VM	6.1.0	5741-A07	Disabled[1]	Yes[2]
TCP/IP	6.1.0	5741-A07	Enabled	Yes[2]

Notes:

1. This product or feature is not available for customer use unless you have a license for it. To use this product or feature, you must order it as documented in the appropriate program directory.

2. To use this product or feature, it must be configured. For configuration information, see the appropriate program directory.

3. This product can be customized.

For detailed information about a product or feature, see its own documentation. See the "Bibliography" on page 227.

Directory Maintenance Facility

Directory Maintenance Facility provides support for all the z/VM directory statements. DirMaint also provides additional utilities to help manage minidisk assignments and allocations, and provides a level of security regarding command authorizations and password monitoring.

Installation Instructions: The installation of DirMaint is complete. To use DirMaint, it must be enabled and configured. See section "6.0 Installation Instructions" in the Directory Maintenance Facility program directory.

Environmental Record Editing and Printing Program

The Environmental Record Editing and Printing Program (EREP) is a diagnostic application program that runs under the MVS™, VM, and VSE operating systems. The purpose of EREP is to help IBM service representatives maintain your data processing installations.

Installation Instructions: No additional installation instructions are required.

Hardware Configuration Definition and Hardware Configuration Manager for z/VM

Hardware Configuration Definition and Hardware Configuration Manager for z/VM (HCD and HCM for z/VM) provides a comprehensive I/O configuration management environment, similar to that available with the z/OS® operating system.

HCM runs on a Microsoft™ Windows-based personal computer connected to the z/VM system through a TCP/IP network connection. HCM provides a graphical user interface as well as commands to help you configure your system. You supply the needed I/O configuration information to HCM, which processes the information and passes it to HCD.

HCD runs in a z/VM server virtual machine and performs the work of actually creating and changing the hardware and software aspects of your I/O configuration. While HCM provides the primary user interface to HCD, HCD also provides a backup user interface on your z/VM host for certain I/O configuration tasks, in case HCM is not available.

z/VM's original dynamic I/O configuration capabilities are still valid. These consist of a set of system operator commands for changing the System z server's I/O configuration while the system continues to run, or for managing the hardware I/O configuration of all of the logical partitions in your System z server. You now have the choice of either using these commands or else using HCM and HCD to manage your I/O configuration. Note, however, that the use of HCM and HCD is incompatible with the original dynamic I/O configuration capabilities. You should select one method to use for the duration of any given IPL of your z/VM system.

Installation Instructions: The installation of the HCD host code is complete. To **install** the workstation code (user interface) and customize HCD, see section "6.0 Installation Instructions" in the Hardware Configuration Definition and Hardware Configuration Manager program directory and follow the installation instructions.

Device Support Facilities (ICKDSF)

Device Support Facilities (ICKDSF) is a program you can use to perform functions needed for the installation, use, and maintenance of IBM DASD. You can also use it to perform service functions, error detection, and media maintenance.

Installation Instructions: No additional installation instructions are required.

Open Systems Adapter Support Facility

Open Systems Adapter Support Facility (OSA/SF) lets you customize the integrated Open Systems Adapter (OSA) hardware feature for the OSA modes, change the settable OSA port parameters, and obtain status about the OSA.

OSA/SF has a Java-based interface, which is called the OSA/SF Graphical User Interface (OSA/SF GUI).

Through the System Authorization Facility (SAF) interface of the system image on which it is running, OSA/SF lets you use the RACF Security Server for z/VM (RACF), or equivalent, to authorize or deny access to OSA/SF commands.

Installation Instructions: The installation of the OSA/SF host code is complete. To **install** the workstation code (OSA/SF user interface) and configure OSA/SF, see section "6.0 Installation Instructions" in the Open Systems Adapter Support Facility program directory and follow the installation instructions.

Performance Toolkit for VM

Performance Toolkit for VM provides performance management capabilities for VM systems. It is a performance analysis tool for z/VM systems that can be used to detect and diagnose performance problems, analyze system performance, and provide printed reports that show the utilization and response times of key system components. You can also use Performance Toolkit for VM to improve operator efficiency and productivity.

Installation Instructions: The installation of Performance Toolkit for VM is complete. To use Performance Toolkit for VM, it must be enabled and configured. See section "6.0 Installation Instructions" in Performance Toolkit for VM program directory.

RACF Security Server for z/VM

RACF Security Server for z/VM (RACF) is a product that works together with the existing system features of z/VM to provide improved data security for an installation.

Installation Instructions: The installation of RACF is complete. To use RACF, it must be enabled and configured. See section "6.0 Installation Instructions" in Resource Access Control Facility (RACF) Security Server program directory.

Remote Spooling Communications Subsystem (RSCS) Networking for z/VM

Remote Spooling Communications Subsystem (RSCS) Networking for z/VM lets users send messages, files and mail to coworkers at other systems on their TCP/IP, SNA, or non-SNA network. They can also use RSCS to print documents and issue commands on other systems.

RSCS uses z/VM spooling facilities to store and retrieve data. RSCS can transfer data to other systems (such as z/VM, z/OS, OS/400®, VSE/ESA™, UNIX®, Linux, and AIX/ESA®) that support Network Job Entry (NJE) protocols. NJE connectivity options include TCP/IP, SNA, ESCON®, channel to channel, and Binary Synchronous Communication.

RSCS also supports secure data transfer between z/VM spool and a system that is a workstation that supports Remote Job Entry (RJE) or Multileaving RJE (MRJE) protocols. RJE/MRJE connectivity options include SNA, and Binary Synchronous Communication.

RSCS provides the full range of all possible print service connectivity options. Instead of LPSERVE, the RSCS server may be chosen to provide an enhanced level of TCP/IP print support, including LPR and LPD. These services allow for intranet and internet print delivery for a system, and also accept print output from those networks. The ability to print data at a workstation printer in a transparent manner is available to end users regardless of how the printer is accessed.

The enhanced level of TCP/IP print support provided by RSCS (LPR, LPD, UFT, and TN3270E) may be used without obtaining a license for RSCS and enabling RSCS. All other RSCS features can only be used after obtaining a license and enabling RSCS.

Installation Instructions: The installation of RSCS is complete. To use RSCS, it must be enabled and configured. See section "6.0 Installation Instructions" in Remote Spooling Communications Subsystem (RSCS) Networking program directory.

Transmission Control Protocol/Internet Protocol for z/VM

Transmission Control Protocol/Internet Protocol for z/VM (TCP/IP) enables z/VM customers to participate in a multivendor, open networking environment using the TCP/IP protocol suite for communications and interoperability. The applications provided in TCP/IP include the ability to transfer files, send mail, log on a remote host, allow access from any other TCP/IP node in the network, and perform other network client and server functions.

Installation Instructions: The installation of TCP/IP is complete. To use TCP/IP, it must be configured. See section "6.0 Installation" in TCP/IP program directory for more information. If you used the IPWIZARD command to initially configure TCP/IP, additional modifications may be required depending on the needs of your installation.

Congratulations!

You have completed z/VM installation. Your system will need to be tailored and there are several planning and administration guides available to do so. See "Bibliography" on page 227.

Part 4, "Service Procedure," on page 183 contains the procedures for servicing your system and should be used to apply service when required.

Return to the z/VM System Delivery Offering program directory when you are ready to install other licensed products.

Part 4. Service Procedure

In this part, you will:

- Run SERVICE to install preventive (recommended service upgrade–RSU) or corrective (COR) service.
- Run PUT2PROD to place the service into production.

The SERVICE EXEC automates the steps for installing preventive (RSU) and corrective (COR) service, while the PUT2PROD EXEC automates the steps for placing service into production. These EXECs apply to the following components, features, and products:

Table 18. Components, Features, and Products Supported by SERVICE and PUT2PROD

Product	COMPNAME
VMSES/E	VMSES
REXX™/VM	REXX
Language Environment	LE
CMS	CMS
CP	CP
GCS	GCS
Dump Viewing Facility	DV
TSAF	TSAF
AVS	AVS
RSCS Networking for z/VM	RSCS
TCP/IP	TCPIP
OSA/SF for VM	OSA
Directory Maintenance Facility	DIRM
RACF Security Server for z/VM	RACF
Performance Toolkit for VM	PERFTK
HCD and HCM for z/VM	VMHCD

Notes:

1. PUT2PROD cannot be used for products other than those listed in Table 18.
2. The steps that SERVICE and PUT2PROD automate are documented in *z/VM: Service Guide* and applicable product program directories.
3. For more information about SERVICE and PUT2PROD, see *z/VM: VMSES/E Introduction and Reference.*
4. For more information on using SERVICE to service VMSES/E-formatted program products that are not preinstalled as part of z/VM installation, see Appendix A, "Setting up VMSES/E Licensed Products to use SERVICE," on page 193.

Chapter 14. Install Preventive (RSU) or Corrective (COR) Service and Place the Service into Production

In this chapter, you will:

- Run SERVICE to receive, apply, and build the preventive (RSU) or corrective (COR) service.
- Run PUT2PROD to place the products into production when you are satisfied with the service.

Step 1. Load the Service Files from the RSU or COR

> **In this step, you will:**
>
> • Run SERVICE to receive, apply, and build the preventive (RSU) or corrective (COR) service.
>
> **Note:** SERVICE processes only one RSU or COR per invocation. It does, however, process all volumes of a multiple-volume RSU or COR in a single invocation.

1. Make sure you have a current backup of your system. For information about backing up your system, see "Step 3. Back up the z/VM System to Tape" on page 135 or "Step 4. Back up the z/VM System to DASD" on page 138.

2. Log on as MAINT.

   ENTER   The default password for MAINT is MAINT.

   ```
   logon maint
     .
     .
     .
   z/VM V6.1.0     yyyy-mm-dd hh:mm
   ```

   ENTER

   ```
     .
     .
     .
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. If the RSU or COR is on tape, continue with this substep. Otherwise, skip to substep 4 on page 187.

   a. Attach a tape drive to MAINT as 181.

   ```
   attach tapeaddr * 181
   TAPE tapeaddr ATTACHED TO MAINT 181
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   b. Mount volume 1 of your service tapes on your 181 tape drive. If you are using an automated tape library (ATL), see the automated tape library manuals.

   If the RSU or COR has multiple volumes, either:
   • Stack the RSU or COR volumes on 181, or
   • Attach additional tape drives and mount each volume.

   c. IPL CMS.

   ```
   ipl cms
   z/VM V6.1.0     yyyy-mm-dd hh:mm
   ```

   ENTER

   ```
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   d. If all the volumes are mounted on 181, run SERVICE with no parameters.

   ```
   service
   VMFSRV2760I SERVICE processing started
     .
     .
     .
   VMFSRV2760I SERVICE processing completed
   successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

e. If the volumes are mounted on multiple tape drives, run SERVICE with the following parameters:

```
service all tapeaddr1 tapeaddr2 ...
VMFSRV2760I SERVICE processing started
:
VMFSRV2760I SERVICE processing completed
successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

List the addresses of each tape volume.

tapeaddr1
    Tape address for tape volume 1

tapeaddr2 ...
    Tape address for tape volume 2, and so on.

Go to substep 5.

4. If the RSU or COR service is electronic or CD-ROM, continue with this substep.

    a. Retrieve the entire RSU or COR service. (The MAINT 500 minidisk can be used to load the service files.)

       • If your media is electronic, follow the instructions that were sent to you electronically.
       • If your media is CD-ROM, follow the instructions in the README file on the CD-ROM.

       Note: You must preserve the file attribute of FIXED BINARY 1024 through all intermediary transports.

    b. IPL CMS.

       ```
       ipl cms
       z/VM V6.1.0     yyyy-mm-dd hh:mm
       ```

       `ENTER`

       ```
       Ready; T=n.nn/n.nn hh:mm:ss
       ```

    c. Access the minidisk containing the service files and decompress the VMSES/E envelope file.

       ```
       access diskaddr c
       Ready;
       deterse envfn envft envfm = servlink =
       ```

       You need to enter the DETERSE command for every envelope file you receive with your order.

    d. Run SERVICE against the COR documentation envelope file. This step is only for COR service as the RSU documentation envelope file is a text readable file.

       ```
       service all docenvfn
       ```

       docenvfn
           File name of the documentation envelope.

       ```
       vmfupdat sysmemo
       ```

       Displays the memos that were in the documentation envelope

    e. Run SERVICE against PTF or RSU envelope.

       ```
       service all envfn1 envfn2 ...
       VMFSRV2760I SERVICE processing started
       :
       VMFSRV2760I SERVICE processing completed
       successfully
       Ready; T=n.nn/n.nn hh:mm:ss
       ```

       List the file names of each PTF or RSU envelope. You can specify more than one envelope file only if the RSU or COR is multivolume.

       envfn1
           File name for the first envelope.

       envfn2 ...
           File name for the second envelope, and so on.

5. View the SERVICE messages log (VMFVIEW SERVICE) and handle any nonzero return codes. Base your actions on the following table:

Load the service files from the RSU or COR

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW SERVICE. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive. 2. Go to substep 6.

Return code 6 and the message:
 	
`VMFSUII2760I VMFSUFIN`
`PROCESSING INCOMPLETE DUE TO`
`LOCAL MODIFCATIONS`
	1. Issue VMFVIEW SERVICE. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive.
	2. Use the VMFUPDAT SYSLMOD command to see which local modifications you need to rework. Rework the local modifications that were affected by service. For more information, see *z/VM: VMSES/E Introduction and Reference*.
	3. After you complete the rework, use the VMFUPDAT SYSLMOD command to flag the local modification as reworked.
	4. Restart by issuing SERVICE RESTART.
	5. If you receive a nonzero return code, repeat substep 5 on page 187.
	6. Go to substep 6.

A return code greater than 6	1. Issue VMFVIEW SERVICE and check for warning and error messages. 2. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive. 3. Correct all errors reported in the error messages. 4. Restart by issuing the SERVICE command as displayed in the message VMFSRV2310W. 5. If you receive a nonzero return code, repeat substep 5 on page 187. 6. Go to substep 6.

Note: You can ignore the following messages and their associated VMF1966W message:
- `DMSLIO201W The following names are undefined:` ISPLINK ARIPRDI
- `DMSLIO201W The following names are undefined:` DMSDSCSC
- `DMSLIO201W The following names are undefined:` DMSUSRX1 DMSUSRX2
- `DMSLIO202W Duplicate identifier` messages associated with object IOACMAIN MODULE.
- `DMSLKD004W Warning messages issued` messages associated with objects ILBONBL, ILBONTR, ILBOREC, ILBORNT, ILBOSND, ILBOSNT, and ILBOSSN.
- `DMSLIO994W Restrictive RMODE encountered in CSECT CEEM@VOU`
- `DMSLIO994W Restrictive RMODE encountered in CSECT CEEBLIIA`

6. Use the VMFUPDAT SYSMEMO command to review any memos that were received with this service.

Step 2. Place the Service into Production

In this step, you will:

- Run PUT2PROD to place the products that were processed by SERVICE into production. Do this step only after you are satisfied with the service.

Attention:

1. PUT2PROD cannot be used for products other than those listed in Table 18 on page 183.

2. PUT2PROD will affect your production environment. It is recommended that all users be logged off. Placing service into production should be performed as part of a planned system outage. The following list of production environment virtual machines will be logged off to write to minidisks or SFS directories they own.

DATAMOVE	OSASF	RSCSDNS
DIRMAINT	OSAMAINT	TCPMAINT
DIRMSAT	RSCS	XCHANGE

3. If you are running RACF and you receive the message VMFP2P1219E while running PUT2PROD, you need to IPL the system using the CF2 PARM disk with NOAUTOLOG and then XAUTOLOG your backup RACF server machine, RACMAINT, before attempting to put RACF service into production. For more information, see the Resource Access Control Facility (RACF) Security Server program directory.

---

1. Log on as MAINT.

   > **ENTER**
   >
   > **logon maint**
   > ⋮
   > z/VM V6.1.0   *yyyy-mm-dd hh:mm*
   >
   > **ENTER**
   > ⋮
   > Ready; T=*n.nn/n.nn hh:mm:ss*

   The default password for MAINT is MAINT.

2. IPL CMS.

   > **ipl cms**
   > z/VM V6.1.0   *yyyy-mm-dd hh:mm*
   >
   > **ENTER**
   > Ready; T=*n.nn/n.nn hh:mm:ss*

3. Run PUT2PROD.

   > **put2prod**
   > VMFP2P2760I PUT2PROD processing started
   > ⋮
   > VMFP2P2760I PUT2PROD processing completed successfully
   > Ready; T=*n.nn/n.nn hh:mm:ss*

4. If you received return code 0, skip this substep. Otherwise, handle a nonzero return code. Base your action on the following table:

Place the service into production

If you received . . .	Then . . .
Return code 4	1. Issue VMFVIEW PUT2PROD. You can ignore any warning messages in the notes below. Take appropriate action based on other warning messages you receive. 2. Go to substep 5.
A return code greater than 4	1. Issue VMFVIEW PUT2PROD and check for warning and error messages. 2. Take appropriate action based on warning messages. 3. Correct all errors reported in the error messages. 4. Issue IPL CMS. 5. Issue PUT2PROD. 6. If you receive a nonzero return code, repeat substep 4 on page 189. 7. Go to substep 5.

Note: The following messages can be ignored:

- `DMSDCS1083E Saved segment $$DMY$$ does not exist`
- `DMSWLG292W Text data will be loaded at '20000'x in user area; user data may be overwritten.`

5. Shut down and re-IPL the system.

    `shutdown reipl`

    `ENTER`

You have now complete the service procedure.

Part 5. Appendixes

Appendix A. Setting up VMSES/E Licensed Products to use SERVICE

You can use SERVICE to automate the apply, receive, and build service steps for installed VMSES/E licensed products that are not preinstalled on the z/VM system DDR. To use SERVICE on these products after you have installed them, you must update the System-Level Service Update Facility (VM SYSSUF) software inventory file by using the VMFUPDAT command, as follows.

For a list of the preinstalled products, see Table 18 on page 183.

Note: You cannot use PUT2PROD for VMSES/E licensed products that are not preinstalled on the z/VM system. Instead, see the steps for placing a product into production in that product's program directory.

Before you begin: You must have the software inventory disk accessed. By default, the software inventory disk is the 51D disk and it is accessed as D.

Perform the following steps to setting up the licensed products:

1. Log on as MAINT.

   `ENTER`   The default password for MAINT is MAINT.

   logon maint
      ⋮
   Ready; T=*n.nn/n.nn hh:mm:ss*

2. Invoke VMFUPDAT to update the VM SYSSUF file.

   vmfupdat syssuf

   ```
                        *** Update SYSSUF Table Entries ***

   Update any PPF/component name or YES|NO field.  To change all occurrences
   of a PPF name in the table replace both ******** fields with PPF names.

   Compname         Prodid   Servlev  Description
   ---------------- -------- -------- -------------------------------------
   ADSM             5654A09A RSU-0101 ADSTAR Distributed Storage Manager for
    :INSTALL   YES     :INSPPF    SERVP2P ADSM
    :BUILD     YES     :BLDPPF    SERVP2P ADSM
    :INCLUDE   YES     :P2PPPF    SERVP2P ADSMP2P
   AVS              6VMAVS10 000-0000 AVS for z/VM 6.1.0
    :INSTALL   YES     :INSPPF    SERVP2P AVS
    :BUILD     YES     :BLDPPF    SERVP2P AVS
    :INCLUDE   YES     :P2PPPF    SERVP2P AVSP2P
   CMS              6VMCMS10 000-0000 CMS for z/VM 6.1.0
    :INSTALL   YES     :INSPPF    SERVP2P CMS
    :BUILD     YES     :BLDPPF    SERVP2P CMS
    :INCLUDE   YES     :P2PPPF    SERVP2P CMSP2P

   Change PPF name ******** to ********
                                               Page 1 of 9

        PF1=HELP  PF3/PF12=Quit  PF5=Process  PF6=VMFSUFTB  PF8=Forward
   ```

3. Press F6 to refresh the VM SYSSUF table from the information on your system inventory disk (51D). This adds the new product(s) you installed in to the VM SYSSUF table and displays the table again.

4. Locate the product to be used with SERVICE by scrolling forward.

   Example: In the following example, HLASM was added, then the user scrolled to it.

193

Setting up VMSES/E licensed products to use SERVICE

```
                   *** Update SYSSUF Table Entries ***

Update any PPF/component name or YES|NO field.  To change all occurrences
of a PPF name in the table replace both ******** fields with PPF names.

Compname        Prodid   Servlev  Description
----------------  --------  --------  ----------------------------------------
HLASM           5696234E 000-0000 HIGH LEVEL ASSEMBLER FOR MVS & VM &
 :INSTALL   YES    :INSPPF   5696234E HLASM
 :BUILD     YES    :BLDPPF   5696234E HLASM
 :INCLUDE   YES    :P2PPPF
ICKDSF          5684042J 011-0011 ICKDSF DEVICE SUPPORT FACILITIES R17
 :INSTALL   YES    :INSPPF   SERVP2P ICKDSF
 :BUILD     YES    :BLDPPF   SERVP2P ICKDSF
 :INCLUDE   YES    :P2PPPF   SERVP2P ICKDSFP2P
LE              5VMLEN40 000-0000 IBM Language Environment for z/VM 4.4.0
 :INSTALL   YES    :INSPPF   SERVP2P LE
 :BUILD     YES    :BLDPPF   SERVP2P LE
 :INCLUDE   YES    :P2PPPF   SERVP2P LEP2P

Change PPF name ******** to ********
                                              Page 4 of 10


     PF1=HELP  PF3/PF12=Quit  PF5=Process  PF7=Backward  PF8=Forward
```

5. If necessary, change the :INSPPF and :BLDPPF fields to the PPF name you are using to service this product.

6. Press F5 to process. The VM SYSSUF table is updated and you exit VMFUPDAT.

You have completed the update procedure. You can now use SERVICE to apply service for new product(s) you added. For more information on using SERVICE, see "Step 1. Load the Service Files from the RSU or COR" on page 186.

Appendix B. Determining the RSU Level for Ordering Service

Use the SERVICE command with the STATUS operand to determine the current RSU Service Level for a component or product. The SERVICE command queries the system-level service update facility (VM SYSSUF) table, which contains a list of all products or components that are installed on the system.

Before you begin: You must have the software inventory disk accessed. By default, the software inventory disk is the 51D disk and it is accessed as D.

To determine the RSU level of a component, issue the SERVICE command as follows:

> **service** *compname* **status**

compname
    A component defined in Table 18 on page 183 or any other component defined in the VM SYSSUF table.

Example: In this example, "0901" represents the RSU level that you would use when ordering service for CP.

```
VMFSRV2195I SERVICE CP STATUS
VMFSRV2760I SERVICE processing started
VMFSRV1225I CP (6VMCPR10%CPSFS) status:
VMFSRV1225I    Service Level     RSU-0901
VMFSRV1225I    Production Level  RSU-0901
VMFSRV2760I SERVICE processing completed successfully
```

For more information, see SERVICE EXEC in *z/VM: VMSES/E Introduction and Reference*.

Post z/VM System Installation

Appendix C. Migrate 51D from the Old System

You can use the MIGR51D command to migrate your current system inventory disk to your new system. If your current system is at least z/VM V5.2, you can do this as part of the migration procedure (documented in Chapter 9, "Plan Your Migration," on page 145 through Chapter 12, "Place Migrated Parts into Production," on page 165). If your current system is older than z/VM V5, or if you do not wish to follow the entire migration procedure, you can run MIGR51D as an independent activity.

To run MIGR51D as an independent activity, complete the steps listed here and then go to Chapter 12, "Place Migrated Parts into Production" and complete "Step 4. Access Current System Software Inventory Disk" on page 169 through "Step 6. Run MIGR51D" on page 173, as directed, in step 2 below.

1. Create a backup of the z/VM version 6 release 1 system software inventory (SI) disk (default is 51D) using your site's normal backup procedures.

2. On your new system, obtain access to the system software inventory (SI) files (51D) on your current system.

   If your new system can be IPLed as a second level system on your current system, then go to Chapter 12, "Place Migrated Parts into Production" and complete "Step 4. Access Current System Software Inventory Disk" on page 169 through "Step 6. Run MIGR51D" on page 173.

   If your new system is running first level, see your system programmer for assistance in making a copy of the current system SI files accessible on your new system. On your new system, create a new minidisk on the MAINT userid, FFF, to store the SI files from your current system. Once the current system SI files are stored on minidisk FFF on your new system, go to Chapter 12, "Place Migrated Parts into Production," "Step 6. Run MIGR51D" on page 173.

Migrate 51D from the old system

Appendix D. Apply or Rework Local Service and Modifications

You can use the LOCALMOD command to create and apply or rework local service and modifications to any component or product defined in the System-Level Service Update Facility (VM SYSSUF) software inventory table.

Apply or Create a Local Modification

You can use the LOCALMOD command to create and apply local modifications to any component or product defined in the System-Level Service Update Facility (VM SYSSUF) software inventory table.

Before you begin: You must have the software inventory disk accessed. By default, the software inventory disk is the 51D disk and it is accessed as D.

1. Create and apply the local modification.

   a. Run LOCALMOD:

      ```
      localmod compname partfn partft
      ```

      compname
      Component name associated with the product you are modifying (for example one of the COMPNAME values in Table 18 on page 183).

      partfn
      File name of the source part that is to be modified.

      partft
      File type of the source part that is to be modified.

   b. Reply to any prompt messages.

   c. Make your changes to the displayed file.

   d. File your changes.

      ```
      ====> file
      ```
      Enter **file** on the XEDIT command line.

   e. Repeat this entire step for any additional local modifications that you need to make.

2. Run SERVICE, for each component processed, to build the local modification(s).

   ```
   service compname build
   ```

3. Run PUT2PROD to put the local modification(s) into production.

   ```
   put2prod
   ```

   Note: You can use only PUT2PROD for products listed in Table 18 on page 183. If you have reworked a local modification for a product that you added to the VM SYSSUF table, follow that product's instructions (found in the product's program directory) to place its service into production.

Rework a Local Modification

You can use the LOCALMOD command to rework a local modification to any component or product defined in the System-Level Service Update Facility (VM SYSSUF) software inventory table.

Before you begin: You must have the software inventory disk accessed. By default, the software inventory disk is the 51D disk and it is accessed as D.

1. Rework the local modification.

   a. Run LOCALMOD:

      `localmod` *compname partfn partft* `(rework`

      compname
      : Component name associated with the product you are reworking (for example one of the COMPNAME values in Table 18 on page 183).

      partfn
      : File name of the source part that is to be reworked.

      partft
      : File type of the source part that is to be reworked.

   b. Reply to any prompt messages.

   c. Make your changes to the displayed file.

   d. File your changes.

      `====> file`   Enter **file** on the XEDIT command line.

   e. Repeat this entire step for any additional local modifications that you need to rework.

2. Run SERVICE, for each component processed, to build the local modification(s).

   If you received a return code 6 (rework local modifications) from a SERVICE invocation, enter the following:

      `service restart`

   Otherwise, enter the following:

      `service` *compname* `build`

3. Run PUT2PROD to put the local modification(s) into production.

      `put2prod`

   Note: You can use only PUT2PROD for products listed in Table 18 on page 183. If you have reworked a local modification for a product that you added to the VM SYSSUF table, follow that product's instructions (found in the product's program directory) to place its service into production.

Apply Local Service

You can use the LOCALMOD command to apply local service to any component or product defined in the System-Level Service Update Facility (VM SYSSUF) software inventory table. Local service is defined as any service received from IBM that is not on a COR or RSU tape (or envelope).

Before you begin: You must have the software inventory disk accessed. By default, the software inventory disk is the 51D disk and it is accessed as D.

1. Apply the local service.

   a. Run LOCALMOD:

   ```
   localmod compname partfn partft servfn servft
   ```

   compname
   : Component name associated with the product you are modifying (for example one of the COMPNAME values in Table 18 on page 183).

   partfn
   : File name of the part to be serviced.

   partft
   : File type of the part to be serviced.

   : If the service is an update, *partft* is the file type of the service part, for example ASSEMBLE. If the service is a replacement part, *partft* is the file type of the part to be replaced, for example TEXT.

   servfn
   : File name of the service received from IBM.

   servft
   : File type of the service received from IBM.

   b. Reply to any prompt messages.

   c. Repeat this entire step for any additional local service.

2. Run SERVICE, for each component processed, to build the local service.

   ```
   service compname build
   ```

3. Run PUT2PROD to put the local service into production.

   ```
   put2prod
   ```

   Note: You can use only PUT2PROD for products listed in Table 18 on page 183. If you have applied local service for a product that you added to the VM SYSSUF table, follow that product's instructions (found in the product's program directory) to place its service into production.

Apply Local Service

Appendix E. Contents of the z/VM System

Products Loaded from the z/VM System Installation Media

Products installed on the z/VM system are:

- z/VM
  - Control Program (CP)
  - Dump Viewing Facility (DV)
  - Conversational Monitor System (CMS)
  - REstructured eXtended eXecutor/VM (REXX)
  - Virtual Machine Serviceability Enhancements Staged/Extended (VMSES)
  - Group Control System (GCS)
  - Transparent Services Access Facility (TSAF)
  - APPC/VM VTAM® Support (AVS)
  - Language Environment (LE)
  - 3800 Model-3 Printer Image Library
  - UCENG Help - Uppercase English Help minidisk
  - Kanji Help - Japanese Help minidisk
- Environmental Record Editing and Printing Program (EREP)
- Device Support Facilities (ICKDSF)
- Remote Spooling Communications Subsystem (RSCS) Networking for z/VM
- Transmission Control Protocol/Internet Protocol (TCPIP)
- Open Systems Adapter Support Facility (OSA)
- Directory Maintenance Facility (DIRM)
- RACF Security Server for z/VM (RACF)
- Performance Toolkit for VM (PERFTK)
- Hardware Configuration Definition and Hardware Configuration Manager for z/VM (VMHCD)

CMS Defaults

The CMS nucleus was built with a local mod to DMSNGP. This local mod updates the CYLADDR, which defines where to write the CMS nucleus on the System disk (the recomp value).

CP Defaults

1. The LOGO CONFIG and SYSTEM CONFIG files are located on the primary parm disk (CF1). A shadow of these files resides on the secondary parm disk (CF2) and backup parm disk (CF3). These files contain the system configuration data used by CP.

2. For detailed information about the CP system configuration function, CP nucleus options, and CP planning, see *z/VM: CP Planning and Administration*.

3. The CP nucleus on the z/VM system is a module. The module resides on the parm disks (CF1, CF2, and CF3).

4. The CP nucleus is IPLed with the system default language, mixed case American English (AMENG), Uppercase English (UCENG), or Kanji (KANJI), which was selected during installation.

5. The USER DIRECT file on the MAINT 2CC minidisk contains entries defining each virtual machine (user) permitted to log on to your system.

CP defaults

If there is no machine mode defined for a user ID, the default machine mode definition is XA. However, issuing the SET MACHINE command overrides the default setting. The USER DIRECT file which was built during installation contains a SET MACHINE XA, SET MACHINE ESA, or SET MACHINE XC command for all user IDs.

6. The USER DIRECT file contains a common profile section, PROFILE IBMDFLT. An INCLUDE statement for this profile has been added to each user ID that previously linked to the AMENG HELP disk (19D). The PROFILE IBMDFLT section contains a link to each HELP disk. Each user you add to the directory that needs access to a HELP disk must have an INCLUDE statement to the PROFILE IBMDFLT section or a LINK statement for each of the three help disks.

7. The z/VM system contains system definition files with sample information and default parameters. You can modify the following files to define your system configuration.

   • The logo configuration file (LOGO CONFIG) defines both the logo that appears on your terminal screen when you log on your system and the logo that appears on separator pages for printers. This file also provides information to the system about status areas on the terminal screens.

     Note: Status areas are normally in the lower right side of the terminal and contain such informational messages as RUNNING, VM READ, CP READ, MORE..., and HOLDING.

   • The CP system control file (SYSTEM CONFIG) describes the system residence device (610RES) and various system parameters, defining the configuration of your system.

8. CP ships several CP Sample Utility Programs to help you configure your system once installation is complete. They are located on the MAINT 2C2 minidisk. For additional information on these programs, see appendix A in *z/VM: CP Planning and Administration*.

GCS Defaults

1. The GCS nucleus was built with mixed case American English (AMENG) as the system default language.

2. The GCS nucleus was built with a system name of GCS and is loaded at storage locations X'400'-X'5FF' and X'1000'-X'11FF'.

3. The GCS nucleus was also built with the following defaults:

Default Item	Description
Saved System Name	GCS
Authorized VM User IDs	VTAM GCS MAINT NETVIEW OPERATNS RSCS AVSVM PDMREM1 PDMGRP4 SNALNKA PVMG NVAS IHVOPER CMEOSI NPM VSCS
Saved System Information	Recovery machine user ID: GCS
	User ID to receive storage dumps: OPERATNS
	GCS Trace Table Size: 16KB
	Common storage above 16MB line (YES or NO): YES
	Single user environment: no
	Maximum number of VM machines: 14
	System ID: GCS
	Name of the VSAM segment: CMSVSAM
	Name of the BAM segment: CMSBAM
	GCS saved system is restricted: yes
	Trace table in private storage: yes
Saved System links	VTAM NETVSG00

User IDs needing VSAM storage
NETVIEW NVAS CMEOSI

Saved Segments on the z/VM System

1. CMS improves system performance and storage usage by placing heavily used execs in the CMS installation segment, CMSINST. CMSINST is a logical segment within the INSTSEG physical segment. If you want to add or delete an exec from CMSINST, you should identify the changes to VMSES/E using the procedure within the local modification example for CMSINST, see *z/VM: Service Guide*. A local modification allows VMSES/E to track the changes and to ensure the CMSINST segment is rebuilt when any of the execs in it are serviced.

2. The QUERY NSS ALL MAP command displays the saved segments and saved systems defined on your system. The segments might be displayed in a different order.

```
        query nss all map                            Enter the QUERY NSS ALL MAP command to list all
                                                     defined saved segments and their addresses.
        :
        FILE FILENAME FILETYPE MINSIZE  BEGPAG ENDPAG TYPE CL #USERS PARMREGS VMGROUP
        nnnn ZCMS     NSS      0000256K 00000  0000D  EW   A  00000  00-15    NO
                                        00020  00023  EW
                                        00F00  013FF  SR
        nnnn CMS      NSS      0000256K 00000  0000D  EW   A  00000  00-15    NO
                                        00020  00023  EW
                                        00F00  013FF  SR
        nnnn GCS      NSS      0000256K 00000  0000C  EW   R  00000  OMITTED  YES
                                        00400  0044E  SR
                                        0044F  0044F  SW
                                        00450  005FF  SN
                                        01000  0101A  SR
                                        0101B  011FF  SN
        nnnn CMSDOS   DCSS-M   N/A      00B00  00B0C  SR   A  00000  N/A      N/A
        nnnn CMSBAM   DCSS-M   N/A      00B0D  00B37  SR   A  00000  N/A      N/A
        nnnn DOSBAM   DCSS-S   N/A      00B00  00B37  --   A  00000  N/A      N/A
        nnnn MONDCSS  CPDCSS   N/A      09000  09FFF  SC   R  00000  N/A      N/A
        nnnn GUICSLIB DCSS     N/A      01F00  01FFF  SR   A  00000  N/A      N/A
        nnnn CMSFILES DCSS     N/A      01900  01BFF  SR   A  00000  N/A      N/A
        nnnn SVM      DCSS     N/A      01900  019FF  SR   A  00000  N/A      N/A
        nnnn CMSPIPES DCSS     N/A      01800  018FF  SR   A  00001  N/A      N/A
        nnnn CMSVMLIB DCSS     N/A      01700  017FF  SR   A  00001  N/A      N/A
        nnnn INSTSEG  DCSS     N/A      01400  016FF  SR   A  00001  N/A      N/A
        nnnn HELPSEG  DCSS     N/A      00C00  00CFF  SR   A  00000  N/A      N/A
        nnnn PERFOUT  DCSS     N/A      08A00  08FFF  SN   A  00000  N/A      N/A
        nnnn DOSINST  DCSS     N/A      00900  0090F  SR   A  00000  N/A      N/A
        nnnn SCEE     DCSS     N/A      00900  009FF  SR   A  00000  N/A      N/A
        nnnn SCEEX    DCSS     N/A      02100  028FF  SR   A  00000  N/A      N/A
        nnnn NLSKANJI DCSS     N/A      02000  020FF  SR   A  00000  N/A      N/A
        nnnn NLSUCENG DCSS     N/A      02000  020FF  SR   A  00000  N/A      N/A
        nnnn NLSAMENG DCSS     N/A      02000  020FF  SR   A  00000  N/A      N/A
        Ready; T=n.nn/n.nn hh:mm:ss
```

VMSERVS, VMSERVU, and VMSERVR File Pool Defaults

The z/VM system incorporates three prebuilt file pools.

VMSYS

- Managed by the VMSERVS server machine
- Enrolled MAINT in the VMSYS file pool
- BFS directories defined for Shell and Utilities, and for SSL

VMSERVS, VMSERVU, and VMSERVR file pool defaults

Note: User IDs always enrolled in the VMSYS file pool are: GSKSSLDB, LDAPSRV, ROOT, SSLSERV, VMRMSVM, VSMPROXY, VSMREQIN, VSMREQIU, VSMWORK1, VSMWORK2, and VSMWORK3.

VMSYSU
* Managed by the VMSERVU server machine
* Enrolled MAINT in the VMSYSU file pool
* MAINT.SAMPLES directory exists with SFS sample files installed.
* BFS directory, /ETC/gskadm/, defined for SSL

VMSYSR
* Managed by the VMSERVR server machine
* Coordinated resource recovery (CRR) file pool

Each of these file pools has two definition files associated with it:
* *filename* POOLDEF, which defines the configuration of the file pool. *filename* is the name of the file pool.
* *filename* DMSPARMS, which contains startup parameters for the file pool server machine. *filename* is the user ID of the server machine.

For more information and examples on tailoring these files and on BFS root directory definitions, see *z/VM: CMS File Pool Planning, Administration, and Operation*.

VMSYS File Pool

If you chose to load these products into the file pool, the following user IDs are also enrolled in the VMSYS file pool:

Table 19. VMSYS File Pool User Ids

Product	User ID(s)
RSCS	6VMRSC10 RSCSAUTH RSCSDNS XCHANGE
OSA/SF	4OSASF40 OSADMIN1 OSADMIN2 OSADMIN3 OSAMAINT OSASF
TCP/IP	6VMTCP10
ICKDSF	5684042J
DIRM	6VMDIR10
RACF	6VMRAC10
PERFTK	6VMPTK10 PERFSVM
VMHCD	5VMHCD40 CBDIODSP

Appendix F. Restore the Named Saved Systems and Segments from Tape

---

In this procedure, you will:

- Restore the CMS named saved system and segments.

You should have created a loadable tape of the named saved systems and segments during your system installation. Perform the following steps to restore the named saved system and segments.

1. Log on as MAINT.

   `ENTER`   The default password for MAINT is MAINT.

   ```
   logon maint
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Attach a tape drive (*tapeaddr*) to MAINT.

   ```
   attach tapeaddr *
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Mount the backup tape on the attached tape drive (*tapeaddr*).

4. Spool the console.

   ```
   spool console *
   ```

5. Enter the SPXTAPE command to load the system data files.

   ```
   spxtape load tapeaddr sdf all run
   ```
       tapeaddr
         Address of the tape drive attached to MAINT.

   ```
   SPXTAPE LOAD   INITIATED ON VDEV tapeaddr
   Ready; T=n.nn/n.nn hh:mm:ss

   LOADING  tapeaddr    :       nnn FILES, PAGES     nnnn
   :
   LOADING  tapeaddr    :       nnn FILES, PAGES     nnnn
   SPXTAPE LOAD END-OF-TAPE ON VDEV tapeaddr;
   MOUNT NEXT TAPE
   TAPE NUMBER:         tapeaddr-001
   FILES PROCESSED:          nnn
   SPOOL PAGES:              nnnn
   LOADING  tapeaddr    :       nnn FILES, PAGES     nnnn
   :
   LOADING  tapeaddr    :       nnn FILES, PAGES     nnnn
   RDR FILE fileno1 SENT FROM MAINT    CON WAS fileno RECS nnnn CPY  001 T NOHOLD NOKEEP
   ```

       fileno1
         File number of the volume log file.

       The volume log file records information about the files processed by the SPXTAPE LOAD command that are associated with a particular tape volume.

    207

Restore the named saved systems and segments from tape

6. When all volumes have been loaded, use the SPXTAPE END command to end the SPXTAPE load.

```
spxtape end tapeaddr
SPXTAPE END    INITIATED ON VDEV tapeaddr
SPXTAPE LOAD COMMAND ENDED     ON VDEV tapeaddr
TIME STARTED:        hh:mm:ss
TIME ENDED:          hh:mm:ss
TAPE COUNT:               nnn
FILES PROCESSED:          nnn
SPOOL PAGES:             nnnn
```

The SPXTAPE END command ends the SPXTAPE LOAD operation at the completion of the current file.

```
Ready; T=n.nn/n.nn hh:mm:ss
```

The CMS ready message may occur between the messages.

```
 RDR FILE fileno2 SENT FROM MAINT    CON WAS fileno RECS nnnn CPY  001 T NOHOLD NOKEEP
```

fileno2
    File number of the command summary log file.

The command summary log file records the progress and status of the SPXTAPE LOAD operation.

For more information on the SPXTAPE command, see *z/VM: CP Commands and Utilities Reference*.

7. IPL the CMS named saved system.

```
ipl cmsname
:
:
z/VM V6.1.0    yyyy-mm-dd hh:mm
```

cmsname
    Either the IBM supplied system name (CMS) or the name you defined in DMSNGP on the SYSNAME statement.

ENTER

```
Ready; T=n.nn/n.nn hh:mm:ss
```

If you have changed the version heading, your own heading will appear.

Appendix G. Restore the z/VM System Backup from Tape

In this procedure, you will:

- Restore the backup of your new z/VM system from tape.

Note: This procedure requires a full pack minidisk be defined in the CP directory, USER DIRECT, for each volume you are restoring.

You should have created a backup of your new z/VM system on tape during your system installation. Perform the following steps to restore the system.

1. Mount the backup tape on a tape drive.

2. Perform an IPL of the tape device.

   ipl *tapeaddr* **clear**

   > *tapeaddr*
   > Address of the tape drive.

3. Use DDRXA to restore the system to disk. Repeat this substep for each DASD volume you are restoring.

   ```
   z/VM DASD DUMP/RESTORE PROGRAM
   ENTER CARD READER ADDRESS OR CONTROL STATEMENTS
   ENTER:
   ```
   sysprint cons
   ```
   ENTER:
   ```

   This first control statement tells DDRXA that you want program messages sent to your console.

   input *tapeaddr* **tape**
   ```
   ENTER:
   ```

   The second control statement is the input control statement.

   > *tapeaddr*
   > Device number where the backup tape is mounted.

   You can specify one alternate tape drive for additional tape volumes.

   Example: If you had a tape attached to 181 and an alternate tape attached to 182, the INPUT control statement would be:

   `input 181 tape 182`

   If you are using a 3590 tape, and multiple DASD volumes were dumped on one tape volume, use the leave option to position the tape for the next restore. The input control statement would be:

   `input 181 tape (leave`

Restore the z/VM system backup from tape

```
output devaddr dasd volid
ENTER:
```

This output statement specifies the DASD device to which you are restoring the system.

devaddr
    Full-pack minidisk address of the volume to which you are restoring this tape.

The full-pack minidisk addresses for the default DASD are 122 (610SPL), 123 (610RES) 124 (610W01), 125 (610W02), ...

By typing **dasd**, the device type (3390) is automatically identified by the DDRXA program.

```
restore all
```

The RESTORE ALL statement tells DDRXA to restore the whole tape to the output device.

```
RESTORING volid
DATA DUMPED mm/dd/yy
  AT hh.mm.ss GMT FROM volid
  RESTORED TO volid
INPUT CYLINDER EXTENTS        OUTPUT CYLINDER EXTENTS
     START       STOP            START        STOP
   nnnnnnnn   nnnnnnnn         nnnnnnnn     nnnnnnnn

    .
    .
    .
END OF RESTORE
BYTES RESTORED nnnnnnnnnn
```

Informational messages: GMT means Greenwich Mean Time.

The exact cylinder extents vary according to the device type.

```
ENTER:
 .
 .
 .
```

Repeat INPUT, OUTPUT, and RESTORE statements for each DASD you are restoring.

```
ENTER:
```

When DDRXA finishes, it prompts you with ENTER. Press Enter to end the program.

`ENTER`
```
END OF JOB
```

Note: When DDRXA encounters the end of a tape, and there is more data to restore, the program prompts you to mount the next tape.

- If you are using the same tape drive, mount the next tape and DDRXA continues.
- If you are using an alternate tape drive, DDRXA uses the alternate tape drive, then alternates between the tape drives for additional tapes. That is, if there are more than two tapes, you are prompted for the third tape on the first tape drive, the fourth tape on the second tape drive, and so forth.

Appendix H. Recover a File or Minidisk

In this procedure, you will:

- Recover an entire minidisk. To recover a minidisk, you may either overlay the existing disk or restore the minidisk to a temporary disk and copy the files to the target disk.

- Recover an individual file from the installation media. To recover an individual file, you must first determine on which minidisk the file is located, restore the entire minidisk to a temporary disk, and copy the file from the temporary disk.

---

1. Log on as MAINT.

   <kbd>ENTER</kbd>   The default password for MAINT is MAINT.
   ```
   logon maint
   :
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. If you want to recover an entire minidisk, skip this substep and go to substep 3.

   To recover an individual file, you must first determine on which minidisk the file is located. If you already know on which minidisk the file is located, go to substep 3. Otherwise, check the minidisk map file. If you loaded z/VM to the file pool, the minidisk map file is on the directory VMSYS:MAINT.CPDV.OBJECT. Access this directory in place of the 194 disk.

   ```
   access 194 z                          The MINIDISK MAP file lists the minidisks shipped
   Ready; T=n.nn/n.nn hh:mm:ss           on the z/VM system and the files contained on each
                                         minidisk. Look at MINIDISK MAP to determine which
   xedit minidisk map z                  minidisk contains the file you want to recover.
     :
   quit
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. If you want to recover an individual file or recover the entire minidisk to a temporary disk, you need to define a temporary disk. The temporary disk must be the same DASD type that is provided by your installation media and the same size as the minidisk you want to recover. (See the $ITEMMD$ $TABLE$ on the 2CC disk for the size of the minidisk you want to recover.)

   ```
   define [t3390 or vfb-512]  loadaddr mdisksize
   DASD loadaddr DEFINED                          loadaddr
   Ready; T=n.nn/n.nn hh:mm:ss                        Address of the temporary disk.

                                                  mdisksize
                                                      Size of the minidisk you want to restore.
   ```

   If you receive the following message:

   `HCPLNM091E DASD loadaddr not defined; temp space not available`

   you must add additional temporary disk space to your system or define a minidisk with the address *loadaddr*. If you define a minidisk, it must be the same DASD type that is provided by your installation media and the same size as the minidisk you want to recover.

4. Continue to the appropriate substep depending on the type of installation media.

   - DDR tape, continue to substep 5 on page 212.
   - DVD, continue to substep 8 on page 212.

211

Recover a file or minidisk

5. Attach tape drive (*tapeaddr*) to the MAINT user ID at device address 181.

```
attach tapeaddr * 181
tapeaddr attached to MAINT
Ready; T=n.nn/n.nn hh:mm:ss
```

6. Mount the z/VM system DDR tape on tape drive 181.

7. Restore the chosen minidisk by using the INSTALL command and RECOVER option.

```
install tape (recover mdiskaddr loadaddr
```

mdiskaddr
> Address of the minidisk to be loaded from the z/VM system DDR.

loadaddr
> Address to which you restore the minidisk.

Notes:

a. If the minidisk belongs to MAINT, *mdiskaddr* is the actual minidisk address. If the minidisk does not belong to MAINT, *mdiskaddr* is the alias address. See the $ITEMMD$ $TABLE$ on the 2CC disk to determine the alias address.

b. To recover a minidisk and overlay the existing disk, you must link the minidisk in write mode. For example, enter the `LINK CMSBATCH 195 801 WR` command.

c. If you want to restore an entire minidisk and overlay the existing minidisk, *loadaddr* is the address at which you have the disk linked.

   If the load address (*loadaddr*) is not specified, a temporary disk (T-disk) is created.

d. You cannot recover the 2CC minidisk directly to the 2CC minidisk. You can recover the 2CC to an address other than 2CC and copy the files you wish to recover to the 2CC minidisk.

e. The INSTALL EXEC requires a full screen terminal with at least 20 lines.

8. Recover the minidisk.

   If your installation media was DVD, you could have installed from the DVD or uploaded the contents of the DVD to either an FTP server or VM minidisk. You can use the FTP server or VM minidisk if they are still available, otherwise use the DVD.

   a. Run INSTPIPE

   ```
   instpipe
   ```

   b. Recover from the DVD or FTP server:

   ```
   pipe ftpget -h IPaddress  -u userID -p password -d ftpdrct -v BEF -DVDEOF  -f dddcuu* |UNPACK|
   restcmd loadaddr
   ```

IPaddress
    IP address or FTP HOSTNAME.

userID
password
    User ID and password used to log on to the FTP
    server.

ftpdrct
    Path to the DVD drive or server directory. If
    using a DVD drive, append **/CPDVD** to the end
    of the path.

ddd
    CKD for 3390 or **FBA** for FBA.

cuu*
    Address of the minidisk to be recovered from the
    DVD, with an asterisk (*) appended to the end.

restcmd
    ECKDREST for 3390 or **MDREST** for FBA.

loadaddr
    Address to which you are restoring the minidisk.

Notes:

1) To recover a minidisk and overlay the existing disk, you must link the minidisk in write mode.
   For example, enter the `LINK CMSBATCH 195 801 WR` command.

2) If the minidisk belongs to MAINT, *cuu* is the actual minidisk address. If the minidisk does not
   belong to MAINT, *cuu* is the alias address. See the $ITEMMD$ $TABLE$ on the 2CC disk to
   determine the alias address.

3) If you want to recover an entire minidisk and overlay the existing minidisk, *loadaddr* is the
   address at which you have the disk linked. If *loadaddr* is not specified, a temporary disk
   (T-disk) is created.

C. Recover from a VM minidisk. Access the VM minidisk address as C.

```
access diskaddr c
Ready; T=n.nn/n.nn hh:mm:ss
pipe dvddecod dddcuu image c |UNPACK| restcmd loadaddr
```

ddd
    CKD for 3390 or **FBA** for FBA.

cuu
    Address of the minidisk to be recovered from the
    DVD.

restcmd
    ECKDREST for 3390 or **MDREST** for FBA.

loadaddr
    Address to which you are recovering the
    minidisk.

Notes:

1) To recover a minidisk and overlay the existing disk, you must link the minidisk in write mode.
   For example, enter the `LINK CMSBATCH 195 801 WR` command.

2) If the minidisk belongs to MAINT, *cuu* is the actual minidisk address. If the minidisk does not
   belong to MAINT, *cuu* is the alias address. See the $ITEMMD$ $TABLE$ on the 2CC disk to
   determine the alias address.

3) If you want to recover an entire minidisk and overlay the existing minidisk, *loadaddr* is the
   address at which you have the disk linked. If *loadaddr* is not specified, a temporary disk
   (T-disk) is created.

9. If you restored the minidisk to a temporary disk, copy the file or files that you want to recover from the
   temporary disk to the target disk.

```
access loadaddr fm-1
Ready; T=n.nn/n.nn hh:mm:ss
```

loadaddr
    Address of the temporary disk.

fm-1
    Any available file mode.

Recover a file or minidisk

```
access mdiskaddr fm-2
Ready; T=n.nn/n.nn hh:mm:ss
```

mdiskaddr
  Address of the target minidisk. If you loaded
  z/VM to the file pool, *mdiskaddr* is the directory
  to which the minidisks were copied. See
  MOVE2SFS $TABLE$ for a list of minidisks and
  directories.

fm-2
  Any available file mode.

```
copyfile fn ft fm-1 = = fm-2 (olddate
Ready; T=n.nn/n.nn hh:mm:ss
```

fn File name of the file you want to recover.

ft File type of the file you want to recover. Repeat
     the COPYFILE command for each file you want
     to recover.

Appendix I. Using an Integrated 3270 Console for Installation

Perform the following steps to install the z/VM system DDR in a new system environment using an integrated 3270 console on the HMC.

1. Open the CPC Image Work Area pane.

   a. In the Hardware Management Console Workplace window, double-click the **Task List** icon in the Views pane.

   b. In the Task List Work Area pane, double-click the **CPC Recovery** icon.

   c. In the Views pane, double-click the **Groups** icon.

   d. In the Groups Work Area pane, double-click the **CPC Images** icon.

2. IPL the tape drive to load ICKDSF.

   a. In the CPC Images Work Area pane, select the LPAR you are going to use for installation.

   b. In the Recovery pane, double-click the **Load** icon. The Load window opens.

   c. In the Load window, ensure that a Load Type of "Normal"is selected, enter the device address of your tape drive in the **Load address** field, and enter CNSLSCLP in the **Load parameter** field.

   d. Click **OK**. The Load Task Confirmation prompt is displayed.

   e. Click **Yes** to continue.

   f. Messages indicating the status of the load are displayed in the Load Progress window. When a message is displayed indicating the load is successful, click **OK** to close the window.

   g. In the Hardware Management Console Workplace window, double-click the **Operating System Messages** icon in the Recovery pane. The Operating System Messages window opens. ICKDSF will load in the Operating System Messages window. It might take a few minutes for the messages to appear.

   h. Go back to "Step 1. Restore the Initial Installation System (IIS)" on page 12 and follow substeps 6 through 11 to use ICKDSF to initialize, format, and label the packs needed for installation. Return here when instructed.

   i. Close the Operating System Messages window.

3. Open an integrated 3270 console and IPL the tape drive to load the DDR program. The Integrated 3270 Console window must remain open, even if it is in the background.

   a. In the Hardware Management Console Workplace window, select the LPAR you are using for installation in the CPC Images Work Area pane.

   b. In the Recovery pane, double-click the **Integrated 3270 Console** icon. The Integrated 3270 Console window for that LPAR opens.

   c. In the Hardware Management Console Workplace window, select the LPAR you are using for installation in the CPC Images Work Area pane again.

   d. In the Recovery pane, double-click the **Load** icon. The Load window opens.

   e. In the Load window, enter the device address of your tape drive in the **Load address** field and enter SYSG in the **Load parameter** field. Ensure the **Load parameter** field is empty before entering SYSG.

   f. Click **OK**. The Load Task Confirmation prompt is displayed.

   g. Click **Yes** to continue.

Using an integrated 3270 console for installation

    h. Messages indicating the status of the load are displayed in the Load Progress window. When a message is displayed indicating the load is successful, click **OK** to close the window.

    i. Click on the Integrated 3270 Console window to bring it to the foreground. The DDR program will be displayed in the Integrated 3270 Console window.

    j. Go back to "Step 1. Restore the Initial Installation System (IIS)" on page 12 and follow substeps 12 and 13 to use DDR to load the IIS. Return here when instructed.

    k. Keep the Integrated 3270 Console window open in the background.

4. IPL the tape drive to load ICKDSF again.

    Note: After the DDR program completes the restore, the tape is rewound to the beginning. If you have problems IPLing the tape, you might need to mount the tape again.

    a. In the Hardware Management Console Workplace window, select the LPAR you are using for installation in the CPC Images Work Area pane.

    b. In the Recovery pane, double-click the **Load** icon. The Load window opens.

    c. In the Load window, enter the device address of your tape drive in the **Load address** field and enter CNSLSCLP in the **Load parameter** field.

    d. Click **OK**. The Load Task Confirmation prompt is displayed.

    e. Click **Yes** to continue.

    f. Messages indicating the status of the load are displayed in the Load Progress window. When a message is displayed indicating the load is successful, click **OK** to close the window.

    g. In the Hardware Management Console Workplace window, double-click the **Operating System Messages** icon in the Recovery pane. The Operating System Messages window opens. ICKDSF will load in the Operating System Messages window. It might take a few minutes for the messages to appear.

    h. Go back to "Step 1. Restore the Initial Installation System (IIS)" on page 12 and follow substeps 14 through 16 to use ICKDSF to allocate your paging and spool space, and allocate the remainder of your 610RES pack if necessary. Return here when instructed.

    i. Close the Operating System Messages window.

5. IPL the 610RES to start the IIS portion of the installation.

    a. In the Hardware Management Console Workplace window, select the LPAR you are using for installation in the CPC Images Work Area pane.

    b. In the Recovery pane, double-click the **Load** icon. The Load window opens.

    c. In the Load window, enter the DASD address of your 610RES volume in the **Load address** field and enter SYSG in the **Load parameter** field.

    d. Click **OK**. The Load Task Confirmation prompt is displayed.

    e. Click **Yes** to continue.

    f. Messages indicating the status of the load are displayed in the Load Progress window. When a message is displayed indicating the load is successful, click **OK** to close the window.

    g. Click on the Integrated 3270 Console window to bring it to the foreground. The Stand Alone Program Loader (SAPL) panel will be displayed in the Integrated 3270 Console window.

    h. Go back to "Step 2. IPL z/VM IIS" on page 19 and continue with substep 2 to complete the installation.

Note: Use CONS=SYSG in place of CONS=*consaddr* on the SAPL panel before pressing F10 to load.

Using an integrated 3270 console for installation

Appendix J. Using a Terminal Emulator to Upload Files from a DVD

Note: Using a terminal emulator to upload files from a DVD can take several hours to complete.

The following procedure will guide you through using IBM Personal Communications to upload files from the z/VM system DVD and the RSU DVD to a VM minidisk. If Personal Communications is not your preferred terminal emulator, this procedure can be used as a model for using the upload function provided with your preferred terminal emulator.

Requirement: Files must be uploaded with a **fixed** record format, a logical record length of **1028**, and a **binary** transfer type. These options must be used to ensure file attributes are maintained.

1. Start a new Personal Communications session and log on to a userid with access to the minidisk where you will transfer the DVD files.

2. If you have already set up a "dvdbinary" transfer type, skip to substep 3. Otherwise, create a new transfer type called "dvdbinary ".

   a. From the **Edit** menu, click **Preferences** then **Transfer**.

   b. In the File Transfer Settings window, click the **General** tab and verify that the **Host Type** is **VM/CMS**. If not, select **VM/CMS** from the **Host Type** list.

   c. Click the **VM** tab.

      1) In the **Transfer Type** field, enter "dvdbinary".

      2) Select **Fixed** in the **Record Format** list.

      3) In the **Logical Record Length** field, enter "1028".

      4) Click **Save**.

      5) Click **OK**.

3. Load the z/VM system DVD in the DVD drive.

   Note: If your DVD drive is not labeled drive letter D, copy the 610prod.srl file from the DVD to your workstation. Open the file, and change "D:" to match your DVD drive letter for each entry. Save the modified file and use it instead of the copy on the DVD for the following steps.

4. Upload the contents of the DVD to the VM minidisk (previously accessed as file mode W).

   a. Set messages off in your VM session:

      ```
      set msg off
      set emsg off
      set imsg off
      set wng off
      ```

   b. From the **Actions** menu, click **Send File To Host**.

   c. In the Send Files to Host window, click **Open List**.

      1) In the Open File-Transfer List File window, navigate to the CPDVD directory on the DVD and select the 610prod.srl file.

         Note: If you created a modified 610prod.srl file in the previous substep, navigate to the location on your workstation where the modified file is saved and select it instead.

      2) Click **Open**. Each file to be copied is added to the transfer list.

d. Click **Send**.

5. Repeat this procedure using the RSU DVD. Substitute one of the following *.srl files in place of the 610prod.srl file used for the z/VM system DVD.

If installing to . . .	Then substitute . . .
3390	61ckdrsu.srl
FBA	61fbarsu.srl

6. When all files have been transferred, restore your message settings in your VM session:

```
set msg on
set emsg on
set imsg on
set wng on
```

Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, New York 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
Mail Station P300
2455 South Road
Poughkeepsie, New York 12601-5400
U.S.A.
Attention: Information Request

221

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information may contain examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information may contain sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml

Adobe is a registered trademark of Adobe Systems Incorporated in the United States, and/or other countries.

Java and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.

Glossary

For a list of z/VM terms and their definitions, see *z/VM: Glossary*.

The z/VM glossary is also available through the online z/VM HELP Facility. For example, to display the definition of the term "dedicated device", issue the following HELP command:

```
help glossary dedicated device
```

While you are in the glossary help file, you can do additional searches:

- To display the definition of a new term, type a new HELP command on the command line:

  ```
  help glossary newterm
  ```

  This command opens a new help file inside the previous help file. You can repeat this process many times. The status area in the lower right corner of the screen shows how many help files you have open. To close the current file, press the Quit key (PF3/F3). To exit from the HELP Facility, press the Return key (PF4/F4).

- To search for a word, phrase, or character string, type it on the command line and press the Clocate key (PF5/F5). To find other occurrences, press the key multiple times.

  The Clocate function searches from the current location to the end of the file. It does not wrap. To search the whole file, press the Top key (PF2/F2) to go to the top of the file before using Clocate.

225

Bibliography

See the following publications for additional information about z/VM. For abstracts of the z/VM publications, see *z/VM: General Information*.

Where to Get z/VM Information

z/VM product information is available from the following sources:

- z/VM Information Center at publib.boulder.ibm.com/infocenter/zvm/v6r1/ index.jsp
- z/VM Internet Library at www.ibm.com/eserver/ zseries/zvm/library/
- IBM Publications Center at www.elink.ibmlink.ibm.com/publications/servlet/ pbi.wss
- *IBM Online Library: z/VM Collection on DVD*, SK5T-7054

z/VM Base Library

Overview

- *z/VM: General Information*, GC24-6193
- *z/VM: Glossary*, GC24-6195
- *z/VM: License Information*, GC24-6200

Installation, Migration, and Service

- *z/VM: Guide for Automated Installation and Service*, GC24-6197
- *z/VM: Migration Guide*, GC24-6201
- *z/VM: Service Guide*, GC24-6232
- *z/VM: VMSES/E Introduction and Reference*, GC24-6243

Planning and Administration

- *z/VM: CMS File Pool Planning, Administration, and Operation*, SC24-6167
- *z/VM: CMS Planning and Administration*, SC24-6171
- *z/VM: Connectivity*, SC24-6174
- *z/VM: CP Planning and Administration*, SC24-6178
- *z/VM: Getting Started with Linux on System z*, SC24-6194
- *z/VM: Group Control System*, SC24-6196

- *z/VM: I/O Configuration*, SC24-6198
- *z/VM: Running Guest Operating Systems*, SC24-6228
- *z/VM: Saved Segments Planning and Administration*, SC24-6229
- *z/VM: Secure Configuration Guide*, SC24-6230
- *z/VM: TCP/IP LDAP Administration Guide*, SC24-6236
- *z/VM: TCP/IP Planning and Customization*, SC24-6238
- *z/OS and z/VM: Hardware Configuration Manager User's Guide*, SC33-7989

Customization and Tuning

- *z/VM: CP Exit Customization*, SC24-6176
- *z/VM: Performance*, SC24-6208

Operation and Use

- *z/VM: CMS Commands and Utilities Reference*, SC24-6166
- *z/VM: CMS Pipelines Reference*, SC24-6169
- *z/VM: CMS Pipelines User's Guide*, SC24-6170
- *z/VM: CMS Primer*, SC24-6172
- *z/VM: CMS User's Guide*, SC24-6173
- *z/VM: CP Commands and Utilities Reference*, SC24-6175
- *z/VM: System Operation*, SC24-6233
- *z/VM: TCP/IP User's Guide*, SC24-6240
- *z/VM: Virtual Machine Operation*, SC24-6241
- *z/VM: XEDIT Commands and Macros Reference*, SC24-6244
- *z/VM: XEDIT User's Guide*, SC24-6245
- *CMS/TSO Pipelines: Author's Edition*, SL26-0018

Application Programming

- *z/VM: CMS Application Development Guide*, SC24-6162
- *z/VM: CMS Application Development Guide for Assembler*, SC24-6163
- *z/VM: CMS Application Multitasking*, SC24-6164
- *z/VM: CMS Callable Services Reference*, SC24-6165
- *z/VM: CMS Macros and Functions Reference*, SC24-6168

- *z/VM: CP Programming Services*, SC24-6179
- *z/VM: CPI Communications User's Guide*, SC24-6180
- *z/VM: Enterprise Systems Architecture/ Extended Configuration Principles of Operation*, SC24-6192
- *z/VM: Language Environment User's Guide*, SC24-6199
- *z/VM: OpenExtensions Advanced Application Programming Tools*, SC24-6202
- *z/VM: OpenExtensions Callable Services Reference*, SC24-6203
- *z/VM: OpenExtensions Commands Reference*, SC24-6204
- *z/VM: OpenExtensions POSIX Conformance Document*, GC24-6205
- *z/VM: OpenExtensions User's Guide*, SC24-6206
- *z/VM: Program Management Binder for CMS*, SC24-6211
- *z/VM: Reusable Server Kernel Programmer's Guide and Reference*, SC24-6220
- *z/VM: REXX/VM Reference*, SC24-6221
- *z/VM: REXX/VM User's Guide*, SC24-6222
- *z/VM: Systems Management Application Programming*, SC24-6234
- *z/VM: TCP/IP Programmer's Reference*, SC24-6239
- *Common Programming Interface Communications Reference*, SC26-4399
- *Common Programming Interface Resource Recovery Reference*, SC31-6821
- *z/OS: IBM Tivoli Directory Server Plug-in Reference for z/OS*, SA76-0148
- *z/OS: Language Environment Concepts Guide*, SA22-7567
- *z/OS: Language Environment Debugging Guide*, GA22-7560
- *z/OS: Language Environment Programming Guide*, SA22-7561
- *z/OS: Language Environment Programming Reference*, SA22-7562
- *z/OS: Language Environment Run-Time Messages*, SA22-7566
- *z/OS: Language Environment Writing ILC Applications*, SA22-7563
- *z/OS MVS Program Management: Advanced Facilities*, SA22-7644
- *z/OS MVS Program Management: User's Guide and Reference*, SA22-7643

Diagnosis

- *z/VM: CMS and REXX/VM Messages and Codes*, GC24-6161
- *z/VM: CP Messages and Codes*, GC24-6177
- *z/VM: Diagnosis Guide*, GC24-6187
- *z/VM: Dump Viewing Facility*, GC24-6191
- *z/VM: Other Components Messages and Codes*, GC24-6207
- *z/VM: TCP/IP Diagnosis Guide*, GC24-6235
- *z/VM: TCP/IP Messages and Codes*, GC24-6237
- *z/VM: VM Dump Tool*, GC24-6242
- *z/OS and z/VM: Hardware Configuration Definition Messages*, SC33-7986

z/VM Facilities and Features

Data Facility Storage Management Subsystem for VM

- *z/VM: DFSMS/VM Customization*, SC24-6181
- *z/VM: DFSMS/VM Diagnosis Guide*, GC24-6182
- *z/VM: DFSMS/VM Messages and Codes*, GC24-6183
- *z/VM: DFSMS/VM Planning Guide*, SC24-6184
- *z/VM: DFSMS/VM Removable Media Services*, SC24-6185
- *z/VM: DFSMS/VM Storage Administration*, SC24-6186

Directory Maintenance Facility for z/VM

- *z/VM: Directory Maintenance Facility Commands Reference*, SC24-6188
- *z/VM: Directory Maintenance Facility Messages*, GC24-6189
- *z/VM: Directory Maintenance Facility Tailoring and Administration Guide*, SC24-6190

Open Systems Adapter/Support Facility

- *System z10, System z9 and eServer zSeries: Open Systems Adapter-Express Customer's Guide and Reference*, SA22-7935
- *System z9 and eServer zSeries 890 and 990: Open Systems Adapter-Express Integrated Console Controller User's Guide*, SA22-7990

- *System z: Open Systems Adapter-Express Integrated Console Controller 3215 Support*, SA23-2247

Performance Toolkit for VM™

- *z/VM: Performance Toolkit Guide*, SC24-6209
- *z/VM: Performance Toolkit Reference*, SC24-6210

RACF® Security Server for z/VM

- *z/VM: RACF Security Server Auditor's Guide*, SC24-6212
- *z/VM: RACF Security Server Command Language Reference*, SC24-6213
- *z/VM: RACF Security Server Diagnosis Guide*, GC24-6214
- *z/VM: RACF Security Server General User's Guide*, SC24-6215
- *z/VM: RACF Security Server Macros and Interfaces*, SC24-6216
- *z/VM: RACF Security Server Messages and Codes*, GC24-6217
- *z/VM: RACF Security Server Security Administrator's Guide*, SC24-6218
- *z/VM: RACF Security Server System Programmer's Guide*, SC24-6219
- *z/VM: Security Server RACROUTE Macro Reference*, SC24-6231

Remote Spooling Communications Subsystem Networking for z/VM

- *z/VM: RSCS Networking Diagnosis*, GC24-6223
- *z/VM: RSCS Networking Exit Customization*, SC24-6224
- *z/VM: RSCS Networking Messages and Codes*, GC24-6225
- *z/VM: RSCS Networking Operation and Use*, SC24-6226
- *z/VM: RSCS Networking Planning and Configuration*, SC24-6227
- *Network Job Entry: Formats and Protocols*, SA22-7539

Prerequisite Products

Device Support Facilities

- *Device Support Facilities: User's Guide and Reference*, GC35-0033

Environmental Record Editing and Printing Program

- *Environmental Record Editing and Printing Program (EREP): Reference*, GC35-0152
- *Environmental Record Editing and Printing Program (EREP): User's Guide*, GC35-0151

Index

A
about this document   xi
audience of this information   xi

B
backing up
    CMS to tape   134
    CP to DASD   138
    CP to tape   135
    named saved systems to tape   134

C
CMS (Conversational Monitor System)
    saved systems
        backing up to tape   134
conventions and terminology   xi
conventions used   xi
corequisite information   xi
CP (Control Program)
    backing up to DASD   138
    backing up to tape   135

D
DASD (Direct Access Storage Device)
    DDR installation worksheet   7
    DVD installation worksheet   64
    restoring IIS minidisks   12, 40, 68, 73, 75, 110, 112
    SCSI device definition worksheet (DVD
     Installation)   64
    used for installation   7, 64
DASD Dump/Restore Program (DDRXA)
    See DDRXA (DASD Dump/Restore Program)
DDR installation TCP/IP configuration worksheet   8
DDRXA (DASD Dump/Restore Program)
    backup system to tape   135, 140
    restoring the system to disk   209
DETERSE
    using   51, 187
Device Support Facilities (ICKDSF)
    See ICKDSF (Device Support Facilities)
diagram for selecting z/VM system DDR installation
  procedure   3, 59
DVD installation TCP/IP configuration worksheet   65

E
Environmental Recording Editing and Printing Program
  (EREP)
    See EREP (Environmental Recording Editing and
      Printing Program)
EREP (Environmental Recording Editing and Printing
  Program)
    product information   179

examples, layout of   xi

F
file recovery   211
format of this information   xi

I
ICKDSF (Device Support Facilities)
    backup system to tape   141
    product information   179
IIS (Initial Installation System)
    IPL   19, 42, 68, 78, 116
    loading   12, 16
    restoring to disk   12, 40, 68, 73, 75, 110, 112
Initial Installation System (IIS)
    See IIS (Initial Installation System)
installation
    procedures
      choosing   3, 59
    saved segments   205
installation worksheet   7, 64
installing
    from a 3270 console
      steps for   215
INSTIIS EXEC
    using   40
INSTPLAN EXEC
    using   23, 38, 71, 108
INSTVM EXEC
    system DDR, loading   25, 46
    System image, loading   82, 120
intended audience   xi
IPL your initial system
    installation procedure 1   19, 68
    installation procedure 2   42, 78, 116

L
licensed products and features, preinstalled   179
    Directory Maintenance Facility   179
    EREP   179
    HCD and HCM   180
    ICKDSF   180
    OSA/SF   180
    Performance Toolkit for VM   181
    RACF Security Server   181
    RSCS Networking   181
    TCP/IP   182
loader panel, sample stand-alone   19, 42, 78, 116, 153,
  158, 170
LOCALMOD
    using   199

IBM ®

Program Number: 5741-A07

Printed in USA