z/VM
Version 7 Release 1

*Installation Guide*

IBM

**Note:**

Before you use this information and the product it supports, read the information in "Notices" on page 315.

This edition applies to the version 7, release 1, modification 0 of IBM® z/VM (product number 5741-A09) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# About this document

This document guides the customer through the installation of version 7 release 1 of IBM z/VM® using step-by-step installation procedures. The procedures cover traditional installation of a z/VM system, first-level (in a processor's logical partition) or second-level (as a guest operating system hosted by z/VM), from DVD or electronic media, and installing z/VM V7.1 as an upgrade to z/VM V6.4.

See Chapter 1, "Installation overview," on page 3 for an overview of the techniques available for installing z/VM and guidelines for selecting the technique that will best suit your needs.

For information about servicing your system, see *z/VM: Service Guide*.

**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 the customer responsible for installing 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 IBM Z(R) 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 dasdaddr *
  DASD dasdaddr ATTACHED TO userid
  dasdaddr
  ⋮
  Ready; T=n.nn/n.nn hh:mm:ss
  ```

  *dasdaddr*
  is the address of the DASD volume.

  *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:

  ```
  IUGIPX8475I Final selections display
  The products you selected to load to minidisk are:
  NONE

  The products you selected to load to SFS are:
  VM PERFTK VMHCD RACF DIRM RSCS ICKDSF TCPIP
  ⋮
  ```

- 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 minidisk for *diskaddr*:

  ```
  attach diskaddr w
  ```

  – In the following, the system would supply the storage size for *nnn* in its response:

  ```
  query virtual storage
  STORAGE = nnn M
  ```

- 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 IBM: z/VM Internet Library (www.ibm.com/vm/library).

For information about related documents, see .

### Links to Other Documents and Websites

The PDF version of this document contains links to other documents and websites. A link from this document to another document works only when both documents are in the same directory or database, and a link to a website works only if you have access to the Internet. A document link is to a specific edition. If a new edition of a linked document has been published since the publication of this document, the linked document might not be the latest edition.

# 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.

To send us your comments, go to z/VM Reader's Comment Form (www.ibm.com/systems/campaignmail/z/zvm/zvm-comments) and complete the form.

**If you have a technical problem**

Do not use the feedback method. Instead, do one of the following:

• Contact your IBM service representative.
• Contact IBM technical support.
• See IBM: z/VM Support Resources (www.ibm.com/vm/service).
• Go to IBM Support Portal (www.ibm.com/support/entry/portal/Overview).

# Summary of changes for z/VM Installation Guide

This information includes terminology, maintenance, and editorial changes.

## GC24-6292-00, z/VM Version 7 Release 1 (September 2018)

This edition includes changes to support the general availability of z/VM V7.1.

**Miscellaneous updates**

- z/VM Single System Image (SSI) is now included in the base of z/VM V7.1.
- The upgrade installation process allows you to upgrade from z/VM V6.4 to z/VM V7.1.

  Upgrading to z/VM V7.1 from z/VM 6.2 or z/VM 6.3 is not supported.
- The following new releases of components and features are preinstalled:
  - Directory Maintenance Facility, function level 710 (disabled)
  - Performance Toolkit for VM, function level 710 (disabled)
  - RACF Security Server for z/VM, function level 710 (disabled)
  - RSCS Networking for z/VM, function level 710 (disabled)
  - TCP/IP, function level 710
  - HCD and HCM for z/VM, function level 710.
- The Open Systems Adapter / Support Facility (OSA/SF) is no longer shipped with z/VM.
- Installation of z/VM on 3390 Model 3 DASDs is no longer supported.

  Storage devices supported for installation include:
  - 3390 volumes with a minimum size of 10016 cylinders.
  - SCSI volumes with a minimum size of 6 GB.
- Kanji (KANJI) is no longer supported as a system default language.

  Mixed-case American English (AMENG) and uppercase English (UCENG) are supported as system default languages.

**VMSES/E MIGRATE command support withdrawn**

The VMSES/E MIGRATE command and related commands, first supplied with z/VM V5.2, are no longer provided or supported in z/VM V7.1. The upgrade installation process that was introduced with z/VM V6.3 can be used to upgrade supported z/VM levels to z/VM V7.1. The migration of customized data for components, features, or products from z/VM levels prior to those supported by the upgrade installation process for z/VM V7.1 now must be performed using locally-developed procedures.

For more information, see:

- *z/VM: VMSES/E Introduction and Reference*

## GC24-6246-04, z/VM Version 6 Release 4 (August 2017)

This edition includes changes to support product changes provided or announced after the general availability of z/VM V6.4.

The following chapters have been updated:

- Chapter 11, "Upgrade installation overview," on page 103

- Chapter 12, "Plan your upgrade installation," on page 105.

Various other updates have been made throughout the document as well.

## GC24-6246-03, z/VM Version 6 Release 4

This edition includes changes to support the general availability of z/VM V6.4.

- The upgrade installation process has been extended to allow you to upgrade from z/VM V6.2 or V6.3 to z/VM V6.4.
- Support is added for installation of z/VM on the 3390 Model 27.
- You can no longer order the z/VM product or service for z/VM on 3590/3592 tape media. z/VM V6.4 is available on DVD and through electronic delivery.
- The following new releases of components and features are preinstalled:
  - Directory Maintenance Facility, function level 640 (disabled)
  - Performance Toolkit for VM, function level 640 (disabled)
  - RACF Security Server for z/VM, function level 640 (disabled)
  - RSCS Networking for z/VM, function level 640 (disabled)
  - TCP/IP, function level 640
  - HCD and HCM for z/VM, function level 640

# Part 1. z/VM installation

This part contains an overview of the techniques available for installing z/VM V7.1 and guidelines for selecting the technique that will best suit your needs.

# Chapter 1. Installation overview

There are two techniques available for installing z/VM V7.1.

The first technique, **traditional installation**, installs a new z/VM system or SSI cluster on a set of DASDs, which can then be customized according to your needs. If you are installing a new system, this is the installation method you should use.

The second technique, **upgrade installation**, is used to upgrade from z/VM V6.4. If you want to upgrade a system from V6.4 to V7.1, this is the installation method you should use. In an upgrade installation, a new release system to be used as a temporary work system is installed as a second level guest of the current release system that you want to upgrade. The new level of code from the work system is then moved to your current system with minimal impact to your current running system. This current running system can be a non-SSI system, the only member of a single member SSI cluster, or any member of a multimember SSI cluster. In a multimember SSI cluster, you will upgrade one member at a time so that there is minimum impact to the other members. Note that you must complete the upgrade for one member before starting the upgrade of the next member.

Select the installation technique that best meets your needs, as follows:

Within each part, read and follow all the procedures in the order presented.

# Part 2. Traditional installation

This part contains procedures for the traditional installation of z/VM to a non-SSI cluster or to an SSI cluster. For information about planning for an SSI cluster, see *z/VM: CP Planning and Administration*.

If you received the z/VM product electronically, you must first complete the instructions you downloaded with your order before using the procedures here in Part 2 to install z/VM.

**In this part, you will:**

- Plan your traditional installation.
- Complete worksheets.
- Install the z/VM system.

# Chapter 2. Plan your traditional installation

**In this chapter, you will:**

- Plan your installation.
- Complete the traditional installation worksheets.

## Step 1. Select your installation procedure

If your z/VM product was obtained via electronic delivery, you must follow the instructions that accompanied the deliverable to do one of the following before proceeding with your installation:

- Create a physical DVD.
- Load the deliverable into an FTP server directory.

**Installation procedures:**

- **First-level installation** can be done from:
  - A physical DVD mounted in a DVD drive attached to the Hardware Management Console (HMC).
  - A physical DVD mounted in a DVD drive connected through an FTP server.
  - An FTP server that has access to a directory where the files from the physical DVDs or electronic deliverables have been stored.
- **Second-level installation** can be done from:
  - A physical DVD mounted in a DVD drive connected through an FTP server.
  - An FTP server that has access to a directory where the files from the physical DVDs or electronic deliverables have been stored.
  - A CMS-formatted minidisk that is accessible by your installation user ID.

# Step 2. Review and comply with the requirements

Before you install version 7 release 1, you must review the following information and make sure all requirements are satisfied:

**Note:** For current information affecting installation, see the following topics at IBM: z/VM Installation Resources (www.vm.ibm.com/install):

- Important z/VM Installation News
- z/VM Installation Tips
- Preventive Service Planning (PSP) bucket for z/VM 710 installation.

**z/VM media deliverable requirements**

- For delivery through physical DVDs, make sure you have the z/VM product DVD and the installation recommended service upgrade (RSU) DVD.
- For electronic delivery, make sure you have the product and RSU .zip or ISO files.
- The RSU that was shipped as part of the z/VM product will be installed during the installation process. If additional service is required, it can be installed after your initial installation (part 2) is complete.

**General requirements**

- A processor supported by z/VM version 7 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 32 lines, or an integrated 3270 console.
- DASD volumes to install your z/VM system. If installing to 3390, the minimum size is 10016 cylinders. If installing to FBA, the minimum size is 6 GB.
- For z/VM installation on FBA, note that z/VM installation supports only emulated FBA on SCSI volumes. Real FBA volumes are *not* supported.
- For instructions on how to receive current service, see the Program Directory for z/VM.
- If you plan to migrate from another z/VM system, review *z/VM: Migration Guide*.
- If you plan to deploy Linux on z Systems®, see *z/VM: Getting Started with Linux on IBM 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.

**First-level installation requirements**

- Hardware requirements:
  - Access to the integrated 3270 console on the HMC for your LPAR (CONS=SYSG) for use as the console during first-level installation.
  - 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.
  - For the LPAR where you are installing, "Input/output (I/O) configuration control" must be enabled. This can done by enabling this in the image profile which is then used to activate the LPAR.

**Review and comply with the requirements**

       Alternatively, you can use the "Change Logical Partition Security" task to query the current setting and, if necessary, dynamically change the setting.

- If installing from a physical DVD mounted in a DVD drive attached to the Hardware Management Console (HMC):
  – The HMC must communicate with the desired support element. An HMC can communicate only with support element versions that are equal to or lower than the version of the HMC. For example, an HMC version 2.10.1 can communicate with a support element at version 2.10.0, or 2.10.1, but it cannot communicate with a support element at version 2.10.2.
- If installing from a physical DVD mounted in a DVD drive connected through an FTP server:
  – The FTP server must comply with RFC 959 and RFC 1123.
  – The FTP 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 FTP server must be able to access to the DVD drive.
- If installing from an FTP server that has access to a directory where the files from the physical DVD or electronic deliverables have been stored:
  – The FTP server must comply with RFC 959 and RFC 1123.
  – The FTP 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 FTP server must be able to access the directory where the contents of the product deliverables will be stored.
  – There must be at least 4 GB of available space to store the contents of the z/VM product deliverable and the installation RSU deliverable.

**Second-level installation requirements**

- Hardware requirements:
  – A processor supported by the release of z/VM that is running first level and by the release of z/VM that is being installed second level.
  – Access to a local non-SNA 3270 terminal, or equivalent, configured with at least 32 lines and 80 columns.
- System software requirements:
  – A first-level system running a supported release of z/VM.
- User ID requirements:
  – You must complete the entire installation using a single installation user ID.
  – If you are installing your new level of z/VM on a system that is a member of an SSI, IBM recommends that the user ID where you perform the installation be defined as an IDENTITY, such as MAINT or MIGMAINT.
  – Access to the INSTPIPE MODULE on your current system. The module was shipped on the MAINT 193 minidisk.
  – Privilege class G.
  – Privilege class B, if installation DASD volumes are not already attached to your installation user ID.
  – At least 128 MB of virtual storage.

    **Note:** The virtual storage required for installation is not necessarily the amount you should have assigned when running a system second level. For information about determining virtual storage requirements, see *z/VM: CP Planning and Administration*.

- A 191 read/write minidisk accessed as file mode A.
- If installing from a CMS-formatted minidisk (referred to as "From a VM Minidisk"), write access to the minidisk where the files will be loaded.
- A 2222 read/write minidisk, matching the supported DASD type (3390 or FBA) of your installation media, that is exactly:
  - 10 cylinders (3390)
  - 14400 512-KB blocks (FBA)
- A 24CC read/write minidisk, matching the supported DASD type (3390 or FBA) of your installation media, that is exactly:
  - 10 cylinders (3390)
  - 14400 512-KB blocks (FBA)
- A 2CF0 read/write minidisk, matching the supported DASD type (3390 or FBA) of your installation media, that is exactly:
  - 120 cylinders (3390)
  - 172800 512-KB blocks (FBA)

- If installing from a physical DVD mounted in a DVD drive connected through an FTP server:
  - The FTP server must comply with RFC 959 and RFC 1123.
  - The FTP server must have a TCP/IP communication path to the system you are using to install.
  - The FTP server must be able to access a DVD drive.
- If installing from an FTP server that has access to a directory where the files from the physical DVDs or electronic deliverables have been stored:
  - The FTP server must comply with RFC 959 and RFC 1123.
  - The FTP server must have a TCP/IP communication path to the system you are using to install.
  - The FTP server must be able to access the directory where the contents of the deliverables will be stored.
  - The contents of the z/VM product deliverable and the installation RSU deliverable must be stored in the same directory.
  - There must be at least 4 GB of available space to store the contents of the z/VM product deliverable and the installation RSU deliverable.
- If installing from a CMS-formatted minidisk where the contents of the physical DVD or electronic deliverable will be uploaded:
  - The CMS-formatted minidisk must be the equivalent of at least 7000 cylinders of 3390 DASD space.

# Step 3. Complete the installation worksheets

1. Determine the installation method you will use, and record the selected installation method on traditional installation worksheet 1 (Table 1 on page 16).

   - 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. Each product on the z/VM product deliverable allows file pool directories to be used for service. Using file pool directories for service (the default) could avoid potential service space problems. Determine which products will use the installation file pools for service disks and which products will use minidisks. Record your choices under the **Install To** column on traditional installation worksheet 1 (Table 1 on page 16).

3. Select your default system language and record your choice on traditional installation worksheet 1 (Table 1 on page 16). The choices are:

   - Mixed Case English (AMENG)

   - Uppercase English (UCENG).

4. Select the DASD type and size you will use to install, and record the DASD information on traditional installation worksheet 1 (Table 1 on page 16).

   - If you are using FBA (SCSI):

     – Record FBA on the "DASD type" line.

     – Record the size on the "Volume size" line.

       - The size of the FBA volumes must be at least 6.0 GB.

       - All volumes must be at least the size recorded.

     **Notes:**

     a. FBA cannot be used for an SSI installation.

     b. z/VM installation supports only emulated FBA on SCSI volumes. Real FBA volumes are *not* supported.

     c. The spool and paging volumes will be reallocated for spool and page space up to a maximum of 16777214 pages (4K) (approximately 64 GB). Any additional space on those volumes will remain PERM space.

     d. IBM strongly recommends that you *not* use any remaining space on the installation volumes.

   - If you are using 3390:

     – Record 3390 on the "DASD type" line.

     – Record the size on the "Volume size" line.

       - The size of the 3390 volumes must be at least 10016 cylinders.

       - All volumes must be at least the size recorded.

     **Notes:**

     a. The spool and paging volumes will be reallocated for spool and page space up to cylinder 65519. Any additional space on those volumes will remain PERM space.

     b. IBM strongly recommends that you *not* use any remaining space on the installation volumes.

5. Select a name for the common service file pool and record your choice on traditional installation worksheet 1 (Table 1 on page 16). The common service file pool contains the service minidisks for the products you choose to load into the installation file pools, and will reside on the COMMON volumes. This file pool will exist even if you do not load any product into the file pool. The file

ICOMDIR NAMES will be created to map your file pool name to the file pool nickname VMPSFS. If you will *not* be adding this system or SSI cluster to a larger ISFC collection, you can use the name VMPSFS as your file pool name. The file pool name:

- Has no default value. You must enter a name.
- Must be 1 to 8 alphanumeric characters (A through Z and 0 through 9).
- Cannot start with the characters VMSYS.
- Cannot start with a number.
- Cannot be ALLOW, ANY, or SYSTEM.
- Should not match any user ID on the system.

Note, also, that if at some time in the future you plan on adding this system or SSI cluster to a larger ISFC collection, the common service file pool name must not match any file pool name used by any other system or member in the ISFC collection.

6. Select the installation type, Non-SSI or Single System Image (SSI), and record your choice on traditional installation worksheet 1 (Table 1 on page 16). If installing to FBA, you must select Non-SSI.

   For more information on planning for an SSI cluster, see *z/VM: CP Planning and Administration*.

7. If you selected Non-SSI, record the name of your system on traditional installation worksheet 1 (Table 1 on page 16). Note that the system name:

   - Must be 1 to 8 alphanumeric characters
   - Cannot start with a number, that is, the first character must be non-numeric
   - Cannot contain blanks
   - Cannot be NOSSI or NOSYS.

   **Attention:** The system name you select should be considered a ***permanent*** name. In previous releases, selecting a "test" name and then later changing it to a "production" name was a common practice. However, due to numerous dependencies in the current release, this practice should *not* be used. Changing the system name after installation is a complicated process. If you intend to configure RSCS, the RSCS node ID should match the system name.

8. If you selected SSI:

   a. On traditional installation worksheet 1 (Table 1 on page 16):

      1) Record the number of members you wish to install (must be 1 to 4).
      2) Record the name of your SSI cluster (must be 1 to 8 alphanumeric characters).

   b. On traditional installation worksheet 6 (Table 6 on page 18):

      1) Select **First-Level** if you intend to IPL your SSI cluster members in first-level LPARs. Otherwise, select **Second-Level**. An SSI cluster can be installed to IPL all members in first-level LPARs or to IPL all members second-level from user IDs on an existing z/VM system.

      2) For each SSI member, record the following:

         a) A member name, which:

            - Must be 1 to 8 alphanumeric characters
            - Cannot start with a number, that is, the first character must be non-numeric
            - Cannot contain blanks
            - Cannot be NOSSI or NOSYS
            - Must have the last 7 characters be unique (different from all other member names).

            **Attention:** The member names you select should be considered ***permanent*** names. In previous releases, selecting a "test" name and then later changing it to a "production" name was a common practice. However, due to numerous dependencies in the current release, this practice should *not* be used. Changing the member name after installation is a

complicated process. If you intend to configure RSCS, the RSCS node IDs should match the member names.

b) The LPAR name or the user ID where the SSI member will be IPLed.

**Notes:**

a) The LPAR name is the name that is defined on the resource statement of the hardware input output control program (IOCP). See your hardware administrator for more information.

b) If you are installing a multimember SSI cluster that will be IPLed second-level, the SSI2ND DIR-PROF file will be generated during installation processing. This file contains the directory definitions and the PROFILE EXECs needed for these user IDs.

9. Select whether to use SMAPI client system management tools. By default, the installation process can configure and enable your new system to be managed by a SMAPI client.

   If you intend to use a directory manager product from IBM or another vendor independently of SMAPI, or if you do not have access to any SMAPI clients for system management, you should enter No on traditional installation worksheet 2 (Table 2 on page 16).

   If you are not sure how you will be managing your system, you should enter No on traditional installation worksheet 2 (Table 2 on page 16).

   If you will be using a SMAPI client for system management, you might want to enter Yes on traditional installation worksheet 2 (Table 2 on page 16). Keep in mind that if you say Yes, you should *not* attempt to manage your system in any other way.

   For more information about using SMAPI clients or for additional configuration options, see *z/VM: Systems Management Application Programming*.

10. If installing to 3390, determine the number of volumes required to install and record the required information on traditional installation worksheet 3 (Table 3 on page 17) for non-SSI or traditional installation worksheet 7 (Table 7 on page 18) for SSI.

    a. Determine the number of volumes required:

       • For non-SSI, you will need five volumes.

       • For SSI, you will need five volumes for member 1, plus three volumes for each additional member.

       **Note:** IBM strongly suggests that you *not* use any remaining space on the installation volumes.

    b. Record the address for each 3390 volume in the **Address** column. If you are changing any of the default installation labels, record the new labels in the **New Label** column. Disregard any volumes that you do not need. Note that you must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined.

       • Volume labels must be 1 to 6 alphanumeric characters.

       • If you selected non-SSI, use traditional installation worksheet 3 (Table 3 on page 17).

       • If you selected SSI, use traditional installation worksheet 7 (Table 7 on page 18).

       **Note:** The address of the VMCOM1 volume is written out by the SALIPL command to cylinder 0 of the IPL volume for each member (M0xRES), to be used at IPL time to locate the SYSTEM CONFIG file. Because of this, the address of the VMCOM1 volume cannot be redefined to a different address without rerunning SALIPL.

11. If you are installing to FBA (SCSI) volumes, use traditional installation worksheet 4 (Table 4 on page 17). Record the address for each volume in the **Address** column. If you are changing any of the default installation labels, record the new labels in the **New Label** column. Note that you must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined.

    • FBA (SCSI) can be used for non-SSI installation only.

    • If the size of your FBA volumes is equal to or greater than 7.3 GB:

       – You will need five volumes. You will *not* need the RELVOL2 volume.

- If the size of your FBA volumes is less than 7.3 GB:
  - If you choose to load all products to minidisk, you will need six volumes.
  - If you choose to load all products to file pool, you will need five volumes. You will *not* need the RELVOL2 volume.
  - If you choose to load some products to minidisk and some products to file pool, you might or might not need the RELVOL2 volume. Based on the size of your installation volumes, the INSTPLAN command (which you will run in Chapter 5, "Non-SSI traditional installation method," on page 45) will indicate whether or not you need RELVOL2.
- Volume labels must be 1 to 6 alphanumeric characters.

**Note:** IBM strongly suggests that you *not* use any remaining space on the installation volumes.

12. If you are using FBA (SCSI) volumes, and they are defined already, you only need the addresses of the volumes and you can continue to the next substep. If they are *not* defined already, you need to know the logical unit number (LUN) and worldwide port number (WWPN) address for each volume, as well as the valid Fibre Channel Protocol (FCP) address (or addresses) or the channel path to which they belong.

    Record each LUN and its corresponding WWPN on traditional installation worksheet 4 (Table 4 on page 17). Also make a note of the valid FCP address (or addresses) or channel path identifier (CHPID).

13. If you selected SSI and First-level in substep "8.b.i" on page 13, complete traditional worksheet 8 (Table 8 on page 19):

    a. Enter the real addresses of the COMMON volume as it is defined to each LPAR. The COMMON volume must be available to each LPAR where your SSI cluster will run.

    b. If installing more than one member, specify the CTCA addresses that will be used to communicate between members of the SSI cluster.

    **Notes:**

      1) Each SSI member must have at least one CTC connection to every other SSI member.

      2) Installation allows you to define up to two connections between any two members. More connections may be defined after installation is complete.

      3) The number of CTC device addresses defined for communication between two members must be the same.

14. If you are installing with an FTP server (using a physical DVD or the server directory), record the path information required to access the DVD drive or FTP directory on traditional installation worksheet 5 (Table 5 on page 17).

    a. Record the IP address or host name of the FTP server.

    b. Record the user ID and password of the FTP server.

    c. Record the DVD or FTP directory path name for the FTP server.

15. If you are installing from a VM minidisk, record the VM user ID and address of the VM minidisk where contents of the z/VM product DVD will be uploaded on traditional installation worksheet 5 (Table 5 on page 17).

**What to do next**

Go to "Step 4. Choose your next step" on page 20.

# Traditional installation worksheets

| Table 1: Traditional installation worksheet 1. |
|---|

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

In the **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 VMPSFS file pool.

| Install To | Product | Install To | Product | Install To | Product |
|---|---|---|---|---|---|
| | VM | | DIRM | | ICKDSF |
| | PERFTK | | RACF® | | RSCS |
| | TCPIP | | VMHCD | | |

Default system language:  _____

DASD type:  _____

Volume size:  _____

Common service file pool name:  _____

**Installation Type:**

__ Non-SSI

System Name*:  _____

__ SSI          Number of Members: ___

SSI Cluster Name:  _____

\* The system name you select should be considered a ***permanent*** name. Changing the system name after installation is a complicated process.

| Table 2: Traditional installation worksheet 2. |
|---|

Would you like to have your system automatically configured to be managed by a SMAPI client for system management? Enter **Y** or **N**: _____

Keep the following in mind:

- If you enter **Y**, you should not attempt to manage your system in any other way.

- If you'd like to manage your own system, or use a purchased external security manager or a purchased directory manager, enter **N**.

| Table 3: Traditional installation worksheet 3 (3390 Non-SSI Only). | | | |
|---|---|---|---|
| **Volume Type** | **Default Label** | **New Label** | **Address** |
| COMMON | VMCOM1 | | |
| RELVOL | 710RL1 | | |
| RES | M01RES | | |
| SPOOL | M01S01 | | |
| PAGE | M01P01 | | |
| **Note:** You must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined. | | | |

| Table 4: Traditional installation worksheet 4 (FBA Non-SSI Only). | | | | | | |
|---|---|---|---|---|---|---|
| **Volume Type** | **Default Label** | **New Label** | **Address** | **FCP Address** | **WWPN** | **LUN** |
| COMMON | VMCOM1 | | | | | |
| RELVOL | 710RL1 | | | | | |
| RELVOL2 | 710RL2 | | | | | |
| RES | M01RES | | | | | |
| SPOOL | M01S01 | | | | | |
| PAGE | M01P01 | | | | | |
| Channel path (CHPID): _____<br>Valid FCP addresses: _____ | | | | | | |
| **Note:** You must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined. | | | | | | |

| Table 5: Traditional installation worksheet 5. |
|---|
| IP address or host name: _____<br><br>FTP server user ID and password: _____<br><br>DVD/FTP directory path name: _____<br><br>VM user ID and address of VM minidisk to upload DVD: _____ |

| Table 6: Traditional installation worksheet 6 (3390 SSI Only). |||
|---|---|---|
| **After installation is complete, SSI will be IPLed:**<br><br>__  First-Level<br>__  Second-Level |||
| **SSI Member Name(s) / IPL LPAR Name(s) or User ID Name(s):** |||
| **Slot Number** | **Member Name*** | **IPL LPAR/User ID** |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| * The member names you select should be considered *permanent* names. Changing a member name after installation is a complicated process. |||

| Table 7: Traditional installation worksheet 7 (3390 SSI Only). |||||||||
|---|---|---|---|---|---|---|---|---|
| **Volume Type** | **Default Label** | **New Label** | **Address** | | | | | |
| COMMON | VMCOM1 | | | | | | | |
| RELVOL | 710RL1 | | | | | | | |
| **Volume Type** | **Default Label** | **New Label** | **Address** | **Volume Type** | **Default Label** | **New Label** | **Address** | |
| **Member 1:** | | | | **Member 2:** | | | | |
| RES | M01RES | | | RES | M02RES | | | |
| SPOOL | M01S01 | | | SPOOL | M02S01 | | | |
| PAGE | M01P01 | | | PAGE | M02P01 | | | |
| **Member 3:** | | | | **Member 4:** | | | | |
| RES | M03RES | | | RES | M04RES | | | |
| SPOOL | M03S01 | | | SPOOL | M04S01 | | | |
| PAGE | M03P01 | | | PAGE | M04P01 | | | |
| **Note:** You must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined. | | | | | | | | |

| *Table 8: Traditional installation worksheet 8 (SSI First-Level Configuration Only).* | | | |
|---|---|---|---|
| **Real addresses for the COMMON volume on each member LPAR:** | | | |
| **Member 1 Address** | **Member 2 Address** | **Member 3 Address** | **Member 4 Address** |
| | | | |

CTC device addresses:

| From: Member 1 | | From: Member 2 | |
|---|---|---|---|
| To: Member 1 | N/A | To: Member 1 | _____ _____ |
| To: Member 2 | _____ _____ | To: Member 2 | N/A |
| To: Member 3 | _____ _____ | To: Member 3 | _____ _____ |
| To: Member 4 | _____ _____ | To: Member 4 | _____ _____ |
| | | | |
| From: Member 3 | | From: Member 4 | |
| To: Member 1 | _____ _____ | To: Member 1 | _____ _____ |
| To: Member 2 | _____ _____ | To: Member 2 | _____ _____ |
| To: Member 3 | N/A | To: Member 3 | _____ _____ |
| To: Member 4 | _____ _____ | To: Member 4 | N/A |

## Step 4. Choose your next step

**What to do next**

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

| If you chose: | Go to: |
| --- | --- |
| The first-level installation method... | Chapter 3, "Traditional installation for first level," on page 21 |
| The second-level installation method... | Chapter 4, "Traditional installation for second level," on page 27 |

# Chapter 3. Traditional installation for first level

**In this chapter, you will:**

- Use step-by-step procedures to IPL the RAMDISK and run DVDPRIME.

## Step 1. Load the RAMDISK

**Before you begin:** You need to complete worksheets 1 through 8 in "Traditional installation worksheets" on page 16. If you have not done so, return to Chapter 2, "Plan your traditional installation," on page 7.

1. Prepare to access the installation files.

   If you are installing from:

   • An HMC DVD drive, load the z/VM product DVD in the HMC DVD drive.
   • An FTP server DVD drive, load the z/VM product DVD in the FTP connected DVD drive.
   • An FTP server directory, if you have not already done so, upload the contents of each DVD or electronic deliverable to a new directory on the FTP server. After the contents of the z/VM product deliverable have been uploaded, upload the contents of the installation RSU deliverable to the same directory, overwriting any duplicate files.

     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 4 GB of free space.
     b. Load the contents of the z/VM product deliverable and the installation RSU deliverable to the directory. When copying the files, make sure the case is preserved.

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, select the LPAR you are going to use for installation.
   b. Under Recovery, click on **Integrated 3270 Console**. The Integrated 3270 Console window for that LPAR opens. Messages are displayed in the Integrated 3270 Console window when the system IPLs.

3. Select **Load from Removable Media or Server** under Recovery for the LPAR you are going to use for installation. The **Load from Removable Media or Server** window is displayed.

4. In the load window, select one of the following:

   • Hardware Management Console CD / DVD-ROM
   • FTP Source

   **Attention:**

   Do *not* select **Hardware Management Console CD / DVD-ROM and assign for operating system use**.

   If you are installing from the HMC DVD drive, select **Hardware Management Console CD / DVD-ROM**. 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, the z/VM product deliverable and the installation RSU deliverable must have been copied into the same directory on the FTP server.

5. 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 (host computer, user ID, and password).
     – Enter the path information required by your FTP server (e.g. DVD drive letter or blank) to access the DVD drive, followed by /CPDVD.

   • If you selected **FTP Source** and you are using an FTP server directory:

     – Specify the FTP connection information for the server (host computer, user ID, and password).
     – Enter the path to the directory where you uploaded the z/VM product 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.

6. Click OK to continue. The **Load from Removable Media or Server - Select Software to Install** task window will be displayed.

7. Load the RAMDISK.

   a. In the task window, select **710VM.ins**, and click **OK**. One or more **Confirm the Action** prompts are 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.

```
hh:mm:ss z/VM V7 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 ****************************************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*                       *
hh:mm:ss * 5741-A09 (C) COPYRIGHT IBM CORP. 1983, 2018. ALL RIGHTS     *
hh:mm:ss * RESERVED. US GOVERNMENT USERS RESTRICTED RIGHTS - USE       *
hh:mm:ss * DUPLICATION OR DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE    *
hh:mm:ss * CONTRACT WITH IBM CORP.                                     *
hh:mm:ss *                                                             *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS MACHINES              *
hh:mm:ss ****************************************************************
hh:mm:ss
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume $RAMD$ (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on blocks nnn through nnn.
  ⋮
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 V7.1.0    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
```

## Step 2. Run DVDPRIME

1. Run DVDPRIME with the *dasdtype* and *source* you are using to install.

<table>
<tr>
<td>

**dvdprime** *dasdtype* **(**<i>source</i>

</td>
<td>

***dasdtype***
    **3390** or **FBA**

***source***
    One of the following:

    **dvd**
        if installing from a physical DVD loaded in an HMC or FTP server drive

    **server**
        if installing from an FTP server that has access to a directory where the files from the physical DVD or electronic deliverables have been stored

</td>
</tr>
</table>

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
IUGDVP8440I Now loading 4CC disk
DVDLOAD: LOADING FILE 'FBA22200 IMAGE *'
DVDLOAD: RC=0
MDREST: WROTE 1800 BLOCKS ON 04CC, RC=0
IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

# Step 3. Choose your next step

**What to do next**

| If this is: | Go to: |
| --- | --- |
| A non-SSI installation... | Chapter 5, "Non-SSI traditional installation method," on page 45 |
| An SSI installation... | Chapter 6, "SSI traditional installation method," on page 59 |

**Choose your next step**

# Chapter 4. Traditional installation for second level

**In this chapter, you will:**

- Set up the user ID for installation.
- Use DVDPRIME to load the 24CC and 2CF0 minidisks.

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

| If you chose to install from: | Go to: |
|---|---|
| A physical DVD... | "Step 1. Set up to install from a DVD drive" on page 28 |
| An FTP server directory... | "Step 2. Set up to install from an FTP server directory" on page 32 |
| A VM minidisk... | "Step 3. Set up to install from a VM minidisk" on page 36 |

## Step 1. Set up to install from a DVD drive

### Step 1a. Set up the user ID for installation

**Before you begin:** You need to complete worksheets 1 through 8 in "Traditional installation worksheets" on page 16. If you have not done so, return to Chapter 2, "Plan your traditional installation," on page 7.

1. Load the z/VM product 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.

2. Log on to the first-level user ID that you will use for installation. Make sure the user ID meets the user ID requirements listed under "Second-level installation requirements" on page 10.

3. Spool the console to make sure it is empty, started, and spooled to the reader.

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

4. Verify that you have a 2222 read/write minidisk with exactly 10 cylinders if installing to 3390 or 14400 512-KB blocks if installing to FBA.

```
query v 2222
DASD 2222 3390 xxxxxx  R/W         10 CYL ON DASD  nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

5. Verify that INSTPIPE MODULE exists in your search order.

```
listfile instpipe module *
INSTPIPE MODULE fm
```

If you receive:

```
DMSLST002E file not found
```

access the disk that contains the INSTPIPE MODULE.

**Note:** The INSTPIPE MODULE was shipped on the MAINT 193 minidisk.

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

    a. Run INSTPIPE.

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

    b. Copy the files from the DVD to the 2222 minidisk.

    **Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in traditional installation worksheet 5 (Table 5 on page 17).

```
pipe ftpget -h host -u userid -p password -d ftpdir/CPDVD
 -v BEF -DVDEOF -f ddd222* |UNPACK| restcmd 2222
```

*host*

The IP address or FTP host name. An IP address is in dotted-decimal form for your IP V4 interface (for example: 129.42.16.99). A host name must begin with a letter, and can contain only alphanumeric characters (A-Z, a-z, 0-9) or hyphens (-) (for example: MyOrg-VM01).

*userid*

The user ID used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

*password*

The password for the user ID used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

*ftpdir*

The path to the DVD drive with **/CPDVD** appended to the end of the path. The maximum length is 40 characters. For example:

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

*ddd*

**CKD** for 3390 or **FBA** for FBA (SCSI). This value must be entered in uppercase.

*restcmd*

**ECKDREST** for 3390 or **MDREST** for FBA (SCSI).

**Note:** In the previous **pipe** command, you can 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
ddd222* !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 1b. Run DVDPRIME

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

```
ipl cms
z/VM Vv.r.m     yyyy-mm-dd hh:mm
 ENTER
Ready; T=n.nn/n.nn hh:mm:ss
```

2. Access the 2222 minidisk as file mode C.

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

3. Verify that the first occurrence of the INSTPIPE MODULE is on the minidisk accessed as file mode 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**.

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
```

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

   **Note:** The information for HOSTNAME OR IP ADDRESS, FTP USERID, FTP PASSWORD, and DVD PATHNAME was recorded in traditional installation worksheet 5 (Table 5 on page 17).

```
              *** DVDPRIME PANEL ***

  Enter information in empty fields and press F5 to process.

  HOSTNAME OR IP ADDRESS:      _____

  FTP USERID:                  _____

  FTP PASSWORD:                _____

  DVD PATHNAME:                _____

  PORT NUMBER:           21_____

     F1 = HELP   F3/F12 = QUIT   F5 = Process   ENTER = Refresh
```

*Figure 1: DVDPRIME Panel*

**HOSTNAME OR IP ADDRESS:**
  This field should be filled in with the IP ADDRESS or HOSTNAME of your FTP server. A host name must begin with a letter, and can 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 V4 interface (for example: 129.42.16.99).

**FTP USERID:**
  The user ID used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**FTP PASSWORD:**
The password used to log on to the FTP server. The maximum length is 40 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. This should be the same path name used on the **ftpget** command in Step 1, substep "6" on page 28. The maximum length is 40 characters. For example:

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

**PORT NUMBER:**
The FTP server's port number. The default port number is 21.

6. Press F5 to process.

```
 F5 

IUGDVP8440I Now loading 24CC disk
{FBA222*|CKD222*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 24CC, RC=0

IUGDVP8440I Now loading 2CF0 disk
{FBACF0*|CKDCF0*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF0, RC=0

IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

**What to do next**

Go to

## Step 2. Set up to install from an FTP server directory

### Step 2a. Set up the user ID for installation

**Before you begin:** You need to complete worksheets 1 through 8 in "Traditional installation worksheets" on page 16. If you have not done so, return to Chapter 2, "Plan your traditional installation," on page 7.

The RSU that is shipped as part of the z/VM product will be installed during the installation process. Do not attempt to skip installing the RSU. If additional service is required, it can be installed after your initial installation (part 2) is complete.

1. Upload the contents of each DVD or electronic deliverable to the directory. After the contents of the z/VM product deliverable have been uploaded, upload the contents of the installation RSU deliverable to the same directory, overwriting any duplicate files.

   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 4 GB of free space.

   b. Load the contents of the z/VM product deliverable and the installation RSU deliverable to the directory. When copying the files, make sure the case is preserved.

2. Log on to the first-level user ID that you will use for installation. Make sure the user ID meets the "Second-level installation requirements" on page 10.

3. Spool the console to make sure it is empty, started, and spooled to the reader.

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

4. Verify that you have a 2222 read/write minidisk with exactly 10 cylinders if installing to 3390 or 14400 512-KB blocks if installing to FBA.

```
query v 2222
DASD 2222 3390 xxxxxx  R/W          10 CYL ON DASD   nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

5. Verify that INSTPIPE MODULE exists in your search order.

```
listfile instpipe module *
INSTPIPE MODULE fm
```

If you receive:

```
DMSLST002E file not found
```

access the disk that contains the INSTPIPE MODULE.

**Note:** The INSTPIPE MODULE was shipped on the MAINT 193 minidisk.

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

   a. Run INSTPIPE.

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

   b. Copy the files from the FTP server to the 2222 minidisk.

   **Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in traditional installation worksheet 5 (Table 5 on page 17).

```
pipe ftpget -h host -u userid -p password -d ftpdir
 -v BEF -DVDEOF -f ddd222* |UNPACK| restcmd 2222
```

**host**

 The IP address or FTP host name. An IP address is in dotted-decimal form for your IP V4 interface (for example: 129.42.16.99). A host name must begin with a letter, and can contain only alphanumeric characters (A-Z, a-z, 0-9) or hyphens (-) (for example: MyOrg-VM01).

**userid**

 The user ID used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**password**

 The password used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**ftpdir**

 The path to the FTP server directory where you loaded the contents of the product deliverables in substep "1" on page 32. The maximum length is 40 characters.

**ddd**

 **CKD** for 3390 or **FBA** for FBA (SCSI). This value must be entered in uppercase.

**restcmd**

 **ECKDREST** for 3390 or **MDREST** for FBA (SCSI).

**Note:** In the previous **pipe** command, you can 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
ddd222*
!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 2b. Run DVDPRIME

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

```
ipl cms
z/VM Vv.r.m      yyyy-mm-dd hh:mm
 ENTER
Ready; T=n.nn/n.nn hh:mm:ss
```

2. Access the 2222 minidisk as file mode C.

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

3. Verify that the first occurrence of the INSTPIPE MODULE is on the minidisk accessed as file mode 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**.

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
```

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

   **Note:** The information for HOSTNAME OR IP ADDRESS, FTP USERID, FTP PASSWORD, and DVD PATHNAME was recorded in traditional installation worksheet 5 (Table 5 on page 17).

```
               *** DVDPRIME PANEL ***

  Enter information in empty fields and press F5 to process.

  HOSTNAME OR IP ADDRESS:      _____

  FTP USERID:                  _____

  FTP PASSWORD:                _____

  DVD PATHNAME:                _____

  PORT NUMBER:            21_____

      F1 = HELP   F3/F12 = QUIT   F5 = Process   ENTER = Refresh
```

*Figure 2: DVDPRIME Panel*

**HOSTNAME OR IP ADDRESS:**
   This field should be filled in with the IP ADDRESS or HOSTNAME of your FTP server. A host name must begin with a letter, and can 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 V4 interface (for example: 129.42.16.99).

**FTP USERID:**
   The user ID used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**FTP PASSWORD:**
   The password used to log on to the FTP server. The maximum length is 40 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
```

**PORT NUMBER:**
   The FTP server's port number. The default port number is 21.

6. Press F5 to process.

```
 F5

IUGDVP8440I Now loading 24CC disk
{FBA222*|CKD222*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 24CC, RC=0

IUGDVP8440I Now loading 2CF0 disk
{FBACF0*|CKDCF0*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF0, RC=0

IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

**What to do next**

Go to .

## Step 3. Set up to install from a VM minidisk

### Step 3a. Set up the user ID for installation

**Before you begin:** You need to complete worksheets 1 through 8 in "Traditional installation worksheets" on page 16. If you have not done so, return to Chapter 2, "Plan your traditional installation," on page 7.

The RSU that is shipped as part of the z/VM product will be installed during the installation process. Do not attempt to skip installing the RSU. If additional service is required, it can be installed after your initial installation (part 2) is complete.

1. Log on to the first-level user ID that you will use for installation. Make sure the user ID meets the user ID requirements listed under "Second-level installation requirements" on page 10.

2. Link to the VM minidisk where you will load the files from the product deliverables. The VM minidisk needs to have the equivalent of at least 7000 cylinders of available 3390 DASD space. The minidisk must not contain any other image files. You must link the minidisk in write mode.

   **Note:** The information for *userid* and *diskaddr* was recorded in traditional installation worksheet 5 (Table 5 on page 17).

   ```
   link userid diskaddr diskaddr MR
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Access the VM minidisk as file mode W.

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

   **diskaddr**
   The address of the CMS-formatted VM minidisk where the files from the product deliverables are to be copied.

4. If the z/VM product and RSU files have already been loaded to the minidisk you are using, skip to substep "16" on page 42.

5. Link to the 592 TCP/IP client code minidisk.

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

6. Access the 592 TCP/IP client code minidisk as file mode Z.

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

7. Set the terminal to alert you one second after CP issues the MORE... status and to clear one second after the alert.

   ```
   terminal more 1 1
   Ready;
   ```

8. Copy the contents of the z/VM product and RSU DVDs or electronic envelopes to the VM minidisk accessed as file mode W.

   **Notes:**

   - If you have an FTP server running on your VM system, use the instructions in Appendix K, "Using a VM FTP server to load files to a VM minidisk," on page 243. After loading the files, continue with substep "15" on page 41.

- If you do not have an FTP server, you can use the upload function of your terminal emulator to load the files to the minidisk. See Appendix J, "Using a terminal emulator to upload files," on page 241. After uploading the files using your terminal emulator, continue with substep "15" on page 41.
- If you have an FTP server running on a workstation, continue with this substep.

  Note that wherever the DVD path is referenced, you can substitute the path to the workstation hard drive where you have loaded the electronic envelopes.

a. If installing from a physical DVD, load the z/VM product 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. Start an FTP session.

```
ftp
VM TCP/IP FTP Level nnn
```

c. Connect to the FTP server. Enter the FTP server IP address or host name (*host*), the user ID used to log on to the FTP server (*userid*), and the password for the user ID used to log on to the FTP server (*password*).

   **Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in traditional installation worksheet 5 (Table 5 on page 17).

```
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
```

d. Change the remote directory to the FTP path of the DVD drive or FTP server (*ftpdir*). If loading from a physical DVD, append /CPDVD to the end of the path (for example: e:/CPDVD).

```
Command:
cd ftpdir/CPDVD

>>>CWD ftpdir/CPDVD
250 Directory changed to ftpdir/CPDVD
```

e. Change the local directory to W.

```
Command:
lcd w

Local directory mode is 'W'
```

f. Set the file transfer mode to **binary**, the record format to **fixed**, and the record length to **1028**.

```
Command:
binary f 1028

>>>TYPE i
200 Type set to I.
Command:
```

g. Copy all required files from the z/VM product deliverable.

**mget** *ddd**                          ***ddd***
                                        **CKD** for 3390 or **FBA** for FBA (SCSI).
                                        This value must be entered in
                                        uppercase.

```
>>>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.
>>>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.
  ⋮
```

h. When all files have been transferred, quit the FTP session.

```
Command:
quit

>>>QUIT
221 Goodbye!
Ready;
```

9. Verify that all of the files copied from the z/VM product deliverable have a **fixed** (F) file format and a logical record length (LRECL) of **1028**.

If the file format or logical record length of any file is incorrect, the files were copied incorrectly. Erase all of the files from the minidisk and copy the contents of the z/VM product deliverable again, using the correct parameters. Repeat substep .

```
filelist * $default w

Cmd    Filename Filetype Fm Format Lrecl   Records    Blocks   Date    Time
       xxx22200 $DEFAULT W1 F        1028     nnnn       nnn   dddd    ttttt
  ⋮
```

10. Verify that all of the files were copied from the z/VM product deliverable.

```
filelist * $default w

 userid   FILELIST W0  V 169  Trunc=169 Size=nnnn Line=1 Col=1 Alt=0
Cmd    Filename Filetype Fm Format Lrecl   Records    Blocks   Date    Time
       xxx22200 $DEFAULT W1 F        1028     nnnn       nnn   dddd    ttttt
  ⋮
```

In the **Size=**_nnnn_ field, _nnnn_ is the number of $DEFAULT files on the minidisk. The product deliverable contains the 710PROD DVDIMAGE file, which lists the number of image files that should have been copied.

Verify that the numbers are the same. If the numbers are not the same, there are files missing. In this case, you can do one of the following:

a. Copy the missing files.

   1) Determine which files are missing. The 710PROD DVDIMAGE file contains a list of all of the files that should have been copied.

   2) Copy each of the the missing files from the z/VM product deliverable by repeating substep <span>"8" on page 36</span>, replacing:

```
mget ddd
```

with:

```
get filename filename.$default
```

b. Copy the contents of the z/VM product deliverable again by repeating substep <span>"8" on page 36</span>.

11. Copy the contents of the z/VM installation RSU deliverable to the same VM minidisk used for the z/VM product deliverable.

a. If installing from a physical DVD, load the z/VM installation 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 stops blinking before continuing.

b. Start an FTP session:

```
ftp
VM TCP/IP FTP Level nnn
```

c. Connect to the FTP server. Enter the FTP server's IP address or host name (_host_), the user ID used to log on to the FTP server (_userid_), and the password for the user ID used to log on to the FTP server (_password_).

**Note:** The information for _host_, _userid_, _password_, and _ftpdir_ was recorded in traditional installation worksheet 5 (<span>Table 5 on page 17</span>).

```
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
```

d. Change the remote directory to the FTP path of the DVD drive or FTP server (_ftpdir_). If loading from a physical DVD, append /CPDVD to the end of the path (for example: e:/CPDVD).

```
Command:
cd ftpdir/CPDVD

>>>CWD ftpdir/CPDVD
250 Directory changed to ftpdir/CPDVD
```

    e. Change the local directory to W.

```
Command:
lcd w

Local directory mode is 'W'
```

    f. Set the file transfer mode to **binary**, the record format to **fixed**, and the record length to **1028**.

```
Command:
binary f 1028

>>>TYPE i
200 Type set to I.
Command:
```

    g. Copy all required files from the z/VM installation RSU deliverable.

| | |
|---|---|
| **mget** *ddd*∗ **(replace** | ***ddd***<br>    **CKD** for 3390 or **FBA** for FBA (SCSI). This value must be entered in uppercase. |

```
>>>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.
>>>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.
   ⋮
```

    h. When all files have been transferred, quit the FTP session.

```
Command:
quit

>>>QUIT
221 Goodbye!
Ready;
```

12. Verify that all of the files copied from the z/VM installation RSU deliverable have a **fixed** (F) file format and a logical record length (LRECL) of **1028**.

    If the file format or logical record length of any file is incorrect, the files were copied incorrectly. Erase all of the new $DEFAULT files from the minidisk and copy the contents of the z/VM installation RSU deliverable again, using the correct parameters. Repeat substep <span></span>.

| | |
|---|---|
| **filelist** *ddd***500**∗ **$default w** | ***ddd***<br>    **CKD** for 3390 or **FBA** for FBA (SCSI). |

```
Cmd   Filename Filetype Fm Format
Lrecl    Records      Blocks   Date
Time
     xxx50000 $DEFAULT W1 F
1028        nnnn          nnn
dddd     ttttt
:
```

13. Verify that all of the files were copied from the z/VM installation RSU deliverable.

```
filelist ddd500* $default w
```

      *ddd*
          **CKD** for 3390 or **FBA** for FBA (SCSI).

```
userid   FILELIST W0  V 169  Trunc=169
Size=nnnn Line=1 Col=1 Alt=0
Cmd   Filename Filetype Fm Format
Lrecl    Records      Blocks   Date
Time
     xxx50000 $DEFAULT W1 F
1028        nnnn          nnn
dddd     ttttt
:
```

In the **Size=***nnnn* field, *nnnn* is the number of $DEFAULT files from the RSU deliverable on the minidisk. The deliverable contains the 71CKDRSU and 71FBARSU DVDIMAGE files, which list the number of image files that should have been copied for each DASD type.

Verify that the numbers are the same. If the numbers are not the same, there are files missing. In this case, you can do one of the following:

  a. Copy the missing files.

      1) Determine which files are missing. The 71*ddd*RSU DVDIMAGE file contains a list of all of the files that should have been copied.

      2) Copy each of the the missing files from the z/VM installation RSU deliverable by repeating substep , replacing:

```
mget ddd* (replace
```

      with:

```
get filename filename.$default
```

  b. Copy the contents of the z/VM installation RSU deliverable again by repeating substep .

14. The FTP MGET command copied the files with a file type of $DEFAULT. The file type needs to be renamed to IMAGE.

```
rename * $default w = image =
Ready;
```

15. Set the terminal to alert you 50 seconds after CP issues the MORE... status and to clear 10 seconds after the alert.

```
terminal more 50 10
Ready;
```

16. Spool the console to make sure it is empty, started, and spooled to the reader.

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

17. Verify that you have a 2222 read/write minidisk of exactly 10 cylinders if installing to 3390 or 14400 512-KB blocks if installing to FBA .

```
query v 2222
DASD 2222 3390 xxxxxx  R/W          10 CYL ON DASD  nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

18. Verify that INSTPIPE MODULE exists in your search order.

```
listfile instpipe module *
INSTPIPE MODULE fm
```

If you receive:

```
DMSLST002E file not found
```

access the disk that contains the INSTPIPE MODULE.

**Note:** The INSTPIPE MODULE was shipped on the MAINT 193 minidisk.

19. Copy the files needed to run DVDPRIME to the 2222 minidisk.

    a. Run INSTPIPE.

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

    b. Decode, unpack, and write the files needed to run DVDPRIME to the 2222 minidisk.

    ```
    pipe dvddecod ddd222 image w |UNPACK| restcmd 2222

    {MDREST|ECKDREST}: WROTE nnn {BLOCKS|TRACKS} ON 2222, RC=0
    Ready; T=n.nn/n.nn hh:mm:ss
    ```

    *ddd*
      **CKD** for 3390 or **FBA** for FBA (SCSI). This value must be entered in uppercase.

    *restcmd*
      **ECKDREST** for 3390 or **MDREST** for FBA (SCSI).

    **Note:** In the previous **pipe** command, you can use a different stage separator by including the **stagesep** keyword. For example:

    ```
    pipe ( stagesep ! ) dvddecod ddd222
    image w
    !UNPACK! restcmd 2222
    ```

## Step 3b. Run DVDPRIME

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

```
ipl cms
z/VM Vv.r.m      yyyy-mm-dd hh:mm

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

2. Access the minidisk that contains the image files as file mode W.

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

*diskaddr*
> The address of the minidisk where the image files were copied.

3. Access the 2222 minidisk as file mode C.

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

4. Verify that the first occurrence of the INSTPIPE MODULE is on the minidisk accessed as file mode 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.**

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
IUGDVP8440I Now loading 24CC disk

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 24CC, RC=0
IUGDVP8440I  Now loading 2CF0 disk

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF0, RC=0
IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

## Step 4. Choose your next step

**What to do next**

| If this is: | Go to: |
| --- | --- |
| A non-SSI installation... | Chapter 5, "Non-SSI traditional installation method," on page 45 |
| An SSI installation... | Chapter 6, "SSI traditional installation method," on page 59 |

# Chapter 5. Non-SSI traditional installation method

**In this chapter, you will:**

- Install a non-SSI z/VM system.

## Step 1. Run INSTPLAN for non-SSI

**Before you begin:** You need to complete worksheets 1 through 8 in "Traditional installation worksheets" on page 16. If you have not done so, return to Chapter 2, "Plan your traditional installation," on page 7.

1. Verify that the correct minidisk (VDEV) is accessed as file mode C. If installing second-level, the disk address is 24CC. If installing first-level, the disk address is 4CC.

   ```
   query disk c
   LABEL  VDEV M  ...
   MNT4CC addr C  ...
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. If you are installing to FBA (SCSI) volumes, see traditional installation worksheet 4 (Table 4 on page 17) and query each address to verify it is not already defined for a different device (see example below). If the address is already in use, either detach the device or choose a different *dasdaddr* and verify that address does not exist.

   For each address:

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

   Record any changed addresses in the **Address** column in traditional installation worksheet 4 (Table 4 on page 17).

3. Run INSTPLAN with the TRADITIONAL operand.

   ```
   instplan traditional
   ```

   The installation planning panels are displayed.

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

   Mark the product(s) selected to be installed into the filepool with an "F"
   and those selected to be installed to minidisks with an "M"
       F       VM          F       DIRM          F       ICKDSF
       F       PERFTK      F       RACF          F       RSCS
       F       TCPIP       F       VMHCD

   Select a System Default Language.
     _ AMENG        _ UCENG

   Select a System DASD type. Volume size can be changed.
     _ 3390 10016             _ FBA DASD 6.0

   Enter the name of the common service filepool.
       Filepool Name: _____

   Select a System Type: Non-SSI or SSI
     _ Non-SSI Install:   System Name _____
     _ SSI Install:       Number of Members _    SSI Cluster Name _____


       F1 = HELP     F3/F12 = QUIT    F5 = Process   ENTER = Refresh
   ```

   *Figure 3: z/VM Traditional Installation Planning Panel 1*

   a. See traditional installation worksheet 1 (Table 1 on page 16) 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 file pool.

b. Place a nonblank character next to the `System` `Default` `Language` you selected for your system on traditional installation worksheet 1 (Table 1 on page 16).

c. Place a nonblank character in front of the DASD type that matches the DASD `type` you will use, recorded on traditional installation worksheet 1 (Table 1 on page 16). Update the size to the volume size you will use, recorded on traditional installation worksheet 1 (Table 1 on page 16).

d. Fill in the `Filepool` `Name` for the common service file pool.

e. Place a nonblank character in front of the type of installation you selected for your system on traditional installation worksheet 1 (Table 1 on page 16) – in this case, `Non-SSI` `Install`.

f. Fill in the `System` `Name`.

g. Press F5 to process your selections.

```
 F5 
```

```
              *** z/VM INSTALLATION PLANNING PANEL 2 ***


     _    Would you like to have your system automatically configured to be
          managed by a SMAPI client for system management? Enter Y or N








          F1 = HELP      F3/F12 = QUIT     F5 = Process    ENTER = Refresh
```

*Figure 4: z/VM Traditional Installation Planning Panel 2*

h. Refer to traditional installation worksheet 2 (Table 2 on page 16):

- If you will be using the System Management Application Programming Interface (SMAPI) function, enter Y. Otherwise, enter N.

i. Press F5 to process your selections.

```
 F5 
```

**Note:** Depending on your planning choices, you might see different output.

```
IUGIPX8475I Final selections display
The products you selected to load to minidisk are:
NONE

The products you selected to load to SFS are:
VM PERFTK VMHCD RACF DIRM RSCS ICKDSF TCPIP

The system default language selected:
AMENG

The common service filepool name is:
poolname

The install type you selected is:
Non-SSI

The system name is:
sysname

The DASD type you selected to load on is:
type size

The volumes needed to load z/VM are:
COMMON: VMCOM1
RELEASE: 710RL1 710RL2
SYSTEM: M01RES M01S01 M01P01

Do you want to continue ? (Y|N)
```

Compare the information listed in the response from the INSTPLAN command to the information listed in your traditional installation worksheets. Make sure the information filled in on the worksheets matches what is listed in this response.

**y**

4. Continue with the following steps to fill in the Installation Volume Definition panel.

```
                    *** z/VM INSTALLATION VOLUME DEFINITION ***
        TYPE        LABEL       ADDRESS                         FORMAT (Y/N)
        COMMON      VMCOM1      ____                                 _

        RELVOL      710RL1      ____
        RELVOL2     710RL2      ____

        TYPE        LABEL       ADDRESS
sysname
        RES         M01RES      ____
        SPOOL       M01S01      ____
        PAGE        M01P01      ____



     F1 = HELP     F3/F12 = QUIT     F5 = Process     ENTER = Refresh
```

*Figure 5: z/VM Traditional Installation Volume Definition (Non-SSI Only)*

a. If you do not want to use a default volume label, enter a new label in the **LABEL** field (recorded on traditional installation worksheet 3, Table 3 on page 17 for 3390, or on traditional installation worksheet 4, Table 4 on page 17 for FBA).

b. Fill in the volume addresses using the information from traditional installation worksheet 3 (Table 3 on page 17) for 3390, or traditional installation worksheet 4 (Table 4 on page 17) for FBA. For more information and help, press F1.

c. Fill in the **FORMAT (Y/N)** column with **Y** to CP format your installation volumes or **N** to not format your installation volumes. Specify **N** only if you have already CP formatted your volumes for this

installation using ICKDSF or CPFMTXA. If you specify **N**, the volumes will be labeled, but not formatted.

  d. Press F5 to process.

    **Note:** Depending on your planning choices, you might see different output.

```
 F5 

IUGIIX8377I You have selected to format the
following
volumes:

IUGIIX8377I You have selected not to format the
following
volumes:
This assumes they have already been formatted.

lblcom dasdaddr
lblrl1 dasdaddr
lblrl2 dasdaddr
lblres dasdaddr
lblspl dasdaddr
lblpag dasdaddr

IUGINP8392I INSTPLAN EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

Depending on whether you chose to format your DASD, you will receive one of these versions of message IUGIIX8377I.

5. Compare the information listed in the response from the INSTPLAN command to the information on your traditional installation worksheets. Ensure that the information filled in on the worksheets matches what is listed in this response.

## Step 2. Verify that the volumes needed for installation are available

1. If you are installing to 3390, skip to substep "8" on page 51.
2. If the SCSI volumes you are installing to are defined as minidisks on your installation user ID, skip to substep "7" on page 51.
3. If the SCSI volumes you are installing to have already been defined, either in the SYSTEM CONFIG or by using the SET EDEVICE command, skip to substep "6" on page 51. If not yet defined, continue with the next substep.
4. To define the SCSI volumes, you need to know which FCP addresses are valid for your SCSI volumes.

   If you know the FCP address or the range of addresses associated with your SCSI volume 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
   ```

5. To define the SCSI volumes, use the information recorded in traditional installation worksheet 4 (Table 4 on page 17).

   See *z/VM: CP Planning and Administration* for information about defining SCSI disks. The following information will provide each SCSI volume with a basic definition.

   For each SCSI volume:

   a. Select and record a free FCP address for each *edevice*. You should use one FCP device for the 710RES and a different (or multiple different) FCPs for the other volumes.

      ```
      query fcp free
      ```

      Choose a device from the output. Record an FCP address for each edevice in the **FCP Address** column on traditional installation worksheet 7 (Table 7 on page 18).

   b. Define the device address.

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

*dasdaddr*
> The edevice address from traditional installation worksheet 7 (Table 7 on page 18).

*attr_type*
> The name of an attribute set to be associated with the real device. See the SET EDEVICE command in *z/VM: CP Commands and Utilities Reference*.

*fcpn*
> The Fibre Channel Protocol (FCP) address. You should use one FCP device for the 710RES and one or more different FCPs for the other disks.

*www*
> The worldwide port number.

*lll*
> The logical unit number (LUN) address.

6. Vary on any SCSI volumes not already online. Repeat this substep for each volume.

```
vary on dasdaddr
```

7. The following changes might be needed in the SYSTEM CONFIG file for future IPLs.

   - When performing a second-level installation to SCSI volumes, 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 volumes 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.

   - If you are installing on a second-level (or higher) system, the edevice details of the SCSI volumes to which you are installing cannot be determined; therefore, the SYSTEM CONFIG file is not updated to include any EDEV statements.

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

8. Attach each DASD volume listed on traditional installation worksheet 3 (Table 3 on page 17) or 4 (Table 4 on page 17) that is not already attached. Enter the following ATTACH command for each volume:

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

*dasdaddr*
> Address of the DASD volume.

*userid*
> First-level user ID logged on to previously.

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

## Step 3. Run INSTALL to install your new system

1. Run INSTALL to install your new system.

   **Note:** You must *not* disconnect your installation user ID. The installation procedure will IPL the z/VM system a number of times and these will fail if the user ID is running disconnected.

   ```
   install

   IUGIIS8490I Now formatting|labeling volume: dasdaddr (1 of n)
   :
   IUGIIS8490I Now formatting|labeling volume: dasdaddr (n of n)
   :
   IUGIIS8380I Restoring IIS to lblcom, lblrll, lblres, and lblspl
   IUGIIS8341I Load of the system IIS to COMMON volume has completed successfully
   :
   IUGIIS8490I Now allocating volume: dasdaddr (COMMON VOLUME)
   :
   IUGIIS8341I Writing ownership for sysname to spladdr lblspl has completed
   successfully
   IUGIIS8341I Writing ownership for sysname to pagaddr lblpag has completed
   successfully
   IUGIDV8341I Creation of the USER DIRECT has completed successfully
   IUGILB8440I Now loading userid cuu (alias) disk 1 of nnn
   IUGILB8440I Now loading userid cuu (alias) disk 2 of nnn
   IUGILB8440I Now loading userid cuu (alias) disk 3 of nnn
   :
   IUGILB8440I Now loading userid cuu (alias) disk nnn of nnn
   ```

   **Note:** If you receive one of the following messages:

   ```
   IUGILB8300E File ddd50000 IMAGE W not found

   IUGILB8342E The command 'PIPE DVDDECOD ddd500 failed with RC=rc'
   ```

   make sure you load the installation RSU DVD to your installation minidisk or FTP server before restarting.

**Messages received if installing from a physical DVD:**

```
HCPIRU8484R Please place the installation RSU DVD
in the DVD drive, then type GO to continue or type
EXIT to quit.
```

Place the installation RSU DVD in the DVD drive and wait until the light on the DVD drive goes out or stops blinking, then enter go.

Do not attempt to skip installing the RSU.

If you enter exit, your installation will not be complete. You must rerun the INSTALL command and enter go to load the RSU files before you can continue to the next step.

If the installation fails while loading the installation RSU DVD, make sure the DVD in the drive is the installation RSU and issue INSTALL to try again.

```
HCPIRU8440I Now loading MAINTvrm 500 disk
HCPIRU8341I Load of the installation RSU has
completed successfully
```

**Messages received if installing first-level:**

```
IUGIDV8341I DIRECTXA USER DIRECT has completed
successfully
IUGIDV8341I SALIPL command has completed
successfully
 :
IUGIWF8338I Now executing copy of CF0 and 4CC step
 :
IUGIDV8392I INSTDVD EXEC ended successfully
```

**Messages received if installing second-level:**

```
IUGIDV8341I DIRECTXA USER DIRECT has completed
successfully
IUGIDV8341I SALIPL command has completed
successfully
IUGIWF8341I {MDDUMP|ECKDDUMP} of 2CF0 has completed
successfully
IUGIWF8338I Now executing copy of 24CC to 4CC step
IUGIWF8341I {MDDUMP|ECKDDUMP} of 24CC has completed
successfully
IUGIDV8392I INSTDVD EXEC ended successfully
```

```
*********************************************
*       Now IPLing volume dasdaddr      *
*       with command:                   *
*       CP SYSTEM CLEAR                  *
*       TERMINAL CONMODE 3270            *
*       SET MACHINE ESA                  *
*       IPL dasdaddr CLEAR               *
*********************************************

hh:mm:ss z/VM V7 R1.0 SERVICE LEVEL 0000 (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss, LOADED FROM lblres
hh:mm:ss
hh:mm:ss ******************************************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*                         *
hh:mm:ss * 5741-A09 (C) COPYRIGHT IBM CORP. 1983, 2018. ALL RIGHTS       *
hh:mm:ss * RESERVED. US GOVERNMENT USERS RESTRICTED RIGHTS - USE         *
hh:mm:ss * DUPLICATION OR DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE      *
hh:mm:ss * CONTRACT WITH IBM CORP.                                       *
hh:mm:ss *                                                               *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS MACHINES                *
hh:mm:ss ******************************************************************
hh:mm:ss
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume lblcom (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nnn through nnn.
  ⋮
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT


z/VM V7.1.0    yyyy-mm-dd

hh:mm:ss AUTO LOGON *** OP1 USERS = 2 BY MAINT710
hh:mm:ss HCPCLS6056I XAUTOLOG information for OP1: The IPL command is verified by
the
  IPL command processor.

IUGPLD8341I Now executing: POSTLOAD processing

DMSACC724I 4CC replaces C (4CC)

IUGIFP8493I Issuing XAUTOLOG for VMSERVU
AUTO LOGON *** VMSERVU USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the IPL
command processor.

IUGIFP8493I Issuing XAUTOLOG for VMSERVR
AUTO LOGON *** VMSERVR USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
command processor.

IUGIFP8493I Issuing XAUTOLOG for VMSERVS
AUTO LOGON *** VMSERVS USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
command processor.

USER DSC LOGOFF AS VMSERVR USERS = n FORCED BY MAINT710

IUGIFP8493I Issuing XAUTOLOG for VMSERVR
AUTO LOGON *** VMSERVR USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
command processor.

IUGIFP8493I Issuing XAUTOLOG for VMSERVP
AUTO LOGON *** VMSERVP USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVP: The IPL command is verified by the IPL
command processor.

IUGIFP8338I Now executing: Update system tables and clean up filepool directories
```

```
USER DSC LOGOFF AS VMSERVP USERS = n FORCED BY
MAINT710
DASD 917 DETACHED
IUGIFP8493I Issuing XAUTOLOG for VMSERVP
AUTO LOGON *** VMSERVP USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVP: The
IPL command is verified by the
IPL command processor.
```

You will receive these messages if you did *not* select VMPSFS as the common service file pool name.

```
IUGIUF8341I Update of SYSTEM CONFIG completed successfully
DASD 0CF0 DETACHED
DASD 0193 DETACHED
z/VM V7.1.0     yyyy-mm-dd hh:mm
DMSWSP100W Shared S-STAT not available

AUTO LOGON *** BLDCMS USERS = n
HCPCFX6768I SECUSER of BLDCMS initiated for you by BLDCMS.
HCPNSD440I The Named Saved System (NSS) CMS was successfully defined in fileid nnnn
BLDCMS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn:nn TOTCPU= nnn:nn:nn
BLDCMS : LOGOFF AT hh:mm:ss EST MONDAY mm/dd/yy BY MAINT710
USER DSC LOGOFF AS BLDCMS USERS = n FORCED BY MAINT710

AUTO LOGON *** BLDCMS USERS = n
HCPCFX6768I SECUSER of BLDCMS initiated for you by BLDCMS.
DMSACC724I 493 replaces Z (493)
HCPNSD440I The Named Saved System (NSS) ZCMS was successfully defined in fileid nnnn
BLDCMS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn:nn TOTCPU= nnn:nn:nn
BLDCMS : LOGOFF AT hh:mm:ss EST MONDAY mm/dd/yy BY MAINT710
USER DSC LOGOFF AS BLDCMS USERS = n FORCED BY MAINT710

************************************************************
* Now executing SERVICE ALL rsuname
************************************************************

***** SERVICE messages ******************


************************************************************
* Now executing PUT2PROD                                  *
************************************************************

****** PUT2PROD messages ***************

*********************************************************************************

* INSTCOMP NOW ISSUING SHUTDOWN REIPL
*
*********************************************************************************
```

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

hh:mm:ss HCPWRP963I SHUTDOWN STEP USOAC - JOURNAL USER TERMINATION
:
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL
hh:mm:ss z/VM V7 R1.0  SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss, LOADED FROM lblres
hh:mm:ss
hh:mm:ss ****************************************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM*                       *
hh:mm:ss * 5741-A09 (C) COPYRIGHT IBM CORP. 1983, 2018. ALL RIGHTS     *
hh:mm:ss * RESERVED. US GOVERNMENT USERS RESTRICTED RIGHTS - USE       *
hh:mm:ss * DUPLICATION OR DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE    *
hh:mm:ss * CONTRACT WITH IBM CORP.                                     *
hh:mm:ss *                                                             *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS MACHINES              *
hh:mm:ss ****************************************************************
hh:mm:ss
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume volid (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nn through nn.
:
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
hh:mm:ss DISCONNECT AT hh:mm:ss timezone weekday mm/dd/yy
hh:mm:ss Press enter or clear key to continue
```

ENTER

Press Enter or the Clear key to continue.

## Step 4. Log on to the new system

1. Log on as MAINT710.

```
logon maint710
⋮
Ready; T=n.nn/n.nn hh:mm:ss
```

The default password for MAINT710 is WD5JU8QP.

## Step 5. IPL the new system

1. If this is a first-level installation, you are done with the RAMDISK.

   a. Shut down the new system.

   ```
   shutdown
   ```

   b. Shut down the RAMDISK system.

   ```
   shutdown system ibmvmram
   ```

   c. IPL the new system from the HMC.

2. If this is a second-level installation, and this is *not* where you plan to run your new system, shut down the system and then IPL where you wish the new system to run.

   **Note:** The default SYSTEM CONFIG file allows the following console addresses: 20, 21, 22, 23, F20, F21, 1020. If your console is *not* one of these addresses, either redefine your console or IPL with the **LOADPARM** *consaddr* option. If you use the **LOADPARM** option, include **cons=***consaddr* as an IPL parameter on the z/VM Stand Alone Program Loader (SAPL) panel.

**What to do next**

Go to Part 3, "After traditional installation," on page 77.

# Chapter 6. SSI traditional installation method

**In this chapter, you will:**

- Install a z/VM SSI cluster.

## Step 1. Run INSTPLAN for SSI

**Before you begin:** You need to complete worksheets 1 through 8 in "Traditional installation worksheets" on page 16. If you have not done so, return to Chapter 2, "Plan your traditional installation," on page 7.

1. Verify that the correct minidisk (VDEV) is accessed as file mode C. If second-level, the disk address is 24CC. If first-level, the disk address is 4CC.

```
query disk c
LABEL  VDEV M  ...
MNT4CC addr C  ...
Ready; T=n.nn/n.nn hh:mm:ss
```

2. Run INSTPLAN with the TRADITIONAL operand.

```
instplan traditional
```

The installation planning panels are displayed.

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

    Mark the product(s) selected to be installed into the filepool with an "F"
    and those selected to be installed to minidisks with an "M"
        F        VM            F        DIRM           F        ICKDSF
        F        PERFTK        F        RACF           F        RSCS
        F        TCPIP         F        VMHCD

    Select a System Default Language.
        _ AMENG          _ UCENG

    Select a System DASD  type. Volume size can be changed.
        _ 3390 10016                _ FBA DASD 6.0

    Enter the name of the common service filepool.
        Filepool Name: _____

    Select a System Type: Non-SSI or SSI
        _ Non-SSI Install:    System Name _____
        _ SSI Install:        Number of Members _    SSI Cluster Name _____


        F1 = HELP     F3/F12 = QUIT    F5 = Process   ENTER = Refresh
```

*Figure 6: z/VM Traditional Installation Planning Panel 1*

a. See traditional installation worksheet 1 (Table 1 on page 16) 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 file pool.

b. Place a nonblank character next to the `System Default Language` you selected for your system on traditional installation worksheet 1 (Table 1 on page 16).

c. Place a nonblank character in front of the DASD type that matches the `DASD  type` you will use, recorded on traditional installation worksheet 1 (Table 1 on page 16). Update the size to the volume size you will use, recorded on traditional installation worksheet 1 (Table 1 on page 16).

d. Fill in the `Filepool  Name` for the common service filepool.

e. Place a nonblank character in front of the type of install you selected for your system on traditional installation worksheet 1 (Table 1 on page 16) – in this case `SSI  Install`.

f. Fill in the `Number of Members` and the `SSI Cluster Name`.

g. Press F5 to process your selections.

3. Complete the Installation Planning Panel 2, as appropriate to your system.

```
                *** z/VM INSTALLATION PLANNING PANEL 2 ***


   _    Would you like to have your system automatically configured to be
        managed by a SMAPI client for system management? Enter Y or N







        F1 = HELP     F3/F12 = QUIT    F5 = Process   ENTER = Refresh
```

*Figure 7: z/VM Traditional Installation Planning Panel 2*

a. Refer to traditional installation worksheet 2 (Table 2 on page 16):

- If you will be using the System Management Application Programming Interface (SMAPI) function, enter Y. Otherwise, enter N.

b. Press F5 to process your selections.

F5

4. Continue with the following steps to fill in the Installation Planning Panel 3.

```
                *** z/VM INSTALLATION PLANNING PANEL 3 ***


   SSI Cluster Name:   ssiclustername


   After installation is complete, the SSI cluster will be IPLed :

   _     First-Level
   _     Second-Level


   SSI Member Name(s):

   SLOT #      MEMBER NAME     IPL LPAR/USERID
   ======      ===========     ===============
     1          --------         --------
     2          --------         --------
     3          --------         --------
     4          --------         --------


      F1 = HELP   F3/F12 = QUIT   F5 = Process   ENTER = Refresh
```

*Figure 8: z/VM Traditional Installation Planning Panel 3 (SSI Only)*

a. See traditional installation worksheet 6 (Table 6 on page 18) and enter a nonblank character next to:

- *First-Level* if the SSI will be IPLed first-level after installation is complete.
- *Second-Level* if the SSI will continue to be IPLed second-level after installation is complete.

b. Fill in the member name for each member.

c. If, after installation is complete, the SSI will be IPLed:

- First-level, fill in the LPAR name for each member.
- Second-level, fill in the user ID that will be used to IPL each member.

       d. Press F5 to process your selections.

             F5

      **Note:** Depending on your planning choices, you might see different output.

```
IUGIPX8475I Final selections display
The products you selected to load to minidisk are:
NONE

The products you selected to load to SFS are:
VM PERFTK VMHCD RACF DIRM RSCS ICKDSF TCPIP

The system default language selected:
AMENG

The common service filepool name is:
poolname

The install type you selected is:
SSI

The SSI cluster name is:
ssiname

The number of members is:
n
MEMBER NAME 1: memname   IPL LPAR/USERID 1: lparname
MEMBER NAME 2: memname   IPL LPAR/USERID 2: lparname
MEMBER NAME 3: memname   IPL LPAR/USERID 3: lparname
MEMBER NAME 4: memname   IPL LPAR/USERID 4: lparname

After installation is complete, members will be IPLed from:
level

The DASD type you selected to load on is:
type size

The volumes needed to load z/VM are:
COMMON: VMCOM1
RELEASE: 710RL1 710RL2
MEMBER1: M01RES M01S01 M01P01
MEMBER2: M01RES M01S01 M01P01
MEMBER3: M01RES M01S01 M01P01
MEMBER4: M01RES M01S01 M01P01

Do you want to continue ? (Y|N)
```

Compare the information listed in the response from the INSTPLAN command to the information listed on your traditional installation worksheets. Ensure that the information filled in on the worksheets matches what is listed in this response.

**y**

5. Continue with the following steps to fill in the Installation Volume Definition panel.

```
                *** z/VM INSTALLATION VOLUME DEFINITION ***
        TYPE       LABEL      ADDRESS                        FORMAT (Y/N)
        COMMON     VMCOM1       ____
_
        RELVOL     710RL1       ____
        RELVOL2    710RL2       ____

        TYPE       LABEL      ADDRESS         TYPE       LABEL      ADDRESS
mem1nam                                 mem2nam
        RES        M01RES       ____            RES        M01RES       ____
        SPOOL      M01S01       ____            SPOOL      M01S01       ____
        PAGE       M01P01       ____            PAGE       M01P01       ____
mem3nam                                 mem4nam
        RES        M01RES       ____            RES        M01RES       ____
        SPOOL      M01S01       ____            SPOOL      M01S01       ____
        PAGE       M01P01       ____            PAGE       M01P01       ____




        F1 = HELP      F3/12 = QUIT     F5 = Process     ENTER = Refresh
```

*Figure 9: z/VM Traditional Installation Volume Definition (SSI Only)*

a. If you do not want to use a default volume label, enter a new label (recorded on traditional installation worksheet 7, Table 7 on page 18) in the **LABEL** field.

b. Fill in the volume addresses using the information from traditional installation worksheet 7 (Table 7 on page 18). For more information and help, press F1.

c. Fill in the **FORMAT (Y/N)** column with **Y** to CP format your installation volumes or **N** to not format your installation volumes. Specify **N** only if you have already CP formatted your volumes for this installation using ICKDSF or CPFMTXA. If you specify **N**, the volumes will be labeled, but not formatted.

d. Press F5 to process your selections.

> F5

6. If you selected "Second_Level" in answer to the question "After installation is complete, the SSI cluster will be IPLed:" on the z/VM Installation Planning panel 3 (in substep "4" on page 61), proceed to substep "7" on page 64.

If you selected "First_Level" in answer to the question "After installation is complete, the SSI cluster will be IPLed:" on the z/VM Installation Planning panel 3 (in substep "4" on page 61), continue with this step to fill in the First-Level Configuration panel.

```
             *** z/VM INSTALLATION FIRST-LEVEL CONFIGURATION ***

 Real addresses for the common volume on each member LPAR:

   VOLUME     DASD        mem1name    mem2name    mem3name    mem4name
    TYPE      LABEL       ADDRESS     ADDRESS     ADDRESS     ADDRESS
   =======   ========    =========   =========   =========   =========
   COMMON    lblcom        ____        ____        ____        ____

 CTC device addresses:

   From: mem1nam                 From: mem2nam
        To: mem1name    N/A            To: mem1name  ____ ____
        To: mem2name ____ ____         To: mem2name    N/A
        To: mem3name ____ ____         To: mem3name  ____ ____
        To: mem4name ____ ____         To: mem4name  ____ ____

   From: mem3nam                 From: mem4nam
        To: mem1name ____ ____         To: mem1name  ____ ____
        To: mem2name ____ ____         To: mem2name  ____ ____
        To: mem3name    N/A            To: mem3name  ____ ____
        To: mem4name ____ ____         To: mem4name    N/A

   F1 = HELP       F3/F12 = QUIT     F5 = Process     ENTER = Refresh
```

*Figure 10: z/VM Traditional Installation DASD Definitions 2 (SSI Only)*

a. Fill in the real address of the VMCOM1 volume as it is defined on each LPAR. Use the information from traditional installation worksheet 8 (Table 8 on page 19).

b. Fill in the CTC device addresses for each member using the information from traditional installation worksheet 8 (Table 8 on page 19).

c. Press F5 to process your selections.

```
 F5 
```

7. **Note:** Depending on your planning choices, the output you see might be different.

```
IUGIIX8377I You have selected to format the
following
volumes:

IUGIIX8377I You have selected not to format the
following
volumes:
This assumes they have already been formatted.
```

Depending on whether you chose to format your DASD, you will receive one of these versions of message IUGIIX8377I.

```
lblcom dasdaddr
lblrl1 dasdaddr
lblrl2 dasdaddr
lblres dasdaddr
lblspl dasdaddr
lblpag dasdaddr
```

```
IUGIIX8377I You have selected the following CTC
addresses:
MEMBER membnam to MEMBER membnam ctcaddr ctcaddr
MEMBER membnam to MEMBER membnam ctcaddr ctcaddr
MEMBER membnam to MEMBER membnam ctcaddr ctcaddr
MEMBER membnam to MEMBER membnam ctcaddr ctcaddr

IUGINP8392I INSTPLAN EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

You will receive the CTC address messages only if you selected "IPL from 1st level after installation is complete".

8. Compare the information listed in the response from the INSTPLAN command to the information listed on your traditional installation worksheets. Ensure that the information filled in on the worksheets matches what is listed in this response.

## Step 2. Run INSTALL to install your new system

1. Attach each volume listed on traditional installation worksheet 7 (Table 7 on page 18) that is not already attached. Enter the following ATTACH command for each volume:

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

***dasdaddr***
> Address of the DASD volume.

***userid***
> First-level user ID logged on to previously.

**Attention:** If there are any DASD volumes or minidisks attached to this user ID (other than the volumes being used for this installation) with the same labels that you are using for your installation volumes, they must be detached from this user ID to prevent bringing them online. Use the QUERY VIRTUAL DASD command to list the DASD volumes and minidisks attached to this user ID.

2. Run INSTALL to install your new system.

   **Note:** You must *not* disconnect your installation user ID. The installation procedure will IPL the z/VM system a number of times and these will fail if the user ID is running disconnected.

```
install

IUGIIS8490I Now formatting|labeling volume: dasdaddr (1 of n)
⋮
IUGIIS8490I Now formatting|labeling volume: dasdaddr (n of n)
⋮
IUGIIS8380I Restoring IIS to lblcom, lblrll, lblres, and lblspl
IUGIIS8341I Load of the system IIS to COMMON volume has completed successfully
⋮
IUGIIS8490I Now allocating volume: dasdaddr (COMMON VOLUME)
⋮
IUGIIS8341I Writing ownership for ssiname NOSYS to comaddr lblcom has completed
successfully
IUGIIS8341I Writing ownership for ssiname mem1name to resaddr lblres has completed
successfully
IUGIIS8341I Writing ownership for ssiname mem1name to spladdr lblspl has completed
successfully
IUGIIS8341I Writing ownership for ssiname mem1name to pagaddr lblpag has completed
successfully
IUGIIS8341I Creating PDR on comaddr has completed successfully
IUGIDV8341I Creation of the USER DIRECT has completed successfully
IUGILB8440I Now loading userid cuu (alias) disk 1 of nnn
IUGILB8440I Now loading userid cuu (alias) disk 2 of nnn
IUGILB8440I Now loading userid cuu (alias) disk 3 of nnn
⋮
IUGILB8440I Now loading userid cuu (alias) disk nnn of nnn
```

**Note:** If you receive one of the following messages:

```
IUGILB8300E File ddd50000 IMAGE W not found

IUGILB8342E The command 'PIPE DVDDECOD ddd500 failed with RC=rc'
```

make sure you load the installation RSU DVD to your installation minidisk or FTP server before restarting.

**Messages received if installing from a physical DVD:**

```
HCPIRU8484R Please place the installation RSU DVD
in the DVD drive, then type GO to continue or type
EXIT to quit.
```

Place the installation RSU DVD in the DVD drive and wait until the light on the DVD drive goes out or stops blinking, then enter go.

Do not attempt to skip installing the RSU.

If you enter exit, your installation will not be complete. You must rerun the INSTALL command and enter go to load the RSU files before you can continue to the next step.

If the installation fails while loading the installation RSU DVD, issue INSTALL to try again.

```
HCPIRU8440I Now loading MAINTvrm 500 disk
HCPIRU8341I Load of the installation RSU has
completed successfully
```

**Messages received if installing first-level:**

```
IUGIDV8341I DIRECTXA USER DIRECT has completed
successfully
IUGIDV8341I SALIPL command has completed
successfully
:
IUGIWF8338I Now executing copy of CF0 and 4CC step
:
IUGIDV8392I INSTDVD EXEC ended successfully
```

**Messages received if installing second-level:**

```
IUGIDV8341I DIRECTXA USER DIRECT has completed
successfully
IUGIDV8341I SALIPL command has completed
successfully
IUGIWF8341I {MDDUMP|ECKDDUMP} of 2CF0 has completed
successfully
IUGIWF8338I Now executing copy of 24CC to 4CC step
IUGIWF8341I {MDDUMP|ECKDDUMP} of 24CC has completed
successfully
IUGIDV8392I INSTDVD EXEC ended successfully
```

```
*******************************************
*         Now IPLing volume dasdaddr       *
*         with command:                    *
*         CP SYSTEM CLEAR                   *
*         TERMINAL CONMODE 3270             *
*         SET MACHINE ESA                   *
*         IPL dasdaddr CLEAR                *
*******************************************

hh:mm:ss z/VM V7 R1.0 SERVICE LEVEL 0000 (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss, LOADED FROM lblres
hh:mm:ss
hh:mm:ss *****************************************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM                        *
hh:mm:ss * 5741-A09 (C) COPYRIGHT IBM CORP. 1983, 2018. ALL RIGHTS          *
hh:mm:ss * RESERVED. US GOVERNMENT USERS RESTRICTED RIGHTS - USE       *
hh:mm:ss * DUPLICATION OR DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE    *
hh:mm:ss * CONTRACT WITH IBM CORP.                                     *
hh:mm:ss *                                                             *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS MACHINES              *
hh:mm:ss *****************************************************************
hh:mm:ss
hh:mm:ss *****************************************************************
hh:mm:ss * IBM z/VM Single System Image Function is active.            *
hh:mm:ss *****************************************************************

hh:mm:ss HCPZCO6718I Using parm disk 1 on volume lblcom (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nnn through nnn.
⋮
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT

z/VM V7.1.0     yyyy-mm-dd hh:mm

hh:mm:ss AUTO LOGON *** OP1 USERS = 2 BY MAINT710
hh:mm:ss HCPCLS6056I XAUTOLOG information for OP1: The IPL command is verified by
the
  IPL command processor.

IUGPLD8341I Now executing: POSTLOAD processing

DMSACC724I 4CC replaces C (4CC)

IUGIFP8493I Issuing XAUTOLOG for VMSERVU
AUTO LOGON *** VMSERVU USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the IPL
command processor.

IUGIFP8493I Issuing XAUTOLOG for VMSERVR
AUTO LOGON *** VMSERVR USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
command processor.

IUGIFP8493I Issuing XAUTOLOG for VMSERVS
AUTO LOGON *** VMSERVS USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the IPL
command processor.

USER DSC LOGOFF AS VMSERVR USERS = n FORCED BY MAINT710

IUGIFP8493I Issuing XAUTOLOG for VMSERVR
AUTO LOGON *** VMSERVR USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the IPL
command processor.

IUGIFP8493I Issuing XAUTOLOG for VMSERVP
AUTO LOGON *** VMSERVP USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVP: The IPL command is verified by the IPL
command processor.

IUGIFP8338I Now executing: Update system tables and clean up filepool directories
```

You will receive these messages if you did *not* select VMPSFS as the common service file pool name.

```
USER DSC LOGOFF AS VMSERVP USERS = n FORCED BY
MAINT710
DASD 917 DETACHED
IUGIFP8493I Issuing XAUTOLOG for VMSERVP
AUTO LOGON *** VMSERVP USERS = n
```

```
HCPCLS6056I XAUTOLOG information for VMSERVP: The IPL command is verified by the
IPL command processor.

IUGIUF8341I Update of SYSTEM CONFIG completed successfully
DASD 0CF0 DETACHED
DASD 0193 DETACHED
z/VM V7.1.0    yyyy-mm-dd hh:mm
DMSWSP100W Shared S-STAT not available

AUTO LOGON *** BLDCMS USERS = n
HCPCFX6768I SECUSER of BLDCMS initiated for you by BLDCMS.
HCPNSD440I The Named Saved System (NSS) CMS was successfully defined in fileid nnnn
BLDCMS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn:nn TOTCPU= nnn:nn:nn
BLDCMS : LOGOFF AT hh:mm:ss EST MONDAY mm/dd/yy BY MAINT710
USER DSC LOGOFF AS BLDCMS USERS = n FORCED BY MAINT710

AUTO LOGON *** BLDCMS USERS = n
HCPCFX6768I SECUSER of BLDCMS initiated for you by BLDCMS.
DMSACC724I 493 replaces Z (493)
HCPNSD440I The Named Saved System (NSS) ZCMS was successfully defined in fileid nnnn
BLDCMS : CONNECT= nn:nn:nn VIRTCPU= nnn:nn:nn TOTCPU= nnn:nn:nn
BLDCMS : LOGOFF AT hh:mm:ss EST MONDAY mm/dd/yy BY MAINT710
USER DSC LOGOFF AS BLDCMS USERS = n FORCED BY MAINT710

***********************************************************
* Now executing SERVICE ALL rsuname
***********************************************************

***** SERVICE messages ******************


***********************************************************
* Now executing PUT2PROD                                  *
***********************************************************

****** PUT2PROD messages ***************

*********************************************************************************

* INSTCOMP NOW ISSUING SHUTDOWN REIPL
*
*********************************************************************************
```

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

hh:mm:ss HCPWRP963I SHUTDOWN STEP PLMLL - LEAVE THE SSI CLUSTER
  :
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL
hh:mm:ss z/VM V7 R1.0  SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss, LOADED FROM lblres
hh:mm:ss
hh:mm:ss ****************************************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM                        *
hh:mm:ss * 5741-A09 (C) COPYRIGHT IBM CORP. 1983, 2018. ALL RIGHTS           *
hh:mm:ss * RESERVED. US GOVERNMENT USERS RESTRICTED RIGHTS - USE       *
hh:mm:ss * DUPLICATION OR DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE    *
hh:mm:ss * CONTRACT WITH IBM CORP.                                     *
hh:mm:ss *                                                             *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS MACHINES              *
hh:mm:ss ****************************************************************
hh:mm:ss
hh:mm:ss ****************************************************************
hh:mm:ss * IBM z/VM Single System Image Function is active.            *
hh:mm:ss ****************************************************************
hh:mm:ss HCPZCO6718I Using parm disk 1 on volume volid (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nn through nn.
  :
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT
```

**What to do next**

| If this is: | Go to: |
| --- | --- |
| A one-member SSI installation... | "Step 3. One-member SSI" on page 70 |
| A multimember SSI installation... | "Step 4. Multimember SSI" on page 71 |

# Step 3. One-member SSI

1. Processing continues.

   ```
   hh:mm:ss DISCONNECT AT hh:mm:ss timezone 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 MAINT710.

   ```
   logon maint710
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   The default password for MAINT710 is
   WD5JU8QP.

3. If this is a first-level installation, you are done with the RAMDISK.

   a. Shut down the new system.

   ```
   shutdown
   ```

   b. Shut down the RAMDISK system.

   ```
   shutdown system ibmvmram
   ```

   c. IPL the new system from the HMC.

4. If this is a second-level installation, and this is *not* where you plan to run your new system, shut down
   the system and then IPL where you wish the new system to run.

   **Note:** The default SYSTEM CONFIG file allows the following console addresses: 20, 21, 22, 23, F20,
   F21, 1020. If your console is *not* one of these addresses, either redefine your console or IPL with the
   **LOADPARM** *consaddr* option. If you use the **LOADPARM** option, include **cons=***consaddr* as an IPL
   parameter on the z/VM Stand Alone Program Loader (SAPL) panel.

**What to do next**

Go to .

# Step 4. Multimember SSI

1. Processing continues.

```
z/VM V7.1.0    yyyy-mm-dd hh:mm
hh:mm:ss AUTO LOGON  ***       OP1      USERS = 2     BY MAINT710

hh:mm:ss HCPCLS6056I XAUTOLOG information for OP1: The IPL command is verified by
the
IPL command processor.
```

```
IUGIMB8380I DDRing cylinders 0 - nnnn from lbl1res to
lbl2res
DDR of lbl1res to lbl2res successful

IUGIMB8380I DDRing cylinders 0 - nnnn from lbl1res to
lbl3res
DDR of lbl1res to lbl3res successful
⋮

IUGIMB8380I DDRing cylinders 0 - nnnn from lbl1res to
lbl4res
DDR of lbl1res to lbl4res successful
⋮
```

You will receive these messages for each member (except member 1) that you selected to install.

```
Labeling volume for lbl2res successful
Labeling volume for lbl3res successful
⋮

Labeling volume for lbl4res successful
⋮

DASD 0550 DETACHED

Writing ownership to lbl2res successful
Writing ownership to lbl2spl successful
Writing ownership to lbl2pag successful

Writing ownership to lbl3res successful
Writing ownership to lbl3spl successful
Writing ownership to lbl3pag successful

Writing ownership to lbl4res successful
Writing ownership to lbl4spl successful
Writing ownership to lbl4pag successful

DASD 0550 DETACHED

SALIPL for addr successful
SALIPL for addr successful
SALIPL for addr successful
```

## Step 5. Initialize members 2, 3, and 4

1. Processing continues.

```
************************************************************
*     PROCESSING UPDATE FOR MEMBER nextmemb
************************************************************
IUGISC8403I SYSTEM CONFIG has been updated to allow member nextmemb to be IPLed.

         member nextmemb will be IPLed by issuing the command:
         SHUTDOWN REIPL dasdaddr

EXECUTING SHUTDOWN REIPL dasdaddr

hh:mm:ss HCPWRP963I SHUTDOWN STEP PLMLV - LEAVE THE SSI CLUSTER
  :
hh:mm:ss z/VM SYSTEM RESTART FROM SHUTDOWN REIPL

hh:mm:ss z/VM V7 R1.0 SERVICE LEVEL nnnn (64-BIT)

hh:mm:ss SYSTEM NUCLEUS CREATED ON yyyy-mm-dd AT hh:mm:ss, LOADED FROM lblres
hh:mm:ss
hh:mm:ss ********************************************************************
hh:mm:ss * LICENSED MATERIALS - PROPERTY OF IBM                           *
hh:mm:ss * 5741-A09 (C) COPYRIGHT IBM CORP. 1983, 2018. ALL RIGHTS          *
hh:mm:ss * RESERVED. US GOVERNMENT USERS RESTRICTED RIGHTS - USE         *
hh:mm:ss * DUPLICATION OR DISCLOSURE RESTRICTED BY GSA ADP SCHEDULE      *
hh:mm:ss * CONTRACT WITH IBM CORP.                                       *
hh:mm:ss *                                                               *
hh:mm:ss * * TRADEMARK OF INTERNATIONAL BUSINESS MACHINES                *
hh:mm:ss ********************************************************************
hh:mm:ss *
hh:mm:ss ********************************************************************
hh:mm:ss * IBM z/VM Single System Image Function is active.              *
hh:mm:ss ********************************************************************
hh:mm:ss
hh:mm:ss HCPZCO6718I Using parm disk n on volume lblcom (device nnnn).
hh:mm:ss HCPZCO6718I Parm disk resides on cylinders nnn through nnn.
  :
hh:mm:ss HCPCRC8082I Accounting records are accumulating for userid DISKACNT

DMSWSP327I The installation saved segment could not be loaded
z/VM V7.1.0    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

hh:mm:ss AUTO LOGON  ***       OP1       USERS = n     BY MAINT710
hh:mm:ss HCPCLS6056I XAUTOLOG information for OP1: The IPL command is verified by
the
         IPL command processor.

AUTO LOGON  ***       BLDCMS    USERS = n
HCPCFX6768I SECUSER of BLDCMS initiated for you by BLDCMS.
HCPNSD440I The Named Saved System (NSS) CMS was successfully defined in fileid
nnnn.
BLDCMS  : HCPNSS440I Named Saved System (NSS) CMS was successfully saved
BLDCMS  : CONNECT= 00:00:nn VIRTCPU= 000:00.nn TOTCPU= 000:00.nn
BLDCMS  : LOGOFF AT hh:mm:ss EST WEDNESDAY mm/dd/yy BY MAINT710
USER DSC   LOGOFF AS  BLDCMS    USERS = n     FORCED BY MAINT710
```

```
*************************************************************
* PROCESSING MEMBER membername                             *
*************************************************************

IUGINI8493I Issuing XAUTOLOG for VMSERVR
AUTO LOGON *** VMSERVR USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the
IPL command processor.

USER DSC LOGOFF AS VMSERVR USERS = n FORCED BY MAINT710
IUGINI8493I Issuing XAUTOLOG for VMSERVR
AUTO LOGON *** VMSERVR USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVR: The IPL command is verified by the
IPL command processor.

IUGINI8493I Issuing XAUTOLOG for VMSERVP
AUTO LOGON *** VMSERVP USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVP: The IPL command is verified by the
IPL command processor.

IUGINI8493I Issuing XAUTOLOG for VMSERVS
AUTO LOGON *** VMSERVS USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVS: The IPL command is verified by the
IPL command processor.

IUGINI8493I Issuing XAUTOLOG for VMSERVU
AUTO LOGON *** VMSERVU USERS = n
HCPCLS6056I XAUTOLOG information for VMSERVU: The IPL command is verified by the
IPL command processor.

*************************************************************
* Now executing PUT2PROD SEGMENTS ALL                      *
*************************************************************
:
******  PUT2PROD messages  ***************
:
*************************************************************
* Now executing SERVICE GCS BLDNUC                         *
*************************************************************
:
******  SERVICE messages  ***************
:
*************************************************************
* Now executing PUT2PROD                                   *
*************************************************************
:
****** PUT2PROD messages ***************
:
```

2. Substep will repeat for members 3 and 4, if applicable.

3. Once all members have been initialized, processing will finish.

```
IUGMLP8392I Installation ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

## Step 6. Update the system configuration file

When "Step 5. Initialize members 2, 3, and 4" on page 72 has completed for each installed member (2-4):

1. Run INSTSCID to update the system configuration with the final System_Identifier information. At the completion of "Step 5. Initialize members 2, 3, and 4" on page 72, the SYSTEM CONFIG file is set up to IPL only the last member you installed. In order to successfully IPL all members of your SSI cluster, the SYSTEM CONFIG file must be updated to include the correct `System_Identifier` statement for each member. After the SYSTEM CONFIG file is updated, you will only be able to IPL the members on their respective LPARs/user IDs.

   ```
   instscid remove

   **********************************************************
   * Processing REMOVE for all members
   **********************************************************
   IUGISC8404I SYSTEM CONFIG has been updated to allow all members
   to be ipled ONLY from the LPAR/userid
   defined for each member at install time.

   IUGISC8392I INSTSCID EXEC ended successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   **Note:** If you attempt to IPL any member except the last member installed before running INSTSCID, your system will not IPL with the correct member volumes and results will be unexpected.

2. Perform a system shutdown.

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


   hh:mm:ss HCPWRP963I SHUTDOWN STEP PLMLV - LEAVE THE SSI CLUSTER
   :
   hh:mm:ss HCPWRP961W SYSTEM SHUTDOWN COMPLETE
   HCPGIR450W CP entered; disabled wait PSW 00020000 00000000 00000000 00000961
   ```

3. IPL the CMS saved segment if it exists. Otherwise, IPL 190.

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

# Step 7. IPL the new SSI cluster

1. If you indicated that the SSI cluster members would be IPLed second-level:

    a. Retrieve the SSI2ND DIR-PROF file from the 191 (A) disk of the user ID you used for installation. This file also exists on the new system's MAINT710 4CC disk. This file contains sample user directory information for the user IDs where you will IPL your SSI members.

    **Attention:** Make sure to use the DEVNO statement as documented in this file to allow all members access to the other members' volumes.

    b. On the system where you plan to IPL your SSI members, add or update the user directory information for the user IDs according to the information defined in the SSI2ND DIR-PROF file.

    c. Detach all installation volumes from your installation user ID.

    d. Log on to each of the IPL user IDs as defined in SSI2ND DIR-PROF and create or update the PROFILE EXEC according to the information in the SSI2ND DIR-PROF file.

    e. Run the PROFILE EXEC on each user ID.

2. If this is a first-level installation, you are done with the RAMDISK.

    a. Shut down the RAMDISK system.

    ```
    shutdown system ibmvmram
    ```

3. IPL each member from its corresponding user ID or LPAR.

    **Note:** The default SYSTEM CONFIG file allows the following console addresses: 20, 21, 22, 23, F20, F21, 1020. If your console is *not* one of these addresses, either redefine your console or IPL with the **LOADPARM** *consaddr* option. If you use the **LOADPARM** option, include **cons=***consaddr* as an IPL parameter on the z/VM Stand Alone Program Loader (SAPL) panel.

**What to do next**

Go to .

# Part 3. After traditional installation

**This part contains the following:**

- Default system information
- Procedures for creating IPLable utility tapes
- Procedures for configuring a basic TCP/IP network connection
- Procedures for backing up the z/VM system
- 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.

# Chapter 7. Default system information

This section provides a summary of important information about your default system setup. Additional information can be found in Appendix C, "Contents of the z/VM system," on page 219. Detailed information about configuring your system can be found in *z/VM: CP Planning and Administration*.

## Logging on to your z/VM system

All of the user IDs that are shipped with your new z/VM system come with some sort of password. These IDs are listed under "Default user directory (USER DIRECT) passwords " on page 79 and are organized by password.

IBM's recommendation is that distinct passwords should be defined only for user IDs where the intent of the ID is that system programmers, administrators, and operators will log on to those IDs (MAINT*vrm* and OPERATOR, for example). These user IDs are shipped with a default password of WD5JU8QP.

Some user IDs will most likely be shared by a number of administrators (MAINT and TCPMAINT, for example). These IDs are shipped with a default password of LBYONLY and a default LOGON BY user ID of IBMVM1. The IBMVM1 user ID, which has no resources assigned to it, has a default password of WD5JU8QP and is intended to get you started with the LBYONLY users. It is expected that you will replace IBMVM1 on the LOGONBY directory statements with your own, real user IDs after they are defined.

Any user ID that functions as:

- A disconnected server is shipped with a password of AUTOONLY (DIRMAINT and RACFVM, for example).
- An owner of resources is shipped with a password of NOLOG (PMAINT, for example).

For security purposes, you should change the default password of WD5JU8QP to a password of your own choosing that conforms to the security policies for your organization.

### Default user directory (USER DIRECT) passwords

The USER DIRECT file contains default passwords for all user IDs defined by the installation process.

The following user IDs have a password of WD5JU8QP:

```
AUTOLOG1        MAINTCSM        RACFSMF         7VMHCD10
CBDIODSP        MAINT710        RACFVM          7VMPTK10
CSMWORK         MIGMAINT        RACMAINT        7VMRAC10
IBMUSER         OPERATOR        5684042J        7VMRSC10
IBMVM1          OP1             7VMDIR10
```

The following user IDs have a password of LBYONLY:

```
CSMSERVE        DTCVSW1         OPERSYMP        TCPIP
SSL             DTCVSW2         PERFSVM         TCPMAINT
SYSMON          DTCVSW3         PORTMAP         TSAFVM
ZHPM            DTCVSW4         REXECD          UFTD
AUDITOR         EREP            RSCS            VMNFS
AUTOLOG2        FTPSERVE        RSCSAUTH        VMRMADMN
AVSVM           GSKADMIN        RSCSDNS         VMRMSVM
BLDCMS          LDAPSRV         RXAGENT1        VMSERVP
BLDNUC          LGLOPR          SMTP            VMSERVR
BLDRACF         MAINT           SNMPD           VMSERVS
BLDSEG          MONWRITE        SNMPQE          VMSERVU
CMSBATCH        MPROUTE         SNMPSUBA        VMUTIL
DISKACNT        OPERATNS        SYSADMIN        XCHANGE
```

The following user IDs have a password of AUTOONLY:

```
DATAMOVE        DIRMSAT2        PERSMAPI        VSMREQIU
DATAMOV2        DIRMSAT3        SSLDCSSM        VSMREQI6
DATAMOV3        DIRMSAT4        VSMEVSRV        VSMWORK1
DATAMOV4        DTCSMAPI        VSMGUARD        VSMWORK2
```

```
DIRMAINT       GCS            VSMREQIN       VSMWORK3
DIRMSAT        LOHCOST
```

The following user IDs have a password of NOLOG:

```
ADM            PMAINT         6VMLEN20       $SYSWRM$
BIN            ROOT           7VMTCP10       $PAGE$
DAEMON         SYS            $ALLOC$        $SPOOL$
DEFAULT        SYSDUMP1       $DIRECT$       $TDISK$
NOBODY         SYSMAINT       $SYSCKP$
```

## Special user IDs in the default user directory (USER DIRECT)

There are a number of dummy user IDs defined in the default USER DIRECT. These user IDs are there to protect CP areas of the volume from being overlaid accidentally when defining new minidisks. You might want to update these entries when adding new volumes or CP areas to your system.

```
$ALLOC$
$DIRECT$
$SYSCKP$
$SYSWRM$
$PAGE$
$SPOOL$
$TDISK$
```

## Default information for IPLing your system

The SYSTEM CONFIG file resides on the CF0 PARM disk, owned by PMAINT.

In an SSI cluster, the installation default is to have a single SYSTEM CONFIG file that is shared by all member systems.

The CPLOAD MODULE resides on the CF1 PARM disk, owned by MAINT.

During installation, the system is set up to IPL the CPLOAD MODULE from MAINT's CF1 PARM disk (extent 1 on the M0xRES volume) and to read the SYSTEM CONFIG file from PMAINT's CF0 PARM disk (for 3390, parm disk 1 on the VMCOM1 volume; for FBA, parm disk 4 on the M01RES volume).

The following SALIPL record was written to the IPL volume:

- **For 3390:**

```
    SALIPL m0xresaddr (EXTENT 1 IPLPARMS fn=SYSTEM ft=CONFIG pdnum=1 pdvol=vmcom1addr
```

- **For FBA:**

```
    SALIPL m0xresaddr (EXTENT 1 IPLPARMS fn=SYSTEM ft=CONFIG pdnum=4
```

**For 3390:** If you change the address of the VMCOM1 volume, you will need to run SALIPL to rewrite the IPL record for the system to point to the new VMCOM1 volume address:

```
    SALIPL m0xresaddr (EXTENT 1 IPLPARMS fn=SYSTEM ft=CONFIG pdnum=1 pdvol=newvmcom1addr
```

**For FBA:** If you IPL first level, enter the edevice number of the RES volume (M01RES address) in the IPL PARAMETERS section with the PDVOL=edevicenumber statement

# Where you can IPL your systems

When installation is complete the following `System_Identifier` statements exist in the SYSTEM CONFIG file on the CF0 PARM disk:

- **Non-SSI:**

```
System_Identifier * * systemname
```

This statement allows the system to be IPLed from any LPAR or user ID.

- **One-member SSI:**

```
/* System_Identifier LPAR system1 member1name */
/* System_Identifier LPAR @@LU-2 @@MEMSLOT2 */
/* System_Identifier LPAR @@LU-3 @@MEMSLOT3 */
/* System_Identifier LPAR @@LU-4 @@MEMSLOT4 */

System_Identifier * * member1name
```

The SYSTEM CONFIG file contains a `System_Identifier` statement that allows the member to be IPLed from any LPAR or user ID. To prevent the member from being IPLed from anywhere else except on the LPAR/user ID you designated during installation, remove the comments from the appropriate `System_Identifier` statement and add comments around the `System_Identifier * *` `member1name` statement.

- **Multimember SSI:**

```
System_Identifier LPAR lpar1   member1
System_Identifier LPAR lpar2   member2
System_Identifier LPAR lpar3   member3
System_Identifier LPAR lpar4   member4

/*   System_Identifier * * member4   */
```

For a multimember SSI, the members can be IPLed only from the LPAR/user ID designated during installation.

For emergency purposes, the CF0 also contains the file INSTALL CONFIG, which will allow member one to be IPLed anywhere:

```
INSTALL  CONFIG

System_Identifier LPAR lpar1   member1
System_Identifier LPAR lpar2   member2
System_Identifier LPAR lpar3   member3
System_Identifier LPAR lpar4   member4

System_Identifier * * member1
```

# Default PARM disk information

The default PARM disks are owned and utilized as follows:

**CF1**
Owned by MAINT, allocated on M01RES, holds the default production CPLOAD MODULE.

**CF3**
Owned by MAINT, allocated on M01RES, used as a backup of the CF1 PARM disk.

**CFD**

Owned by MAINT, allocated on M01RES, a dummy parm disk designed to maintain the EXTENT 1 and 3 values for CF1 and CF3.

**CF2**

Owned by MAINT710, allocated on 710RL1, used by SERVICE to hold the test CPLOAD MODULE.

**CF0**

Owned by PMAINT, allocated on VMCOM1, holds the SYSTEM CONFIG file.

## Default spool and page

The system was installed with one SPOOL volume and one PAGE volume for each system or member. The amount of spool and page space that is required for installation is not necessarily the amount you should have assigned for running production workloads. For information about planning spool and page requirements, see the Storage Planning and Administration section of *z/VM: CP Planning and Administration*.

## Volume ownership

z/VM allows DASD volumes to be owned by an SSI cluster or by a specific member of a SSI cluster or non-SSI system. Installation volumes contain the following ownership information:

- **Non-SSI:**

  | | |
  |---|---|
  | **VMCOM1** | No ownership |
  | **710RL1** | No ownership |
  | **710RL2** | No ownership |
  | **M01RES** | No ownership |
  | **M01S01** | No ownership |
  | **M01P01** | No ownership |

- **SSI:**

  | | |
  |---|---|
  | **VMCOM1** | VM SSI owner: *SSIname* <br> System owner: none |
  | **710RL1** | No ownership |
  | **710RL2** | No ownership |
  | **M0xRES** | VM SSI owner: *SSIname* <br> System owner: *memberxname* |
  | **M0xS01** | VM SSI owner: *SSIname* <br> System owner: *memberxname* |
  | **M0xP01** | VM SSI owner: *SSIname* <br> System owner: *memberxname* |

For more information on volume ownership, see *z/VM: CP Planning and Administration*.

# Full-pack minidisk definitions

Each volume used for installation, except those used for paging space, has a full-pack minidisk defined in the default user directory. Full-pack minidisk definitions are required for DDR backups. The 123 minidisk is required to create the object user directory.

- **MAINT**

```
MDISK 122 3390 000 END M01S01 MR
MDISK 123 3390 000 END M01RES MR
```

- **MAINT710**

```
MDISK 131 3390 000 END 710RL1 MR
MDISK 132 3390 000 END 710RL2 MR
LINK MAINT 122 122 MR
LINK MAINT 123 123 MR
LINK PMAINT 141 141 MR
```

- **PMAINT**

```
MDISK 141 3390 000 END VMCOM1 MR
```

# Chapter 8. Create IPLable utilities

**In this chapter, you will:**

- Create IPLable utilities.

## Step 1. Create a standalone dump device

z/VM includes a standalone dump utility that you tailor according to your installation's configuration, using CMS. After you install z/VM, you should create the standalone dump utility and place it on DASD for emergency use. If, after a system failure, CP cannot create an abend dump, you can use the standalone dump on DASD to dump all of storage.

For instructions on creating a standalone dump utility, see *z/VM: CP Planning and Administration*.

**Note:** Do not use a standalone dump from a previous release of z/VM to attempt to dump your V7.1 system.

# Step 2. Create an IPLable DDR utility tape

You can optionally create an IPLable DDR utility tape. This tape can be used to IPL DDR standalone if you need to run DDR when CMS and the DDR MODULE are not available. If you choose to create the IPLable DDR utility tape, continue with this step. Otherwise, go to "Step 3. Create an IPLable ICKDSF utility tape" on page 89.

**Note:** IBM has included the DDR MODULE on the MAINT CF1 minidisk. This DDR MODULE can be selected and IPLed from the SALIPL screen. For more information, see *z/VM: System Operation*.

1. Attach a tape drive (*tapeaddr*) to MAINT710 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 as file mode Z.

```
access 193 z
Ready; T=n.nn/n.nn hh:mm:ss
```

4. Load the DDRXA utility to tape.

```
utility utiltape ddrxa
Rewind complete
IUGWUT8317I MOVING IPL DDRXA TO TAPE
IUGWUT8318I THE IPL DDRXA PROGRAM IS
             ON TAPE FILE NUMBER 1
Ready; T=n.nn/n.nn hh:mm:ss
```

5. Rewind the DDR utility tape attached at virtual device address 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 V7.1.0    yyyy-mm-dd hh:mm

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

8. Rewind the tape and store it for future use.

**Create an IPLable DDR utility tape**

```
tape run
```

# Step 3. Create an IPLable ICKDSF utility tape

You can optionally create an IPLable ICKDSF utility tape. This tape can be used to IPL ICKDSF standalone 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 .

**Note:** IBM has included the ICKDSF MODULE on the MAINT CF1 minidisk. This ICKDSF MODULE can be selected and IPLed from the SALIPL screen. For more information, see *z/VM: System Operation*.

1. Attach a tape drive (*tapeaddr*) to MAINT710 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 as file mode Z.

   ```
   access 193 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Load the ICKDSF utility to tape.

   ```
   utility utiltape dsf
   Rewind complete
   IUGWUT8317I MOVING ICKSADSF COREIMAG TO
   TAPE
   IUGWUT8318I THE ICKSADSF COREIMAG
   PROGRAM IS
   ON TAPE FILE NUMBER 1
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Rewind the ICKDSF utility tape attached at virtual device address 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 (ICKDSF): User's Guide and Reference (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3gc350033/$file/ickug00_v2r3.pdf).

   ```
   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:

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:
```

This message tells you that the Device Support Facilities (ICKDSF) is loaded and ready.

7. IPL CMS.

```
#cp ipl cms
z/VM V7.1.0     yyyy-mm-dd hh:mm

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

8. Rewind the tape and store it for future use.

```
tape run
```

# Chapter 9. Configure an initial network connection and back up the system

**In this chapter, you will:**

- Configure a basic TCP/IP network connection.
- Optionally back up the system.

## Step 1. Configure TCP/IP for an initial network connection

You can optionally create a minimal TCP/IP configuration that establishes basic connectivity to your IP network. 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. Optionally back up the system" on page 95.

**Note:** If you are using QDIO Layer 2 for the network interface in IPWIZARD, you need to add or update the VMLAN MACPREFIX statement in your SYSTEM CONFIG file to define a unique MAC address prefix for this system. If you are installing a multimember SSI, the VMLAN MACPREFIX and USERPREFIX must be configured in each SSI member. For more information, see "Media Access Control (MAC) Address" in *z/VM: Connectivity*, and the VMLAN statement in *z/VM: CP Planning and Administration*. If changes are made to your SYSTEM CONFIG file, the z/VM image must be re-IPLed so that the statements take effect.

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 IBM Z* to set up your Linux on z Systems images, skip this step and go to "Step 2. Optionally back up the system" on page 95.

If you came to this step from *z/VM: Getting Started with Linux on IBM Z*, continue with this step and then return to *z/VM: Getting Started with Linux on IBM Z*.

Perform the following steps to configure TCP/IP for an initial network connection.

1. Gather the necessary information from your network system administrator and record the information in the tables in Appendix L, "Basic TCP/IP connectivity worksheets," on page 245.

   If you are installing a multimember SSI, the TCP/IP configuration must be done separately on each SSI member. Fill out a set of configuration worksheets for each member on which you will create a minimal TCP/IP configuration. Configuration worksheets can be found in Appendix L, "Basic TCP/IP connectivity worksheets," on page 245.

   **Note:** You can use the QUERY CHPIDS command to verify that the CHPID associated with your network interface device number is online. If the CHPID is not online, you can use the VARY ON CHPID command to bring it online.

2. Log on to the system/member you are going to configure as MAINT710.

   ```
   logon maint710
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Access the minidisk 193 as file mode E.

   ```
   access 193 e
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. 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
```

5. Using the information you gathered in the TCP/IP configuration worksheets (in Appendix L, "Basic TCP/IP connectivity worksheets," on page 245), fill in the z/VM TCP/IP Configuration Wizard panel and press F8 to continue.

6. 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.

7. Fill in the Interface Configuration Panel and press F5 to process. The panel content will depend on which interface type is to be used.

8. 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*.

9. The PROFILE EXEC on the AUTOLOG1 191 minidisk contains a commented-out XAUTOLOG statement for TCPIP. Removing the comment characters around the statement will autolog the TCPIP server during CP IPL.

```
 link autolog1 191 999 wr
 access 999 z
 xedit profile exec z
```

Remove the comment characters from this line:

```
 /*  "PIPE CP XAUTOLOG TCPIP"  */
```

The line should now look like this:

```
 "PIPE CP XAUTOLOG TCPIP"
```

Then:

```
 file
 release z (detach
```

10. If you have a multimember SSI cluster, log on as MAINT710 on each member and repeat substeps "3" on page 92 through "9" on page 93 to configure a basic IP network connection for each member,

using the corresponding tables from Appendix L, "Basic TCP/IP connectivity worksheets," on page 245.

## Step 2. Optionally back up the system

If you choose to back up your system at this time, use your site backup procedures or see one of the following appendixes:

- Appendix D, "Back up the named saved systems and segments to tape," on page 225
- Appendix E, "Back up the z/VM system to tape," on page 227
- Appendix F, "Back up the z/VM system to DASD," on page 231.

**What to do next**

Continue to Chapter 10, "Preinstalled licensed products and features," on page 97.

**Optionally back up the system**

# Chapter 10. 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.

| 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? |
|---|---|---|---|---|
| *Table 9: Preinstalled Licensed Products and Features.* | | | | |
| Directory Maintenance Facility | 7.1.0 | 5741-A09 | Disabled[1] | Yes[2] |
| EREP | 3.5.0 | 5654-260 | Enabled | No |
| HCD and HCM for z/VM | 7.1.0 | 5741-A09 | Enabled | No[3] |
| ICKDSF | 1.17.0 | 5684-042 | Enabled | No |
| Performance Toolkit for VM | 7.1.0 | 5741-A09 | Disabled[1] | Yes[2] |
| RACF Security Server for z/VM | 7.1.0 | 5741-A09 | Disabled[1] | Yes[2] |
| RSCS Networking for z/VM | 7.1.0 | 5741-A09 | Disabled[1] | Yes[2] |
| TCP/IP | 7.1.0 | 5741-A09 | 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 319.

## 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 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 IBM 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 IBM 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.

# 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 "1.0 Introduction" in Resource Access Control Facility (RACF) Security Server program directory.

RACF database requirements:

- For z/VM non-Single System Image (SSI) installation, the primary and backup RACF databases were defined during the install.
- For z/VM SSI installation, you must *manually* define the primary and backup RACF databases as two 3390 full-pack minidisks. For SSI, it is required that the RACF database be shared between the members of an SSI cluster. See the Sharing RACF Databases in a z/VM Single System Image Cluster section of the *z/VM: RACF Security Server System Programmer's Guide*. See also *z/VM: CP Planning and Administration* for more information on DASD sharing.

# 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 on z Systems, 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 aid you. See "Bibliography" on page 319.

Return to the z/VM System Delivery Offering program directory when you are ready to install other licensed products.

# Part 4. Upgrade installation

This part contains the procedures to be followed if you are upgrading a z/VM V6.4 system or member of an SSI cluster to z/VM V7.1.

**In this part, you will:**

- Plan your upgrade installation.
- Complete the upgrade installation worksheets.
- Install the z/VM V7.1 work system.
- Upgrade your current system to V7.1.

# Chapter 11. Upgrade installation overview

An upgrade installation is used to upgrade a z/VM V6.4 system or a member of an SSI cluster to z/VM V7.1.

In a *traditional installation*, a new z/VM V7.1 system or SSI cluster is installed on a set of DASDs, which can then be customized according to your needs.

In an *upgrade installation*, a work system is installed as a second-level guest of the system that you want to upgrade. The new level of code from the work system is then moved to the system that is being upgraded.

The system to be upgraded can be a non-SSI system, the only member of a single-member SSI cluster, or any member of a multimember SSI cluster.

In a multimember SSI cluster, you will upgrade one member at a time so that there is minimal impact to the other members. Note that you must complete the upgrade for one member before starting the upgrade of the next member.

**Restrictions on using the upgrade installation procedure:**

- Upgrading from a mixed-release SSI cluster is not allowed. Before beginning the upgrade of a multimember SSI cluster, all members must be running the same release level.
- After one member of the SSI cluster has been upgraded to the new z/VM V7.1 release, no remaining member can be upgraded to any release other than z/VM V7.1.

Furthermore, this procedure cannot be used if any of the following changes were made to the system that is to be upgraded:

- The format of the user directory shipped by IBM was changed by replacing identity/subconfig definitions with user entries.
- IBM-supplied USER or IDENTITY names were changed or deleted.
- IBM-supplied minidisk addresses were changed or deleted.
- IBM-supplied minidisks were moved under different user IDs or moved from the subconfig section to the identity section of the user ID.
- The default values in the VMSESE PROFILE file or the VMFINS DEFAULTS file were changed.
- An override to the SERVP2P PPF is being used for SERVICE and PUT2PROD.

**Note:** The list of IBM-supplied user IDs can be found in .

An upgrade installation is performed using a 2-stage approach, with two separate sets of changes being defined and then made to the system that is being upgraded. The first set of changes, STAGE1, can be made to the system that is being upgraded without disrupting your production workload.

After the STAGE1 changes are made, you must stop all normal production work on the system that is being upgraded or move that workload to another system. In an SSI cluster environment, you can relocate production Linux on z Systems workloads from the system that is being upgraded to other members of your cluster before performing STAGE2 activities.

After you have relocated or stopped your workloads, you should create a backup of the system you are upgrading, using your normal backup procedures. You will then be ready to proceed to STAGE2.

When the STAGE2 changes are complete, you will IPL the upgraded system with the new level of z/VM and restart your normal workloads.

The overall workflow of an upgrade installation is as follows:

- **Plan your upgrade installation** for this system and complete the upgrade installation worksheets.

- **Install a z/VM V7.1 work system** for your upgrade installation. Run INSTPLAN, verify your upgrade installation volumes, and then run INSTALL.
- **Create a backup** of the system that is to be upgraded, following your normal backup procedures.
- **Generate the STAGE1 changes file.** Run INSTUPGR with the STAGE1 operand and the PRIME option to create a file containing the specific STAGE1 changes to be made to the system or member that is being upgraded.
- **Make the STAGE1 changes.** Run INSTUPGR with the STAGE1 operand and the COMMIT option to update the system or member that is being upgraded with the changes identified previously. Note that you have the option to complete these changes manually.
- **Finish the STAGE1 upgrade.** Before running STAGE2, you will need to review security manager and user directory considerations. If you have any local modifications to components that are upgraded to the new release, you will also need to rework them. Note that when the first member of an SSI cluster is upgraded, all members of the cluster will be upgraded to the new level of DirMaint between STAGE1 and STAGE2.
- **Back up the system** that is being upgraded. At this point, all production work running on the system or member that is being upgraded must be stopped or relocated to another member of your cluster and a backup of the system that you are upgrading must be created.
- **Generate the STAGE2 changes file.** Run INSTUPGR with the STAGE2 operand and the PRIME option to create a file containing the specific STAGE2 changes to be made to the system or member that is being upgraded.
- **Make the STAGE2 changes.** Run INSTUPGR with the STAGE2 operand and the COMMIT option to update the system or member that is being upgraded with the STAGE2 changes identified previously. Note that, as with the STAGE1 changes, you have the option to complete these changes manually. The VMPSFS, VMSYS, VMSYSU, and VMSYSR servers will be recycled during the STAGE2 commit process.
- **Finish the upgrade of your system.** To complete the upgrade, you will review updates and considerations, IPL your upgraded system or member, migrate LPs, and perform manual updates.
- **Resume your normal production work.**

If you are upgrading a single system or a single-member SSI cluster, you are done.

If you have additional members in an SSI cluster to upgrade, when you are ready, repeat the process outlined previously, starting with Chapter 12, "Plan your upgrade installation," on page 105, for each additional member. z/VM supports running multiple levels of z/VM in one cluster, so you can run the new level of VM on one member until you are satisfied. When you are ready, you can upgrade the next member.

When all members of your cluster have been upgraded to the new level of z/VM, follow the procedure in Chapter 22, "Remove the obsolete release," on page 209.

# Chapter 12. Plan your upgrade installation

**In this chapter, you will:**

- Plan your upgrade installation.
- Complete the upgrade installation worksheets.

## Step 1. Select your upgrade installation source

1. The z/VM 7.1.0 product was obtained by ordering electronic delivery or by ordering physical DVDs.

   - If your z/VM product was obtained through electronic delivery:
     - You must follow the instructions that accompanied the deliverable to do one of the following before starting your upgrade installation:
       - Create two physical DVDs, one that contains the product and one that contains the RSU.
       - Load the product and the RSU deliverables into the same FTP server directory.
   - If your z/VM product was obtained on physical DVDs:
     - Make sure you have the z/VM product DVD and the installation RSU DVD.

2. An upgrade installation can be done from one of the following sources:

   - A physical DVD mounted in a DVD drive connected through an FTP server (referred to as "From a DVD Drive").
   - An FTP server that has access to a directory where the files from the physical DVDs or electronic deliverable have been or will be stored (referred to as "From an FTP Server").
   - A CMS-formatted minidisk (referred to as "From a VM Minidisk") where the files will be uploaded from the physical DVDs or the FTP server. This CMS-formatted minidisk must be accessible by the installation user ID MIGMAINT.

3. Select your upgrade installation source, keeping in mind the following requirements:

   - If installing from a physical DVD mounted in a DVD drive connected through an FTP server:
     - The FTP server must comply with RFC 959 and RFC 1123.
     - 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 effects of intervening firewall systems, so your FTP server must support the PASV command.
     - The FTP server must have a TCP/IP communication path to the system you are upgrading.
     - The FTP server must be able to access the DVD drive.
   - If installing from an FTP server that has access to a directory where the files from the physical DVDs or electronic deliverables have been stored:
     - The FTP server must comply with RFC 959 and RFC 1123.
     - 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 effects of intervening firewall systems, so your FTP server must support the PASV command.
     - The FTP server must have a TCP/IP communication path to the system you are upgrading.
     - The FTP server must be able to access the directory where the contents of the DVDs will be stored.
     - The contents of the z/VM product DVD and the installation RSU DVD must be stored in the same directory.
     - There must be at least 4 GB of available space to store the contents of the z/VM product DVD and the installation RSU DVD.
   - If installing from a CMS-formatted minidisk where the contents of the physical DVD or electronic deliverable will be uploaded:
     - The CMS-formatted minidisk must be the equivalent of at least 6000 cylinders of 3390 DASD space.
     - You must be able to write to the CMS-formatted minidisk to load the files.

– If you are performing multiple upgrades, you can load the image files to the minidisk once and use those image files for all upgrades. The minidisk must be shared across the systems you are upgrading. For each upgrade, you must install a new work system.

– This CMS-formatted minidisk must be accessible by the installation user ID MIGMAINT.

## Step 2. Review the requirements for using the upgrade procedure

Before performing the z/VM V7.1 upgrade procedure, you must review the following information and make sure all requirements are satisfied.

1. Hardware requirements:

   - A processor supported by the release of z/VM that is running first level and by the release of z/VM that is being installed second level. For a list of processors supported by z/VM, see *z/VM: General Information*.
   - Access to a local non-SNA 3270 terminal, or equivalent, configured with at least 32 lines and 80 columns.

2. System software requirements:

   - z/VM V6.4 running in the LPAR you are upgrading.
   - You must make sure you have the appropriate licenses for V7.1 and for all of the optional features that are enabled in your z/VM V6.4 environment before you upgrade your system. You will be required to verify that you have the licenses needed during upgrade installation processing for:
     - Directory Maintenance Facility (DirMaint)
     - Performance Toolkit for VM (PERFTK)
     - RACF Security Server for z/VM (RACF)
     - RSCS Networking for z/VM (RSCS).
   - **CP:** If you are upgrading the first member of a multi-member SSI cluster, CP APAR VM65976 (PTF UM35063) must be applied to all members of your SSI cluster before you begin your upgrade. To verify that the APAR is installed on your system:

     Log on to MAINT640 and enter the following command:

     ```
     SERVICE CP STATUS VM65976
     ```

   - **RACF/VM:** The 710 level of RACF/VM contains a new level of the RACF database template. Before you begin your upgrade, you should verify that your existing RACF database does not contain any corruption. The process for doing this can be found on the z/VM Security and Integrity Resources web page (www.vm.ibm.com/security) in a white paper entitled "Validating and Repairing RACF Database Integrity on z/VM".

3. System requirements:

   - If upgrading a multimember SSI:
     - There must be a shared source for the user directory file.
     - There must be a shared SYSTEM CONFIG file for all members of the cluster.

4. MIGMAINT user ID requirements:

   - You must complete the upgrade installation from the MIGMAINT user ID logged on to the system/member you are upgrading.

     **Note:** The default MIGMAINT user ID defined with z/VM V6.4 meets all of the requirements defined in this substep.

     The MIGMAINT user ID requirements are:
     - Privilege classes of at least B and G.
     - Authority to issue the DEFINE MDISK command.
       - The default privilege class for this command is class A and the directory entry for MIGMAINT must include DEVMAINT on the OPTION statement.

- – Administrator authority for the VMSYS, VMPSFS, and VMSYSU filepools.
- – Access to the INSTPIPE MODULE that was shipped with your current release of z/VM. The module was shipped on the MAINT 193 minidisk.
- – At least 256 MB of virtual storage.
- – A 191 read/write minidisk accessed as file mode A.
- – A 2222 read/write minidisk, matching the installation DASD type (3390 or FBA) of the system you are upgrading, that is exactly:
  - - 10 cylinders (3390).
  - - 14400 512-KB blocks (FBA).
- – A 24CC read/write minidisk, matching the installation DASD type (3390 or FBA) of the system you are upgrading. This minidisk cannot be defined on a temporary disk and must be exactly:
  - - 10 cylinders (3390).
  - - 14400 512-KB blocks (FBA).

  - A 2CF0 read/write minidisk, matching the installation DASD type (3390 or FBA) of the system you are upgrading. This minidisk cannot be defined on a temporary disk and must be exactly:
  - - 120 cylinders (3390).
  - - 172800 512-KB blocks (FBA).

5. Conditional requirements for the MIGMAINT user ID:

- • If you will install your work system using a CMS-formatted minidisk (referred to as "From a VM Minidisk"):

  - – MIGMAINT will need to be able to access the CMS-formatted minidisk where the installation files are or will be loaded. If you will be loading the files to the minidisk from MIGMAINT, MIGMAINT must have read/write access to the minidisk.

- • If you are using a directory manager program, such as DirMaint:

  - – MIGMAINT must be authorized to issue directory manager commands on behalf of other users without the need to supply a password.
  - – Refer to your directory manager documentation for additional requirements.
    - - If you are using DirMaint, review the upgrade requirements in Appendix C of the *Program Directory for Directory Maintenance Facility for z/VM*, function level 710.

- • If you are using a security manager program, such as RACF:

  - – MIGMAINT must be authorized to link to any minidisk in write mode on the system without the need to supply a password (by specifying ATTRIBUTE=OPERATIONS in the RACF profile for MIGMAINT, for example).
  - – Refer to your security manager documentation for additional requirements.

- • If the system being upgraded has products loaded to the VMPSFS filepool and you are upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI:

  - – MIGMAINT needs a 2191 read/write minidisk, which:
    - - Must be formatted with 4K blocks.
    - - Cannot be defined on a temporary disk.
    - - Has enough free space to hold all required SFS files from the work system. The amount of space needed on the 2191 minidisk is determined by which products you have installed to the VMPSFS file pool.
  - – Calculate the size needed for the 2191 minidisk, using the following table.

| Product | 3390 cylinders needed | FBA (512-KB) blocks needed |
|---|---:|---:|
| VM | 1167 | 1680480 |
| PERFTK | 26 | 37440 |
| VMHCD | 417 | 600480 |
| RACF | 78 | 112320 |
| DIRM | 32 | 46080 |
| RSCS | 46 | 66240 |
| ICKDSF | 0 | 0 |
| TCPIP | 206 | 296640 |

Total the number of cylinders or FBA blocks needed for all of the products that the system being upgraded has loaded to the file pool.

– Make a note of the disk size needed. Using your normal directory update procedures, define a 2191 minidisk for MIGMAINT that is at least the required size in cylinders or FBA blocks.

# Step 3. Review the DASD requirements

1. For upgrade installation purposes, there are three kinds of DASD volumes: COMMON, RELEASE, and MEMBER.

   - COMMON volumes:

     – A set of volumes shared across an entire SSI cluster. The COMMON volumes that were defined when you installed z/VM have default labels of VMCOM1 and VMCOM2. You might have added additional COMMON (shared) volumes to your cluster.

   - RELEASE volumes:

     – A set of shared volumes for each release of z/VM on your system or in your cluster.

     – Each release of z/VM has its own set of volumes.

     – The default labels for RELEASE volumes are *vrm*RL1, *vrm*RL2 and *vrm*RL3, where *vrm* is the release level for a specific set of volumes (710, for example).

     – When upgrading to a new release, a new set of RELEASE volumes will be added to your system or SSI cluster.

   - MEMBER volumes:

     – One set of system volumes for each member, some of which are shared with other members in an SSI cluster.

     – This set of volumes consists of:

       - A system residence volume.

         - The default volume label is M0*m*RES, where *m* is the number of the member in the member list on the SSI configuration statement (M01RES for member 1, for example). This volume contains member-specific data such as the warm start and checkpoint areas, the object directory, and member-specific minidisks, and is not shared in an SSI cluster.

       - If the system residence volume is not large enough to contain all of the system/member specific minidisks, more MEMBER volumes are required.

         - The default volume labels are M0*m*W0*n*, where *m* is the number of the member and *n* is the number of the volume (M01W01 and M01W02, for example). These volumes are not shared in an SSI cluster.

       - Volumes that contain paging space:

         - The CP-owned volumes for paging space are also member- specific and nonshared.

         - The default volume labels are M0*m*P*nn* (M01P01 for member 1 and M02P01 for member 2, for example).

       - Volumes that contain spool space:

         - The spool volumes owned by each member are shared with the other members.

         - The default volume labels are M0*m*S*nn* (M01S01 for member 1 and M02S01 for member 2, for example).

2. Upgrade installation requires DASD volumes to install a work system. During the upgrade of a non-SSI, a one-member SSI, or the *first* member of a multimember SSI, the new RELEASE volumes created on the work system will be added to the system that is being upgraded. All DASD volumes that are used to install the work system, except for these RELEASE volumes, will no longer be needed after the upgrade is complete.

3. When upgrading the *first* member of a multimember SSI, the DASD volumes that will be used as the release volumes for your work system should be volumes that can be attached to all members of your cluster. After the upgrade of the first member of a cluster is complete, the release volumes become permanent volumes in your cluster and should not be reused.

- If any members of your cluster are running as a second-level guest, you should use MDISK statements with the DEVNO option in the user directory definitions to attach the DASD volumes to all members of your cluster in write mode at the end of your upgrade. See *z/VM: CP Planning and Administration* for more information about the MDISK statement in the user directory.

4. DASD volumes needed to install work systems:

  - For each system you are upgrading, you will need DASD volumes to install a work system. The DASD type (3390 or FBA) must match the installation DASD type of the system you are upgrading.
  - The number of FBA DASD volumes needed to install the work system:
    - If the size of your FBA volumes is equal to or greater than 7.3 GB:
      - You will need five volumes. You will *not* need the RELVOL2 volume.
        - One volume is the permanent release volume.
        - The other four volumes are temporary.
    - If the size of your FBA volumes is less than 7.3 GB:
      - If the system you are upgrading has all products loaded to minidisk, you will need six volumes:
        - Two volumes are permanent release volumes.
        - The other four volumes are temporary.
    - If the system you are upgrading has all products loaded to file pool, you will need five volumes. You will *not* need the RELVOL2 volume.
      - One volume is the permanent release volume.
      - The other four volumes are temporary.
    - If the system you are upgrading has some products loaded to minidisk and some products loaded to file pool, you might or might not need the RELVOL2 volume. Based on the size of your installation volumes, the INSTPLAN command (which you will run in Chapter 5, "Non-SSI traditional installation method," on page 45) will indicate whether or not you need RELVOL2.
  - Note that z/VM installation supports only emulated FBA on SCSI volumes. Real FBA volumes are not supported.
  - The number of 3390 DASD volumes needed for each work system:
    - For non-SSI or one-member SSI:
      - Five volumes are needed.
      - One volume is the permanent release volume.
      - The other four volumes are temporary.
    - For multimember SSI:

      When upgrading a multimember SSI, most of the DASD volumes used to install the work system for the first system upgraded can be formatted and reused to install the next member's work system. The following numbers reflect reuse of the volumes.

      **Warning:** The release volumes created when the first member is upgraded *cannot* be reused. These permanent volumes will be attached to all of the systems that are being upgraded.

      - Six volumes are needed.
      - One volume is the permanent release volume.
      - The other five volumes are temporary.

5. DASD space needed on the system being upgraded:

  - DASD space is also required for new and changed minidisks that do not reside on the RELEASE volumes. This space must be defined on volumes that are attached to the system being upgraded.
  - On each system you are upgrading, you will need space on one or more MEMBER volumes. These volumes should be attached to the system you are upgrading before you begin your upgrade.

- When upgrading a non-SSI, a one-member SSI, or the *first* member of a multimember SSI, space is also needed on a COMMON volume. This volume should be attached to the system you are upgrading before you begin your upgrade.
- The total space needed on the MEMBER and COMMON volumes that belong to the system being upgraded will be calculated in "Upgrade installation worksheets" on page 125.

## Step 4. Prepare the system before you start the upgrade process

Before performing the z/VM V7.1 upgrade installation, you must review the following information and make any required updates.

1. Review the following topics at IBM: z/VM Installation Resources (www.vm.ibm.com/install) for current information affecting installation:

   - Important z/VM Installation News
   - z/VM Installation Tips
   - Preventive Service Planning (PSP) bucket for z/VM 710 installation

2. Verify that the VMSES/E control files contain correct system information. The system name returned by the QUERY USERID command must match the system name contained in the following VMSES/E files found on the system to be upgraded:

   - VM SYSSUF file, found on the MAINT640 51D minidisk

     – In the VM SYSSUF file, verify that the system name (or one of the system names in a multimember SSI) on each :PRODLEV tag matches the system name returned by the QUERY USERID command. If the names do not match or the name is missing on any of the :PRODLEV tags for any of the components, contact IBM service for assistance in correcting this information.

       **Note:** The SERVICE ALL STATUS command can be used to display production-level information for all systems.

   - VM SYSPINV file, found on the PMAINT 41D minidisk

     – In the VM SYSPINV file, verify that the system name (or one of the system names in a multimember SSI) on each :SYSTEM tag matches the system name returned by the QUERY USERID command. If the names do not match or the name is missing on any of the :SYSTEM tags for any of the components, contact IBM service for assistance in correcting this information.

3. Install all required service on your z/VM 6.4 system.

   - Before upgrading the first member of a multi-member SSI cluster:

     – You must install and put into production the CP APAR VM65976 (PTF UM35063) on all members of the cluster.

4. Complete any SERVICE processing, PUT2PROD processing, or both that has been started for this system before upgrading. If upgrading a multimember SSI, complete all SERVICE and PUT2PROD processing that has been started for all members of the SSI cluster. Do not start any new service until the upgrade of this member is complete.

5. If upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI, the upgrade installation will add the following user IDs to the system. If you have any of these user IDs already defined on your system, you must rename them:

   - MAINT710
   - 7VMPTK10
   - 7VMRAC10
   - 7VMRSC10
   - 7VMTCP10
   - 7VMDIR10
   - 7VMHCD10
   - ZHPM
   - CSMSERVE
   - CSMWORK

- MAINTCSM

6. During upgrade, the following user IDs will be deleted. If there is any data on the user IDs' minidisks that you want to save, you should copy the data to a new location before starting your upgrade.

- CMS1

- OPNCLOUD

- ZVMLXTS

- ZVMMAPLX

7. If upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI, and your system being upgraded has products loaded to the VMPSFS file pool:

- The VMPSFS file pool needs free space to hold the new release files.

  - Determine how much space is available in storage group 1 and storage group 2 for the VMPSFS file pool, by doing the following:

```
QUERY FILEPOOL STORGRP VMPSFS
```

  - **Storage group 1**

    - Make sure storage group 1 for VMPSFS has enough free space to hold the additional index records for the new data that is being added to VMPSFS. If you are using more than 40% of the space in storage group 1, you should add an additional 50-cylinder minidisk (for FBA, 72000 512 blocks) to storage group 1.

  - **Storage group 2**

    - The amount of free space needed in storage group 2 is determined by which products you have installed to the VMPSFS file pool. To calculate the amount of free space needed in the VMPSFS file pool, use the following table. Total the 4K blocks needed for all of the products that the system being upgraded has loaded to the file pool.

    - Make a note of the number of free 4K blocks needed in storage group 2.

| Product | 4K blocks needed |
|---------|-----------------:|
| VM      | 320000 |
| PERFTK  | 22000 |
| VMHCD   | 90000 |
| RACF    | 42000 |
| DIRM    | 17000 |
| RSCS    | 16000 |
| ICKDSF  | 0 |
| TCPIP   | 65000 |

    - If more space is needed in storage group 2, follow the procedures in *z/VM: CMS File Pool Planning, Administration, and Operation* to add additional space to the VMPSFS file pool.

8. Complete any directory manager tasks.

- If you are *not* using a directory manager program:

  - INSTUPGR will remove sequence numbers from the directory, if they exist.

- If you *are* using a directory manager program:

  - Create and save a flat-file backup of your current user directory.

- If you are using DirMaint, use the folllowing commands to generate and retrieve the file:

```
DIRM BACKUP
DIRM SEND USER BACKUP
```

- Check with your software vendor to determine whether your directory manager program provides the upgrade installation exit required for upgrade installation to z/VM 710.

  - DirMaint supplies an installation upgrade exit that is shipped with the z/VM product. No installation of the exit program is needed.

  - CA VM:Director supplies an installation upgrade exit. Refer to the product documentation for CA VM:Director for information about installing the required level of the upgrade exit.

- If your directory manager program supplies an installation upgrade exit, refer to the program's documentation for program-specific requirements to use the exit provided.

  - For installation upgrade requirements related to DirMaint, review Appendix C of the *Program Directory for Directory Maintenance Facility for z/VM function level 710*.

  - For installation upgrade requirements related to CA VM:Director, refer to the Administrators section of the CA VM:Director wiki.

- If your directory manager program does *not* supply an installation upgrade exit, you will need to perform one of the following tasks:

  a. Make the required directory changes yourself during STAGE1 and STAGE2 commit processing.

  b. Suspend your directory manager temporarily and create a CP user directory file that the upgrade procedure can update with the xedit option.

- Directory changes must be made available (or put online) to all systems immediately.

- If your directory manager has minidisk password checking enabled, you might need to disable it during the upgrade because user IDs will be added to the directory that might have minidisk passwords that are considered trivial.

- If you are using DirMaint as your directory manager, you must have DATAMOV* servers configured and available.

- If upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI:

  - The DASD volumes you will use for the release volumes when installing the work system must be included in the control files that define the DASD pool available to the directory manager. If possible, this should be done before you begin your upgrade. The default labels for these volumes are:

    • 710RL1

    • 710RL2

  - The appropriate directory manager control files must be configured so that the directory manager will ignore fullpack minidisk definitions for user IDs MAINT, PMAINT, MAINT640, MAINT710, SYSDUMP1, SYSDMP-1, SYSDMP-2, SYSDMP-3, and SYSDMP-4.

9. If you are using an external security manager (ESM) program (such as RACF):

• Make sure the MIGMAINT user ID is authorized to perform security authorizations on behalf of other users.

• If you are managing SFS with your security manager, MIGMAINT must be authorized to perform all SFS administration functions.

• If your external security manager has minidisk password checking enabled, you might need to disable it during the upgrade because user IDs will be added to the directory that might have minidisk passwords that are considered trivial.

# Step 5. Complete upgrade installation worksheet 1

1. Print or copy the upgrade installation worksheets (Table 12 on page 125 through Table 16 on page 127).

2. If you are installing from a physical DVD or an FTP server directory, record the path information required to access the DVD drive or FTP directory on upgrade installation worksheet 1 (Table 12 on page 125):

   a. The IP address or host name of the FTP server.

   b. The user ID and password of the FTP server.

   c. The DVD or FTP directory path name for the FTP server.

3. If you are installing from a VM minidisk, on upgrade installation worksheet 1 (Table 12 on page 125), record the VM user ID and address of the VM minidisk where contents of the z/VM product DVD and the installation RSU DVD will be uploaded.

## Step 6. Complete upgrade installation worksheet 2

1. Determine the file name, file type, and location of the system configuration file for the system that is being upgraded.

   a. Record the file name and file type of your system configuration file on upgrade installation worksheet 2 (Table 13 on page 125).

   b. Record the user ID that owns the minidisk and the minidisk address where the file is located on upgrade installation worksheet 2 (Table 13 on page 125).

   **Note:** The default file name and location of the system configuration file are:

   Name: SYSTEM CONFIG
   User ID: PMAINT
   Minidisk: CF0

2. Determine how the upgrade installation procedure will update the CP user directory.

   a. If you do *not* use a directory manager program to update your CP user directory and instead edit your CP user directory file manually (XEDIT):

   • Record YES on the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125) and skip to substep "3" on page 118.

   b. If you use a directory manager program that supplies an installation upgrade exit:

   • Record NO on the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125).

   c. If you use a directory manager program that does *not* supply an installation upgrade exit, you will need to perform one of the following tasks:

   1) Use your directory manager to make the directory changes yourself during commit processing.

   • Record NO on the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125).

   2) Create a CP user directory file that can be updated with the xedit option.

   • Record YES in the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125).

   • To create a CP user directory file:

   – Disable the directory manager program so that no updates can be made to the directory.

   – Use your directory manager procedure to create a CMS file that contains the directory (such as USER DIRECT) on a minidisk that is available to MIGMAINT in write mode (such as PMAINT 2CC).

   – The directory file (such as USER DIRECT) must have all of the subconfigs directly following the IDENTITY sections and before any other user or identity starts.

   – No updates can be made to the directory until upgrade is complete.

   – After the upgrade is completed, use your directory manager procedure to replace the updated directory in your directory manager database.

3. If you recorded YES on the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125):

   • Determine the file name and file type of your user directory file, the minidisk address where it is located, and the user ID that owns the minidisk.

   **Note:** The default file name and location of the user directory file are:

   – Name: USER DIRECT

   – User ID: PMAINT

        – Minidisk: 2CC

     • Record the CP directory file information on upgrade installation worksheet 2 (Table 13 on page 125).

4. Determine whether you are running a security manager other than RACF on your system. Record YES or NO on upgrade installation worksheet 2 (Table 13 on page 125).

5. Determine the DASD type you will use to install your z/VM work system. Record 3390 or FBA on upgrade installation worksheet 2 (Table 13 on page 125).

     • The DASD type (3390 or FBA) must match the installation DASD type of the system you are upgrading.

6. Select the DASD size you will use to install your z/VM work system.

     • The DASD size does not have to match the size of the installation DASD on the system you are upgrading.

        – If you are using 3390:

           - Record the size on the "Volume size" line. The size of the volumes must be at least 10016 cylinders.

        – If you are using FBA (SCSI):

           - Record the size on the "Volume size" line. The size of the volumes must be at least 6.0 GB.

        **Note:** All volumes must be at least the size recorded on the "Volume size" line.

## Step 7. Complete upgrade installation worksheet 3

If you are installing your z/VM work system to FBA DASD, skip to "Step 8. Complete upgrade installation worksheet 4" on page 121.

If you are installing your z/VM work system to 3390 DASD, follow these steps:

1. Determine the number of volumes required to install a single work system.

   - For a non-SSI, one member SSI, or the *first* member of a multimember SSI:

     – Five volumes are needed.
     – One volume is the permanent release volume.
     – The other four volumes are temporary.

   - For the second, third, or fourth member of a multimember SSI:

     When upgrading a multimember SSI, most of the DASD volumes used to install the work system for the first system upgraded can be formatted and reused to install the next member's work system. Do not reuse the RELVOL (default label 710RL1).

     – Five volumes are needed. All volumes are temporary.

   **Warning:** The release volume created when the first member is upgraded *cannot* be reused. This permanent volume will be attached to all of the systems that are being upgraded.

2. Record the address for each 3390 volume required in the Address column on the upgrade installation worksheet 3 (Table 14 on page 126). If you are changing any of the default installation labels, record the new labels in the New Label column. Disregard any spaces in the worksheet for volumes that you do not need. Note that you must not use any of IBM's default volume labels for a volume other than the volume for which it is originally defined.

   - Volume labels must be 1 to 6 alphanumeric characters.

   **Notes:**

   a. If you are upgrading a non-SSI, a one-member SSI, or the *first* member of a multimember SSI, the volume where the new release code is installed on your z/VM work system (default label 710RL1) will be added to the system that is being upgraded. You should choose a label for this volume that adheres to any local policies for volume labels for your organization. All other volumes used for the work system (COMMON, RES, SPOOL, and PAGE) can be returned to your DASD pool after the upgrade installation of this system is complete.

   b. In a multimember SSI cluster, only the first member upgraded to V7.1 will add the release volume to the system that is being upgraded. For subsequent members, you need to specify a DASD address for the release volume that is not the release volume you used for your first member. This new DASD will be formatted and used to install a work system, but it will not be added to the system that is being upgraded. The default label displayed on the INSTPLAN panel will be IBMRL1. The label for the release volume should be different from the label used for the release volume when upgrading the first member.

   c. In a multimember SSI cluster, when upgrading the second, third or fourth member, the release volume used in the first member upgrade should be attached to all members of your SSI (including the system you are now upgrading) before the upgrade is started.

# Step 8. Complete upgrade installation worksheet 4

If you are installing your z/VM work system to 3390 DASD, skip to "Step 9. Complete upgrade installation worksheet 5" on page 122.

If you are installing your work system to FBA (SCSI) volumes, follow these steps.

1. Determine the number of volumes required to install a single work system.

   - If the size of your FBA volumes is equal to or greater than 7.3 GB:
     - You will need five volumes. You will *not* need the RELVOL2 volume.
       - One volume is the permanent release volume.
       - The other four volumes are temporary.
   - If the size of your FBA volumes is less than 7.3 GB:
     - If the system you are upgrading has all products loaded to minidisk, you will need six volumes:
       - Two volumes are permanent release volumes.
       - The other four volumes are temporary.
   - If the system you are upgrading has all products loaded to file pool, you will need five volumes. You will *not* need the RELVOL2 volume.
     - One volume is the permanent release volume.
     - The other four volumes are temporary.
   - If the system you are upgrading has some products loaded to minidisk and some products loaded to file pool, you might or might not need the RELVOL2 volume. Based on the size of your installation volumes, the INSTPLAN command (which you will run in Chapter 5, "Non-SSI traditional installation method," on page 45) will indicate whether or not you need RELVOL2.

2. On upgrade installation worksheet 4 (Table 15 on page 126), record the address for each volume in the Address column. If you are changing any of the default installation labels, record the new labels in the New Label column. Note that you must not use any of IBM's default volume labels for a volume other than the volume for which it is originally defined.

   - Volume labels must be 1 to 6 alphanumeric characters.
   - For z/VM installation on FBA: note that z/VM installation supports only emulated FBA on SCSI volumes. Real FBA volumes are not supported.

   **Note:** The volume (default label 710RL1) or volumes (default labels 710RL1 and 710RL2) where the new release code is installed on your z/VM work system will be added to the system that is being upgraded. You should choose volume labels that adhere to any local policies for volume labels for your organization. All other volumes used for the work system (COMMON, RES, SPOOL, and PAGE) can be returned to your DASD pool after the upgrade installation of this system is complete.

3. If you are using FBA (SCSI) disks and they are already defined, you need only the 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 the valid FCP address (or addresses) or the channel path (CHPID) to which they belong. Record each LUN and its corresponding WWPN on upgrade installation worksheet 4 (Table 15 on page 126). Also make a note of the valid FCP address (or addresses) or CHPID.

# Step 9. Complete upgrade installation worksheet 5

1. Additional space needs to be allocated on the system being upgraded for new and changed minidisks that do not reside on the RELEASE volumes. This space needs to be on volumes that already belong to the system being upgraded, not on the volumes being used to install the work system. Make sure these volumes are attached to the system and are included in the control files for your directory manager (for DirMaint: EXTENT CONTROL).

   Some of the space must be defined on volumes that are designated as MEMBER volumes for the system you are upgrading and some of the space must be defined on volumes that are designated as COMMON volumes.

   - A MEMBER volume is one that is assigned to and is usually accessible to just one member of an SSI cluster (such as the MEMBER volumes with default labels of M01RES, M01W01, and M01W02). On a non-SSI system, these volumes might also be referred to as SYSTEM volumes.

   - A COMMON volume is one that is not assigned to any specific member and is accessible by all members of an SSI cluster (such as the COMMON volumes with default labels of VMCOM1 and VMCOM2).

   - If the system you are upgrading is not a member of an SSI cluster, you should still allocate this new space on volumes that would be considered MEMBER volumes and COMMON volumes in an SSI cluster to minimize rework in case you decide in the future to convert your non-SSI system to a single-member SSI cluster.

2. Space that will be needed on MEMBER volumes is listed in Table 10 on page 123. You must allocate the space for these minidisks on the same type of DASD you used when you installed your z/VM system.

   - Table 10 on page 123 lists the user IDs that own the minidisks, the product associated with each user ID, and the minimum amount of space needed on a MEMBER volume.

   - The amount of space needed is dependent on where the associated product is installed (on minidisks or in the VMPSFS file pool) on the system being upgraded.

   - Determine where each product was loaded and record an M (for minidisks) or an F (for file pool) in the Location column in upgrade installation worksheet 5 (Table 16 on page 127).

   - Use Table 10 on page 123 to determine the amount of space needed for each user ID and record the space needed on upgrade installation worksheet 5 (Table 16 on page 127) in the Minimum column.

   - Determine which MEMBER volumes assigned to the system you are upgrading have sufficient contiguous space available to define each user ID's minidisks. All of the user IDs do not need to be on the same MEMBER volume, but all of the space for each user ID must be on one volume and must be contiguous.

   **Note:** If there is not enough free space on any of the MEMBER volumes on the system that is being upgraded, you should add a new MEMBER volume to your system before you begin your upgrade. See *z/VM: CP Planning and Administration* for more information about adding additional MEMBER volumes to your system.

   - On upgrade installation worksheet 5 (Table 16 on page 127), for each user ID, record the label of the MEMBER volume where that user ID's minidisks should be defined.

     – If you edit your CP user directory file manually, that is, you recorded YES on upgrade installation worksheet 2 (Table 13 on page 125), also record the start and end cylinders or block extents where the user ID's minidisks are to be defined.

       - For 3390, the lowest value for the START cylinder extent is 1.

       - For FBA, the lowest value for the START block extent is 1200.

     – If you use a directory manager product, that is, you recorded NO on upgrade installation worksheet 2 (Table 13 on page 125), the directory manager will define the minidisks on these volumes.

- You must make sure all member volumes you are using are included in the control files that define the DASD pool for your directory manager product.
- Each volume must have enough contiguous space to define the minidisks assigned to that volume.

| Table 10: Minimum space requirements for MEMBER volumes. | | | | | |
|---|---|---|---|---|---|
| **MEMBER volumes installing on:** | | **Minimum space needed:** | | | |
| | | **3390 (cylinders)** | | **FBA (512K blocks)** | |
| **User ID** | **Product/ component** | **Product in file pool** | **Product on minidisk** | **Product in file pool** | **Product on minidisk** |
| ZHPM | VM | 10 | 10 | 14400 | 14400 |
| CSMSERVE | VM | 9 | 9 | 12960 | 12960 |
| CBDIODSP | VMHCD | 720 | 720 | 1036800 | 1036800 |

3. If you are upgrading a member of an SSI cluster and this is not the first member to be upgraded, you do not need to allocate any additional space on COMMON volumes.

   • Make sure the common volume you used for previous upgrades is available to this member.
   • Skip the next substep and continue to Chapter 13, "Set up for your upgrade installation," on page 129.

4. If you are upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI, space that will be needed on COMMON volumes is listed in Table 11 on page 124. You must allocate the space for these minidisks on the same type of DASD you used when you installed your z/VM system.

   • Table 11 on page 124 lists the user IDs that own the minidisks, the product associated with each user ID, and the minimum amount of space needed on a COMMON volume.
   • The amount of space needed is dependent on where the associated product is installed (on minidisks or in the VMPSFS file pool) on the system being upgraded,
   • Determine where each product was loaded and record an M (for minidisks) or an F (for file pool) in the Location column in upgrade installation worksheet 5 (Table 16 on page 127).
   • Use Table 11 on page 124 to determine the amount of space needed for each user ID and record the space needed on upgrade installation worksheet 5 (Table 16 on page 127) in the Minimum column.
   • Determine which COMMON volumes assigned to the system you are upgrading have sufficient contiguous space available to define each user ID's minidisks. All of the user IDs do not need to be on the same COMMON volume, but all of the space for each user ID must be on one volume and must be contiguous.

   **Note:** If there is not enough free space on any of the COMMON volumes on the system that is being upgraded, you should add a new COMMON volume to your system before you begin your upgrade. See *z/VM: CP Planning and Administration* for more information about adding additional COMMON volumes to your system.

   • On upgrade installation worksheet 5 (Table 16 on page 127, for each user ID, record the label of the COMMON volume where that user ID's minidisks should be defined.

     – If you edit your CP user directory file manually, that is, you recorded YES on upgrade installation worksheet 2 (Table 13 on page 125), also record the start and end cylinders or block extents where the user ID's minidisks are to be defined.

       - For 3390, the lowest value for the START cylinder extent is 1.
       - For FBA, the lowest value for the START block extent is 1200.

     – If you use a directory manager product, that is, you recorded NO on upgrade installation worksheet 2 (Table 13 on page 125), the directory manager will define the minidisks on these volumes.

- You must make sure all COMMON volumes you are using are included in the control files that define the DASD pool for your directory manager product.
- Each volume must have enough contiguous space to define the minidisks assigned to that volume.

| Table 11: Minimum space requirements for COMMON volumes. | | | | | |
|---|---|---|---|---|---|
| **COMMON volumes installing on:** | | **Minimum space needed:** | | | |
| | | **3390 (cylinders)** | | **FBA (512K blocks)** | |
| **User ID** | **Product/ component** | **Product in file pool** | **Product on minidisk** | **Product in file pool** | **Product on minidisk** |
| 5684042J | ICKDSF | 0 | 60 | 0 | 84600 |
| 7VMDIR10 | DirMaint | 69 | 184 | 99360 | 29460 |
| MAINTCSM | VM | 175 | 175 | 252000 | 252000 |

**What to do next**

Go to .

# Upgrade installation worksheets

| Table 12: Upgrade Installation Worksheet 1 |
|---|
| IP address or host name: _____<br><br>FTP server user ID and password: _____<br><br>DVD/FTP directory path name: _____<br><br>VM user ID and address of VM minidisk to upload DVD: _____ |

| Table 13: Upgrade Installation Worksheet 2. |
|---|
| **Current System Information:** |
| System configuration file:<br><br>Name: _____ _____　　　　User ID:　_____　　　Address:　_____<br>Do you edit your CP directory file manually? _____<br>If **yes**, CP directory file:<br>Name: _____ _____　　　　User ID:　_____　　　Address:　_____<br>Are you using a security manager other than RACF?　　　_____<br>DASD type:　　　　_____<br><br>Volume size:　　　　_____ |

*Table 14: Upgrade Installation Worksheet 3 (3390 Only).*

**Installation Volumes for z/VM Work System (3390):**

| Volume Type | Default Label | New Label | Address |
|---|---|---|---|
| COMMON | IBMCM1 | | |
| RELVOL | *xxx*RL1 | | |
| RES | IBMRES | | |
| SPOOL | IBMS01 | | |
| PAGE | IBMP01 | | |

**Notes:**

- *xxx* will be 710 for the first member that is upgraded and will be IBM for the second, third, and fourth members.
- You must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined.

*Table 15: Upgrade Installation Worksheet 4 (FBA Only).*

**Installation Volumes for z/VM Work System (FBA):**

| Volume Type | Default Label | New Label | Address | FCP Address | WWPN | LUN |
|---|---|---|---|---|---|---|
| COMMON | IBMCM1 | | | | | |
| RELVOL | 710RL1 | | | | | |
| RELVOL2 | 710RL2 | | | | | |
| RES | IBMRES | | | | | |
| SPOOL | IBMS01 | | | | | |
| PAGE | IBMP01 | | | | | |

Channel path (CHPID): _____

Valid FCP addresses: _____

Note: You must *not* use any of IBM's default volume labels for a volume other than the volume for which it is originally defined.

*Table 16: Upgrade Installation Worksheet 5.*

**Additional Space Needed on Current System:**

Space is needed in your existing environment to create minidisks for the following user IDs:

**MEMBER volume(s):**

| User ID | Product | Location (M/F) | Minimum | Label | Start | End |
|---|---|---|---|---|---|---|
| ZHPM | VM | | | | | |
| CSMSERVE | VM | | | | | |
| CBDIODSP | VMHCD | | | | | |

**COMMON volume(s):**

| User ID | Product | Location (M/F) | Minimum | Label | Start | End |
|---|---|---|---|---|---|---|
| 5684042J | ICKDSF | | | | | |
| 7VMDIR10 | DirMaint | | | | | |
| MAINTCSM | VM | | | | | |

**Upgrade installation worksheets**

# Chapter 13. Set up for your upgrade installation

**In this chapter, you will:**

- Set up the environment for an upgrade installation.

Choose your next step based on which source you will use to perform your installation.

| If you chose to install from: | Go to: |
|---|---|
| A physical DVD... | "Step 1. Set up to install from a DVD drive" on page 130 |
| An FTP server directory... | "Step 2. Set up to install from an FTP server directory" on page 134 |
| A VM minidisk... | "Step 3. Set up to install from a VM minidisk" on page 138 |

## Step 1. Set up to install from a DVD drive

**Before you begin:** You should have completed worksheets 1 through 5 in "Upgrade installation worksheets" on page 125). If you have not done so, return to Chapter 12, "Plan your upgrade installation," on page 105.

1. Load the z/VM product 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.

2. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

3. Spool the console to make sure it is empty, started, and spooled to the reader.

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

4. Verify that you have a 2222 read/write minidisk with exactly 10 cylinders if installing to 3390 or 14400 512-KB blocks if installing to FBA.

```
query v 2222
DASD 2222 3390 xxxxxx  R/W          10 CYL ON DASD  nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

5. Verify that INSTPIPE MODULE exists in your search order.

```
listfile instpipe module *
INSTPIPE MODULE fm
```

If you receive:

```
DMSLST002E file not found
```

access the disk that contains the INSTPIPE MODULE.

**Note:** The INSTPIPE MODULE was shipped on the MAINT 193 minidisk.

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

   a. Run INSTPIPE.

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

   b. Copy the files from the DVD to the 2222 minidisk.

   **Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in upgrade installation worksheet 1 (Table 12 on page 125).

   ```
   pipe ftpget -h host -u userid -p password -d ftpdir/CPDVD
    -v BEF -DVDEOF -f ddd222* |UNPACK| restcmd 2222
   ```

*host*
> The IP address or FTP host name. Host names must begin with a letter and contain alphanumeric characters (A-Z, a-z, 0-9) or hyphens (-) only (`MyOrg-VM01`, for example).
>
> Specify an IP address in dotted-decimal form for your IP V4 interface (`129.42.16.99`, for example).

*userid*
> The user ID that is used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

*password*
> The password that is used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

*ftpdir*
> The path to the DVD drive, with `/CPDVD` appended to the end of the path. The maximum length is 40 characters. For example:

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

*ddd*
> CKD (for 3390) or FBA (for FBA), which must be specified in uppercase.

*restcmd*
> ECKDREST (for 3390) or MDREST (for FBA).

**Note:** In the `pipe` command shown previously, you can 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 ddd222* !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
```

7. IPL CMS to remove the old INSTPIPE MODULE from storage.

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

8. Access the 2222 minidisk as file mode C.

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

9. Verify that the first occurrence of the INSTPIPE MODULE is on the minidisk accessed as file mode C. Remove or rename all other copies.

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

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

```
dvdprime dasdtype (dvd
```
*dasdtype*
  **3390** or **FBA**.

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
```

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

    **Note:** The information for HOSTNAME OR IP ADDRESS, FTP USERID, FTP PASSWORD, and DVD PATHNAME was recorded in upgrade installation worksheet 1 ().

```
                   *** DVDPRIME PANEL ***

  Enter information in empty fields and press F5 to process.

  HOSTNAME OR IP ADDRESS:        _____

  FTP USERID:                    _____

  FTP PASSWORD:                  _____

  DVD PATHNAME:                  _____

  PORT NUMBER:             21_____

     F1 = HELP    F3/F12 = QUIT   F5 = Process   ENTER = Refresh
```

*Figure 11: DVDPRIME Panel*

**HOSTNAME OR IP ADDRESS:**
> The IP address or host name of your FTP server. Host names must begin with a letter and contain alphanumeric characters (A-Z, a-z, 0-9) or hyphens (-) only (MyOrg-VM01, for example).
>
> Specify an IP address in dotted-decimal form for your IP V4 interface. (129.42.16.99, for example).

**FTP USERID:**
> The user ID that is used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**FTP PASSWORD:**
> The password that is used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**DVD PATHNAME:**

The path to the DVD drive (according to the conventions used by your server), with /CPDVD appended to the end of the path. The maximum length is 40 characters. This should be the same path name used on the `ftpget` command in substep . The maximum length is 40 characters. For example:

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

**PORT NUMBER:**

The FTP server's port number. The default port number is 21.

12. Press F5 to process.

```
 F5 

IUGDVP8440I Now loading 24CC disk
{FBA222*|CKD222*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 24CC, RC=0

Now loading 2CF0 disk
{FBACF0*|CKDCF0*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF0, RC=0

IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

**What to do next**

Go to .

## Step 2. Set up to install from an FTP server directory

**Before you begin:** You should have completed worksheets 1 through 5 in "Upgrade installation worksheets" on page 125). If you have not done so, return to Chapter 12, "Plan your upgrade installation," on page 105.

The RSU that is shipped as part of the z/VM product will be installed during the upgrade process. Do not attempt to skip installing the RSU during upgrade. If additional service is required, install the additional service after the upgrade of this member is complete (after you have completed Chapter 21, "Finish your upgrade installation," on page 193).

1. Upload the contents of each DVD or electronic deliverable to the directory. After the contents of the z/VM product deliverable have been uploaded, upload the contents of the installation RSU deliverable to the same directory, overwriting any duplicate files.

   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 4 GB of free space.

   b. Load the contents of the z/VM product deliverable and the installation RSU deliverable to the directory. When copying the files, make sure the case is preserved.

2. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

3. Spool the console to make sure it is empty, started, and spooled to the reader.

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

4. Verify that you have a 2222 read/write minidisk with exactly 10 cylinders if installing to 3390 or 14400 512-KB blocks if installing to FBA.

   ```
   query v 2222
   DASD 2222 3390 xxxxxx  R/W          10 CYL ON DASD  nnnn SUBCHANNEL = nnnn
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. Verify that INSTPIPE MODULE exists in your search order.

   ```
   listfile instpipe module *
   INSTPIPE MODULE fm
   ```

   If you receive:

   ```
   DMSLST002E file not found
   ```

   access the disk that contains the INSTPIPE MODULE.

   **Note:** The INSTPIPE MODULE was shipped on the MAINT 193 minidisk.

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

   a. Run INSTPIPE.

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

   b. Copy the files from the FTP server to the 2222 minidisk.

   **Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in upgrade installation worksheet 1 (Table 12 on page 125).

Set up to install from an FTP server directory

```
pipe ftpget -h host -u userid -p password -d ftpdir
 -v BEF -DVDEOF -f ddd222* |UNPACK| restcmd 2222
```

**host**

> The IP address or FTP host name. Host names must begin with a letter and contain alphanumeric characters (A-Z, a-z, 0-9) or hyphens (-) only (`MyOrg-VM01`, for example).
>
> Specify an IP address in dotted-decimal form for your IP V4 interface (`129.42.16.99`, for example).

**userid**

> The user ID that is used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**password**

> The password that is used to log on to the FTP server. The maximum length is 40 alphanumeric characters.

**ftpdir**

> The path to the FTP server directory where you loaded the contents of the product deliverables in substep "1" on page 134. The maximum length is 40 characters.

**ddd**

> CKD (for 3390) or FBA (for FBA), which must be specified in uppercase.

**restcmd**

> ECKDREST (for 3390) or MDREST (for FBA).

**Note:** In the `pipe` command shown previously, you can 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 ddd222* !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
```

7. IPL CMS to remove the old INSTPIPE MODULE from storage.

Set up for your upgrade installation **135**

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

8. Access the 2222 minidisk as file mode C.

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

9. Verify that the first occurrence of the INSTPIPE MODULE is on the minidisk accessed as file mode C.
   Remove or rename all other copies.

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

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

| | *dasdtype* |
|---|---|
| `dvdprime` *dasdtype* `(server` | **3390** or **FBA**. |

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
```

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

    **Note:** The information for HOSTNAME OR IP ADDRESS, FTP USERID, FTP PASSWORD, and DVD
    PATHNAME was recorded in upgrade installation worksheet 1 ().

```
                    *** DVDPRIME PANEL ***

  Enter information in empty fields and press F5 to process.

  HOSTNAME OR IP ADDRESS:        _____

  FTP USERID:                    _____

  FTP PASSWORD:                  _____

  DVD PATHNAME:                  _____

  PORT NUMBER:              21_____

       F1 = HELP   F3/F12 = QUIT   F5 = Process   ENTER = Refresh
```

*Figure 12: DVDPRIME Panel*

**HOSTNAME OR IP ADDRESS:**
> The IP address or host name of your FTP server. A host name must begin with a letter and can
> contain alphanumeric characters (A-Z, a-z, 0-9) or hyphens (-) only (MyOrg-VM01, for example).
>
> Specify an IP address in dotted-decimal form for your IP V4 interface (129.42.16.99, for
> example).

**FTP USERID:**
> The User ID that is used to log on to the FTP server. The maximum length is 40 alphanumeric
> characters.

**FTP PASSWORD:**
> The password used to log on to the FTP server. The maximum length is 40 alphanumeric
> characters.

**DVD PATHNAME:**
> 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
```

**PORT NUMBER:**
> The FTP server's port number. The default port number is 21.

12. Press F5 to process.

```
 F5 

IUGDVP8440I Now loading 24CC disk
{FBA222*|CKD222*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 24CC, RC=0

Now loading 2CF0 disk
{FBACF0*|CKDCF0*}

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF0, RC=0

IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

**What to do next**

Go to .

## Step 3. Set up to install from a VM minidisk

**Before you begin:** You should have completed worksheets 1 through 5 in "Upgrade installation worksheets" on page 125). If you have not done so, return to Chapter 12, "Plan your upgrade installation," on page 105.

The RSU that is shipped as part of the z/VM product will be installed during the upgrade process. Do not attempt to skip installing the RSU during upgrade. If additional service is required, install the additional service after the upgrade of this member is complete (after you have completed Chapter 21, "Finish your upgrade installation," on page 193).

1. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Link to the VM minidisk where you will load the files from the product deliverables. The VM minidisk needs to have the equivalent of at least 7000 cylinders of available 3390 DASD space. The minidisk must not contain any other files with filetype IMAGE. You must link the minidisk in write mode.

   **Note:** The information for *userid* and *diskaddr* was recorded in upgrade installation worksheet 1 (Table 12 on page 125).

   ```
   link userid diskaddr diskaddr MR
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Access the VM minidisk as file mode W.

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

   *diskaddr*
   Address of the CMS-formatted VM minidisk where the files from the product deliverables are to be copied.

4. If the z/VM product and RSU files have already been loaded to the minidisk you are using, skip to substep "16" on page 143.

5. Link to the 592 TCP/IP client code minidisk.

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

6. Access the 592 TCP/IP client code minidisk as file mode Z.

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

7. Set the terminal to alert you one second after CP issues the MORE... status and to clear one second after the alert.

   ```
   terminal more 1 1
   Ready;
   ```

8. Copy the contents of the z/VM product and RSU DVDs or electronic envelopes to the VM minidisk accessed as file mode W.

   **Notes:**

   - If you have an FTP server running on your VM system, use the instructions in Appendix K, "Using a VM FTP server to load files to a VM minidisk," on page 243. After loading the files, continue with substep "15" on page 143.

- If you do not have an FTP server, you can use the upload function of your terminal emulator to load the files to the minidisk. See Appendix J, "Using a terminal emulator to upload files," on page 241. After uploading the files using your terminal emulator, continue with substep "15" on page 143.
- If you have an FTP server running on a workstation, continue with this substep.

  Note that wherever the DVD path is referenced, you can substitute the path to the workstation hard drive where you have loaded the electronic envelopes.

a. If installing from a physical DVD, load the z/VM product 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. Start an FTP session.

```
ftp
VM TCP/IP FTP Level nnn
```

c. Connect to the FTP server. Enter the FTP server IP address or host name (*host*), the user ID used to log on to the FTP server (*userid*), and the password for the user ID used to log on to the FTP server (*password*).

   **Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in upgrade installation worksheet 1 (Table 12 on page 125).

```
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
```

d. Change the remote directory to the FTP path of the DVD drive or FTP server (*ftpdir*). If loading from a physical DVD, append **/CPDVD** to the end of the path (for example: **e:/CPDVD**).

```
Command:
cd ftpdir/CPDVD

>>>CWD ftpdir/CPDVD
250 Directory changed to ftpdir/CPDVD
```

e. Change the local directory to W.

```
Command:
lcd w

Local directory mode is 'W'
```

f. Set the file transfer mode to `binary`, the record format to `fixed`, and the record length to 1028.

```
Command:
binary f 1028

>>>TYPE i
200 Type set to I.
Command:
```

g. Copy all required files from the z/VM product deliverable.

```
     mget ddd*                                          ddd
                                                        CKD for 3390 or FBA for FBA (SCSI),
                                                        which must be entered in uppercase.
```

```
>>>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.
>>>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.
⋮
```

h. When all files have been transferred, quit the FTP session.

```
Command:
quit

>>>QUIT
221 Goodbye!
Ready;
```

9. Verify that all of the files copied from the z/VM product deliverable have a fixed (F) file format and a logical record length (LRECL) of 1028.

If the file format or logical record length of any file is incorrect, the files were copied incorrectly. Erase all of the files from the minidisk and copy the contents of the z/VM product deliverable again, using the correct parameters. Repeat substep .

```
filelist * $default w

Cmd    Filename Filetype Fm Format Lrecl    Records    Blocks   Date     Time
       xxx22200 $DEFAULT W1 F       1028      nnnn        nnn   dddd     ttttt
⋮
```

10. Verify that all of the files were copied from the z/VM product deliverable.

```
filelist * $default w

 userid   FILELIST W0  V 169  Trunc=169 Size=nnnn Line=1 Col=1 Alt=0
Cmd    Filename Filetype Fm Format Lrecl    Records    Blocks   Date     Time
       xxx22200 $DEFAULT W1 F       1028      nnnn        nnn   dddd     ttttt
⋮
```

In the **Size=***nnnn* field, *nnnn* is the number of $DEFAULT files on the minidisk. The deliverable contains the 710PROD DVDIMAGE file, which lists the number of image files that should have been copied.

Verify that the numbers are the same. If the numbers are not the same, there are files missing. In this case, you can do one of the following:

a. Copy the missing files.

1) Determine which files are missing. The 710PROD DVDIMAGE file contains a list of all of the files that should have been copied.

2) Copy each of the the missing files from the z/VM product deliverable by repeating substep "8" on page 138, replacing:

```
mget ddd*
```

with:

```
get filename filename.$default
```

   b. Copy the contents of the z/VM product deliverable again by repeating substep "8" on page 138.

11. Copy the contents of the z/VM installation RSU deliverable to the same VM minidisk used for the z/VM product deliverable.

   a. If installing from a physical DVD, load the z/VM installation 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 stops blinking before continuing.

   b. Start an FTP session:

```
ftp
VM TCP/IP FTP Level nnn
```

   c. Connect to the FTP server. Enter the FTP server's IP address or host name (*host*), the user ID used to log on to the FTP server (*userid*), and the password for the user ID used to log on to the FTP server (*password*).

**Note:** The information for *host*, *userid*, *password*, and *ftpdir* was recorded in upgrade installation worksheet 1 (Table 12 on page 125).

```
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
```

   d. Change the remote directory to the FTP path of the DVD drive or FTP server (*ftpdir*). If loading from a physical DVD, append /CPDVD to the end of the path (e: /CPDVD, for example).

```
Command:
cd ftpdir/CPDVD

>>>CWD ftpdir/CPDVD
250 Directory changed to ftpdir/CPDVD
```

   e. Change the local directory to W.

```
Command:
lcd w

Local directory mode is 'W'
```

   f. Set the file transfer mode to `binary`, the record format to `fixed`, and the record length to 1028.

```
Command:
binary f 1028
```

```
>>>TYPE i
200 Type set to I.
Command:
```

g. Copy all required files from the z/VM installation RSU deliverable.

**mget** *ddd*✶ **(replace**

*ddd*
　**CKD** for 3390 or **FBA** for FBA (SCSI),
　which must be entered in uppercase.

```
>>>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.
>>>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.
    ⋮
```

h. When all files have been transferred, quit the FTP session.

```
Command:
quit

>>>QUIT
221 Goodbye!
Ready;
```

12. Verify that all of the files copied from the z/VM installation RSU deliverable have a fixed (F) file format and a logical record length (LRECL) of 1028.

   If the file format or logical record length of any file is incorrect, the files were copied incorrectly. Erase all of the new $DEFAULT files from the minidisk and copy the contents of the z/VM installation RSU deliverable again, using the correct parameters. Repeat substep .

**filelist** *ddd***500**✶ **$default w**

*ddd*
　**CKD** (for 3390) or **FBA** (for FBA).

```
Cmd    Filename Filetype Fm Format Lrecl    Records    Blocks   Date    Time
       xxx50000 $DEFAULT W1 F       1028      nnnn        nnn   dddd    ttttt
 ⋮
```

13. Verify that all of the files were copied from the z/VM installation RSU deliverable.

**filelist** *ddd***500**✶ **$default w**

*ddd*
　**CKD** (for 3390) or **FBA** (for FBA).

```
userid   FILELIST W0  V 169  Trunc=169 Size=nnnn Line=1 Col=1 Alt=0
Cmd    Filename Filetype Fm Format Lrecl    Records    Blocks   Date    Time
       xxx50000 $DEFAULT W1 F       1028      nnnn        nnn   dddd    ttttt
 ⋮
```

In the **Size=***nnnn* field, *nnnn* is the number of $DEFAULT files from the RSU deliverable on the minidisk. The deliverable contains the 71CKDRSU and 71FBARSU DVDIMAGE files, which list the number of image files that should have been copied for each DASD type.

Verify that the numbers are the same. If the numbers are not the same, there are files missing. In this case, you can do one of the following:

a. Copy the missing files.

   1) Determine which files are missing. The 71*ddd*RSU DVDIMAGE file contains a list of all of the files that should have been copied.

   2) Copy each of the the missing files from the z/VM installation RSU deliverable by repeating substep "11" on page 141, replacing:

```
mget ddd* (replace
```

with:

```
get filename filename.$default
```

b. Copy the contents of the z/VM installation RSU deliverable again by repeating substep "11" on page 141.

14. The FTP MGET command copied the files with a file type of $DEFAULT. The file type needs to be renamed to IMAGE.

```
rename * $default w = image =
Ready;
```

15. Set the terminal to alert you 50 seconds after CP issues the MORE... status and to clear 10 seconds after the alert.

```
terminal more 50 10
Ready;
```

16. Spool the console to make sure it is empty, started, and spooled to the reader.

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

17. Verify that you have a 2222 read/write minidisk of exactly 10 cylinders if installing to 3390 or 14400 512-KB blocks if installing to FBA.

```
query v 2222
DASD 2222 3390 xxxxxx  R/W        10 CYL ON DASD  nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

18. Verify that INSTPIPE MODULE exists in your search order.

```
listfile instpipe module *
INSTPIPE MODULE fm
```

If you receive:

```
DMSLST002E  file not found
```

access the disk that contains the INSTPIPE MODULE.

**Note:** The INSTPIPE MODULE was shipped on the MAINT 193 minidisk.

19. Copy the files needed to run DVDPRIME to the 2222 minidisk.

a. Run INSTPIPE.

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

b. Decode, unpack, and write the files needed to run DVDPRIME to the 2222 minidisk.

```
pipe dvddecod ddd222 image w |UNPACK| restcmd 2222

{MDREST|ECKDREST}: WROTE nnn {BLOCKS|TRACKS} ON 2222, RC=0
Ready; T=n.nn/n.nn hh:mm:ss
```

> ***ddd***
> > **CKD** for 3390 or **FBA** for FBA (SCSI),
> > which must be entered in uppercase.
>
> ***restcmd***
> > **ECKDREST** (for 3390) or **MDREST** (for
> > FBA).
>
> **Note:** In the `pipe` command shown
> previously, you can use a different stage
> separator by including the **stagesep**
> keyword. For example:
>
> ```
> pipe ( stagesep ! ) dvddecod ddd222
> image w !UNPACK! restcmd 2222
> ```

20. IPL CMS to remove the old INSTPIPE MODULE from storage.

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

21. Access the minidisk that contains the image files as file mode W.

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

> ***diskaddr***
> > Address of the minidisk where the image
> > files were copied.

22. Access the 2222 minidisk as file mode C.

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

23. Verify that the first occurrence of the INSTPIPE MODULE is on the minidisk accessed as file mode C.
Remove or rename all other copies.

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

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

```
dvdprime dasdtype (disk
```

> ***dasdtype***
> > **3390** or **FBA**.

```
IUGDVP8327I ** Now executing DVDPRIME on date at time **
IUGDVP8440I Now loading 24CC disk

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 24CC, RC=0
Now loading 2CF0 disk

{MDREST|ECKDREST}: WROTE nnnn {BLOCKS|TRACKS} ON 2CF0, RC=0
IUGDVP8392I DVDPRIME EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

**What to do next**

Go to Chapter 14, "Install a z/VM V7.1 work system for your upgrade installation," on page 147.

# Chapter 14. Install a z/VM V7.1 work system for your upgrade installation

**In this chapter, you will:**

- Run INSTPLAN.
- Verify your upgrade installation volumes.
- Run INSTALL.

## Step 1. Run INSTPLAN

**Before you begin:** You should have completed worksheets 1 through 5 in "Upgrade installation worksheets" on page 125). If you have not done so, return to Chapter 12, "Plan your upgrade installation," on page 105.

1. From the MIGMAINT user ID, verify that the installation tools minidisk, 24CC, is accessed as C:

```
query disk c
LABEL  VDEV M  ...
MNT4CC 24CC C  ...
Ready; T=n.nn/n.nn hh:mm:ss
```

2. If you are installing to FBA (SCSI) volumes, see upgrade installation worksheet 4 (Table 15 on page 126) and query each address to verify it is not already defined for a different device (see example below). If the address is already in use, either detach the device or choose a different *dasdaddr* and verify that address does not exist.

   For each address:

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

   Record any changed addresses in the **Address** column in upgrade installation worksheet 4 (Table 15 on page 126).

3. Run INSTPLAN with the UPGRADE operand.

```
instplan upgrade
```

   The installation planning panels are displayed.

```
          *** z/VM UPGRADE - EXISTING ENVIRONMENT INFORMATION ***

System Type: type      System/Member Name: name      Cluster Name: name

Members in this cluster:
    SLOT #      MEMBER NAME     RELEASE LEVEL
    ------      -----------     -------------
      1         Member1             vrm
      2         Member2
vrm
      3         Member3
vrm
      4         Member4
vrm

Common Service Filepool Name:   fpname

Current z/VM Product Information for name:
  COMPONENT LOCATION  ENABLEMENT          COMPONENT LOCATION  ENABLEMENT
  --------- --------- ----------          --------- --------- ----------
    VM        Minidisk                      DIRM      Filepool  ENABLED
    ICKDSF    Filepool                      PERFTK    Filepool  ENABLED
    RACF      Filepool  ENABLED             RSCS      Filepool  ENABLED
    TCPIP     Filepool                      VMHCD     Filepool



    F1 = HELP      F3/12 = QUIT     F5 = Process     ENTER =
Refresh
```

*Figure 13: z/VM Upgrade - Existing Environment Information Panel*

The Existing Environment Information panel is displayed. Review this information to verify that this is the system you are intending to upgrade.

a. The system type is either SSI or Non-SSI. If the system being that is upgraded is a member of an SSI cluster, *System Type* is SSI and the other fields displayed are *Member Name*, which contains the name of the member being upgraded, and *Cluster Name,* which contains the name of the SSI cluster.

   If the system that is being upgraded is not a member of an SSI cluster, *System Type* is Non-SSI and the other field displayed is *System Name,* which contains the name of the system being upgraded.

b. If the system that is being upgraded is a member of an SSI cluster, the *Members in this Cluster* fields are displayed. For each member in the cluster, the slot number, member name, and current release level of that member are displayed

c. The *Common Service Filepool Name* field contains the name of the common service file pool, as defined to the system being upgraded. This is either the IBM default name VMPSFS or the name you selected in ICOMDIR NAMES to map your file pool name to the file pool nickname VMPSFS.

d. The *Current z/VM Product Information* fields display the z/VM pre-installed products and where they are installed (file pool or minidisk). It also indicates which products are enabled or disabled. A blank in this field indicates that enabled/disabled does not apply to that product.

e. Press F5 to continue if this is the system you intend to upgrade.

   F5

4. The License Validation panel will be displayed if you have priced components or features enabled on your current system. If you do, a list of the features that are enabled on the system you intend to upgrade will be displayed. Upgrade installation will enable these same features on the new level of z/VM. Confirm that you have all the necessary licenses for each pre-installed component and feature that is enabled on your system. If you do not have any IBM pre-installed products or features enabled on your system, the license validation panel will not be displayed and you should skip to substep .

```
                  *** z/VM UPGRADE - LICENSE VALIDATION ***

Upgrade Installation will automatically enable the same features for your
new system that are enabled on your current system.  The features that are
enabled on your current system are listed below.  The new features must be
appropriately licensed for all machines that will run your new system.

If you have ordered these features and accept the licensing terms and
conditions, press F5 to acknowledge your agreement and acceptance of the
terms and conditions.  If you are accepting these terms on behalf of
another person or company or other legal entity, you represent and
warrant that you have full authority to bind that person, company, or legal
entity to these conditions.

If you do not agree to these terms, or you do not have licenses for all the
features listed below, press F3 to cancel the installation.
 DirMaint:    ENABLED
 PERFTK:      ENABLED
 RACF:        ENABLED
 RSCS:        ENABLED

 F1 = HELP      F3/12 = QUIT     F5 = I Agree
```

*Figure 14: z/VM Upgrade - License Validation Panel*

    a. This panel shows which z/VM components and features are enabled on the system that is being upgraded. You must verify that you have appropriate licenses for each of these components and features for the release to which you are upgrading.

    b. Press F5 to agree that you have appropriate licenses on the new release of z/VM.

> F5

    If you do not have all the required licenses, press F3 or F12 to exit. Rerun the upgrade procedure once you have obtained the necessary licenses.

5. Complete the User Supplied Environment Information panel using the information you entered in Upgrade Planning Worksheet 2 (Table 13 on page 125).

```
          *** z/VM UPGRADE - USER SUPPLIED ENVIRONMENT INFORMATION ***

Enter your work system DASD size.
 _ 3390 10016

If you changed the name or location of your system configuration file,
change the values below.
 System Configuration Name: SYSTEM   CONFIG     UserID: PMAINT    Addr: CF0


Do you edit your CP directory file manually?
 _ YES  User Directory Name: USER     DIRECT    UserID: PMAINT    Addr: 2CC
 _ NO

RACF is disabled for the system you are upgrading.
Are you using a different security manager?
 _ YES
 _ NO




    F1 = HELP      F3/F12 = QUIT     F5 = Process    ENTER = Refresh
```

*Figure 15: z/VM Upgrade - User Supplied Environment Information Panel*

    a. The `Enter your work system DASD size` field will display only the installation DASD type for the system you are upgrading.

        **If your IBM-installed minidisks reside on 3390 volumes:** 3390 with the default minimum DASD size of 10016 cylinders will be displayed.

**If your IBM-installed minidisks reside on FBA volumes:** FBA DASD with the default minimum DASD size of 6.0 gigabytes will be displayed. Place any nonblank character in front of the FBA DASD field. If you are using FBA DASD with a size larger than the default minimum, change the size field.

b. The *System Configuration Name* fields are preloaded with the default file name, file type, and location of the file as shipped by IBM. If the system you are upgrading changed any of these values, enter the actual file name, file type, and location of your system configuration file.

c. If you recorded NO on the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125), enter a nonblank character in front of NO.

d. If you recorded YES on the "Do you edit your CP directory file manually?" line on upgrade installation worksheet 2 (Table 13 on page 125), enter a nonblank character in front of YES. If you have changed the defaults shipped by IBM, update the file name, file type, and location of your user directory with the actual file information.

e. If the RACF/VM Security Server is enabled on the system you are upgrading, this panel will not display any information related to the security manager. If you are using any security manager other than RACF, place a nonblank character in front of YES. If you are not using a security manager, place a nonblank character in front of NO.

f. Press F5 to process your selections.

> `F5`

6. Complete the Installation Volume Definition panel using the information you entered on Upgrade Installation Worksheet 3 for 3390 (Table 14 on page 126) or Upgrade Installation Worksheet 4 for FBA (Table 15 on page 126).

```
          *** z/VM UPGRADE - INSTALLATION VOLUME DEFINITION ***

COMMON AND RELEASE VOLUMES
     TYPE     LABEL      ADDRESS                      FORMAT (Y/N)
     =======  ========   =========                    ============
     COMMON   IBMCM1      ____                              _
     RELVOL   xxxRL1      ____
     RELVOL2  xxxRL2      ____



MEMBER VOLUMES
     TYPE     LABEL      ADDRESS
     =======  ========   =========
     RES      IBMRES      ____
     SPOOL    IBMS01      ____
     PAGE     IBMP01      ____



   F1 = HELP     F3/F12 = QUIT    F5 = Process    ENTER = Refresh
```

*Figure 16: z/VM Upgrade - Installation Volume Definition Panel*

a. If you do not want use a default volume label, then enter a new label in the *LABEL* field. See upgrade installation worksheet 3 (Table 14 on page 126) or upgrade installation worksheet 4 (Table 15 on page 126) for the labels you selected during planning.

b. Fill in the volume addresses in the *ADDRESS* fields. See upgrade installation worksheet 3 (Table 14 on page 126) or upgrade installation worksheet 4 (Table 15 on page 126) for the addresses you selected during planning.

c. Fill in the *FORMAT (Y/N)* column with Y to let the installation program format your installation volumes or N to not format your installation volumes. Specify N only if you have already CP formatted your volumes for this installation using ICKDSF or CPFMTXA. If you specify N, the volumes will be labeled but not formatted.

d. Press F5 to process your selections.

F5

7. Complete the Additional Space Requirements panel.

```
          *** z/VM UPGRADE - ADDITIONAL SPACE REQUIREMENTS ***

   Space is needed in your existing environment to load minidisks for the
   following user IDs.  Supply the volume label and free space on each volume.

   MEMBER VOLUME
        USER ID    MINIMUM      LABEL      START         END
        --------   --------     -------    ----------    ----------
        ZHPM           nnnn      _____    _____    _____
        CSMSERVE       nnnn      _____    _____    _____
        CBDIODSP       nnnn      _____    _____    _____

   COMMON VOLUME
        USER ID    MINIMUM      LABEL      START         END
        --------   --------     -------    ----------    ----------
        5684042J       nnnn      _____    _____    _____
        7VMDIR10       nnnn      _____    _____    _____
        MAINTCSM       nnnn      _____    _____    _____



        F1 = HELP     F3/12 = QUIT     F5 = Process     ENTER = Refresh
```

*Figure 17: z/VM Upgrade - Additional Space Requirements Panel*

a. If you are upgrading the second, third, or fourth member of an SSI, only the MEMBER VOLUME fields will be displayed.

b. Using Upgrade Installation Worksheet 5 (Table 16 on page 127), fill in:

- The labels of the volumes where the space for each user ID will be allocated.

c. If you edit your CP user directory file manually, using upgrade installation worksheet 5 (Table 16 on page 127), fill in:

- The starting cylinder or block where the minidisks for this user ID will be defined.
- The ending cylinder or block where the minidisks for this user ID will be defined.
- The space available between the *START* and *END* values must be equal to or larger than the value displayed in the *MINIMUM* column.

d. Press F5 to process.

F5

8. A summary of your upgrade information is displayed. The output you see may be different due to your planning choices and your current system environment. Review the output displayed to verify your planning choices. If any of the information displayed is not correct, rerun the INSTPLAN command and supply corrected information.

**Notes:**

- You might not see message IUGPUX8418W.
- If you are upgrading the second, third, or fourth member of an SSI, the COMMON VOLUME information will not be displayed.

```
IUGPUX8475I System upgrade information

    Existing system information:
      System type:  SSItype     System|Member  name: sname   Cluster  name:
ssiname
      Common service filepool: fpname
      z/VM products/features
enabled:
        prods

    Additional space requirements:


MEMBER        USER ID      MIN      LABEL     START        END
VOLUME        ----------  --------  ------  ----------  ----------
              ZHPM           nnnn   label         nnnn        nnnn
              CSMSERVE       nnnn   label         nnnn        nnnn
              CBDIODSP       nnnn   label         nnnn        nnnn


COMMON        USER ID      MIN      LABEL     START        END
VOLUME        ----------  --------  ------  ----------  ----------
              5684042J       nnnn   label         nnnn        nnnn
              7VMDIR10       nnnn   label         nnnn        nnnn
              MAINTCSM       nnnn   label         nnnn        nnnn


    Work system information:
      DASD size selected: type - size
      Format volumes:  y/n
      Volume labels and addresses:
      lblcm1 addr
      lblrl1 addr
      lblrl2 addr
      lblres addr
      lblspl addr
      lblpag addr


IUGPUX8418W Not enough space available in filepool fpname. Your existing
            fpname filepool has nnnnnnnn blocks available. You need nnnnnnnn
            blocks in storage group 2 to load the new filespaces. You must
            increase your filepool by nnnnnn blocks before running INSTUPGR

IUGINP8392I INSTPLAN EXEC ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

9. Verify that the information listed in the response from the INSTPLAN command matches the system you are upgrading and the information listed on your upgrade installation worksheets.

## Step 2. Verify your upgrade installation volumes

From the MIGMAINT user ID on the system being upgraded:

1. If you are installing to 3390, skip to substep "7" on page 155.
2. If the SCSI volumes you are installing to are defined as minidisks on your installation user ID, skip to substep "7" on page 155.
3. If the SCSI volumes you are installing to have already been defined, in the SYSTEM CONFIG or by using the SET EDEVICE command, skip to substep "6" on page 155. If not yet defined, continue with the next substep.
4. To define the SCSI volumes, you need to know which FCP addresses are valid for your SCSI volumes.

   If you know the FCP address or the range of addresses associated with your SCSI volume 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
   ```

5. To define the SCSI volumes, use the information recorded in upgrade installation worksheet 4 (Table 15 on page 126).

   See *z/VM: CP Planning and Administration* for information about defining SCSI disks. The following information will provide each SCSI volume with a basic definition.

   For each SCSI volume:

   a. Select and record a free FCP address for each edevice. You should use one FCP device for the 710RES and a different (or multiple different) FCPs for the other volumes.

   ```
   query fcp free
   ```

   Choose a device from the output. Record a FCP address for each edevice in the **FCP Address** column in upgrade installation worksheet 4 (Table 15 on page 126).

   b. Define the device address.

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

> ***dasdaddr***
> > The edevice address from traditional installation worksheet 7 (Table 7 on page 18).
>
> ***attr_type***
> > The name of an attribute set to be associated with the real device. See the SET EDEVICE command in *z/VM: CP Commands and Utilities Reference*.
>
> ***fcpn***
> > The Fibre Channel Protocol (FCP) address. You should use one FCP device for the 710RES and one or more different FCPs for the other disks.
>
> ***www***
> > The worldwide port number.
>
> ***lll***
> > The logical unit number (LUN) address.

6. Vary on any SCSI volumes not already online. Repeat this substep for each volume.

```
vary on dasdaddr
```

7. Attach each DASD volume listed on upgrade installation worksheet 3 (Table 14 on page 126) or upgrade installation worksheet 4 (Table 15 on page 126) that is not already attached. Enter the following ATTACH command for each volume:

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

> ***dasdaddr***
> > The address of the DASD volume.
>
> ***userid***
> > The 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.

## Step 3. Run INSTALL

1. From the MIGMAINT user ID, access the 24CC minidisk as file mode C.

   ```
   access 24cc c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

2. Run INSTALL to install your new V7.1 work system for your upgrade installation.

   **Note:** You must *not* disconnect your MIGMAINT user ID. The installation procedure will IPL the z/VM system a number of times and these will fail if MIGMAINT is running disconnected.

   ```
   install
   ```

   At this point, messages related to activities performed by installation, such as formatting and allocation DASD, restoring data, IPLing the system, and running SERVICE and PUT2PROD will be displayed.

   If you receive one of the following messages:

   ```
   IUGILB8300E File ddd50000 IMAGE W not found

   IUGILB8342E The command 'PIPE DVDDECOD ddd500 failed with RC=rc'
   ```

   make sure you load the installation RSU DVD to your installation minidisk or FTP server before restarting.

   If you are installing from a physical DVD, you will receive the following prompt:

   ```
   HCPIRU8484R Please place the installation RSU DVD
   in the DVD drive, then type GO to continue or type
   EXIT to quit.
   ```

   Place the installation RSU DVD in the DVD drive and wait until the light on the DVD drive goes out or stops blinking, then enter go.

   Do not attempt to skip installing the RSU during upgrade.

   If you enter `exit`, your installation will not be complete. You must rerun the INSTALL command and enter go to load the RSU files before you can continue to the next step.

   If the installation fails while loading the installation RSU DVD, make sure the DVD in the drive is the installation RSU and issue INSTALL to try again.

   ```
   HCPIRU8440I Now loading MAINTvrm 500 disk
   HCPIRU8341I Load of the installation RSU has completed successfully
   ```

   When the INSTALL command completes, there will be one additional IPL, the system will come back up logged on to MAINT710, and the following will be displayed:

```
*****************************************************************
*                                                               *
*  The installation of your upgrade work system is complete.  *
*  This system will be SHUTDOWN and you will be returned to   *
*  MIGMAINT on the system you are upgrading.                  *
*                                                               *
*  Once the system shutdown is complete:                      *
*                                                               *
*    IPL CMS on MIGMAINT                                       *
*    Continue with the instructions in the Installation Guide. *
*                                                               *
*****************************************************************


*****************************************************************
*                                                               *
*  Type GO to continue                                        *
*                                                               *
*****************************************************************
```

```
go
:
```

3. IPL CMS on the MIGMAINT user ID.

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

**What to do next**

Go to Chapter 15, "Generate the STAGE1 changes file," on page 159.

# Chapter 15. Generate the STAGE1 changes file

**In this chapter, you will:**

- Create a backup copy of the system being upgraded.
- Run INSTUPGR to create the STAGE1 changes file.

## Step 1. Create a backup copy of the system being upgraded

Before you begin to upgrade your system, you should create a backup copy of the system to be upgraded following your normal backup procedures.

If updates are made to the system being upgraded that cannot be backed out, this backup can be used to restore the system to the state it was in before the installation upgrade STAGE1 procedure started.

## Step 2. Generate the STAGE1 table

1. Make sure any user IDs that have write links to the system inventory and service disks, such as PMAINT, MAINT, MAINT640, and MAINT710, and product installation IDs 6VM*xxx*40 and 7VM*xxx*10 are logged off the system you are upgrading and all other members of your cluster before logging on to MIGMAINT.

2. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

3. Access the 24CC minidisk as file mode C.

   ```
   access 24cc c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Run INSTUPGR to generate the $STAGE1$ $TABLE$ file, which will list the STAGE1 changes needed to upgrade your system.

   ```
   instupgr stage1 (prime
   IUGUPG8392I INSTUPGR ended successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. If any errors occur, review the error messages in file INSTUPGR $CONSLOG on the MIGMAINT 2CF0 minidisk (accessed as filemode E), correct the condition that is causing the error, and then go back to substep "4" on page 161. (The most current messages are at the bottom of the file.)

6. If INSTUPGR completes with no errors, but does have warnings, they will be displayed on the screen and also logged in the file $STAGE1$ $WRNFILE on the MIGMAINT 2CF0 disk (accessed as filemode E). Review the warnings and resolve any issues before continuing to Chapter 16, "Update your current system with the STAGE1 changes," on page 163.

**What to do next**

Continue to Chapter 16, "Update your current system with the STAGE1 changes," on page 163.

# Chapter 16. Update your current system with the STAGE1 changes

**In this chapter, you will:**

- Make the changes to your current system identified in the $STAGE1$ $TABLE$.

## Step 1. Choose your update option

In the previous step a file named $STAGE1$ $TABLE$ was generated on the MIGMAINT 2CF0 disk by the INSTUPGR command. This table contains a list of actions to be taken on your current system in order to complete the first stage of your system upgrade. Each entry in the table consists of one or more comment lines that describe an action to be taken and then one or more lines with more detailed information so that a program or a person could read the information and perform the action on a specific system.

There are three ways to complete these actions:

1. Run the INSTUPGR command with operand STAGE1 and option COMMIT. The programs supplied by IBM will read the $STAGE1 $TABLE$ and perform all the actions listed. If you are using a directory manager program on your system and that program has provided an exit to work with the IBM upgrade code, that exit will be called to perform directory functions. If you edit your CP user directory manually, INSTUPGR will make the necessary changes to your CP user directory file, using the information you provided when you ran the INSTPLAN command. In either case, INSTUPGR will generate a file that will allow you to back out the changes made to this point. If you edit your CP user directory manually, backout will consist of restoring the user directory that existed before running INSTUPGR STAGE1 (COMMIT. Any changes made to the user directory by your normal procedures after STAGE1 (COMMIT begins would be lost. You need to document any changes made by your normal procedures so they can be restored after backout.

2. Manually update your system with the changes listed in the $STAGE1$ $TABLE$. You can perform all of the changes listed in the table and edit the table to mark them as complete. Note that some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table.

   **Note:** If you choose this option, no backout file is created. If you decide *not* to use the upgrade installation procedure after you have made changes to your system, you will need to remove the changes manually.

3. Use a combination of options 1 and 2. If you prefer, you can make some of the required changes manually and allow the INSTUPGR program to make the rest. Note that some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table and you must complete all the entries that precede the changes you select to make manually. To use this method, make the changes you wish to make yourself first and update the $STAGE1$ $TABLE$ to mark just those changes as complete. Then run the INSTUPGR command with operand STAGE1 and option COMMIT. The INSTUPGR program will make any changes to your system that you have not marked as completed and it will update the $STAGE1$ $TABLE$ and all other required status tables. It will also generate a backout file. This backout file will only contain records for the changes that were made by the INSTUPGR program. If you decide *not* to use the upgrade installation procedure after you have made changes to your system, you will need to remove the changes you made manually.

No matter which option you choose, the changes listed in the $STAGE1$ $TABLE$ file must be completed *before* moving on to STAGE2.

If you are running DirMaint, do not recycle any DirMaint servers before you have completed Chapter 17, "Step 3. Review directory considerations" on page 179.

To use the INSTUPGR command to make your system changes, follow "Step 2. Use the INSTUPGR command to make your STAGE1 system changes " on page 165.

To make some of the changes to your system manually, follow "Step 3. Make some of the STAGE1 changes to your system manually " on page 166.

To make all of the changes to your system manually, follow "Step 4. Make all of the STAGE1 changes to your system manually " on page 167.

## Step 2. Use the INSTUPGR command to make your STAGE1 system changes

From the MIGMAINT user ID on the system being upgraded:

1. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Access the 24CC minidisk as file mode C.

```
access 24cc c
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Run INSTUPGR to upgrade your system with STAGE1 changes defined in the $STAGE1$ $TABLE$ file.

```
instupgr stage1 (commit
Now processing line 10 of nnn
Now processing line 20 of nnn
    ⋮
IUGUPG8392I INSTUPGR ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

4. If any errors occur, review the error messages in file INSTUPGR $CONSLOG on the MIGMAINT 2CF0 minidisk (accessed as filemode E), correct the condition that is causing the error, and then go back to substep "3" on page 165.

   **Note:** For some error conditions, you may need to remove the changes that have been made on your system up to this point. If this is the case, see Appendix Q, "Removing changes made by STAGE1 (optional)," on page 291.

5. If you are running DirMaint, do not recycle any DirMaint servers before you have completed Chapter 17, "Step 3. Review directory considerations" on page 179.

**What to do next**

Go to Chapter 17, "Finish the STAGE1 upgrade," on page 169.

## Step 3. Make some of the STAGE1 changes to your system manually

From the MIGMAINT user ID on the system being upgraded:

1. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Access the 24CC minidisk as file mode C.

```
access 24cc c
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Access the 2CF0 minidisk as file mode E.

```
access 2cf0 e
Ready; T=n.nn/n.nn hh:mm:ss
```

4. Review the entries in the $STAGE1$ $TABLE$ to determine which changes you want to perform yourself.

   Some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table, so you must also manually complete all the entries that precede the changes you select to make manually.

   For each entry in the $STAGE1$ $TABLE$ that you selected to manually update on your system:

   a. See Appendix O, "$STAGE1$ $TABLE$ entry definitions," on page 259 for a description of the changes required for that entry.

   b. Make the changes to your system. You should document the changes you made, for potential backout purposes.

   c. Once an entry has been completed, update the entry in the $STAGE1$ $TABLE$ with a dash (-) in the first column to indicate that the entry has been completed.

5. After you have completed all of the changes you selected and you have updated the $STAGE1$ $TABLE$, go to "Step 2. Use the INSTUPGR command to make your STAGE1 system changes " on page 165 to complete the rest of the entries.

6. If you are running DirMaint, do not recycle any DirMaint servers before you have completed Chapter 17, "Step 3. Review directory considerations" on page 179.

**Note:** If you decide not to use the upgrade installation to upgrade this system, you should refer to Appendix Q, "Removing changes made by STAGE1 (optional)," on page 291 for information on removing the changes made up to this point.

# Step 4. Make all of the STAGE1 changes to your system manually

From the MIGMAINT user ID on the system being upgraded:

1. Make sure the user ID meets the MIGMAINT user ID requirements.
2. Access the 24CC minidisk as file mode C.

```
access 24cc c
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Access the 2CF0 minidisk as file mode E.

```
access 2cf0 e
Ready; T=n.nn/n.nn hh:mm:ss
```

4. Review the entries in the $STAGE1$ $TABLE$.

   Some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table.

   For each entry in the $STAGE1$ $TABLE$:

   a. See Appendix O, "$STAGE1$ $TABLE$ entry definitions," on page 259 for a description of the changes required for that entry.
   b. Make the changes to your system. You should document the changes you made, for potential backout purposes.
   c. Once an entry has been completed, update the entry in the $STAGE1$ $TABLE$ with a dash (-) in the first column to indicate that the entry has been completed.

5. Once all the changes are complete and you have updated the $STAGE1$ $TABLE$, run the INSTUPGR command to update the appropriate status tables so that you can proceed with the second stage of your upgrade installation.

```
instupgr stage1 (commit done
IUGUPG8392I INSTUPGR ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

6. If you are running DirMaint, do not recycle any DirMaint servers before you have completed Chapter 17, "Step 3. Review directory considerations" on page 179.

**Note:** If you decide not to use the upgrade installation to upgrade this system, you should refer to Appendix Q, "Removing changes made by STAGE1 (optional)," on page 291 for information on removing the changes made up to this point.

**What to do next**

Go to Chapter 17, "Finish the STAGE1 upgrade," on page 169.

**Make all of the STAGE1 changes to your system manually**

# Chapter 17. Finish the STAGE1 upgrade

**In this chapter, you will:**

- Convert the RACF/VM database.
- Review external security manager (ESM) considerations.
- Review directory considerations.
- Rework your local modifications.

## Step 1. Convert the RACF/VM database

- If you are upgrading a multi-member SSI and this is not the first member to be upgraded, skip to "Step 3. Review directory considerations" on page 179.
- If you are not running the RACF/VM security manager, skip to "Step 2. Review external security manager (ESM) considerations" on page 172.
- If you are running the RACF/VM security manager and you installed APAR VM65930 (PTF UV61335) on your z/VM V6.4 system, skip to "Step 2. Review external security manager (ESM) considerations" on page 172.

To convert the RACF/VM database, follow these steps:

1. Create a backup of the RACF database using your normal backup procedures.
2. Log on to RACMAINT on the system you are upgrading. Do not disconnect from RACMAINT or close this session.
3. In a new terminal session, log on to OPERATOR on the system you are upgrading and force RACFVM.

```
FORCE RACFVM
```

4. If you are upgrading the first LPAR that is sharing a RACF database with other systems or if you are upgrading the first member of a multi-member SSI cluster, you must force RACFVM off on all of the systems sharing that database, to avoid database corruption.

   For an SSI cluster:

   - Log on to OPERATOR on each system that is a member of your SSI cluster and force RACFVM:

   ```
   FORCE RACFVM
   ```

   - Do *not* autolog RACMAINT on these systems.

   For non-VM systems:

   - Follow your normal procedures to force the RACF service ID.

5. Disconnect from OPERATOR on the system you are upgrading.
6. Return to the RACMAINT session to run the RACFCONV utility.

   a. Verify that the minidisks that are linked by RACMAINT are owned by 7VMRAC10:

   ```
   query mdisk 305
   TargetID Tdev OwnerID  Odev
   RACMAINT 0305 7VMRAC10 0505
   Ready;
   query mdisk 490
   TargetID Tdev OwnerID  Odev
   RACMAINT 0490 7VMRAC10 0590
   Ready;
   query mdisk 29e
   TargetID Tdev OwnerID  Odev
   RACMAINT 029E 7VMRAC10 029E
   Ready;
   query mdisk 192
   TargetID Tdev OwnerID  Odev
   RACMAINT 0192 7VMRAC10 0191
   Ready;
   ```

   b. Verify that RACMAINT has write access to the RACF database disks:

   ```
   query links 200
   RACMAINT 0200 R/W
   Ready;
   query links 300
   ```

```
RACMAINT 0300 R/W
Ready;
```

c. Run the RACFCONV utility to convert the RACF database:

```
IPL 190
RACFCONV
 ENTER
200
yes
RACFCONV
 ENTER
300
yes
```

If RACFCONV receives RC=0, RACFCONV upgraded the RACF templates successfully or the templates are at the correct level. One of the following messages is displayed:

```
Processing complete, template update was applied.

Processing complete, template update not required.
```

If RACFCONV ends with any other return code, review the information about running RACFCONV in the *z/VM: RACF Security Server System Programmer's Guide* and take any corrective actions that might be needed.

Continue upgrading your z/VM system only when you are sure that your RACF database templates are at the correct level.

d. Start RACMAINT by IPLing 490:

```
IPL 490
RACSTART
#CP DISC
```

e. Log on to OPERATOR on the system you are upgrading and restart the production RACF server, RACFVM:

```
LOGON OPERATOR
FORCE RACMAINT
XAUTOLOG RACFVM
```

f. If the RACF database is shared, restart the RACF servers on all systems that share the RACF database.

Log on to OPERATOR on the other LPARs or on the other members of your cluster and autolog RACFVM. Because RACF services are not available, you might need to enter the password for OPERATOR that is currently listed in your CP user directory. The password for OPERATOR that was shipped in the default z/VM 640 user directory is WD5JU8QP.

```
XAUTOLOG RACFVM
```

## Step 2. Review external security manager (ESM) considerations

If you are *not* running an external security manager (ESM), skip to "Step 3. Review directory considerations" on page 179.

If you are upgrading a multimember SSI cluster and this is *not* the first member to be upgraded to z/VM V7.1, skip this step and go to "Step 3. Review directory considerations" on page 179.

Some of the required authorizations that follow might have been done by your security manager when the new user IDs were added to your system. You should verify that all of the authorizations listed are done before continuing with your upgrade.

Refer to the documentation for your security manager to perform the following steps, as necessary:

1. Make sure the MAINT710 user ID is authorized to:

   • Link to any minidisk on the system without the need to supply a password.

   • Perform security authorizations on behalf of other users.

   • Perform all SFS administration functions, if you are managing SFS with your security manager.

2. If you are using an ESM to manage logon authorizations:

   • The following user IDs were added to the user directory with the default password. Make sure your ESM will allow these user IDs to be logged on:

     ```
     MAINT710
     7VMDIR10
     7VMPTK10
     7VMRAC10
     7VMRSC10
     7VMHCD10
     MAINTCSM
     CSMWORK
     IBMVM1
     ```

   • The following user IDs were added to the user directory with the LBYONLY password. Make sure your ESM will allow these user IDs to be logged on by the LOGONBY user ID (IBMVM1):

     ```
     CSMSERVE
     ZHPM
     ```

   • The following user IDs were added to the user directory with the NOLOG password:

     ```
     7VMTCP10
     ```

3. If you are using an ESM to manage disk access:

   • The following component user IDs were added for the new release:

     – The user IDs for the new release need to have the same disk authorizations as the corresponding user IDs for the old release.

     – User IDs that are currently authorized to access resources owned by the user IDs from the old release must now be authorized for the same resources as the user IDs for the new release.

       - If you are using RACF, you can use the RACF command RLIST for each user ID and minidisk from the old release to determine the current disk authorization.

| New release | Old release |
|---|---|
| MAINT710 | MAINT640 |
| 7VMDIR10 | 6VMDIR40 |
| 7VMPTK10 | 6VMPTK40 |
| 7VMRAC10 | 6VMRAC40 |
| 7VMRSC10 | 6VMRSC40 |
| 7VMTCP10 | 6VMTCP40 |
| 7VMHCD10 | 6VMHCD40 |

- The following new user IDs were added and need the following link authorizations:

| User ID | Link authorizations |
|---|---|
| CSMSERVE | 7VMTCP10 491 RR<br>7VMTCP10 492 RR<br>MAINT 190 RR<br>MAINT 19D RR<br>MAINT 19E RR<br>MAINT 401 RR<br>MAINT 402 RR<br>TCPMAINT 198 RR<br>TCPMAINT 591 RR<br>TCPMAINT 592 RR |
| MAINTCSM | MAINT 190 RR<br>MAINT 193 RR<br>MAINT 19D RR<br>MAINT 19E RR<br>MAINT 401 RR<br>MAINT 402 RR<br>MAINT710 51D RR<br>MAINT710 5BC RR<br>MAINT710 5E6 RR |
| ZHPM | MAINT 190 RR<br>MAINT 19D RR<br>MAINT 19E RR |

- Current users need authorizations for the following links that were added for this release:

| User ID | Link authorization |
|---|---|
| MAINT | MAINT710 5BC RR |

4. The following user IDs have links that were changed during the upgrade installation. These user IDs need to be authorized to link to the new disks for the link mode indicated:

| User ID | Old link (with mode) | New link (with mode) |
|---|---|---|
| RACMAINT | 6VMRAC40 191 RR<br>6VMRAC40 29E RR<br>6VMRAC40 505 MR<br>6VMRAC40 590 MR | 7VMRAC10 191 RR<br>7VMRAC10 29E RR<br>7VMRAC10 505 MR<br>7VMRAC10 590 MR |

| User ID | Old link (with mode) | New link (with mode) |
|---------|----------------------|----------------------|
| TCPMAINT | 6VMTCP40 491 RR<br>6VMTCP40 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| DIRMAINT | 6VMDIR40 11F MR<br>6VMDIR40 41F MR<br>6VMDIR40 491 MR<br>6VMDIR40 492 MR | 7VMDIR10 11F MR<br>7VMDIR10 41F MR<br>7VMDIR10 491 MR<br>7VMDIR10 492 MR |
| MAINT | MAINT640 194 RR<br>MAINT640 2A2 RR<br>MAINT640 2A4 RR<br>MAINT640 2A6 RR<br>MAINT640 2C4 RR<br>MAINT640 2D2 RR<br>MAINT640 201 RR<br>MAINT640 490 RR<br>MAINT640 493 RR<br>MAINT640 51D RR<br>MAINT640 5E5 RR<br>MAINT640 5E6 RR<br>MAINT640 890 RR | MAINT710 194 RR<br>MAINT710 2A2 RR<br>MAINT710 2A4 RR<br>MAINT710 2A6 RR<br>MAINT710 2C4 RR<br>MAINT710 2D2 RR<br>MAINT710 201 RR<br>MAINT710 490 RR<br>MAINT710 493 RR<br>MAINT710 51D RR<br>MAINT710 5E5 RR<br>MAINT710 5E6 RR<br>MAINT710 890 RR |
| PERFSVM | 6VMPTK40 200 RR<br>6VMPTK40 29D RR | 7VMPTK10 200 RR [1]<br>7VMPTK10 29D RR [1] |

[1] If PERFTK was loaded to file pool, this disk does not exist. No authorization is necessary.

5. The following user IDs have links to a disk that is actually owned by a different user ID (an indirect resource). The user IDs listed in the table need to be authorized to link to the indirect resource for the link mode indicated:

*Table 17: Links to indirect resources, Part 1 of 3.*

| User ID | Directory link (with mode) | Indirect resource (with mode) |
|---------|----------------------------|-------------------------------|
| EREP | MAINT 201 RR | MAINT710 201 RR |
| LOHCOST | MAINT 400 RR | MAINT710 400 RR |
| MIGMAINT | MAINT 51D MR<br>MAINT 5E5 RR | MAINT710 51D MR<br>MAINT710 5E5 RR |
| 5684042J | MAINT 51D MR<br>MAINT 5E5 RR | MAINT710 51D MR<br>MAINT710 5E5 RR |
| PERSMAPI | PERFSVM 200 RR<br>PERFSVM 29D RR | 7VMPTK10 200 RR [1]<br>7VMPTK10 29D RR [1] |
| IBMUSER | RACMAINT 192 RR<br>RACMAINT 29E RR<br>RACMAINT 305 RR | 7VMRAC10 191 RR<br>7VMRAC10 29E RR<br>7VMRAC10 505 RR |

[1] If PERFTK was loaded to file pool, this disk does not exist. No authorization is necessary.

| Table 18: Links to indirect resources, Part 2 of 3. | | |
|---|---|---|
| **User ID** | **Directory link (with mode)** | **Indirect resource (with mode)** |
| DATAMOVE | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DATAMOV2 | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DATAMOV3 | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DATAMOV4 | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DIRMSAT | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DIRMSAT2 | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DIRMSAT3 | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| DIRMSAT4 | DIRMAINT 191 RR<br>DIRMAINT 192 RR<br>DIRMAINT 11F RR<br>DIRMAINT 21F RR | 7VMDIR10 491 RR<br>7VMDIR10 492 RR<br>7VMDIR10 11F RR<br>7VMDIR10 41F RR |
| TCPIP | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| DTCVSW1 | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| DTCVSW2 | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |

| Table 18: Links to indirect resources, Part 2 of 3. (continued) | | |
|---|---|---|
| **User ID** | **Directory link (with mode)** | **Indirect resource (with mode)** |
| DTCVSW3 | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| DTCVSW4 | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| FTPSERVE | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| LDAPSRV | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| MPROUTE | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |

| Table 19: Links to indirect resources, Part 3 of 3. | | |
|---|---|---|
| **User ID** | **Directory link (with mode)** | **Indirect resource (with mode)** |
| PORTMAP | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| REXECD | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| RXAGENT1 | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| SMTP | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| SNMPD | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| SNMPQE | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| SNMPSUBA | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| UFTD | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| VMNFS | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |

*Table 19: Links to indirect resources, Part 3 of 3. (continued)*

| User ID | Directory link (with mode) | Indirect resource (with mode) |
|---------|---------------------------|-------------------------------|
| GSKADMIN | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| SSLDCSSM | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |
| DTCSMAPI | TCPMAINT 491 RR<br>TCPMAINT 492 RR | 7VMTCP10 491 RR<br>7VMTCP10 492 RR |

6. If you configured RACF, you should have given the following user IDs operation authority. If you have defined operation authority for these IDs, no additional authorizations are needed for these disks and you can go to the next substep.

*Table 20: Links to indirect resources.*

| User ID | Directory link (with mode) | Indirect resource (with mode) |
|---------|---------------------------|-------------------------------|
| BLDNUC | MAINT 490 MW<br>MAINT 890 MW | MAINT710 490 MW<br>MAINT710 890 MW |
| BLDSEG | MAINT 194 MR<br>MAINT 2A2 MR<br>MAINT 2A4 MR<br>MAINT 2A6 MR<br>MAINT 2C4 MR<br>MAINT 2D2 MR<br>MAINT 5E6 RR<br>MAINT 51D MR | MAINT710 194 MR [1]<br>MAINT710 2A2 MR [1]<br>MAINT710 2A4 MR [1]<br>MAINT710 2A6 MR [1]<br>MAINT710 2C4 MR [1]<br>MAINT710 2D2 MR [1]<br>MAINT710 5E6 RR<br>MAINT710 51D MR |
| BLDRACF | RACMAINT 490 MW<br>RACMAINT 305 RR | 7VMRAC10 590 MW<br>7VMRAC10 505 RR |

[1] If z/VM was loaded to file pool, this disk does not exist. No authorization is necessary.

7. If you are using an ESM to manage your shared file pool administrator authorizations, give ADMIN authority for the following file pools to the user IDs listed:

| File pool | User IDs |
|-----------|----------|
| VMPSFS | MAINT710 |
| VMSYS | MAINT710 |
| VMSYSR | MAINT710 |
| VMSYSU | MAINT710 |

8. If you are using an ESM to manage command authorizations, the new user IDs should be authorized for appropriate VM commands following your normal site procedures:

| User ID | Authorization |
|---------|---------------|
| MAINT710 | Same as MAINT640 |
| 7VMDIR10 | Same as 6VMDIR40 |
| 7VMPTK10 | Same as 6VMPTK40 |

| User ID | Authorization |
|---------|---------------|
| 7VMRAC10 | Same as 6VMRAC40 |
| 7VMRSC10 | Same as 6VMRSC40 |
| 7VMTCP10 | Same as 6VMTCP40 |
| 7VMHCD10 | Same as 6VMHCD40 |
| MAINTCSM | Class BCG |
| CSMSERVE | Class BG |
| CSMWORK | Class G |
| ZHPM | Class G |

9. If you are using an ESM to manage any other system resources, review the user directory entries for the following new user IDs to identify any other security authorization that may be required for your environment:

```
MAINT710
7VMDIR10
7VMPTK10
7VMRAC10
7VMRSC10
7VMTCP10
7VMHCD10
MAINTCSM
CSMSERVE
CSMWORK
ZHPM
```

## Step 3. Review directory considerations

1. If you are upgrading a member of a multimember SSI cluster, the user directory needs to be brought online for all members of the cluster.

   a. If you indicated that you xedit your directory and allowed INSTUPGR to make the directory changes, you need to run DIRECTXA on all other members of the cluster.

   b. If you used DirMaint as your directory manager to make upgrade changes, the directory was already brought online for all members.

   c. If you used a different directory manager or made the directory updates manually, you need to make sure the directory is brought online for all other members of the cluster.

2. If you are upgrading a non-SSI system, a one member SSI cluster, or the first member of a multimember SSI cluster and DirMaint is enabled as your directory manager, copy any configured files from 6VMDIR40's minidisks to the new 7VMDIR10's disks and then recycle DirMaint.

   a. Copy only the configured files and any locally-written exits from:

      6VMDIR40 491 to 7VMDIR10 491
      6VMDIR40 492 to 7VMDIR10 492
      6VMDIR40 11F to 7VMDIR10 11F
      6VMDIR40 41F to 7VMDIR10 41F

   Make sure that you have copied all of your CONFIG* DATADVH files from the 6VMDIR40 11F and 41F minidisks. Do not copy the CONFIG DATADVF file.

   b. Also copy the DVHPROFA DIRMSAT*, DVHPROFA DIRMAINT, and DVHPROFM DATADVH files, if they exist, from 6VMDIR40 491 and 492 to 7VMDIR10 491 and 492.

   c. Update configuration files, such as AUTHFOR CONTROL and DVHNAMES DATADVH, with the new user IDs that were added for z/VM V7.1, as appropriate:

      MAINT710
      7VMDIR10

   d. If you are using an ESM, user IDs AUTOLOG1 and AUTOLOG2 need access to the 7VMDIR10 11F minidisk. Make sure these user IDs have been given read authority to the 11F minidisk.

   e. Recycle all of the DirMaint servers:

      • If your SSI cluster runs first-level:

        1) Attach the new release volume (or volumes) from your work system to all of the other members of your SSI.

        2) Determine which member the user ID DIRMAINT is logged on to.

        3) From that member, log off DIRMAINT.

        4) From that member, XAUTOLOG DIRMAINT.

      Repeat these three steps for DIRMSAT, DIRMSAT2, DIRMSAT3, DIRMSAT4, DATAMOVE, DATAMOV2, DATAMOV3, and DATAMOV4, as necessary.

      Your DirMaint servers are now running the upgraded release level of DirMaint.

      • If your SSI cluster runs second-level and if this was the first member of a multimember SSI cluster to be upgraded to this release, add the new release volumes to the directory entries for the user IDs where you IPL your SSI members, in the same manner as the current release volumes.

      For each release volume added:

1) Add an MDISK statement to the directory entry for the user ID of the SSI member that will own the DASD.

2) Add a LINK statement to the directory entries for each of the user IDs where you IPL your additional SSI members.

After you have updated the directory entries for all of the user IDs where you IPL your SSI members:

1) Shut down all members of your SSI.

2) Log off the user IDs.

3) Log the user IDs back on.

   This will pick up the new release volumes. When you IPL the members of your SSI, they will have access to the new volumes.

4) IPL the members of your SSI.

5) On the member you are upgrading, enroll the new MAINT*vrm* user ID as ADMIN for the service file pools. Log on to MIGMAINT and enter the following commands:

   – ENROLL ADMIN MAINT710 VMPSFS

   – ENROLL ADMIN MAINT710 VMSYS

   – ENROLL ADMIN MAINT710 VMSYSU

   – ENROLL ADMIN MAINT710 VMSYSR

3. Log off MIGMAINT.

# Step 4. Rework your local modifications

1. If you are upgrading a multimember SSI cluster and this is *not* the first member to be upgraded to z/VM V7.1, skip this step and go to Chapter 18, "Stop your production workload and back up your system," on page 183.

2. If your system has local modifications to any components that are upgraded with the new release, the local modification files were copied over to the new release service disks and the VM SYSLMOD table was updated to allow those local modifications to be applied to the new release. You need to review your local modifications and either rework them for the new release or else remove them. You must then update the VM SYSLMOD table with the status of each local modification listed. This must be completed before continuing to the second stage of your upgrade installation.

3. Log on to the maintenance user ID for your new release, MAINT710.

   ```
   logon maint710
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   The default password for MAINT710 is WD5JU8QP.

4. Determine if you have any local modifications by using the VMFUPDAT SYSLMOD command:

   ```
   vmfupdat syslmod
   ```

   If there are *no* local modifications that require rework, you'll see one of the following responses:

   **Response 1:**

   ```
   VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
   VMFUPX2309I There are no local modifications that require rework
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   **Response 2:**

   ```
   VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
   DMSCPY002E INPUT file VM SYSLMOD D not found
   VMFUPX0002E File VM SYSLMOD D not found
   Ready (00028); T=n.nn/n.nn hh:mm:ss
   ```

   If you receive one of these responses (meaning there are *no* local modifications that require rework), skip to substep "7" on page 182.

   If there are local modifications that require rework, you'll see this panel:

```
                       *** Update SYSLMOD Table Entries ***

    Set action code AC to C when rework is Complete.  Action code N means rework
    is Not Complete.  Use the lines at the bottom of the panel to mark rework
    complete for: ALL Localmods ( press PF6 ), any Localmods with ***** ( fill in
    a Modid ), or any Localmods for **************** ( fill in a Compname ).

    AC  Compname         Prodid     Modid    Part Fn  Part Fta   VVT Ft
    --  ---------------- ---------  -----    --------  --------   --------
    N   CMS              7VMCMS10   0002     DMSNGP    TXT        VVTLCL





    All local modifications PF6
    All local modifications with Modid *****
    All local modifications for Compname ****************
                                                       Page 1 of 1



              PF1=HELP  PF3/PF12=Quit  PF5=Process  PF6=All_Mods
```
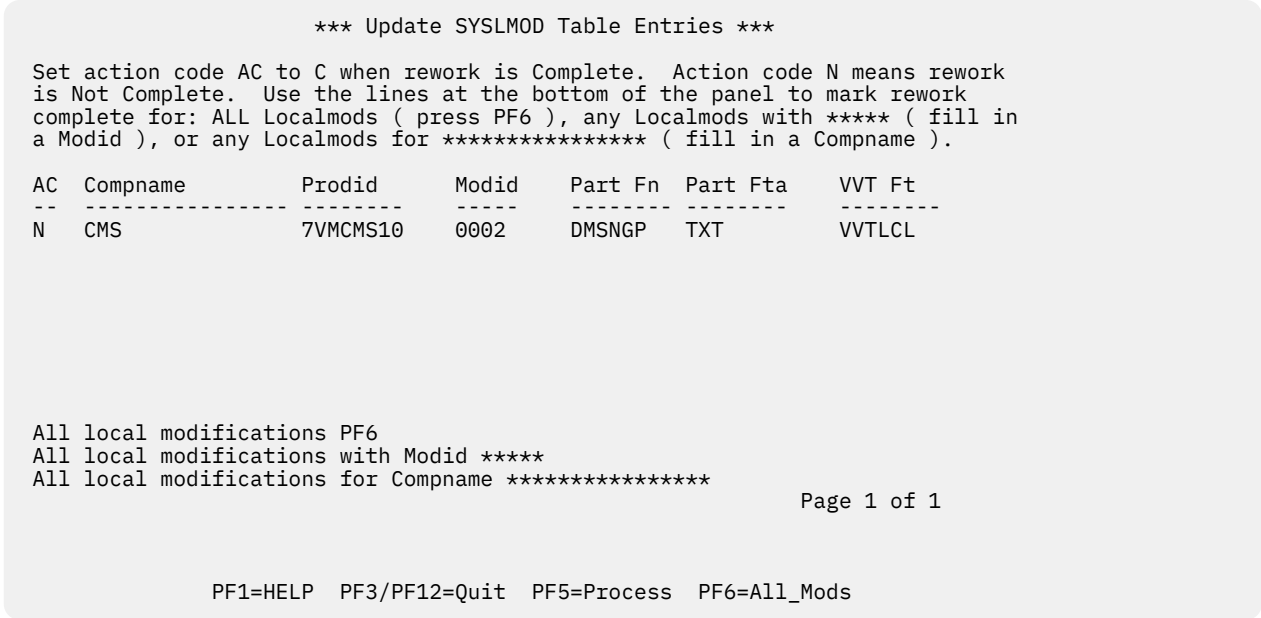
*Figure 18: Update SYSLMOD Table Entries Panel*

Review the information displayed on this panel and make a note of any parts with local modifications that you need to rework. Also make a note of any local modifications that should be removed. Press F3 or F12 to exit.

**Note:** The "Part Fta" displayed is an abbreviation for the generated object file type.

5. Use the LOCALMOD command to rework any local modifications. See the *z/VM: Service Guide* for instructions on using LOCALMOD for rework. Even if you do not make any changes, type FILE. If any local modifications need to be removed, use the VMFREM command. See the *z/VM: VMSES/E Introduction and Reference* for details on the VMFREM EXEC.

   **Note:** Do *not* run the SERVICE or PUT2PROD commands. The parts will be rebuilt during a later step.

   If you receive message VMFUPX2309I from the LOCALMOD command, skip to substep .

6. After all local modifications have been reworked or removed, update the status in the VM SYSLMOD table by once again invoking the VMFUPDAT SYSLMOD command.

   ```
   vmfupdat syslmod
   ```

   Mark each part according to the instructions on the panel (as shown in ). When all parts are marked, press F5 to process the status updates.

7. Log off MAINT710.

**What to do next**

Go to .

# Chapter 18. Stop your production workload and back up your system

**In this chapter, you will:**

- Stop your production workload and back up your system.

You are now ready to run the second stage of upgrade. In STAGE2, the new release code will be moved into production. You should shut down all your production workloads on the system you are upgrading (stop application servers, have end users log off, and so on) or move your production workload to another system or to another member of your SSI cluster.

You must *not* shut down your shared file system servers, and you must *not* shut down your directory manager or security manager servers, if you are running these products.

After you have shut down or relocated your production workload, you should create a backup of your system. STAGE2 processing will modify the following disks:

```
CBDIODSP 400
MAINT 190
MAINT 193
MAINT 19D
MAINT 19E
MAINT 401
MAINT 402
MAINT 990
MAINT CF1
MAINT710 51D
PERFSVM 201
PMAINT 41D
RACFVM 305
RACFVM 490
RSCS 401
RSCS 403
TCPMAINT 591
TCPMAINT 592
VMSERVP 191
VMSERVR 191
VMSERVS 191
VMSERVU 191
```

Because backing out STAGE2 requires that you restore the backup copy of your system, you should *not* make any directory or security changes on your system or any member of your SSI cluster after you create your backup.

**Note:** After you have created your backup, do not restart your production workloads on the member you are upgrading until you have completed your upgrade.

**What to do next**

Go to .

**Stop your production workload and back up your system**

# Chapter 19. Generate the STAGE2 changes file

**In this chapter, you will:**

- Run INSTUPGR to create the STAGE2 changes file.

**To generate the STAGE2 table, follow these steps:**

1. Make sure any user IDs that have write links to the system inventory and service disks, such as MAINT, MAINT640, MAINT710, and product installation IDs 6VM*xxx*40 and 7VM*xxx*10 are logged off of the system you are upgrading and all other members of your cluster before logging onto MIGMAINT.

2. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements. You must log off of MIGMAINT after STAGE1 processing is complete and log back on to MIGMAINT before running STAGE2 processing.

3. Access the 24CC minidisk as file mode C:

   ```
   access 24cc c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Run INSTUPGR to generate the $STAGE2$ $TABLE$ file, which will list the STAGE2 changes needed to upgrade your system. If you have not logged off non-essential user IDs, you will receive message IUGUPG8541 regarding users you might want to log off. Follow the instructions provided in the message.

   ```
   instupgr stage2 (prime

   IUG2FC8535I Creating temporary work copy of MAINT 190 minidisk
   z/VM DASD DUMP/RESTORE PROGRAM
   COPYING   MNT190
   COPYING DATA  01/06/13 AT 20.33.21  GMT FROM MNT190 TO MNT190

   INPUT {CYLINDER|BLOCK} EXTENTS      OUTPUT {CYLINDER|BLOCK} EXTENTS
         START        STOP               START        STOP
            0         nnnn                   0         nnnn


   END OF COPY
   END OF JOB

   IUGUPG8392I INSTUPGR ended successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

5. If any errors occur, review the error messages in file INSTUPGR $CONSLOG on MIGMAINT's 2CF0 minidisk (accessed as filemode E), correct the condition that is causing the error, and then go back to substep "4" on page 185. (The most current messages are at the bottom of the file.)

6. If INSTUPGR completes with no errors, but does have warnings, they will be displayed on the screen and also logged in the file $STAGE2$ $WRNFILE on MIGMAINT's 2CF0 disk (accessed as file mode E). Review the warnings and resolve any issues before continuing to Chapter 20, "Update your current system with the STAGE2 changes," on page 187.

   If you are upgrading a member of a multimember SSI cluster and this is *not* the first member, you might get warning messages regarding the DirMaint help files. You can ignore these messages.

**What to do next**

Continue to Chapter 20, "Update your current system with the STAGE2 changes," on page 187.

**Note:** During the next step, the IBM-supplied file pools - VMSYS, VMSYSR, VMSYSU, and VMPSFS - are restarted.

# Chapter 20. Update your current system with the STAGE2 changes

**In this chapter, you will:**

- Make the changes to your current system identified in the $STAGE2$ $TABLE$.

## Step 1. Choose your update option

In the previous step a file named $STAGE2$ $TABLE$ was generated on MIGMAINT's 2CF0 disk by the INSTUPGR command. This table contains a list of actions to be taken on your current system in order to complete the second stage of your system upgrade. Each entry in the table consists of one or more comment lines that describe an action to be taken and then one or more lines with more detailed information so that a program or a person could read the information and perform the action on a specific system.

There are three ways to complete these actions:

- Run the INSTUPGR command with operand STAGE2 and option COMMIT. The programs supplied by IBM will read the $STAGE2 $TABLE$ and perform all the actions listed. If you are using a directory manager program on your system and that program has provided an exit to work with the IBM upgrade code, that exit will be called to perform directory functions. If you edit your CP user directory manually, INSTUPGR will make the necessary changes to your CP user directory file, using the information you provided when you ran the INSTPLAN command.

- Manually update your system with the changes listed in the $STAGE2$ $TABLE$. You can perform all of the changes listed in the table and edit the table to mark them as complete. Note that some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table.

- Use a combination of the above two options. If you prefer, you can make some of the required changes manually and allow the INSTUPGR program to make the rest. Note that some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table and you must complete all the entries that precede the changes you select to make manually. To use this method, make the changes you wish to make yourself first and update the $STAGE2$ $TABLE$ to mark just those changes as complete. Then run the INSTUPGR command with operand STAGE2 and option COMMIT. The INSTUPGR program will make any changes to your system that you have not marked as completed and it will update the $STAGE2$ $TABLE$ and all other required status tables.

No matter which option you choose, the changes listed in the $STAGE2$ $TABLE$ file must be completed *before* moving on to Chapter 21, "Finish your upgrade installation," on page 193.

To use the INSTUPGR command to make your system changes, follow "Step 2. Use the INSTUPGR command to make your STAGE2 system changes " on page 188.

To make some of the changes to your system manually, follow "Step 3. Make some of the STAGE2 changes to your system manually " on page 190.

To make all of the changes to your system manually, follow "Step 4. Make all of the STAGE2 changes to your system manually " on page 191.

## Step 2. Use the INSTUPGR command to make your STAGE2 system changes

1. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Access the 24CC minidisk as file mode C.

```
access 24cc c
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Run INSTUPGR to upgrade your system with STAGE2 changes defined in the $STAGE2$ $TABLE$ file. If you have not logged off non-essential user IDs, you will receive message IUGUPG8541 regarding users you might want to log off. Follow the instructions provided in the message.

```
instupgr stage2 (commit
Now processing line 10 of nnn
Now processing line 20 of nnn
    ⋮
IUGUPG8529I The 190 disk on the current system has been upgraded.
IUGUPG8529I You must IPL the 190 disk to reaccess the new files,
IUGUPG8529I To complete commit processing:
IUGUPG8529I IPL 190
IUGUPG8529I ACCESS 24CC C
IUGUPG8529I and then re-issue:
IUGUPG8529I INSTUPGR STAGE2 (COMMIT
Ready; T=n.nn/n.nn hh:mm:ss
```

4. If any errors occur, review the error messages in file INSTUPGR $CONSLOG on MIGMAINT's 2CF0 minidisk (accessed as filemode E), correct the condition that is causing the error, and then go back to substep "3" on page 188.

   **Note:** Do *not* run SERVICE RESTART.

5. IPL the 190 disk to reaccess the files on your updated 190 disk. You might receive messages DMSWSP327I and DMSDCS1083E, related to segments. These messages can be ignored.

```
ipl 190
    ⋮
Ready; T=n.nn/n.nn hh:mm:ss
```

6. Access the 24CC minidisk as filemode C.

```
acc 24cc c
Ready; T=n.nn/n.nn hh:mm:ss
```

7. Reissue INSTUPGR to finish upgrading your system with STAGE2 changes defined in the $STAGE2$ $TABLE$ file.

```
instupgr stage2 (commit
Now processing line 10 of nnn
Now processing line 20 of nnn
    ⋮
IUGUPG8392I INSTUPGR ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

8. If any errors occur, review the error messages in file INSTUPGR $CONSLOG on MIGMAINT's 2CF0 minidisk (accessed as filemode E), correct the condition that is causing the error, and then go back to substep "7" on page 188.

**What to do next**

Go to Chapter 21, "Finish your upgrade installation," on page 193.

## Step 3. Make some of the STAGE2 changes to your system manually

1. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Access the 24CC minidisk as file mode C.

   ```
   access 24cc c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Access the 2CF0 minidisk as file mode E.

   ```
   access 2cf0 e
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Review the entries in the $STAGE2$ $TABLE$ to determine which changes you want to perform yourself.

   Some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table, so you must also manually complete all the entries that precede the changes you select to make manually.

   For each entry in the $STAGE2$ $TABLE$ that you selected to manually update on your system:

   a. See Appendix P, "$STAGE2$ $TABLE$ entry definitions," on page 275 for a description of the changes required for that entry.

   b. Make the changes to your system.

   c. Once an entry has been completed, update the entry in the $STAGE2$ $TABLE$ with a dash (-) in the first column to indicate that the entry has been completed.

5. Once you have completed all of the changes you selected and you have updated the $STAGE2$ $TABLE$, go to "Step 2. Use the INSTUPGR command to make your STAGE2 system changes " on page 188 to complete the rest of the entries.

# Step 4. Make all of the STAGE2 changes to your system manually

1. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.
2. Access the 24CC minidisk as file mode C.

   ```
   access 24cc c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Access the 2CF0 minidisk as file mode E.

   ```
   access 2cf0 e
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Review the entries in the $STAGE2$ $TABLE$.

   Some changes are dependent on earlier entries being complete. You must complete all entries in the order they appear in the table.

   For each entry in the $STAGE2$ $TABLE$:

   a. See Appendix P, "$STAGE2$ $TABLE$ entry definitions," on page 275 for a description of the changes required for that entry.

   b. Make the changes to your system.

   c. Once the entry has been completed, update the entry in the $STAGE2$ $TABLE$ with a dash (-) in the first column to indicate that the entry has been completed.

5. Once all the changes are complete and you have updated the $STAGE2$ $TABLE$, run the INSTUPGR command to update the appropriate status tables.

   ```
   instupgr stage2 (commit done
   IUGUPG8392I INSTUPGR ended successfully
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

**What to do next**

Go to Chapter 21, "Finish your upgrade installation," on page 193.

**Make all of the STAGE2 changes to your system manually**

# Chapter 21. Finish your upgrade installation

**In this chapter, you will:**

- Review directory considerations.
- Review SYSTEM CONFIG changes.
- Review *sysname* $WRNFILE messages.
- Shut down and IPL your upgraded system.
- Migrate LPs.
- Complete your upgrade.
- Review post-upgrade information.

## Step 1. Review directory considerations

1. If you are upgrading a member of a multimember SSI cluster, the user directory needs to be brought online for all members of the cluster.

   a. If you indicated that you edit your directory and allowed INSTUPGR to make the directory changes, you need to run DIRECTXA on all other members of the cluster.

   b. If you used DirMaint as your directory manager to make upgrade changes, the directory was already brought online for all members.

   c. If you used a different directory manager or made the directory updates manually, you need to make sure the directory is brought online for all other members of the cluster.

2. If you disabled minidisk password checking before starting the upgrade installation, you should verify that the disks added to the directory have minidisk passwords that adhere to your password guidelines, then re-enable minidisk password checking.

   New user IDs with disks:

   ```
   MAINT710
   7VMDIR10
   7VMPTK10
   7VMRAC10
   7VMRSC10
   7VMTCP10
   7VMHCD10
   ZHPM
   CSMSERVE
   MAINTCSM
   ```

3. The following minidisks were changed during INSTUPGR STAGE2 processing:

   ```
   CBDIODSP 400
   5684042J 2D2
   ```

   Verify that the security authorizations for these minidisks are still correct.

# Step 2. Review SYSTEM CONFIG changes

If you are upgrading member 2, 3, or 4 of a multimember SSI, skip to . Otherwise, continue with this step.

1. Access the disk where your SYSTEM CONFIG file resides. The default is PMAINT's CF0 disk.
2. Review the changes made to the SYSTEM CONFIG file to verify that they meet the conventions for your site.

   Changes were added to the end of the file and start with the block comment:

   ```
   /*****************************************************/
   /*           UPGRADE STATEMENTS for 710             */
   /* Any statements that follow this comment have been */
   /* added by the UPGRADE process. Do not add or remove */
   /* statements beyond this comment. Doing so will     */
   /* negate your ability to use the upgrade backout    */
   /* automation or functions.                          */
   /*****************************************************/
   ```

   Each statement added is delineated by the comments:

   ```
   /*  UPGRn Statement was added by INSTUPGR STAGE1 (COMMIT  */
   ⋮
   /*  UPGRn END       */
   ```

   There are three types of statements that may have been added:

   - The addition of the release volumes to the User_Volume_List:

     ```
     User_Volume_List  710RL1  710RL2
     ```

   - An edevice statement, if your system is installed in FBA DASD. If the device details could be determined, a real edevice statement was added:

     ```
     edevice 4076  type fba attr SCSI fcp_dev 4F60,
     wwpn 5005076306134411 lun 4011407600000000
     ```

     If the details could not be determined, a comment was added:

     ```
     /* edevice 4087 is not an emulated device */
     ```

     Review the edevice statements to verify or correct the statements for your devices.

   - A PRODUCT statement was added for the new release products and features. The state of the new products and features is the same as the state of the equivalent product or feature from your old release. For example, if Performance Toolkit was not enabled on z/VM V6.4, it will not be enabled on z/VM V7.1:

     ```
     PRODUCT PRODID 7VMPTK10 STATE DISABLED DESCRIPTION
     '00/00/00.00:00:00.$UPGRADE PERFORMANCE TOOLKIT FOR VM'
     ```

3. When you have reviewed the upgrade statements that were added to the SYSTEM CONFIG file, you can leave the statements where they are or you can move them up, to match your organization of the file. After you have moved the statements, you can delete the following comments:

```
/*****************************************************/
/* UPGRADE STATEMENTS for 710                        */
/* Any statements that follow this comment have been */
/* added by the UPGRADE process. Do not add or remove*/
/* statements beyond this comment. Doing so will     */
/* negate your ability to use the upgrade backout    */
/* automation or functions.                          */
/*****************************************************/

/* UPGRn Statement was added by INSTUPGR STAGE1 (COMMIT */
   ⋮
/* UPGRn END */
```

## Step 3. Review *sysname* $WRNFILE messages

**Note:** If the PARTNOTIFY keyword entries were done manually, you were instructed to make a note of the messages received, to be addressed after the upgrade was complete. This is the point at which you should make any necessary changes.

1. Log on to the MIGMAINT user ID on the system being upgraded.

2. Access the 2CF0 minidisk as file mode E.

```
access 2cf0 e
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Review the *sysname* $WRNFILE file on the 2CF0 disk (where *sysname* is the system name of the system you are upgrading).

   The *sysname* $WRNFILE file might contain the following messages:

   **IUG1EX8301W**
   Device details could not be determined to add an edevice statement to the SYSTEM CONFIG file. Review the statement in the SYSTEM CONFIG file and, if needed, add the real edevice statement details.

   **IUG1EX8528W**
   An APAR exists to a part that resides on the PMAINT 551 disk on your current system that is not included in the part on the new release. After the upgrade installation is complete, apply the APAR to the new release, if required.

   **IUG2EX8536W**
   A customizable file was not copied because the target disk could not be obtained in write mode. Access the source and target disks and copy the file.

   **IUG2EX8542W**
   The new administrator userid was not added to the DMSPARMS file for a IBM filepool because the DMSPARMs file was not found on the servers 191 minidisk. Access the DMSPARMS file listed in the message and add the required ADMIN userids to the ADMIN statement.

   **IUG2EX8555W**
   A customizable file that was changed on your current system from the IBM default has been updated by IBM on the new release. Review the current and new files and merge your current file with the new file updated by IBM.

4. If the *sysname* $WRNFILE contains any of these messages, review the actions described in *z/VM: CP Messages and Codes* and decide if you need to make any additional changes to your upgraded system before moving to the next step.

## Step 4. Shut down and IPL your upgraded system

1. If you are not running with a security manager:

    a. Shut down this system or member.

    b. IPL the upgraded system or member.

    c. Go to "Step 5. Migrate LPs" on page 200.

2. If you are running with a security manager other than RACF/VM:

    a. Consult the documentation for your security manager to see if there are any special requirements before IPLing.

    b. Shut down this system or member.

    c. IPL the upgraded system or member.

    d. Go to "Step 5. Migrate LPs" on page 200.

3. If you are running with the RACF/VM security manager, note that the test disks for RACF/VM were updated with the new level of code. To complete the upgrade of RACF/VM, you will need to perform the following steps:

    a. Log on to OPERATOR on the system you are upgrading and force RACFVM.

    ```
    FORCE RACFVM
    ```

    b. Use the XAUTOLOG command to log on the test RACF/VM server, RACMAINT:

    ```
    XAUTOLOG RACMAINT
    ```

    c. Disconnect from OPERATOR.

    d. Log on to the MIGMAINT user ID on the system you are upgrading.

    e. Using DDR and VMFCOPY, copy the RACF/VM test build disks to the RACF/VM production disks:

       1) Use DDR to copy the 7VMRAC10 590 disk to the RACFVM 490 disk:

       ```
       LINK 7VMRAC10 590 1590 RR
       LINK RACFVM   490 1490 MR
       DDR
            SYSPRINT CONS
            INPUT  1590 DASD RAC590
            OUTPUT 1490 DASD RCF490
            COPY ALL
             ENTER
       ACCESS 1490 G
       FORMAT 1490 G (LABEL
       RCF490
       QUERY DISK G
       RELEASE G (DETACH
       DETACH 1590
       ```

       2) Use VMFERASE and VMFCOPY to update the RACFVM 305 disk:

       ```
       LINK 7VMRAC10 505 1505 RR
       LINK RACFVM 305 1305 MR
       ACCESS 1505 G
       ACCESS 1305 H
       VMFERASE PROD 6VMRAC40%RACF FROM H
       VMFCOPY * * G = = H (PRODID 7VMRAC10%RACF SPRODID 7VMRAC10%RACF OLDDATE REPLACE
       RELEASE G (DETACH
       RELEASE H (DETACH
       ```

    f. Shut down your system. Do not use the SHUTDOWN REIPL command.

g. IPL the upgraded system.

h. While logged on to an authorized user ID such as OPERATOR, force RACFVM.

 i. XAUTOLOG RACMAINT.

 j. Log on to MAINT710.

k. Run PUT2PROD for RACF:

```
put2prod racf
```

 l. Log off MAINT710.

m. Log on to OPERATOR and restart the production RACF server, RACFVM:

```
LOGON OPERATOR
FORCE RACMAINT
XAUTOLOG RACFVM
```

# Step 5. Migrate LPs

If you are upgrading the second, third, or fourth member of a multimember SSI cluster, skip to "Step 6. Complete your upgrade" on page 204.

The 51D disk that is owned by MAINT710 has not been updated for LPs that were not pre-installed with z/VM (for example, C/C++ or the High Level Assembler). You will need to use MIGR51D to move the VMSES/E inventory files for the LPs from MAINT640's 51D disk to MAINT710's 51D disk.

1. Log on as MAINT710.

   ```
   logon maint710
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   The default password for MAINT710 is WD5JU8QP.

2. Create a backup copy of the your new system software inventory disk (default is 51D) using your site's normal backup procedures.

3. Link to the MAINT640 51D disk.

   ```
   link maint640 51d fff rr
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Access the software inventory FFF minidisk as file mode Z.

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

5. Access the new system 51D minidisk as file mode D.

   ```
   access 51D d
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

6. Access the 493 minidisk as file mode W.

   ```
   access 493 w
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

7. Run MIGR51D to update the system software inventory files.

   ```
   migr51d
   IUGMIX8478R 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 Migration panel is displayed.

```
          *** 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
-- ---------------- -------- --------- ----------------------------------
M  OSA             40SASF40 BUILT     OSASF for VM

M  CCXXSFS         5654A22C BUILT     IBM XL C/C++ for z/VM Compiler in
                                      SFS
M  DFSMSVM         VSM221B  BUILT     DFSMSVM FOR VM/ESA 1.2

M  HLASM           5696234J BUILT     High Level Assembler for z/OS &
                                      z/VM & z/VSE
D  AVS             6VMAVS40 APPLIED   AVS component for z/VM 6.4.0

D  CMS             6VMCMS40 APPLIED   CMS component for z/VM 6.4.0

D  CP              6VMCPR40 APPLIED   CP component for Z/VM 6.4.0

D  DIRM            6VMDIR40 BUILT     Install/service DirMaint using
                                      minidisk
                                                   Page 1 of 3

             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 a sample. Your panels will not list the same products, action codes, statuses, and descriptions.

   2) Products that are preselected as D (Do Not Migrate) should not be changed.

   3) If you are upgrading a system that still uses OSA-Express3 cards, you should leave the action code for OSA/SF as M (Migrate). If your hardware does not include any OSA-Express3 cards, you can change the action code to D (Do Not Migrate).

   4) If a product is not supported on the new z/VM release, you should enter D (Do Not Migrate) for that product.

   5) 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. On the final panel, press F5 to process the product migration information and display the Segment Migration panel. Depending on the size of your software inventory files, it could 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
    -- --------      --------  ---------------- ---------------- ----------------
    P  CCNSEG   Old-> 5654A22C CCXXSFS          3000-7BFF SR     PPF(CCPLUS
             New->
       ******** Mig-> 5654A22C CCXXSFS          3000-7BFF SR     PPF(CCPLUS
    D  CMSBAM   Old-> 6VMCMS40 CMS              B0D-B37 SR       PPF(SERVP2P
             New-> 7VMCMS10 CMS              B0D-B37 SR       PPF(SERVP2P
       ******** Mig-> 7VMCMS10 CMS              B0D-B37 SR       PPF(SERVP2P
    D  CMSDOS   Old-> 6VMCMS40 CMS              B00-B0C SR       PPF(SERVP2P
             New-> 7VMCMS10 CMS              B00-B0C SR       PPF(SERVP2P
       ******** Mig-> 7VMCMS10 CMS              B00-B0C SR       PPF(SERVP2P
    D  CMSFILES Old-> 6VMCMS40 CMS              1900-1BFF SR     PPF(SERVP2P
             New-> 7VMCMS10 CMS              1900-1BFF SR     PPF(SERVP2P
       ******** Mig-> 7VMCMS10 CMS              1900-1BFF SR     PPF(SERVP2P
                                                                Page 1 of 5


            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.

    **Note:** With z/VM V6.3, segments HELPSEG and NLSAMENG were deleted. If these segments are present on your current system, you should not migrate them.

    e. Press F8 to select action codes for all Software Inventory Segment Migration panels before continuing to the next step.

    f. On the final panel, press F5 to process. Depending on the size of your software inventory files, it could take several minutes to process.

8. Release the software inventory disk for your current system (attached as FFF and accessed as file mode Z.

```
release z (detach
```

9. MIGR51D updated the V7.1 VMSES/E system software inventory files on your new 51D minidisk to reflect the licensed products installed on your old system that you chose to migrate. You might also need to migrate the segments associated with each licensed product reflected in the new system software inventory files. See the documentation for each licensed product for information about the segments required. If none of the products have segments or you are not using them, skip to "Step 6. Complete your upgrade" on page 204.

If the licensed product segments are built by VMSES/E, you must sign on to MAINT710 and do the following to update some of the other segment files on the system software inventory disk:

a. Issue VMFSGMAP.

```
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.

For example, if you need to rebuild segments for the C/C++ product, you would log on to the C/C++ maintenance ID and enter the following:

```
vmfsetup ccplus ccxx
vmfbld ppf segbld esasegs segblist ccnseg (serviced
```

If you receive message VMFBDS2003W indicating that the SYSTEM SEGID file has been updated, you should log on to MAINT710 and enter the following commands to update the MAINT 190 disk and re-save CMS:

```
link maint 190 190 mr
acc 190 t
copy system segid d = = t (olddate replace
PUT2PROD SAVECMS
```

# Step 6. Complete your upgrade

**Note:** To upgrade the next member, complete this step and then return to Chapter 12, "Step 1. Select your upgrade installation source" on page 106. If this is the last member to be upgraded, complete this step and then continue on to "Step 7. Perform post-upgrade tasks" on page 206.

1. Review the latest installation information in the Preventive Service Planning (PSP) bucket to make sure all required tasks are completed.

2. By default, the EREP 3.5.0 production code resides on the MAINT*vrm* 201 minidisk. This disk contains the level of EREP that was shipped with z/VM 710 (EREP 3.5.0, SDO-1600). If you are upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI, and you had previously installed service beyond SDO-1600, you need to reinstall it on your upgraded system or copy the files from your prior-release MAINT640 201 minidisk.

3. If you are upgrading the first member of a multimember SSI, you should make sure that all release volumes (default labels 710RL*n*) are available to all of the remaining members of the SSI.

4. If your SSI cluster runs second-level and if this was the first member of a multimember SSI cluster to be upgraded to this release, add the new release volumes to the directory entries for the user IDs where you IPL your SSI members, in the same manner as the current release volumes.

   For each release volume added:

   a. Add an MDISK statement to the directory entry for the user ID of the SSI member that will own the DASD.

   b. Add a LINK statement to the directory entries for each of the user IDs where you IPL your additional SSI members.

   After you have updated the directory entries for all of the user IDs where you IPL your SSI members:

   a. Shut down all members of your SSI

   b. Log off the user IDs

   c. Log the user IDs back on

   d. IPL the members of your SSI.

   This will pick up the new release volumes. When you IPL the members of your SSI, they will have access to the new volumes.

5. The SAPL record on the IPL volume was *not* rewritten with the z/VM 7.1.0 level of SALIPL. This will result in the SAPL screen displaying z/VM 6.4.0. If you want the release that is displayed on the SAPL screen to be upgraded to z/VM 7.1.0, rewrite your SALIPL record using the z/VM 7.1.0 level of the SALIPL MODULE. See Chapter 2, "Using the Stand-Alone Program Loader", in *z/VM: System Operation* for information about rewriting the SALIPL record.

6. z/VM includes a stand-alone dump utility that you tailor according to your installation's configuration. After you install z/VM, you should create the stand-alone dump utility and place it on DASD for emergency use. If, after a system failure, CP cannot create an abend dump, you can use the stand-alone dump on DASD to dump all of real storage.

   For instructions on creating a stand-alone dump utility, see Chapter 11, "The Stand-Alone Dump Utility", in *z/VM: CP Planning and Administration*.

   **Note:** Do not use a stand-alone dump utility created from a previous release of z/VM to attempt to dump your V7.1 system.

7. If you added links in existing user definitions to disks owned by current release-specific user IDs, such as MAINT640, 6VMTCP40, or 6VMDIR40, you need to evaluate if any of these links need to be updated in the existing user definitions for the new release-specific user IDs, such as MAINT710, 7VMTCP10, and 7VMDIR10.

8. Any volumes used to install the work system that were not added to your current system can be returned to the DASD pool.

    a. If you are upgrading the second, third, or fourth member of a multimember SSI, then all of the volumes used to install the work system can be returned to the DASD pool.

    b. If you are upgrading a non-SSI, a one-member SSI, or the first member of a multimember SSI, then all of the volumes used to install the work system except the release volumes, default labels 710RL*x*, can be returned to the DASD pool.

9. If this was the first member of a multimember SSI to be upgraded to this release, the help disks (MAINT 19D, 401, and 402) were updated on the member being upgraded with the new release help files for DirMaint. Although all members were upgraded to use the new level of DirMaint, the DirMaint help files on the other members do not match the new level. You can either leave the help disks as the are and they will be upgraded as you upgrade each of the remaining members, or you can manually upgrade the help disks. To manually upgrade the help disks, do the following on each member:

    a. Log on to MAINT710.

    b. Link and access the DirMaint test help disk as X.

```
LINK 7VMDIR10 29D 29D RR
ACCESS 29D X
```

    c. For each help disk to be updated (19D, 401, and 402):

       1) Link and access the disk to be updated as Z, in write mode.

```
LINK MAINT addr addr MR
ACCESS addr Z
```

       2) Use VMFERASE to erase the 640 DirMaint help files.

```
VMFERASE PROD 6VMDIR40%DIRM FROM Z
```

       3) Use VMFCOPY to copy the new release DirMaint help files. If updating the 19D disk, do *not* include the UPCASE option on the VMFCOPY command.

```
VMFCOPY * * X = = Z (PRODID 7VMDIR10%DIRM SPRODID 7VMDIR10%DIRM OLDDATE REPLACE UPCASE
```

# Step 7. Perform post-upgrade tasks

1. Pre-installed products that did *not* change release levels from z/VM V6.4 to z/VM V7.1 were *not* updated on your upgraded system. Any service on the 710 installation RSU for these products was not applied to your system. These products are:

   - LE 6.2.0
   - ICKDSF 1.17.0

   You should compare the GA service levels with the service levels for these products on your current system. For any products with GA service levels that are higher, you should install the additional service for those products.

   - See the following web page for information about the levels of service that are shipped on the base:

     IBM: z/VM Installation Resources (www.vm.ibm.com/install)

     The installation level of service is contained in the installation RSU SERVLINK, which was copied to the MAINT710 500 minidisk by the upgrade procedure.

2. You should create a backup copy of your current system, following your normal backup procedures.

3. **User directory default passwords:** The following new user IDs were added to the USER DIRECT during upgrade installation:

   ```
   IDENTITY        CSMSERVE        LBYONLY (the default LBYONLY user is IBMVM1)
   USER            CSMWORK         WD5JU8QP
   USER            MAINTCSM        WD5JU8QP
   USER            MAINT710        WD5JU8QP
   IDENTITY        ZHPM            LBYONLY (the default LBYONLY user is IBMVM1)
   USER            7VMDIR10        WD5JU8QP
   USER            7VMHCD10        WD5JU8QP
   USER            7VMPTK10        WD5JU8QP
   USER            7VMRAC10        WD5JU8QP
   USER            7VMRSC10        WD5JU8QP
   USER            7VMTCP10        NOLOG
   ```

4. For backout purposes, the following disks that were deleted or moved during the upgrade installation process were not formatted to remove residual data.

   After the system has been upgraded, to remove residual data, you might want to format the extents where these minidisks were defined before the system was upgraded.

   - Disks deleted:

         IDENTITY OPNCLOUD 191
         IDENTITY OPNCLOUD 101
         IDENTITY OPNCLOUD 102
         IDENTITY ZVMLXTS 191
         IDENTITY ZVMLXTS D4C
         IDENTITY ZVMLXTS D4D
         IDENTITY ZVMMAPLX 150

   - Disks with size change:

         IDENTITY CBDIODSP 400
         USER 5684042J 2D2

5. The file CPB710 MODULE was copied to the MAINT CF1 minidisk. This is the z/VM V7.1 GA base CPLOAD MODULE. The old release CPBASE MODULE should be erased from the MAINT CF1 minidisk.

6. If you upgraded a non-SSI, a one-member SSI, or the *first* member of a multimember SSI, and you are using DirMaint as your directory manager, your system or SSI cluster has been updated to run DirMaint function level 710 on all members. You should now disable the prior DirMaint function level, 640.

   a. Set 6VMDIR40 to disabled on the currently-running system:

```
SET PRODUCT 6VMDIR40 STATE DISABLED
```

   b. Edit the SYSTEM CONFIG file and change the PRODUCT statement for 6VMDIR40 from enabled to disabled.

   c. In a multimember SSI, disable 6VMDIR40 on all additional members of the SSI cluster.

```
AT membername CMD SET PRODUCT 6VMDIR40 STATE DISABLED
```

7. Review program directories for the pre-installed licensed products and features to determine if any additional configuration is required by the new release.

**Perform post-upgrade tasks**

# Chapter 22. Remove the obsolete release

**In this chapter, you will:**

- Remove the obsolete release.

If this was the last member to be upgraded from the old release, when you are sure you will no longer be using the old release:

1. The user IDs associated with the old release level of the products that will no longer be used can be removed from the user directory and from the VMPSFS and VMSYS file pools:

   ```
   MAINT640
   6VMDIR40
   6VMPTK40
   6VMRAC40
   6VMRSC40
   6VMTCP40
   6VMHCD40
   ```

   **Note:** Do *not* delete 6VMLEN20.

2. The following user IDs are no longer shipped with z/VM and can be deleted from the user directory and from the VMPSFS and VMSYS file pools when they are no longer needed:

   ```
   IMAP
   IMAPAUTH
   4OSASF40
   OSADMIN1
   OSADMIN2
   OSADMIN3
   OSAMAINT
   OSASF
   ```

3. Old release volumes should be checked to see if any required disks remain on the volumes before they are returned to the DASD pool.

4. Any products associated with the old release that will no longer be used should be set to disabled. Because the old release components have been removed from the VMSES/E control files, you should:

   - Use the CP SET PRODUCT command to set the status on your running system.
   - Edit the SYSTEM CONFIG file to update the PRODUCT statement to set the old release components to DISABLED or delete the PRODUCT statement.

   ```
   6VMDIR40
   6VMPTK40
   6VMRAC40
   6VMRSC40
   ```

5. The system configuration files can be updated to remove the old release volumes and products.

**Remove the obsolete release**

# Appendix A. 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 and components that are installed on the system.

Table 21 on page 211 lists the z/VM preinstalled components, features, and products, in the usual service order.

*Table 21: Preinstalled components, features, and products, in preferred service order*

| Product | Component name |
| --- | --- |
| 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 |
| Directory Maintenance Facility | DIRM |
| RACF Security Server for z/VM | RACF |
| Performance Toolkit for VM | PERFTK |
| HCD and HCM for z/VM | VMHCD |

**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 listed in Table 21 on page 211 or any other component defined in the VM SYSSUF table.

**Example:** In this example, 1601 represents the RSU level that you would use when ordering service for CP.

```
VMFSRV2195I SERVICE CP STATUS
VMFSRV2760I SERVICE processing started
VMFSRV1225I CP (7VMCPR10%CP) status:
VMFSRV1225I    Service Level    RSU-1601
```

**211**

```
VMFSRV1225I    Production Level  sysname.RSU-1601
VMFSRV2760I SERVICE processing completed successfully
```

For more information, see the SERVICE command in *z/VM: VMSES/E Introduction and Reference*.

# Appendix B. Migrate 51D from the old system

If you used your own procedures to migrate to z/VM 710, you might still want to use the MIGR51D command to migrate program product information from your current system inventory disk to your new system.

You should *not* use this appendix if you used the upgrade installation procedure. If you are performing an upgrade installation, the 51D will be migrated as part of those procedures.

MIGR51D only moves product inventory information. All user IDs and product data must be moved to your new system manually.

To run MIGR51D as an independent activity, complete the steps listed here.

1. Create a backup of the z/VM version 7 release 1 system software inventory disk (default is MAINT710 51D) using your site's normal backup procedures.

2. On your new system, obtain access to the system software inventory files (MAINT 51D) on your current system.

   a. If your new system can be IPLed as a second-level system on your current system:

      1) Log on to MAINT on your current system.

      2) Define the current software inventory disk as address FFF.

      ```
      define 51D FFF
      DASD 0FFF DEFINED
      Ready; T=n.nn/n.nn hh:mm:ss
      ```

      The default software inventory disk is MAINT 51D. If your software inventory disk has an address other than 51D, substitute that disk address for 51D.

      3) IPL the new system second level.

      4) Disconnect from the operator.

      5) Log on to MAINT710.

      6) Attach the software inventory 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
      ```

      7) Access the software inventory FFF minidisk as file mode Z.

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

      8) Access the new system 51D minidisk as file mode D.

      ```
      access 51D d
      Ready; T=n.nn/n.nn hh:mm:ss
      ```

      9) Access the 493 minidisk as file mode W.

      ```
      access 493 w
      Ready; T=n.nn/n.nn hh:mm:ss
      ```

   b. If your new system is running first level:

      1) See your system programmer for assistance in making a copy of the current system software inventory files accessible on your new system.

2) On your new system, create a new minidisk owned by the MAINT710 user ID, FFF, to store the software inventory files from your current system.

3) Send all of the files from the current system 51D to MAINT710 on the new system. You might need to use FTP to send the files, or, if it is installed, you can use RSCS.

If you use FTP, the files can be loaded directly to the new MAINT710 FFF minidisk. After the files are loaded, log on to MAINT710 and access the software inventory FFF minidisk as file mode Z.

If you use RSCS, enter:

```
logon maint710
access FFF z
```

To display all of the files in the reader, enter:

```
rdrlist
```

For each file from the current system 51D, type:

```
receive / = = z
```

on the line, and then press ENTER .

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
```

3. Run MIGR51D to update the system software inventory files.

```
migr51d
IUGMIX8478R 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 Migration panel is displayed.

```
            *** 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
-- ---------------- -------- ---------- ---------------------------------
M  CCXXSFS          5654A22C BUILT      IBM XL C/C++ for z/VM Compiler in
                                        SFS
M  DFSMSVM          VSM221B  BUILT      DFSMSVM FOR VM/ESA 1.2

M  HLASM            5696234J BUILT      High Level Assembler for z/OS &
                                        z/VM & z/VSE
D  AVS              6VMAVS40 APPLIED    AVS component for z/VM 6.4.0

D  CMS              6VMCMS40 APPLIED    CMS component for z/VM 6.4.0

D  CP               6VMCPR40 APPLIED    CP component for Z/VM 6.4.0

D  DIRM             6VMDIR40 BUILT      Install/service DirMaint using
                                        minidisk
                                                    Page 1 of 3

            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. On the final panel, 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.

**Migrate 51D from the old system**

```
           *** 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
-- --------       --------  ----------------  ----------------  ----------------
P  CCNSEG    Old-> 5654A22C CCXXSFS          3000-7BFF SR     PPF(CCPLUS
           New->
   ******** Mig-> 5654A22C CCXXSFS          3000-7BFF SR     PPF(CCPLUS
D  CMSBAM    Old-> 6VMCMS40 CMS              B0D-B37 SR       PPF(SERVP2P
           New-> 7VMCMS10 CMS              B0D-B37 SR       PPF(SERVP2P
   ******** Mig-> 7VMCMS10 CMS              B0D-B37 SR       PPF(SERVP2P
D  CMSDOS    Old-> 6VMCMS40 CMS              B00-B0C SR       PPF(SERVP2P
           New-> 7VMCMS10 CMS              B00-B0C SR       PPF(SERVP2P
   ******** Mig-> 7VMCMS10 CMS              B00-B0C SR       PPF(SERVP2P
D  CMSFILES Old-> 6VMCMS40 CMS              1900-1BFF SR     PPF(SERVP2P
           New-> 7VMCMS10 CMS              1900-1BFF SR     PPF(SERVP2P
   ******** Mig-> 7VMCMS10 CMS              1900-1BFF SR     PPF(SERVP2P
                                                             Page 1 of 5


           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.

     **Note:** With z/VM V6.3, segments HELPSEG and NLSAMENG were deleted. If these segments are present on your current system, you should not migrate them.

   e. Press F8 to select action codes for all Software Inventory Segment Migration panels before continuing to the next step.

   f. On the final panel, press F5 to process. Depending on the size of your software inventory files, it could take several minutes to process.

4. Release the software inventory disk for your current system (attached as FFF and accessed as filemode Z.

```
release z
```

5. MIGR51D updated the V7.1 VMSES/E system software inventory files on your new 51D minidisk to reflect the licensed products installed on your old system that you chose to migrate. You might also need to migrate the segments associated with each licensed product reflected in the new system software inventory files. See the documentation for each licensed product for information about the segments required. If none of the products have segments or you are not using them, skip to step "6" on page 217.

   If the licensed product segments are built by VMSES/E, you must sign on to MAINT710 and do the following to update some of the other segment files on the system software inventory disk:

   a. Issue VMFSGMAP.

```
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.

Before you can use the VMFBLD command to build the licensed product segments from the corresponding licensed product installation user IDs. You must first move the user IDs and product data to your new system. After all user IDs and data have been moved, you can use VMSES/E on your new system to build the program product segments. Follow the information in the licensed product program directories.

For example, if you need to rebuild segments for the C/C++ product, you would log on to the C/C++ maintenance ID and enter the following:

```
vmfsetup ccplus ccxx
vmfbld ppf segbld esasegs segblist ccnseg (serviced
```

If you receive message VMFBDS2003W indicating that the SYSTEM SEGID file has been updated, you should log on to MAINT710 and enter the following commands to update the MAINT 190 disk and re-save CMS:

```
link maint 190 190 mr
acc 190 t
copy system segid d = = t (olddate replace
PUT2PROD SAVECMS
```

6. Product inventory migration is complete. If you haven't done so yet, you must now move all user IDs and product data to your new system. Refer to the product program directories for information about user ID and data disks.

# Appendix C. 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/E)
  - Group Control System (GCS)
  - Transparent Services Access Facility (TSAF)
  - APPC/VM VTAM® Support (AVS)
  - Language Environment (LE release level 6.2.0)
  - 3800 Model-3 Printer Image Library
  - UCENG Help - Uppercase English 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)
- 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 common parameter disk (PMAINT CF0). These files contain the system configuration data used by CP.

   The CP system control file (SYSTEM CONFIG) describes the system residence device (M0xRES) and various system parameters, defining the configuration of your system.

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 system parm disks (MAINT CF1 and CF3 disks).

4. The CP nucleus is IPLed with the system default language, mixed-case American English (AMENG) or uppercase English (UCENG), which was selected during installation.

5. The default USER DIRECT file on the PMAINT 2CC minidisk contains entries defining each virtual machine (user) permitted to log on to your system.

   If there is no machine mode defined for a user ID, the default machine mode definition is ESA. 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 USER DIRECT file contains default passwords for all user IDs defined by the installation process. All passwords that are not NOLOG, AUTOONLY, or LBYONLY have been set to the default of WD5JU8QP. Before moving your system into production, you should make sure all passwords conform to your corporate security policies.

   The following user IDs have a password of NOLOG, AUTOONLY, or LBYONLY:

   **NOLOG**

   > 6VMLEN20

   **AUTOONLY**

   > VSMWORK1
   > VSMWORK2
   > VSMWORK3
   > RXAGENT1
   > DATAMOVE
   > DATAMOV2
   > DATAMOV3
   > DATAMOV4
   > DIRMAINT
   > DIRMSAT
   > DIRMSAT2
   > DIRMSAT3
   > DIRMSAT4
   > VSMGUARD
   > PERSMAPI
   > DTCSMAPI
   > LOHCOST
   > ZVMLXTS
   > OPNCLOUD

   **LBYONLY**

   > SSL
   > SSLDCSSM

8. The z/VM system contains system definition files with sample information and default parameters. You can modify the files to define your system configuration. See "Configuring Your System" in *z/VM: CP Planning and Administration* for more information.

9. CP ships several CP Sample Utility Programs to help you configure your system once installation is complete. They are located on the MAINT*vrm* 2C2 minidisk or in the VMPSFS:MAINT*vrm*.CPDV.SAMPLE. directory. For more information about 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 local modification procedure. 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. To see a local modification example for CMSINST, see *z/VM: Service Guide*.

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
   ```

```
   ⋮
FILE FILENAME FILETYPE MINSIZE  BEGPAG ENDPAG TYPE CL #USERS PARMREGS VMGROUP
nnnn ZCMS     NSS      0000256K 00000  0000D  EW   A  nnnnn  00-15    NO
                                00020  00023  EW
                                00F00  013FF  SR
nnnn CMS      NSS      0000256K 00000  0000D  EW   A  nnnnn  00-15    NO
                                00020  00023  EW
                                00F00  013FF  SR
nnnn GCS      NSS      0000256K 00000  0000C  EW   R  nnnnn  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  nnnnn  N/A      N/A
nnnn CMSBAM   DCSS-M   N/A      00B0D  00B37  SR   A  nnnnn  N/A      N/A
nnnn DOSBAM   DCSS-S   N/A      00B00  00B37  --   A  nnnnn  N/A      N/A
nnnn MONDCSS  CPDCSS   N/A      09000  0CFFF  SC   R  nnnnn  N/A      N/A
nnnn GUICSLIB DCSS     N/A      01F00  01FFF  SR   A  nnnnn  N/A      N/A
nnnn CMSFILES DCSS     N/A      01900  01BFF  SR   A  nnnnn  N/A      N/A
nnnn SVM      DCSS     N/A      01900  019FF  SR   A  nnnnn  N/A      N/A
nnnn CMSPIPES DCSS     N/A      02100  022FF  SR   A  nnnnn  N/A      N/A
nnnn CMSVMLIB DCSS     N/A      01700  017FF  SR   A  nnnnn  N/A      N/A
nnnn INSTSEG  DCSS     N/A      01400  016FF  SR   A  nnnnn  N/A      N/A
nnnn PERFOUT  DCSS     N/A      08A00  08FFF  SN   A  nnnnn  N/A      N/A
nnnn DOSINST  DCSS     N/A      00900  0090F  SR   A  nnnnn  N/A      N/A
nnnn SCEE     DCSS     N/A      00900  009FF  SR   A  nnnnn  N/A      N/A
nnnn SCEEX    DCSS     N/A      02100  029FF  SR   A  nnnnn  N/A      N/A
nnnn NLSKANJI DCSS     N/A      02000  020FF  SR   A  nnnnn  N/A      N/A
nnnn NLSUCENG DCSS     N/A      02000  020FF  SR   A  nnnnn  N/A      N/A
nnnn SMAPIOUT DCSS     N/A      08400  089FF  SN   A  nnnnn  N/A      N/A
Ready; T=n.nn/n.nn hh:mm:ss
```

## VMSYS, VMSYSU, VMSYSR, and VMPSFS file pool defaults

The z/VM system incorporates four prebuilt file pools:

VMSYS

- System/member specific file pool

  – BFS directories defined for Shell and Utilities, and for SSL

  – System specific work disks in SFS

- Managed by the VMSERVS server machine

- Administrators – MAINT, MAINT710, MIGMAINT, VSMGUARD, VSMWORK1, VSMWORK2, VSMWORK3, and 7VMTCP10

**Note:** User IDs always enrolled in the VMSYS file pool are: DTCSMAPI, GSKADMIN, GSKSSLDB, LDAPSRV, MAINT, MAINT710, OPERATNS, PERSMAPI, ROOT, SSLSERV, SSL00001, SSL00002, SSL00003, SSL00004, SSL00005, TCPMAINT, VMRMSVM, VSMEVSRV, VSMGUARD, VSMREQIN, VSMREQI6, VSMREQIU, VSMWORK1, VSMWORK2, and VSMWORK3.

VMSYSU

- User data repository file pool

  – SFS storage space for general use by the system user population

  – SFS directories defined for use by SSL pool servers

- Managed by the VMSERVU server machine

- Administrators – MAINT, MAINT710, and MIGMAINT

**Note:** User IDs always enrolled in the VMSYSU file pool are: ETC, MAINT, MAINT710, TMP, and VAR.

VMSYSR

- Coordinated resource recovery (CRR) file pool

- Managed by the VMSERVR server machine

- Administrators – MAINT, MAINT710, and MIGMAINT

VMPSFS

- Product service file pool
- Managed by the VMSERVP server machine
- Administrators – MAINT, MAINT710, AUTOLOG1, AUTOLOG2, MIGMAINT, VSMGUARD, VSMWORK1, VSMWORK2, and VSMWORK3
- MAINT710's default file pool is set to VMPSFS

**Note:** User IDs always enrolled in the VMPSFS file pool are: BLDSEG, DATAMOVE, DATAMOV2, DATAMOV3, DATAMOV4, DIRMAINT, DIRMSAT, DIRMSAT2, DIRMSAT3, DIRMSAT4, MAINT, MAINT710, and VSMGUARD.

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*.

## Additional file pool enrollments

If you chose to load these products into the file pool, the following user IDs are also enrolled in the following file pools:

*Table 22: VMSYS/VMPSFS File Pool User IDs*

| Product | File Pool | User IDs |
|---------|-----------|----------|
| VM | VMPSFS | 6VMLEN20 |
| RSCS | VMPSFS | 7VMRSC10 |
| | VMPSFS | RSCSAUTH |
| | VMPSFS | RSCSDNS |
| | VMPSFS | XCHANGE |
| | VMSYS | 7VMRSC10 |
| | VMSYS | XCHANGE |
| TCP/IP | VMPSFS | 7VMTCP10 |
| ICKDSF | VMPSFS | 5684042J |
| DIRM | VMPSFS | 7VMDIR10 |
| RACF | VMPSFS | 7VMRAC10 |
| PERFTK | VMPSFS | 7VMPTK10 |
| | VMPSFS | PERFSVM |
| | VMPSFS | PERSMAPI |
| | VMSYS | PERFSVM |
| VMHCD | VMPSFS | 7VMHCD10 |
| | VMPSFS | CBDIODSP |

# Appendix D. Back up the named saved systems and segments to tape

1. Log on the system or member you are backing up as MAINT710.

   ```
   logon maint710
   ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   The default password for MAINT710 is WD5JU8QP.

2. Attach a tape drive (*tapeaddr*) to MAINT710 at virtual device address 181.

   ```
   attach tapeaddr * 181
   TAPE 0181 ATTACHED
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Mount a tape, to be used for backup, on the tape drive attached at virtual device address 181.

4. Spool the console.

   ```
   spool
   console * start
   ```

5. 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***
       The address of the tape drive attached to MAINT710.

   ```
   DUMPING  tapeaddr :        nnn  FILES, PAGES      nnnn    nn% COMPLETE
    ⋮
   DUMPING  tapeaddr :        nnn  FILES, PAGES      nnnn    nn% COMPLETE
   RDR FILE fileno1 SENT FROM MAINT710 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
   ```

   The messages from SPXTAPE tell you that the files are being dumped to tape.

   ```
   RDR FILE fileno2 SENT FROM MAINT710 CON WAS fileno2 RECS nnnn CPY  001 T NOHOLD
   NOKEEP
   ```

*fileno1*
> The 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*
> The file number of the command summary log file. The command summary log file records the progress and status of the SPXTAPE DUMP operation.

6. 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 G, "Restore the named saved systems and segments from tape," on page 233.

7. If you have a multimember SSI cluster, repeat substep "1" on page 225 through substep "6" on page 226 for each remaining member to back up the named saved systems and segments for that member.

# Appendix E. Back up the z/VM system to tape

If you do not have a tape drive or if you want to back up to DASD, see Appendix F, "Back up the z/VM system to DASD," on page 231.

1. Log on the system or member you are going to back up to tape as MAINT710.

   ```
   logon maint710
   ⋮
   Ready; T=n.nn/n.nn hh:mm:ss
   ```
   The default password for MAINT710 is WD5JU8QP.

2. Make sure you have a link to all of the full-pack minidisks for all of the volumes you are backing up, as per the following table.

| Default label | Full-pack minidisk | Owner | Member-specific or Common |
|---|---|---|---|
| M01RES | 123 | MAINT | Member-specific |
| 710RL1 | 131 | MAINT710 | Common |
| 710RL2 | 132 | MAINT710 | Common |
| VMCOM1 | 141 | PMAINT | Common |

```
q v 123
DASD 0123 3390 M01RES R/O nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss

q v 131-132
DASD 0131 3390 710RL1 R/W nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
DASD 0132 3390 710RL2 R/W nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss

q v 141
DASD 0141 3390 VMCOM1 R/O nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Attach a tape drive (*tapeaddr*) to MAINT710 at virtual device address 181.

   ```
   attach tapeaddr * 181
   TAPE 0181 ATTACHED
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

4. Mount a tape, to be used for back up, on the tape drive attached at virtual device address 181.

5. Access the 193 minidisk as file mode Z.

   ```
   access 193 z
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

6. Load the DDRXA utility to tape.

   ```
   utility utiltape ddrxa
   Rewind complete
   IUGWUT8317I MOVING IPL DDRXA TO TAPE
   IUGWUT8318I THE IPL DDRXA PROGRAM IS
               ON TAPE FILE NUMBER 1
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

7. Rewind the backup tape attached at virtual device address 181.

```
rewind 181
Rewind complete
```

8. 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.

```
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.

*devno*
　　The full-pack minidisk address of the volume you are backing up.

*volid*
　　The volume label (M01RES, for example).

```
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 at virtual device address 181 and an alternate tape attached at virtual device address 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.

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.

9. 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.

10. Press Enter to end the program.

```
 ENTER 

END OF JOB
```

11. IPL CMS.

```
#cp ipl cms
z/VM V7.1.0    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 .

12. If you have a multimember SSI cluster, repeat substep through substep for each remaining member to back up the member-specific volumes.

**Back up the z/VM system to tape**

# Appendix F. Back up the z/VM system to DASD

If you want to store a backup to tape, see .

1. Log on the system or member you are going to back up to DASD as MAINT710.

```
logon maint710
:
Ready; T=n.nn/n.nn hh:mm:ss
```

The default password for MAINT710 is WD5JU8QP.

2. Make sure you have a link to all of the full-pack minidisks for all of the volumes you are backing up, as per the following table.

| Default label | Full-pack minidisk | Owner | Member-specific or Common |
|---|---|---|---|
| M01RES | 123 | MAINT | Member-specific |
| 710RL1 | 131 | MAINT710 | Common |
| 710RL2 | 132 | MAINT710 | Common |
| VMCOM1 | 141 | PMAINT | Common |

```
q v 123
DASD 0123 3390 M01RES R/O nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss

q v 131-132
DASD 0131 3390 710RL1 R/W nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
DASD 0132 3390 710RL2 R/W nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss

q v 141
DASD 0141 3390 VMCOM1 R/O nnnn CYL ON DASD nnnn SUBCHANNEL = nnnn
Ready; T=n.nn/n.nn hh:mm:ss
```

3. Access the 193 minidisk as file mode Z.

```
access 193 z
Ready; T=n.nn/n.nn hh:mm:ss
```

4. 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.

*devno*
> The full-pack minidisk address of the volume you are backing up.

*volid*
> The volume label (M01RES, for example).

```
output devno dasd scratch
ENTER:
```

You need a separate volume for each volume you are backing up.

*devno*
> The full-pack minidisk address of the volume you are using to back up.

```
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.

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:
```

When DDR finishes dumping the volume, it prompts.

5. If you have any more DASD volumes to back up, repeat the INPUT, OUTPUT, and COPY ALL statements for each volume.

6. Press Enter to end the program.

```
 ENTER 

END OF JOB
```

7. If you have a multimember SSI cluster, repeat substep through substep for each remaining member to back up the member-specific volumes.

# Appendix G. Restore the named saved systems and segments from tape

If you 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 MAINT710.

   ```
   logon maint710
   :
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

   The default password for MAINT710 is WD5JU8QP.

2. Attach a tape drive (*tapeaddr*) to MAINT710.

   ```
   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***
   The address of the tape drive attached to MAINT710.

   ```
   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 MAINT710 CON WAS fileno RECS nnnn CPY  001 T NOHOLD
   NOKEEP
   ```

   ***fileno1***
   The 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.

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 MAINT710 CON WAS fileno RECS nnnn CPY  001 T NOHOLD
NOKEEP
```

*fileno2*
> The 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 about the SPXTAPE command, see *z/VM: CP Commands and Utilities Reference*.

7. IPL the CMS named saved system.

```
ipl cmsname
:
z/VM V7.1.0    yyyy-mm-dd hh:mm

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

*cmsname*
> The IBM-supplied system name (CMS) or the name you defined in DMSNGP on the SYSNAME statement.

If you changed the version heading, your own heading will appear.

# Appendix H. Restore the z/VM system backup from tape

**Note:** This procedure requires a full-pack minidisk be defined in the CP directory, USER DIRECT, for each volume you are restoring.

If you created a backup of your new z/VM system on tape during your system installation using the instructions in Appendix E, "Back up the z/VM system to tape," on page 227, you can perform the following steps to restore the system.

1. Mount the backup tape on a tape drive.
2. IPL the tape drive, to restore the system to DASD.

   ```
   ipl tapeaddr clear
   ```

   **tapeaddr**
   The address of the tape drive.

3. This will invoke DDRXA, which will restore the contents of the tape to DASD.

   ```
   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**
   The 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 at virtual device address 181 and an alternate tape attached at virtual device address 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
   ```

```
output devaddr dasd volid
ENTER:
```

This output statement specifies the DASD device to which you are restoring the system.

*devaddr*
> The 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 (M0*x*S01), 123 (M0*x*RES), 124 (M0*x*W01), 125 (M0*x*W02), ...

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
```

The exact cylinder extents vary according to the device type.

```
ENTER:
⋮
```

Repeat INPUT, OUTPUT, and RESTORE statements for each DASD you are restoring.

```
ENTER:

 ENTER

END OF JOB
```

When DDRXA finishes, it prompts you with `ENTER:`. Press Enter to end the program.

**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 and 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 I. Recover a file or minidisk

1. Log on as MAINT710:

```
logon maint710
⋮
Ready; T=n.nn/n.nn hh:mm:ss
```

The default password for MAINT710 is WD5JU8QP.

2. If you want to recover an entire minidisk, skip this step and go to step "3" on page 237.

   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 step "3" on page 237. Otherwise, check the minidisk map file. If you loaded z/VM to the file pool, the minidisk map file is on the directory VMPSFS:MAINT710.CPDV.OBJECT. Access this directory in place of the 194 disk.

```
access 194 z
Ready; T=n.nn/n.nn hh:mm:ss

xedit minidisk map z
⋮
quit
Ready; T=n.nn/n.nn hh:mm:ss
```

The MINIDISK MAP file lists the minidisks shipped on the z/VM system and the files contained on each minidisk. Look at MINIDISK MAP to determine which minidisk contains the file you want to recover.

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 4CC disk for the size of the minidisk you want to recover.)

```
define [t3390 or vfb-512] loadaddr
mdisksize
DASD loadaddr DEFINED
Ready; T=n.nn/n.nn hh:mm:ss
```

**loadaddr**
   The address of the temporary disk.

**mdisksize**
   The 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. 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*
> The IP address or FTP host name.

*userid*
> The user ID that is used to log on to the FTP server.

*password*
> The password that is used to log on to the FTP server.

*ftpdrct*
> The 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\**
> The 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*
> The address to which you are restoring the minidisk.

**Notes:**

1) To recover a minidisk and overlay the existing disk, you must link the existing minidisk in write mode. For example, enter the LINK CMSBATCH 195 801 WR command.

2) If the minidisk belongs to MAINT710, *cuu* is the actual minidisk address. If the minidisk does not belong to MAINT710, *cuu* is the alias address. See the $ITEMMD$ $TABLE$ on the 4CC 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 existing 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 file mode 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*
> The address of the minidisk to be recovered from the DVD.

*restcmd*
> **ECKDREST** (for 3390) or **MDREST** (for FBA).

*loadaddr*
> The address to which you are recovering the minidisk.

**Notes:**

1) To recover a minidisk and overlay the existing disk, you must link the existing minidisk in write mode. For example, enter the LINK CMSBATCH 195 801 WR command.

2) If the minidisk belongs to MAINT710, *cuu* is the actual minidisk address. If the minidisk does not belong to MAINT710, *cuu* is the alias address. See the $ITEMMD$ $TABLE$ on the 4CC 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 existing disk linked. If *loadaddr* is not specified, a temporary disk (T-disk) is created.

5. 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*
The address of the temporary disk.

*fm-1*
Any available file mode.

```
access mdiskaddr fm-2
Ready; T=n.nn/n.nn hh:mm:ss
```

*mdiskaddr*
The 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*

The file name of the file you want to recover.

*ft*

The file type of the file you want to recover. Repeat the COPYFILE command for each file you want to recover.

# Appendix J. Using a terminal emulator to upload files

**Note:** Using a terminal emulator to upload files can take several hours to complete.

The following procedure will guide you through using IBM Personal Communications to upload files from the z/VM product and RSU DVDs or electronic envelopes to a minidisk on your VM system. 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. Wherever the DVD path is referenced, you can substitute the path to the workstation hard drive where you have loaded the electronic envelopes.

**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 make sure file attributes are maintained.

1. Start a new Personal Communications session and log on to a user ID 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 . 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 product DVD in the DVD drive.

   **Note:** If your DVD drive is not labeled drive letter D, copy the 710prod.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 710prod.srl file.

         **Note:** If you created a modified 710prod.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 z/VM installation RSU DVD. Substitute one of the following .srl files in place of the 710prod.srl file used for the z/VM product DVD.

```
If installing to:     Substitute:
3390                  71ckdrsu.srl
FBA                   71fbarsu.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
```

7. Verify that all of the files transferred have a **fixed** (F) file format and a logical record length (LRECL) of **1028**.

   If the file format or logical record length of any file is incorrect, then the files were uploaded incorrectly. Erase all of the files from the minidisk and upload the contents of the z/VM product DVD and the z/VM installation RSU DVD again, using the correct parameters:

```
filelist * image w

Cmd Filename Filetype Fm Format Lrecl Records Blocks Date Time
    xxx22200 IMAGE    W1 F       1028  nnnn    nnn    dddd ttttt
  ⋮
```

8. Return to Chapter 4, "Traditional installation for second level," Step 3a, substep or Chapter 13, "Set up for your upgrade installation," Step 3, substep .

# Appendix K. Using a VM FTP server to load files to a VM minidisk

The following procedure will load the z/VM product and RSU DVDs or electronic envelopes to a minidisk on your VM system.

You must have an FTP server running on the VM system and a user ID on VM that owns a 7000-cylinder minidisk. The minidisk should be formatted with 4K blocks. The user ID should be logged off while you are loading the installation files.

**Note:** For this example, the user ID is MIGMAINT and the minidisk is 291.

1. If loading the files from the electronic envelopes to a directory on your workstation, make a note of the directory path name. Load the files from the z/VM product electronic envelope to the directory. Load the files from the z/VM Stacked RSU electronic envelope to the same directory. If there are any duplicate files, replace them with the files from the RSU.

2. Make sure the minidisk where you will load the files is not attached in write mode by any user ID on VM.

3. Open a DOS window on your workstation and change the drive to the path where you have loaded the z/VM product and RSU files.

4. FTP the product files to the VM minidisk.

   a. Start the FTP session with your z/VM host:

   ```
   ftp -i VM host address
    ENTER
   ```

   b. Enter the VM user ID that can access the minidisk in write mode and the password for that ID:

   ```
   User (x.x.x.x:(none)):  MIGMAINT
    ENTER
   331 Send password please.
   Password: WD5JU8QP
    ENTER
   230-VM ID logged in; working directory = MIGMAINT 191
   ```

   c. Change the working directory on your VM host to the minidisk where you want to load the files (note that there is a period between the user ID and minidisk address):

   ```
   ftp> cd MIGMAINT.291
    ENTER
   250 Working directory is MIGMAINT 291
   ```

   d. Your local directory path should already be the path to the directory where you loaded the VM files.

   e. Set the file transfer mode to binary and the record format and length to fixed 1028:

   ```
   ftp> binary
    ENTER
   200 Representation type is IMAGE.
   ftp> quote site fixrec 1028
    ENTER
   200 Site command was accepted.
   ```

   f. Put the installation files on the VM minidisk:

```
ftp> mput ddd*
 ENTER
```

> ***ddd***
> **CKD** for 3390 or **FBA** for FBA (SCSI).

All of the files in the directory that start with *ddd* will now start to transfer. This could take some time, depending on the speed of your connection. When all of the files have transferred, the DOS window will return with the FTP prompt (`ftp>`). Enter `quit` to end the FTP session.

5. Verify that all of the files loaded from the directory have a fixed (F) file format and a logical record length (LRECL) of 1028. If the file format or logical record length of any file is incorrect, the files were copied incorrectly. Erase all of the files from the minidisk and load the contents of the directory again, using the correct parameters. Repeat step "4" on page 243.

   Also verify that all of the files were loaded. The 710PROD DVDIMAGE file lists the number of image files that should have been copied. In the `Size=`*nnnn* field, *nnnn* is the number of $DEFAULT files on the minidisk from the product. The RSU deliverable contains the 71CKDRSU and 71FBARSU DVDIMAGE files, which list the number of RSU image files for each DASD type. Add the number of files from the 710PROD DVDIMAGE file and the number of files from the applicable RSU DVDIMAGE file. Verify that the numbers are the same. If the numbers are not the same, there are files missing. If there are files missing, determine which files were not loaded and repeat step "4" on page 243 for those files (use the PUT command for individual files instead of MPUT.)

   a. Log on to MIGMAINT.

   b. Access the 291 disk:

   ```
   access 291 w
   ```

   c. List all of the files that were loaded to verify the format and LRECL:

   ```
   filelist * * w

   MIGMAINT FILELIST W0 V 169 Trunc=169 Size=nnnn Line=1 Col=1 Alt=0
   Cmd  Filename Filetype Fm Format Lrecl   Records    Blocks  Date      Time
        ddd500nn $DEFAULT W1 F       1028       nnnn       nnnn dddd      tttt
        ddd500nn $DEFAULT W1 F       1028       nnnn       nnnn dddd      tttt
        :
   ```

6. Press **F3** to leave the `FILELIST` screen.

7. Rename the files that you loaded to the correct file type:

   ```
   rename * $DEFAULT W = IMAGE W
   ```

8. Return to Chapter 4, "Traditional installation for second level," Step 3a, substep "15" on page 41 or Chapter 13, "Set up for your upgrade installation," Step 3, substep "15" on page 143.

# Appendix L. Basic TCP/IP connectivity worksheets

Gather the TCP/IP configuration information from your network system administrator and record the information in the following worksheets.

If you are installing a multimember SSI, the TCP/IP configuration must be done separately on each SSI member. Therefore, you will need a separate set of configuration worksheets for each member (1, 2, 3, 4) on which you will create a minimal TCP/IP configuration.

In these worksheets, a number in parentheses that follows a field description – the 20 in `Host name (20)`, for example – is the maximum length for that field.

**QDIO layer 2**

If you are using QDIO layer 2 for the network interface in IPWIZARD, you need to add or update the VMLAN MACPREFIX statement in your SYSTEM CONFIG file to define a unique MAC address prefix for this system. If you are installing a multimember SSI, the VMLAN MACPREFIX and USERPREFIX must be configured in each SSI member. For more information, see "Media Access Control (MAC) Address" in *z/VM: Connectivity* and the VMLAN statement in *z/VM: CP Planning and Administration*. If changes are made to your SYSTEM CONFIG file, the z/VM image must be re-IPLed so that the statements take effect.

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

## Member 1

| Table 23: Installation TCP/IP Configuration Worksheet – Member 1. | |
|---|---|
| **Member 1:** | |
| z/VM user ID of the z/VM TCP/IP stack virtual machine:<br><br>(The default user ID is TCPIP. If you change this user ID, you must define the user ID in your user directory before issuing IPWIZARD.) | |
| Host name (20): | |
| Domain name (40): | |
| DNS IP address (up to three addresses): | 1)<br>_____<br>2)<br>_____<br>3)<br>_____ |
| Gateway IP address : | |
| Interface name (16): | |
| Device number: | |
| IP address: | |
| IPv4 subnet mask (15) or IPv6 prefix length (3): | |
| (IPv4 only) Path MTU discovery: | __ Enabled<br>__ Disabled |
| Choose the interface you will be using (select one): | __ QDIO (layer 2) – see "QDIO layer 2" on page 245<br>__ QDIO (layer 3)<br>__ LCS<br>__ HiperSockets™<br>__ CTC<br><br>See the appropriate interface worksheet to record additional information.<br><br>IPv6 is available only for QDIO and HiperSockets devices. |

| Table 24: QDIO Interface Worksheet – Member 1. | |
|---|---|
| **Member 1:** | |
| Router type (select one): | __ Primary<br>__ Secondary<br>__ None<br><br>Router type is not available for layer 2 transport. |
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum transmission unit (MTU) size: | |
| (Optional) Port number: | |
| (Optional) VLAN ID: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

| Table 25: LCS Interface Worksheet – Member 1. | |
|---|---|
| **Member 1:** | |
| Port/adapter number: | |
| Maximum transmission unit (MTU) size: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

| Table 26: HiperSockets Interface Worksheet – Member 1. | |
|---|---|
| **Member 1:** | |
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum frame size (MFS) in kilobytes: | |
| (Optional) VLAN ID: | |

| Table 27: CTC Interface Worksheet – Member 1. | |
|---|---|
| **Member 1:** | |
| Write channel device number (select one): | __ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel.<br>__ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel plus one. |
| Maximum transmission unit (MTU) size: | |
| Peer IP address: | |

# Member 2

| *Table 28: Installation TCP/IP Configuration Worksheet – Member 2.* | |
|---|---|
| **Member 2:** | |
| z/VM user ID of the z/VM TCP/IP stack virtual machine:<br><br>(The default user ID is TCPIP. If you change this user ID, you must define the user ID in your user directory before issuing IPWIZARD.) | |
| Host name (20): | |
| Domain name (40): | |
| DNS IP address (up to three addresses): | 1)<br><br>_____<br>2)<br><br>_____<br>3)<br><br>_____ |
| Gateway IP address : | |
| Interface name (16): | |
| Device number: | |
| IP address: | |
| IPv4 subnet mask (15) or IPv6 prefix length (3): | |
| (IPv4 only) Path MTU discovery: | \_\_ Enabled<br>\_\_ Disabled |
| Choose the interface you will be using (select one): | \_\_ QDIO (layer 2) – see "QDIO layer 2" on page 245<br>\_\_ QDIO (layer 3)<br>\_\_ LCS<br>\_\_ HiperSockets<br>\_\_ CTC<br><br>See the appropriate interface worksheet to record additional information.<br><br>IPv6 is available only for QDIO and HiperSockets devices. |

| Table 29: QDIO Interface Worksheet – Member 2. | |
|---|---|
| **Member 2:** | |
| Router type (select one): | __ Primary<br>__ Secondary<br>__ None<br><br>Router type is not available for layer 2 transport. |
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum transmission unit (MTU) size: | |
| (Optional) Port number: | |
| (Optional) VLAN ID: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

| Table 30: LCS Interface Worksheet – Member 2. | |
|---|---|
| **Member 2:** | |
| Port/adapter number: | |
| Maximum transmission unit (MTU) size: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

| Table 31: HiperSockets Interface Worksheet – Member 2. | |
|---|---|
| **Member 2:** | |
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum frame size (MFS) in kilobytes: | |
| (Optional) VLAN ID: | |

| Table 32: CTC Interface Worksheet – Member 2. | |
|---|---|
| **Member 2:** | |
| Write channel device number (select one): | __ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel.<br>__ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel plus one. |
| Maximum transmission unit (MTU) size: | |
| Peer IP address: | |

## Member 3

| Table 33: Installation TCP/IP Configuration Worksheet – Member 3. | |
|---|---|
| **Member 3:** | |
| z/VM user ID of the z/VM TCP/IP stack virtual machine:<br><br>(The default user ID is TCPIP. If you change this user ID, you must define the user ID in your user directory before issuing IPWIZARD.) | |
| Host name (20): | |
| Domain name (40): | |
| DNS IP address (up to three addresses): | 1)<br>––––––––––––––––––––––––––––––––––––––––<br>2)<br>––––––––––––––––––––––––––––––––––––––––<br>3)<br>–––––––––––––––––––––––––––––––––––––––– |
| Gateway IP address : | |
| Interface name (16): | |
| Device number: | |
| IP address: | |
| IPv4 subnet mask (15) or IPv6 prefix length (3): | |
| (IPv4 only) Path MTU discovery: | __ Enabled<br>__ Disabled |
| Choose the interface you will be using (select one): | __ QDIO (layer 2) – see "QDIO layer 2" on page 245<br>__ QDIO (layer 3)<br>__ LCS<br>__ HiperSockets<br>__ CTC<br><br>See the appropriate interface worksheet to record additional information.<br><br>IPv6 is available only for QDIO and HiperSockets devices. |

*Table 34: QDIO Interface Worksheet – Member 3.*

| Member 3: | |
|---|---|
| Router type (select one): | __ Primary<br>__ Secondary<br>__ None<br><br>Router type is not available for layer 2 transport. |
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum transmission unit (MTU) size: | |
| (Optional) Port number: | |
| (Optional) VLAN ID: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

*Table 35: LCS Interface Worksheet – Member 3.*

| Member 3: | |
|---|---|
| Port/adapter number: | |
| Maximum transmission unit (MTU) size: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

*Table 36: HiperSockets Interface Worksheet – Member 3.*

| Member 3: | |
|---|---|
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum frame size (MFS) in kilobytes: | |
| (Optional) VLAN ID: | |

*Table 37: CTC Interface Worksheet – Member 3.*

| Member 3: | |
|---|---|
| Write channel device number (select one): | __ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel.<br>__ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel plus one. |
| Maximum transmission unit (MTU) size: | |
| Peer IP address: | |

# Member 4

| Table 38: Installation TCP/IP Configuration Worksheet – Member 4. | |
|---|---|
| **Member 4:** | |
| z/VM user ID of the z/VM TCP/IP stack virtual machine:<br><br>(The default user ID is TCPIP. If you change this user ID, you must define the user ID in your user directory before issuing IPWIZARD.) | |
| Host name (20): | |
| Domain name (40): | |
| DNS IP address (up to three addresses): | 1)<br><br>_____<br>2)<br><br>_____<br>3)<br><br>_____ |
| Gateway IP address : | |
| Interface name (16): | |
| Device number: | |
| IP address: | |
| IPv4 subnet mask (15) or IPv6 prefix length (3): | |
| (IPv4 only) Path MTU discovery: | __ Enabled<br>__ Disabled |
| Choose the interface you will be using (select one): | __ QDIO (layer 2) – see "QDIO layer 2" on page 245<br>__ QDIO (layer 3)<br>__ LCS<br>__ HiperSockets<br>__ CTC<br><br>See the appropriate interface worksheet to record additional information.<br><br>IPv6 is available only for QDIO and HiperSockets devices. |

*Table 39: QDIO Interface Worksheet – Member 4.*

| Member 4: | |
|---|---|
| Router type (select one): | __ Primary<br>__ Secondary<br>__ None<br><br>Router type is not available for layer 2 transport. |
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum transmission unit (MTU) size: | |
| (Optional) Port number: | |
| (Optional) VLAN ID: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

*Table 40: LCS Interface Worksheet – Member 4.*

| Member 4: | |
|---|---|
| Port/adapter number: | |
| Maximum transmission unit (MTU) size: | |
| **Note:** As of V6.2, only Ethernet network types are allowed. | |

*Table 41: HiperSockets Interface Worksheet – Member 4.*

| Member 4: | |
|---|---|
| (IPv6 only) Router advertisements: | __ On<br>__ Off |
| Maximum frame size (MFS) in kilobytes: | |
| (Optional) VLAN ID: | |

*Table 42: CTC Interface Worksheet – Member 4.*

| Member 4: | |
|---|---|
| Write channel device number (select one): | __ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel.<br>__ This choice contains the device number specified on the main z/VM TCP/IP Configuration Wizard panel plus one. |
| Maximum transmission unit (MTU) size: | |
| Peer IP address: | |

# Appendix M. IPLing z/VM from an SCSI device

When IPLing z/VM from an SCSI device, the following parameters need to be entered in the HMC Load window

1. Select the **radio button for SCSI**.
2. In the **Load address** field, enter the address of the FCP device (that is, the FCP address, not the EDEV address) used to define the residence volume for the system you are IPLing.
3. In the **Load parameter** field, enter the address of your system console – either SYSG for the Integrated 3270 Console on the HMC, or some other address (for example, 20) that represents your system console.
4. In the **Worldwide port name** field, enter the worldwide port name (WWPN) used to define the residence volume for the system you are IPLing.
5. In the **Logical unit number** field, enter the 16-character logical unit number (LUN) of the residence volume for the system you are IPLing.
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**. Confirmation prompts will be displayed.

Once you have confirmed your IPL, the z/VM Stand Alone Program Loader (SAPL) panel will be displayed on the console that you specified.

1. Verify that your FCP device address is displayed in the **DEVICE NUMBER** field.
2. In the **IPL PARAMETERS** area, enter "**cons=**" followed by your console address, and "**pdvol=**" followed by the EDEVICE number used to define the residence volume for the system you are IPLing.
3. When you have entered all your data, press F10 to complete your IPL.

# Appendix N. IBM-supplied user IDs with upgrade restrictions

Upgrade installation restricts changes for the user IDs that were shipped with z/VM 6.4 that are included in this appendix. Do not make any changes to the following user IDs except to increase the size of a minidisk, if required.

- User IDs defined with the USER statement:

```
BLDCMS        DIRMAINT      SYSADMIN      6VMPTK40
BLDNUC        DIRMSAT       SYSMAINT      6VMRAC40
BLDRACF       DIRMSAT2      VMSERVP       6VMRSC40
BLDSEG        DIRMSAT3      4OSASF40      6VMTCP40
CMS1          DIRMSAT4      5684042J
DATAMOVE      IBMUSER       6VMDIR40
DATAMOV2      MAINT640      6VMHCD40
DATAMOV3      PMAINT        6VMLEN20
DATAMOV4
```

- User IDs defined with the IDENTITY statement:

```
AUDITOR       MAINT         REXECD        VMSERVR
AUTOLOG1      MIGMAINT      RSCS          VMSERVS
AUTOLOG2      MONWRITE      RSCSAUTH      VMSERVU
AVSVM         MPROUTE       RSCSDNS       VMUTIL
CBDIODSP      OPERATNS      RXAGENT1      VSMEVSRV
CMSBATCH      OPERATOR      SMTP          VSMGUARD
DISKACNT      OPERSYMP      SNMPD         VSMREQIN
DTCSMAPI      OPNCLOUD      SNMPQE        VSMREQIU
DTCVSW1       OP1           SNMPSUBA      VSMREQI6
DTCVSW2       OSADMIN1      SSL           VSMWORK1
DTCVSW3       OSADMIN2      SSLDCSSM      VSMWORK2
DTCVSW4       OSADMIN3      SYSDUMP1      VSMWORK3
EREP          OSAMAINT      SYSMON        XCHANGE
FTPSERVE      OSASF         TCPIP         ZVMLXTS
GCS           PERFSVM       TCPMAINT      ZVMMAPLX
GSKADMIN      PERSMAPI      TSAFVM
IMAP          PORTMAP       UFTD
IMAPAUTH      RACFSMF       VMNFS
LDAPSRV       RACFVM        VMRMADMN
LGLOPR        RACMAINT      VMRMSVM
LOHCOST
```

# Appendix O. $STAGE1$ $TABLE$ entry definitions

This appendix lists the keywords that can be found in the entries in the $STAGE1$ $TABLE$ and describes the steps to update your system manually with the changes listed for each entry.

Note that the order of the entries in the $STAGE1$ $TABLE$ is the order in which the actions should be performed.

```
 1  ATTVOLS
 2  DDRMDISK DEFMDISK
 3  DDRMDISK EXT3MDISK
 4  DIRECT   ADDMDISK
 5  DIRECT   ADDMDISKNB
 6  DIRECT   ADDMEMIDENT
 7  DIRECT   ADDMEMSUB
 8  DIRECT   ADDNEWUSER
 9  DIRECT   ADDRELLINK
10  DIRECT   COMMON
11  DIRECT   DELRELLINK
12  FILEPOOL ADDADMIN
13  FILEPOOL ADDRELFS
14  FILEPOOL ADDSPACE
15  FILEPOOL CREATDIR
16  FILEPOOL ENROLLUSR
17  FILEPOOL GRANTAUTH
18  LOCALMOD COPYLCL
19  LOCALMOD UPDTSLMOD
20  SETPRODUCT
21  SYSCONF ADDEDEV
22  SYSCONF ADDPRODUCT
23  SYSCONF ADDRELVOL
```

These entries are described below:

**1**

The ATTVOLS keyword attaches a new volume to your running system.

**Syntax:**

```
ATTVOLS ATTACH dasdaddr SYSTEM label
```

**Example:** Attach the new volume with address CECB and label UGT3R1 to the system:

```
ATTVOLS ATTACH CECB SYSTEM UGT3R1
```

**Manual Instructions:** Issue the attach command that follows the ATTVOLS keyword. In this example:

```
ATTACH CECB SYSTEM UGT3R1
```

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

**2**

The DDRMDISK DEFMDISK keywords copy a minidisk from the work system to a disk that was added on the system being upgraded, using the DDR command. The disk on the work system is accessed by using the DEFINE MDISK command, and then the contents are copied to the extents defined for the new disk on the system being upgraded.

**Syntax:**

```
DDRMDISK DEFMDISK USER|IDENTITY useriddiskaddr
```

**Example:** Copy the contents of the VSMGUARD A91 minidisk from the work system volume to the VSMGUARD A91 minidisk that was added to the system being upgraded:

```
DDRMDISK DEFMDISK IDENTITY VSMGUARD A91
```

**Manual Instructions:**

1. Issue the DEFINE MDISK command to define a minidisk overlay to the disk on the work system volume:

   a. Locate the minidisk statement in the user directory file for the work system (INSTUPGR $USERDIR) located on the MIGMAINT 2CF0 disk. If the user type is IDENTITY, locate the minidisk statement contained in the SUBCONFIG that corresponds to the system being upgraded.

   b. Note the start location, disk size, and volume label for the disk. For example, if the MDISK statement for the MAINT 491 disk looks like this:

   ```
   MDISK 491 3390 3298 030 IBMCM1 MR
   ```

   the start location for the 491 disk is 3298, the size is 30, and the volume label is IBMCM1.

   c. Attach the address associated with the noted volume label (refer to Table 14 on page 126 or Table 15 on page 126 for addresses and volume labels) to your current system. In this example, if the address for the volume with label IBMCM1 is C11:

   ```
   ATTACH C11 TO SYSTEM
   ```

   d. Issue the DEFINE MDISK command:

   ```
   DEFINE MDISK linkaddr start size vollabel
   ```

   In this example:

   ```
   DEFINE MDISK 1491 3298 30 IBMCM1
   ```

2. Link to the disk that was added to the upgrade system, in write mode. In this example:

   ```
   LINK 7VMDIR10 491 2491 WR
   ```

3. Use DDR to copy from the overlay disk on the work system to the disk that was added on the system being upgraded. In this example:

   ```
   DDR
   SYSPRINT CONS
   INPUT 1491 DASD
   OUTPUT 2491 DASD
   COPY ALL
   ENTER
   ```

4. Detach the overlay and new minidisks:

   ```
   DETACH 2491
   DETACH 1491
   ```

5. Detach the work system volume from the system you are upgrading. In this example:

```
DETACH VOLID IBMCM1 FROM SYSTEM
```

_____

**3**

The DDRMDISK EXT3MDISK keywords initialize a minidisk that was added on the system being upgraded by using DDR to restore a binary file that is shipped on the MAINT*vrm* 400 minidisk.

**Syntax:**

```
DDRMDISK EXT3MDISK USER|IDENTITY name
```

**Example:** Initialize the contents of the NEWID 100 minidisk that was added to the system being upgraded:

```
DDRMDISK EXT3MDISK IDENTITY NEWID 100
```

**Manual Instructions:**

1. Link MAINT710 400 disk and access as X
2. Link MAINT710 493 disk and access as Z
3. Link to the disk to be initialized (in this example NEWID 100) as *vaddr* in write mode:

```
LINK NEWID 100 100 WR
```

4. Run the DDRREST EXEC to initialize the disk using the image file for either 3390 or FBA DASD.

   For 3390:

```
DDRREST vaddr ECKD100 IMAGE X
```

   In this example, if your system is installed on 3390 DASD:

```
DDRREST 100 ECKD100 IMAGE X
```

   For FBA:

```
DDRREST vaddr FBA100 IMAGE X
```

   In this example, if system is installed on FBA DASD:

```
DDRREST 100 FBA100 IMAGE X
```

5. Detach the minidisk that was initialized. In this example:

```
DETACH 100
```

_____

**4**

The DIRECT ADDMDISK keywords update the user directory to add a new minidisk to an existing user ID.

**Syntax:**

**$STAGE1$ $TABLE$ entry definitions**

```
DIRECT ADDMDISK {USER username *} | {SUBCONFIG UNKNOWNSUB identname}
        mdaddr BK|NOBK {NOFMT | FMT label blocksize} mdiskstatement
```

**BK**        Need to keep track for backout.

**NOBK**      Do not need to keep track for backout.

**FMT**      Format the disk with label and block size indicated.

**NOFMT**    Do not format the disk.

**Example:** Update the user directory to add a new minidisk, A91, to the existing SUBCONFIG entry for IDENTIY VSMWORK1 that is associated with the system you are upgrading:

```
DIRECT ADDMDISK SUBCONFIG UNKNOWNSUB VSMWORK1 A91 BK NOFMT
        MDISK A91 3390 2728 005 UG1W01 MR ALL ALL ALL
```

**Manual Instructions:** Using your site's procedures to update the user directory, add the A91 minidisk statement shown to the SUBCONFIG for VSMWORK1 that is built on the system being upgraded. You should include this disk in your backout log (BK option) and you do not need to format this minidisk (NOFMT).

1. Determine the name of the SUBCONFIG for this system by examining the BUILD ON statement for the system you are upgrading in the IDENTITY entry in the USER DIRECT file for VSMWORK1:

```
BUILD ON * | systemname USING SUBCONFIG VSMWK1-1
```

   In this example, VSMWK1-1 is the name of the SUBCONFIG.

2. Add the MDISK statement that was included on the entry in the $STAGE1$ $TABLE$ to the SUBCONFIG entry for VSMWK1-1.

   If you edit your USER DIRECT file directly, the MDISK statement includes the correct extent information for the new disk:

```
MDISK A91 3390 2728 005 UG1W01 MR ALL ALL ALL
```

   If you use a directory manager product, the MDISK statement contains the word NULL instead of a starting extent, followed by the disk size, volume label and password information. Use this information to have your directory manager product define the new disk:

```
MDISK A91 3390 NULL 005 UG1W01 MR ALL ALL ALL
```

3. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

   If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

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

**5**

The DIRECT ADDMDISKNB keywords update the user directory to add a new minidisk. No backout is needed for the disk because the user or subconfig this disk belongs to was also just added, and the disk will be removed when the user/subconfig added is backed out. The disk should not be formatted.

**Syntax:**

```
DIRECT ADDMDISKNB USER username mdiskstatement
DIRECT ADDMDISKNB SUBCONFIG subconfname membername identname mdiskstatement
```

**Example:** Add new minidisk 191 for new subconfig NEWID-1 to the user directory:

```
DIRECT ADDMDISKNB SUBCONFIG NEWID-1 UPGRMEM1 NEWID
        MDISK 191 3390 1 001 UG1W02 MR READ WRITE MULTIPLE
```

**Manual Instructions:** Using your site's procedures to add minidisks, add the 191 minidisk statement shown to new SUBCONFIG NEWID-1. You should *not* need to include this disk in your backout log because if you delete the new SUBCONFIG, the new disk will be deleted at the same time. You do *not* need to format this minidisk.

1. Add the MDISK statement that was included on the entry in the $STAGE1$ $TABLE$ to the SUBCONFIG entry for NEWID-1.

   If you edit your USER DIRECT file directly, the MDISK statement includes the correct extent information for the new disk:

   ```
   MDISK 191 3390 1 001 UG1W02 MR READ WRITE MULTIPLE
   ```

   If you use a directory manager product, the MDISK statement contains the word NULL instead of a starting extent, followed by the disk size, volume label and password information. Use this information to have your directory manager product define the new disk:

   ```
   MDISK 191 3390 NULL 001 UG1W02 MR READ WRITE MULTIPLE
   ```

2. If you edit your user directory directly, put the new version of the directory online:

   ```
   DIRECTXA USER DIRECT
   ```

   If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

_____

**6**

The DIRECT ADDMEMIDENT keywords update the user directory to add a new IDENTITY entry. The information for the new IDENTITY entry is contained in a file named *identname* $DIRADD$, which is found on the MIGMAINT 2CF0 minidisk.

**Syntax:**

```
DIRECT ADDMEMIDENT identname $DIRADD$ 2CF0
```

**Example:** Add a new IDENTITY entry, in this example NEWID, to the user directory using the contents of the NEWID $DIRADD$ file that was created on the MIGMAINT 2CF0 disk:

```
DIRECT ADDMEMIDENT NEWID $DIRADD$ 2CF0
```

**Manual Instructions:** Following your site's procedures to update the user directory, use the information in the NEWID $DIRADD$ file to add the new IDENTITY NEWID to your user directory. You should include this task in your backout log. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

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

**7**

The DIRECT ADDMEMSUB keywords update the user directory to add a new SUBCONFIG entry and associate the SUBCONFIG entry with an existing IDENTITY entry. The information for the new SUBCONFIG entry is contained in a file named *subconfigname* $DIRADD$, which is found on the MIGMAINT 2CF0 minidisk.

**Syntax:**

```
DIRECT ADDMEMSUB subconfname $DIRADD$ 2CF0 membername identity
```

**Example:** Add the new subconfig, in this example NEWID-1, to the user directory using the contents of the NEWID-1 $DIRADD$ file that was created on the MIGMAINT 2CF0 disk and associate the new SUBCONFIG with system UPGRMEM1 in IDENTITY NEWID:

```
DIRECT ADDMEMSUB NEWID-1 $DIRADD$ 2CF0 UPGRMEM1 NEWID
```

**Manual Instructions:** Following your site's procedures to update your user directory. You should include this task in your backout log.

If you edit your user directory directly:

1. Add a BUILD ON statement to the IDENTITY for this system:

   - If UPGRMEM1 is a member of an SSI cluster:

   ```
   BUILD ON UPGRMEM1 USING SUBCONFIG NEWID-1
   ```

   - If UPGRMEM1 is *not* a member of an SSI cluster:

   ```
   BUILD ON * USING SUBCONFIG NEWID-1
   ```

2. Add the SUBCONFIG NEWID-1 to the user directory. The subconfig definition is in the file NEWID-1 $DIRADD$, which is located on MIGMAINT's 2CF0 disk.

3. Put the new version of the directory online:

   ```
   DIRECTXA USER DIRECT
   ```

   If you use a directory manager product, use the information in the NEWID-1 $DIRADD$ file to update the user directory and to associate the new SUBCONFIG with IDENTITY NEWID and make sure the directory manager puts the updated information online immediately.

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

**8**

The DIRECT ADDNEWUSER keywords update the user directory to add a new USER entry. The information for the new USER entry is contained in a file named *username* $DIRADD$, which is found on the MIGMAINT 2CF0 minidisk. Regardless of whether you use a directory manager, you should use all of the information in the *username* $DIRADD$ file exactly as it appears, including all minidisk definitions.

**Syntax:**

```
DIRECT ADDNEWUSER username $DIRADD$ 2CF0
```

**Example:** Add the new USER, in this example MAINT710, to the user directory using the contents of the MAINT710 $DIRADD$ file that was created on the MIGMAINT 2CF0 disk:

```
DIRECT ADDNEWUSER MAINT710 $DIRADD$ 2CF0
```

**Manual Instructions:** Following your site's procedures to update the user directory, use the information in the MAINT710 $DIRADD$ file to add the new USER MAINT710 entry to your user directory. You should include this task in your backout log. These disks should *not* be formatted if you need to back out this task. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

If you use a directory manager product, use the contents of the MAINT710 $DIRADD$ file as input to your directory manager, including the minidisk definitions. Ensure that the directory manager puts the updated information online immediately.

───────────────────────────────────────────────────────────────────────────────

**9**

The DIRECT ADDRELLINK keywords update the user directory to add a link statement to an existing directory entry (USER, IDENTITY or SUBCONFIG). You should include this link change in your backout log.

**Syntax:**

```
DIRECT ADDRELLINK USER|IDENTITY|SUBCONFIG  username|identname linkstatement
```

**Example:** Add the link statement, in this example, LINK MAINT710 201 201 RR, to the directory entry for the SUBCONFIG for IDENTITY MAINT that is associated with the system being upgraded:

```
DIRECT ADDRELLINK SUBCONFIG MAINT LINK MAINT710 201 201 RR
```

**Manual Instructions:** Using your site's procedures to update the user directory, add the link statement shown to the SUBCONFIG for MAINT that is built on the system being upgraded. You should include this link in your backout log.

1. Determine the name of the SUBCONFIG for this system by examining the BUILD ON statement for the system you are upgrading in the IDENTITY entry in the USER DIRECT file for MAINT:

```
BUILD ON * | systemname USING SUBCONFIG MAINT-1
```

In this example, MAINT-1 is the name of the SUBCONFIG.

2. Add the LINK statement that was included on the entry in the $STAGE1$ $TABLE$ to the SUBCONFIG entry for MAINT-1:

```
LINK MAINT710 201 201 RR
```

3. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

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**10**

The DIRECT COMMON keywords update the user directory to change a statement on an existing directory entry (USER, IDENTITY or SUBCONFIG).

**$STAGE1$ $TABLE$ entry definitions**

**Syntax:**

```
DIRECT COMMON action uptype USER|IDENTITY|SUBCONFIG userid input
```

where *action* is ADD, DELETE, or REPLACE, *uptype* is OPTION, NAMESAVE, VSTOR, or IPL, and *input* contains the information that will be added to, deleted from, or replaced in the directory entry for *userid*. If the *uptype* is OPTION, combine the *uptype* and the *input* to develop the directory statement. If the *uptype* is NAMESAVE or IPL, then *input* contains the required directory statement. If the *uptype* is VSTOR then *input* contains the new storage value to be replaced on the current statement.

**Example:** ADD the following OPTION to the user directory entry for IDENTITY VSMGUARD:

```
DIRECT COMMON ADD OPTION IDENTITY VSMGUARD LNKNOPAS
```

**Manual Instructions:** Using your site's procedures to update the user directory, add, delete, or replace the directory statement defined by the $STAGE1$ $TABLE$ entry. In this example, you should add an OPTION statement to the directory entry for IDENTITY VSMGUARD that includes option LNKNOPAS.

1. Add the OPTION statement that was defined on the entry in the $STAGE1$ $TABLE$ to the IDENTITY entry for VSMGUARD:

```
OPTION LNKNOPAS
```

2. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

_____

**11**

The DIRECT DELRELLINK keywords update the user directory to delete a link statement from an existing directory entry (USER, IDENTITY or SUBCONFIG). You should include this link change in your backout log.

**Syntax:**

```
DIRECT DELRELLINK USER|IDENTITY|SUBCONFIG  username|identname linkstatement
```

**Example:** Delete the link statement, in this example, LINK MAINT640 201 201 RR, from the directory entry for the SUBCONFIG for IDENTITY MAINT that is associated with the system being upgraded:

```
DIRECT DELRELLINK SUBCONFIG MAINT LINK MAINT640 201 201 RR
```

**Manual Instructions:** Using your site's procedures to update the user directory, delete the link statement shown from the SUBCONFIG for MAINT that is built on the system being upgraded. You should include this link change in your backout log.

1. Determine the name of the SUBCONFIG for this system by examining the BUILD ON statement for the system you are upgrading in the IDENTITY entry in the USER DIRECT file for MAINT:

```
BUILD ON * | systemname USING SUBCONFIG MAINT-1
```

In this example, MAINT-1 is the name of the SUBCONFIG.

2. Delete the LINK statement that was included on the entry in the $STAGE1$ $TABLE$ to the SUBCONFIG entry for MAINT-1:

```
LINK MAINT640 201 201 RR
```

3. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

---

**12**

The FILEPOOL ADDADMIN keywords enroll a new administrator to an existing file pool.

**Syntax:**

```
FILEPOOL ADDADMIN  fpoolname fpooluid users2add
```

**Example:** Enroll as an administrator the user IDs listed in the FILEPOOL ADDADMIN entry in the $STAGE1$ $TABLE$, in this example, MAINT710, for the file pool listed, in this example, VMSYSU running on server user ID VMSERVU.

```
FILEPOOL ADDADMIN VMSYSU VMSERVU MAINT710
```

**Manual Instructions:**

1. Enroll as an administrator. In this example, MAINT710 in VMSYSU.

```
ENROLL ADMINISTRATOR MAINT710 VMSYSU
```

---

**13**

The FILEPOOL ADDRELFS keywords add a new filespace to an existing file pool. You should include this task in your backout log.

**Syntax:**

```
FILEPOOL ADDRELFS fpname filespacename UNLOAD 2191
```

**Example:** Load the new filespace, 7VMDIR10, to the VMPSFS file pool:

```
FILEPOOL ADDRELFS VMPSFS 7VMDIR10 UNLOAD 2191
```

**Manual Instructions:**

1. Access MIGMAINT 2191 Z.
2. Link and access MAINT 193:

```
LINK MAINT 193 193 RR
ACCESS 193 X
```

3. Enter the FILEWAIT command:

```
SET FILEWAIT ON
```

4. Enter the FILEDEF command to define the input file *fspacename* UNLOAD Z. In this example:

```
FILEDEF RELOAD DISK 7VMDIR10 UNLOAD Z
```

5. Enter the FILEPOOL command to load the *fspacename* into *fpoolname*. In this example:

```
FILEPOOL RELOAD FILESPACE 7VMDIR10 VMPSFS
```

6. Reply '1' to the prompt.

_____

14
The FILEPOOL ADDSPACE keywords increase the storage space available for a user that is enrolled in a file pool.

**Syntax:**

```
FILEPOOL ADDSPACE BK|NOBK fpoolname filespaceid fpoolcmd
```

| | |
|---|---|
| **BK** | Need to keep track for backout. |
| **NOBK** | Do not need to keep track for backout. |

**Example:** Increase the amount of storage space that can be used in the VMSYS file pool by user VSMWORK1:

```
FILEPOOL ADDSPACE BK VMSYS VSMWORK1 MODIFY USER +1000 FOR VSMWORK1 VMSYS
```

**Manual Instructions:** Increase the amount of space that can be used by user VSMWORK1 by issuing the MODIFY USER command as specified by the FILEPOOL ADDSPACE entry in the $STAGE1$ $TABLE$. In this example, enter the following command:

```
MODIFY USER +1000 FOR VSMWORK1 VMSYS
```

_____

15
The FILEPOOL CREATDIR keywords update a file pool to create a new directory in an existing file pool.

**Syntax:**

```
FILEPOOL CREATDIR BK|NOBK fpoolname filespacename fpoolcmd
```

**BK**        Need to keep track for backout.

**NOBK**      Do not need to keep track for backout.

**Example:** Update the VMSYS file pool to create the new directory VMSYS:VSMWORK1.STATUS:

```
FILEPOOL CREATDIR BK VMSYS VSMWORK1 CREATE DIRECTORY VMSYS:VSMWORK1.STATUS
```

**Manual Instructions:** Create the directory indicated by issuing the CREATE DIRECTORY command as specified by the FILEPOOL CREATDIR entry in the $STAGE1$ $TABLE$. In this example, enter the following command:

```
CREATE DIRECTORY VMSYS:VSMWORK1.STATUS
```

_____

**16**

The FILEPOOL ENROLLUSR keywords update a file pool to enroll a new user in an existing file pool.

**Syntax:**

```
FILEPOOL ENROLLUSR BK|NOBK fpoolname username fpoolcmd
```

**BK**        Need to keep track for backout.

**NOBK**      Do not need to keep track for backout.

**Example:** Update the VMPSFS file pool to enroll the new user MAINT710:

```
FILEPOOL ENROLLUSR BK VMPSFS MAINT710  ENROLL USER MAINT710 VMPSFS:
```

**Manual Instructions:** Enroll a new user in an existing file pool by issuing the ENROLL USER command as specified by the FILEPOOL ENROLLUSR entry in the $STAGE1$ $TABLE$. In this example, enter the following command:

```
ENROLL USER MAINT710 VMPSFS:
```

_____

**17**

The FILEPOOL GRANTAUTH keywords update a file pool to grant authority to a user in an existing file pool.

**Syntax:**

```
FILEPOOL GRANTAUTH BK|NOBK fpoolname username fpoolcmd
```

**BK**        Need to keep track for backout.

**NOBK**      Do not need to keep track for backout.

**Example:** Update the VMSYS file pool to grant authority to VSMGUARD in the VMSYS:VSMWORK1.STATUS directory:

```
FILEPOOL GRANTAUTH BK VMSYS VSMWORK1 GRANT AUTHORITY
         VMSYS:VSMWORK1.STATUS TO VSMGUARD ( WRITE NEWWRITE
```

**Manual Instructions:** Grant authority to a user in an existing file pool by issuing the GRANT AUTHORITY command as specified by the FILEPOOL GRANTAUTH entry in the $STAGE1$ $TABLE$. In this example, enter the following command:

```
GRANT AUTHORITY VMSYS:VSMWORK1.STATUS TO VSMGUARD ( WRITE NEWWRITE
```

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

**18**

The LOCALMOD COPYLCL keywords copy local modifications from the local modification disks for the current z/VM release to the new release local modifications disk. There are two versions of this entry: one to copy the VVTLCL file and one to copy the local modifications files.

**Version 1:** Copy the *sourceprodid* VVTLCL file to the new local mod disk as *targetprodid* VVTLCL.

**Version 1 Syntax:**

```
LOCALMOD COPYLCL FROM sourceuserid sourcedisk sourceprodid VVTLCL
         TO targetuserid targetdisk targetprodid VVTLCL
```

**Version 1 Example:** Copy the 6VMCMS40 VVTLCL file to the new local mod disk as 7VMCMS10 VVTLCL:

```
LOCALMOD COPYLCL FROM MAINT640 3C4 6VMCMS40 VVTLCL TO MAINT710 3C4
         7VMCMS10 VVTLCL
```

**Version 1 Manual Instructions:**

1. Link and access the *sourceuserid sourcedisk*. In this example: link and access MAINT640 3C4:

```
LINK MAINT640 3C4 13C4 RR
ACCESS 13C4 G
```

2. Link and access the *targetuserid targetdisk* in write mode. In this example: link and access MAINT710 3C4:

```
LINK MAINT710 3C4 23C4 WR
ACCESS 23C4 H
```

3. Copy the VVTLCL file from the *sourceuserid* disk to the *targetuserid* disk, changing the filename to the *targetprodid*. In this example:

```
COPYFILE 6VMCMS40 VVTLCL G 7VMCMS10 VVTLCL H (OLDDATE
```

4. Release and detach the disks that were linked and accessed:

```
RELEASE G (DETACH
RELEASE H (DETACH
```

**Version 2:** Copy the local mod files to the new local mod disk.

**Version 2 Syntax:**

```
LOCALMOD COPYLCL FROM sourceuserid sourcedisk pfn * TO targetuserid targetdisk
pfn =
```

**Version 2 Example:**

```
LOCALMOD COPYLCL FROM MAINT640 3C4 TELL * TO MAINT710 3C4 TELL =
```

**Version 2 Manual Instructions:**

1. Link and access the *sourceuserid sourcedisk*. In this example: link and access MAINT640 3C4:

```
LINK MAINT640 3C4 13C4 RR
ACCESS 13C4 G
```

2. Link and access the *targetuserid targtdisk* in write mode. In this example: link and access MAINT710 3C4:

```
LINK MAINT710 3C4 23C4 WR
ACCESS 23C4 H
```

3. Copy the local mod files from the *soruceuserid* disk to the *tragetuserid* disk. In this example:

```
COPYFILE TELL * G TELL = H (OLDDATE
```

4. Release and detach the disks that were linked and accessed:

```
RELEASE G (DETACH
RELEASE H (DETACH
```

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

**19**

The LOCALMOD UPDTSLMOD keywords update the SYSLMOD table on MAINT710's 51D disk to indicate local mods have been added.

**Syntax:**

```
LOCALMOD UPDTSLMOD ADD VMFSIM MODIFY VM SYSLMOD Z TDATA
         :LMOD lmoddata :STAT statdata :CUSTYPE custdata
```

**Example:** Update the VM SYSLMOD table on MAINT710's 51D disk:

```
LOCALMOD UPDTSLMOD ADD VMFSIM MODIFY VM SYSLMOD Z TDATA
         :LMOD 7VMCMS10%CMS.TELL.SXE.0002.VVTLCL
         :STAT REWORK.mm/dd/yy.hh:mm:ss.MIGMAINT
         :CUSTYPE LOCALMOD (ADD
```

**Manual Instructions:**

1. Link MAINT710's 51D disk in write mode:

```
LINK MAINT710 51D 151D WR
```

2. Access MAINT710's 51D disk as Z.

3. Update the SYSLMOD table by issuing the VMFSIM MODIFY command as specified by the LOCALMOD UPDTSLMOD entry. Substitute the current date and time for UPDDATE.UPDTIME. The format is *mm/dd/yy.hh:mm:ss*. In this example, enter the following command:

```
VMFSIM MODIFY VM SYSLMOD Z TDATA :LMOD 7VMCMS10%CMS.TELL.SXE.0002.VVTLCL
          :STAT REWORK.UPDDATE.UPDTIME.MIGMAINT :CUSTYPE LOCALMOD (ADD
```

4. Release and detach the disk that was linked and accessed:

```
RELEASE Z (DETACH
```

_____

**20**

The SETPRODUCT keyword issues the SET PRODUCT command to set the enablement status (ENABLED or DISABLED) of a product on your running system.

**Syntax:**

```
SETPRODUCT SET PRODUCT prodid STATE prodstat
```

**Example:** Set the status for product 7VMPTK10 to ENABLED on the running system:

```
SETPRODUCT SET PRODUCT 7VMPTK10 STATE ENABLED
```

**Manual Instructions:** Set the status of the product on your running system by issuing the SET PRODUCT command as specified by the SETPRODUCT entry. In this example:

```
SET PRODUCT 7VMPTK10 STATE ENABLED
```

_____

**21**

The SYSCONF ADDEDEV keywords update the system configuration file to add an edevice statement for a new volume. There are two versions of this entry. Use Version 1 if the edevice details were available during INSTUPGR STAGE1 (PRIME. Use Version 2 if the edevice details were not available.

**Version 1 Syntax:**

```
SYSCONF ADDEDEV 1 edevice addr type fba attr SCSI fcp_dev fcpaddr
              wwpn wwpnaddr lun lunaddr
```

**Version 2 Syntax:**

```
SYSCONF ADDEDEV 2 edevice addr is not an emulated device
```

**Example:** Add the edevice statement to your system configuration file.

Version 1:

```
SYSCONF ADDEDEV 1 edevice 6505 type fba attr SCSI fcp_dev 1F01
              wwpn 500507630B00C038 lun 401140F100000000
```

Version 2:

```
SYSCONF ADDEDEV 2 edevice 6505 is not an emulated device
```

**Manual Instructions:**

1. Link and access the disk containing your system configuration file:

```
LINK PMAINT CF0 CF0 WR
ACCESS CF0 Z
```

2. Update the system configuration file to add the new edevice statement. In this example:

    Version 1:

```
edevice 6505 type fba attr SCSI fcp_dev 1F01 wwpn 500507630B00C038
         lun 401140F100000000
```

    Version 2:

    a. If a real edevice statement is required, you should determine the details of the device and add an edevice statement with the correct attributes.

    b. If a real edevice statement is not required, do one of the following:

    • Add the entry (commented out) to document the device added:

```
/* edevice 6505 is not an emulated device */
```

    • Choose to skip adding an edevice statement.

3. Save the changes you made to the system configuration file and release and detach the disk that was linked and accessed:

```
RELEASE Z (DETACH
```

_____

**22**

The SYSCONF ADDPRODUCT keywords update the system configuration file to permanently set the enablement status (ENABLED or DISABLED) of a product on your system.

**Syntax:**

```
SYSCONF ADDPRODUCT product prodstat
```

**Example:** Add the PRODUCT statement for 7VMPTK10 to your system configuration file. The entire PRODUCT statement is documented in the comments preceding the SYSCONF ADDPRODUCT entry in the $STAGE1$ $TABLE$. For example:

```
*  Add the following product statement for 7VMPTK10 to SYSTEM CONFIG
*  PRODUCT PRODID 7VMPTK10 STATE DISABLED DESCRIPTION
*   '00/00/00.00:00:00.$UPGRADE PERFORMANCE TOOLKIT FOR VM'
SYSCONF ADDPRODUCT 7VMPTK10 DISABLED
*

SYSCONF ADDPRODUCT 7VMPTK10 ENABLED
```

**Manual Instructions:**

1. Link and access the disk containing your system configuration file:

```
LINK PMAINT CF0 CF0 WR
ACCESS CF0 Z
```

2. Update the system configuration file to permanently set the status of the product on your system by adding the PRODUCT statement with the STATE specified by the SYSCONF ADDPRODUCT entry. In this example:

```
PRODUCT PRODID 7VMPTK10 STATE DISABLED DESCRIPTION
'00/00/00.00:00:00.$UPGRADE
         PERFORMANCE TOOLKIT FOR VM'
```

3. Save the changes you made to the system configuration file and release and detach the disk that was linked and accessed:

```
RELEASE Z (DETACH
```

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

**23**

The SYSCONF ADDRELVOL keywords update the system configuration file to add a new User_Volume_List statement that includes the labels for the new release volumes.

**Syntax:**

```
SYSCONF ADDRELVOL User_Volume_List volumelabels
```

**Example:** Add the release volumes to your system configuration file by adding the User_Volume_List statement:

```
SYSCONF ADDRELVOL User_Volume_List UGT3R1 UGT3R2
```

**Manual Instructions:**

1. Link and access the disk containing your system configuration file:

```
LINK PMAINT CF0 CF0 WR
ACCESS CF0 Z
```

2. Update the system configuration file to add the new release volumes statement listed in the SYSCONF ADDRELVOL entry in the $STAGE1$ $TABLE$. In this example:

```
User_Volume_List UGT3R1 UGT3R2
```

# Appendix P. $STAGE2$ $TABLE$ entry definitions

This appendix lists the keywords that can be found in the entries in the $STAGE1$ $TABLE$ and describes the steps to update your system manually with the changes listed for each entry.

Note that the order of the entries in the $STAGE2$ $TABLE$ is the order in which the actions should be performed.

```
 1  CPYFIL
 2  DDRMDISK MDISK
 3  DIRECT DELENTRY
 4  DIRECT DELRELLINK
 5  DIRECT MOVEMDISK
 6  FILEPOOL ADDADMIN
 7  MIGDISK COPY
 8  MIGDISK ERASE
 9  PARTNOTIFY
10  SESCMD
11  SESMOVE COPY
12  SESMOVE ERASE
13  UPDDISK COPY
14  UPDDISK ERASE
```

These entries are described below:

**1**

The CPYFIL keyword copies a file. CPYFIL REPLace replaces the file if it exists. CPYFIL NOREPL returns an error if the file already exists.

**Syntax:**

```
CPYFIL REPLace|NOREPL sourcelinktype sourcefname sourceftype * sourceuserid
sourcedisk
        targetlinktype targetfname targetftype * targetuserid targetdisk
```

*sourcelinktype*
Method used to access the disk where the file resides: LINKACC|ACCDIR|MDISK. LINKACC is specified if the source location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the source location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the source location is located on a work system volume that must be accessed using the DEFINE MDISK command. For instructions on how to access a disk using DEFINE MDISK, see the DDRMDISK keyword.

*sourcefname*
File name of the file to be copied.

*sourceftype*
File type of the file to be copied.

*sourceuserid*
User ID that owns the disk where the file resides. If the file is in an SFS directory the value of this field is "DIR".

*sourcedisk*
Minidisk or SFS directory where the file resides.

*targetlinktype*
Method used to access the disk where the file will be copied: LINKACC|ACCDIR|MDISK. LINKACC is specified if the target ("to") location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the target location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the target location must be accessed using the DEFINE MDISK command. For instructions on how to access a disk using DEFINE MDISK, see the DDRMDISK keyword.

*targetfname*
> File name given to the file when it is copied.

*targetftype*
> File type given to the file when it is copied.

*targetuserid*
> User ID that owns the disk where the file will be copied. If the file is in an SFS directory the value of this field is "DIR".

*targetdisk*
> Minidisk or SFS directory where the file will be copied.

**Example:**

```
CPYFIL REPL ACCDIR  LDAPDS SAMPENVR * DIR VMPSFS:7VMTCP10.TCPIP.OBJECT
            LINKACC LDAPDS SAMPENVR * TCPMAINT  198
```

**Manual Instructions:**

1. Link and access the source disk.

   If the *sourcelinktype* is LINKACC, link and access the minidisk.

   If the *sourcelinktype* is ACCDIR, access the SFS directory. In this example:

   ```
   ACCESS VMPSFS:7VMTCP10.TCPIP.OBJECT G
   ```

2. Link and access the target ("to") disk in write mode.

   If the *targetlinktype* is LINKACC, link and access the minidisk. In this example:

   ```
   LINK TCPMAINT 198 1198 WR
   ACCESS 1198 H
   ```

   If the *targetlinktype* is ACCDIR, access the SFS directory.

3. Copy the file from the source disk to the target disk, using REPLACE if it was specified on the CPYFIL entry. In this example:

   ```
   COPYFILE IBM DTCPARMS G IBM DTC++001 H (OLDDATE REPLACE
   ```

   **Note:** The OLDDATE parameter should always be specified on the COPYFILE command.

4. Release and detach, if necessary, the SFS directories and minidisks accessed above. In this example:

   ```
   RELEASE G
   RELEASE H (DETACH
   ```

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

**2**

The DDRMDISK MDISK keywords copy a minidisk from a work system volume to a disk on the current system. The disk on the work system volume is accessed using the DEFINE MDISK command, then the contents of the disk are copied using the DDR command to the disk on the current system.

**Syntax:**

```
DDRMDISK MDISK IDENTITY sourceusername sourcedisk LINK IDENTITY targetusername
targetdisk
```

**Example:** DDR the MAINT 190 disk on the work system to the MAINT 190 disk on the system being upgraded:

```
DDRMDISK MDISK IDENTITY MAINT 190 LINK IDENTITY MAINT 190
```

**Manual Instructions:**

1. Issue the DEFINE MDISK command to define a minidisk overlay to the source disk on the work system:

   a. Locate the minidisk statement in the work directory file (INSTUPGR $USERDIR) located on the MIGMAINT 2CF0 disk for the *sourceusername* and *sourcedisk* in the $STAGE2$ $TABLE$ entry. If the *sourcetype* is SUBCONFIG, locate the minidisk statement contained in the SUBCONFIG that corresponds to the system being upgraded.

   b. Note the start location, size and volume label. In this example, if the MDISK statement for the MAINT 190 disk looks like this:

   ```
   MDISK 190 3390 280 214 IBMRES
   ```

   then the start location for the 190 disk is 280, the size is 214, and the volume label is IBMRES.

   c. Attach the address associated with the noted volume label (refer to Table 14 on page 126 or Table 15 on page 126 for addresses and volume labels) to your current system. In this example, if the address for the volume with label IBMRES is C10:

   ```
   ATTACH C10 TO SYSTEM
   ```

   d. Issue the DEFINE MDISK command for the *sourcedisk*:

   ```
   DEFINE MDISK vaddr start size vollabel
   ```

   In this example:

   ```
   DEFINE MDISK 1190 280 214 IBMRES
   ```

2. Link, in write mode, to the *targetdisk* owned by *targetusername* on your current system. In this example:

   ```
   LINK MAINT 190 2190 WR
   ```

3. Use the DDR command to copy from the *sourcedisk* (*vaddr*) on the work system volume to the *targetdisk* that is being updated on the system being upgraded. In this example:

   ```
   DDR
   SYSPRINT CONS
   INPUT 1190 DASD
   OUTPUT 2190 DASD
   COPY ALL
   <answer any prompts, then press enter to end DDR>
   ENTER
   ```

4. Detach the disks you linked to and defined. In this example:

```
DETACH 1190
DETACH 2190
```

5. Detach the work system volume from the current system. In this example:

```
DETACH C10 FROM SYSTEM
```

---

**3**

The DIRECT DELENTRY keywords update the user directory to delete a USER, IDENTITY, or SUBCONFIG definition. For SUBCONFIG, only the SUBCONFIG definition associated with the system or member that is being updated is deleted.

**Syntax:**

```
DIRECT DELENTRY USER|IDENTIY|SUBCONFIG identusername membername
```

**Example:** Delete the SUBCONFIG definition for IDENTITY DHCPD that is associated with the system being upgraded, UPGRMEM1.

```
DIRECT DELENTRY SUBCONFIG DHCPD UPGRMEM1
```

**Manual Instructions:** Following your site's normal procedures to update the user directory, delete the USER, IDENTITY, or SUBCONFIG definition specified in the $STAGE2$ $TABLE$ entry, as follows:

**USER**
> Delete the entire USER definition.

**IDENTITY**
> Delete the IDENTITY definition. All SUBCONFIG definitions associated with this IDENTITY definition should have already been deleted.

**SUBCONFIG**
> Delete the SUBCONFIG definition that is associated with this member. Also, delete the BUILD ON statement in the IDENTITY definition that refers to this SUBCONFIG.

1. Determine the name of the SUBCONFIG to be deleted by examining the BUILD ON statement for system you are upgrading in the IDENTITY specified on the $STAGE2$ $TABLE$ entry. In this example:

```
BUILD ON UPGRMEM1 USING SUBCONFIG DHCPD-1
```

The name of the SUBCONFIG is DHCPD-1.

2. Follow your site's normal process to delete the named SUBCONFIG.

3. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

---

**4**

The DIRECT DELRELLINK keywords update the user directory to delete a link statement from an existing directory entry (USER, IDENTITY or SUBCONFIG).

**Syntax:**

```
DIRECT DELRELLINK USER|IDENTITY|SUBCONFIG username|identname linkstatement
```

**Example:** Delete the link statement, in this example, LINK MAINT640 201 201 RR, from the directory entry for the SUBCONFIG for IDENTITY MAINT that is associated with the system being upgraded:

```
DIRECT DELRELLINK SUBCONFIG MAINT LINK MAINT640 201 201 RR
```

**Manual Instructions:** Using your site's procedures to update the user directory, delete the link statement shown from the SUBCONFIG for MAINT that is built on the system being upgraded.

1. Determine the name of the SUBCONFIG for this system by examining the BUILD ON statement for the system you are upgrading in the IDENTITY entry in the USER DIRECT file for MAINT:

```
BUILD ON * | systemname USING SUBCONFIG MAINT-1
```

   In this example, MAINT-1 is the name of the SUBCONFIG.

2. Delete the LINK statement that was included on the entry in the $STAGE1$ $TABLE$ to the SUBCONFIG entry for MAINT-1:

```
LINK MAINT640 201 201 RR
```

3. If you edit your user directory directly, put the new version of the directory online:

```
DIRECTXA USER DIRECT
```

   If you use a directory manager product, ensure that the directory manager puts the updated information online immediately.

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

**5**

The DIRECT MOVEMDISK keywords update the user directory to move an existing minidisk from its current location to a new location. MOVEDISK COPY indicates that the data on the current disk should be copied to the disk at its new location. MOVEDISK NOCOPY indicates that the disk should be defined at the new location specified on the $STAGE2$ $TABLE$ entry, but no data from the current disk should be copied to the new location.

**Syntax:**

```
DIRECT MOVEMDISK idtype userid membername COPY|NOCOPY mdiskstmtdata
```

**Example:** Move the 191 minidisk owned by user 7VMHCD10 to a new location specified as cylinder 1958 for a length of 50 on the volume labeled UGCOM2. The data from the existing minidisk should be copied to the new minidisk location:

```
DIRECT MOVEMDISK USER 7VMHCD10 UPGRMEM1 COPY 191 3390 1958 050 UGCOM2
```

**Manual Instructions:** Following your site's normal procedures to update the user directory, move the minidisk listed from its current location to the location defined in the DIRECT MOVEMDISK entry. If COPY is specified on the MOVEMDISK entry, transfer all data to the new location.

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

## $STAGE2$ $TABLE$ entry definitions

**6**

The FILEPOOL ADDADMIN keywords update a DMSPARMS file to add a new administrator to an existing file pool.

**Syntax:**

```
FILEPOOL ADDADMIN  fpoolname fpooluid users2add
```

**Example:** Add the user IDs listed in the FILEPOOL ADDADMIN entry in the $STAGE2$ $TABLE$, in this example, MAINT710, to the DMSPARMS file for the file pool listed, in this example, VMSYSU running on server user ID VMSERVU. The DMSPARMS file is named *filepoolid* DMSPARMS and is found on the 191 disk for the *filepoolid*. In this example, the file VMSERVU DMSPARMS will be found on the 191 disk for user ID VMSERVU:

```
FILEPOOL ADDADMIN VMSYSU VMSERVU MAINT710
```

**Manual Instructions:**

1. Force the file pool user ID off the system:

```
FORCE VMSERVU
```

2. Link, in write mode, the file pool's server user ID's 191 minidisk. In this example, VMSERVU's 191 minidisk:

```
LINK VMSERVU 191 1191 WR
```

3. Access the file pool's server user ID 191 minidisk you linked above:

```
ACCESS 1191 Z
```

4. Xedit the *fpooluid* DMSPARMS file. In this example VMSERVU DMSPARMS:

```
XEDIT VMSERVU DMSPARMS Z
```

5. Add the users indicated to the ADMIN statement and file the changes. In this example, MAINT710.
6. Release and detach the file pool's server user ID 191 minidisk.

```
RELEASE Z (DETACH
```

7. Restart the file pool by autologging the *filepoolid*, in this example, VMSERVU:

```
XAUTOLOG VMSERVU
```

_____

**7**

The MIGDISK COPY keywords use the VMFCOPY command to copy files for the specified product ID from the source location to the target location on the system being upgraded.

**Syntax:**

```
MIGDISK COPY {fname ftype|* *} targetlinktype targetprodid targettype targetuid
       targetaddr
               sourcelinktype sourceprodid sourcetype sourceuid sourceaddr EXCL|
       NOEXCL
```

*fname ftype|\* \**

When *fname ftype* is \* \*, use VMFCOPY to copy all files on *sourceuid sourceaddr* that are associated with the *sourceprodid* to *targetuid targetaddr*, associating them with *sourceprodid*.

When *fname ftype* is a filename and filetype, the named file will be found on the MIGMAINT 2CF0 disk. Use VMFCOPY to copy only the files listed in *fname ftype* from *sourceuid sourceaddr* that are associated with the *sourceprodid* to *targetuid targetaddr*, associating them with *sourceprodid*.

*targetlinktype*

Method used to access the location where the files will be copied. LINK is specified if the target location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the target location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the target location is located on a work system volume that must be accessed using the DEFINE MDISK command.

*targetprodid*

For the MIGDISK COPY keywords, this field should be ignored. Only the *sourceprodid* is used.

*targettype*

USER, IDENTITY, or SUBCONFIG.

*targetuid*

User ID that owns the target location. If the files will be copied to an SFS directory the value of this field is "DIR".

*targetaddr*

Minidisk or SFS directory where the files will be copied.

*sourcelinktype*

Method used to access the source location of the files to be copied. LINK is specified if the source location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the source location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the source location is located on a work system volume that must be accessed using the DEFINE MDISK command.

*sourceprodid*

The VMSES/E prodid that is associated with the files to be copied.

*sourcetype*

USER, IDENTITY, or SUBCONFIG.

*sourceuid*

User ID that owns the source location. If the files to be copied are in an SFS directory the value of this field is "DIR".

*sourceaddr*

Minidisk or SFS directory that contains the files to be copied.

**EXCL|NOEXCL**

This field should be ignored.

**Example 1,** when *fname ftype* is \* \*:

```
MIGDISK COPY * * LINK 6VMPTK40%PERFTK IDENTITY PERFSVM 201 ACCDIR
7VMPTK10%PERFTK USER DIR
            VMPSFS:7VMPTK10.PERFTK.TBUILD NOEXCL
```

**Example 2,** when *fname ftype* is a file, 7VMCMS10 C493CMS, on the MIGMAINT 2CF0 disk:

```
MIGDISK COPY 7VMCMS10 C493CMS LINK 6VMCMS40%CMS IDENTITY MAINT 193 LINK
7VMCMS10%CMS USER
            MAINT710 493 EXCL
```

**Manual Instructions:**

**$STAGE2$ $TABLE$ entry definitions**

1. Access the source location.

   If the *sourcelinktype* is LINK, link and access the *sourceuid sourceaddr*.

   If the *sourcelinktype* is ACCDIR, access the SFS directory specified. In Example 2:

   ```
   ACCESS VMPSFS:7VMPTK10.PERFTK.TBUILD G
   ```

   If the *sourcelinktype* is MDISK, the disk must be defined issuing the DEFINE MDISK command, as follows:

   a. Locate the minidisk statement in the work directory file (INSTUPGR $USERDIR) located on the MIGMAINT 2CF0 disk for the *sourceuid* and *sourceaddr* in the $STAGE2$ $TABLE$ entry. If the *sourcetype* is SUBCONFIG, locate the minidisk statement contained in the SUBCONFIG that corresponds to the system being upgraded.

   b. Note the start location, size, and volume label. For example, if the MDISK statement for the MAINT 491 disk looks like this:

   ```
   MDISK 491 3390 3298 030 IBMCM1 MR
   ```

   the start location for the 491 disk is 3298, the size is 30, and the volume label is IBMCM1.

   c. Attach the address associated with the noted volume label (refer to Table 14 on page 126 or Table 15 on page 126 for addresses and volume labels) to your current system. In this example, if the address for the volume with label IBMCM1 is C11:

   ```
   ATTACH C11 TO SYSTEM
   ```

   d. Issue the DEFINE MDISK command for the *sourceaddr*:

   ```
   DEFINE MDISK linkaddr start size vollabel
   ```

   In this example:

   ```
   DEFINE MDISK 1491 3298 30 IBMCM1
   ```

   e. Access the MDISK defined for *sourceaddr*:

   ```
   ACCESS linkaddr fm
   ```

   In this example:

   ```
   ACCESS 1491 H
   ```

2. Access the target location in write mode.

   If the *targetlinktype* is LINK, link and access *targetuid targetaddr* with *linkmode* of WR. In Example 1:

   ```
   LINK PERFSVM 201 1201 WR
   ACCESS 1201 H
   ```

   If the *targetlinktype* is ACCDIR, access the SFS directory specified, specifying the option FORCERW on the ACCESS command. For example:

```
ACCESS dirname fm (FORCERW
```

If the *targetlinktype* is MDISK, the disk must be defined issuing the DEFINE MDISK command, as follows:

a. Locate the minidisk statement in the work directory file (INSTUPGR $USERDIR) located on the MIGMAINT 2CF0 disk for the *targetuid* and *targetaddr* in the $STAGE2$ $TABLE$ entry. If the *sourcetype* is SUBCONFIG, locate the minidisk statement contained in the SUBCONFIG that corresponds to the system being upgraded.

b. Note the start location, size, and volume label. For example, if the MDISK statement for the MAINT 190 disk looks like this:

```
MDISK 190 3390 280 214 IBMRES
```

the start location for the 190 disk is 280, the size is 214, and the volume label is IBMRES.

c. Attach the address associated with the noted volume label (refer to Table 14 on page 126 or Table 15 on page 126 for addresses and volume labels) to your current system. In this example, if the address for the volume with label IBMRES is C10:

```
ATTACH C10 TO SYSTEM
```

d. Issue the DEFINE MDISK command:

```
DEFINE MDISK linkaddr start size vollabel
```

In this example:

```
DEFINE MDISK 2190 280 214 IBMRES
```

e. Access the MDISK defined for *targetaddr*:

```
ACCESS linkaddr fm
```

In this example:

```
ACCESS 2190 H
```

3. Issue the VMFCOPY command to copy the files from the *sourceaddr* to the *targetaddr*.

**When *fname ftype* is * ***, use the VMFCOPY command to copy all the files in the VMSES PARTCAT for *targetprodid* on *sourceaddr* to *targetaddr*:

```
VMFCOPY * * sourcefm = = targetfm ( PRODID sourceprodid
        SPRODID sourceprodid OLDDATE REPLACE
```

In Example 1:

```
VMFCOPY * * G = = H ( PRODID 7VMPTK10%PERFTK SPRODID 7VMPTK10%PERFTK OLDDATE
REPLACE
```

**Note:** If the target disk is MAINT's 402 disk, add the UPCASE operand to the end of the VMFCOPY command.

**When *fname ftype* is a file on the MIGMAINT 2CF0 disk,** use the VMFCOPY command to copy only the files listed in the file *fname ftype*. Issue the following command for each entry in the named file:

```
VMFCOPY entryfilename entryfiletype sourcefm = = targetfm
        ( PRODID sourceprodid SPRODID sourceprodid OLDDATE REPLACE
```

In Example 2, for each *filename filetype* entry in file 7VMCMS10 C493CMS, enter the following command:

```
VMFCOPY filename filetype G = = H ( PRODID 7VMCMS10%CMS SPRODID
                7VMCMS10%CMS (OLDDATE REPLACE
```

**Note:** If the target disk is MAINT's 402 disk, add the UPCASE operand to the end of the VMFCOPY command.

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**8**

The MIGDISK ERASE keywords use the VMFERASE command to erase files for the specified product ID from the target location.

**Syntax:**

```
MIGDISK ERASE {fname ftype|* *} targetlinktype targettype targetuid
        targetaddr targetprodid EXCL|NOEXCL
```

***fname ftype|* ****
When *fname ftype* is * *, use VMFERASE to erase all files from the *targetuid targetaddr* that are associated with *targetprodid*.

When *fname ftype* is a filename and filetype, the named file will be found on the MIGMAINT 2CF0 disk. Use VMFERASE to erase only the files listed in *fname ftype* from the *targetuid targetaddr* that are associated with *targetprodid*.

***targetlinktype***
Method used to access the location from which the files will be erased. LINK is specified if the target location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the target location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the target location is located on a work system volume that must be accessed using the DEFINE MDISK command.

***targettype***
USER, IDENTITY, or SUBCONFIG.

***targetuid***
User ID that owns the target location. If the files will be erased from an SFS directory the value of this field is "DIR".

***targetaddr***
Minidisk or SFS directory from which the files will be erased.

***targetprodid***
The VMSES/E prodid that is associated with the files to be erased.

**EXCL|NOEXCL**
This field should be ignored.

**Example 1,** when *fname ftype* is * *:

```
MIGDISK ERASE * * LINK IDENTITY PERFSVM 201 6VMPTK40%PERFTK NOEXCL
```

**Example 2,** when *fname ftype* is a file on the MIGMAINT 2CF0 disk (6VMCMS40 E490CMS in this example):

```
MIGDISK ERASE 6VMCMS40 E490CMS MDISK IDENTITY MAINT 190 6VMCMS40%CMS EXCL
```

**Manual Instructions:**

1. Access the target location in write mode.

   If the *targetlinktype* is LINK, link and access *targetuid targetaddr* with *linkmode* of WR. In Example 1:

   ```
   LINK PERFSVM 201 1201 WR
   ACCESS 1201 H
   ```

   If the *targetlinktype* is ACCDIR, access the SFS directory specified, specifying the option FORCERW on the ACCESS command. For example:

   ```
   ACCESS dirname fm (FORCERW
   ```

   If the *targetlinktype* is MDISK, the disk must be defined issuing the DEFINE MDISK command, as follows:

   a. Locate the minidisk statement in the work directory file (INSTUPGR $USERDIR) located on the MIGMAINT 2CF0 disk for the *targetuid* and *targetaddr* in the $STAGE2$ $TABLE$ entry. If the *sourcetype* is SUBCONFIG, locate the minidisk statement contained in the SUBCONFIG that corresponds to the system being upgraded.

   b. Note the start location, size, and volume label. For example, if the MDISK statement for the MAINT 190 disk looks like this:

   ```
   MDISK 190 3390 280 214 IBMRES
   ```

   the start location for the 190 disk is 280, the size is 214, and the volume label is IBMRES.

   c. Attach the address associated with the noted volume label (refer to Table 14 on page 126 or Table 15 on page 126 for addresses and volume labels) to your current system. In this example, if the address for the volume with label IBMRES is C10:

   ```
   ATTACH C10 TO SYSTEM
   ```

   d. Issue the DEFINE MDISK command:

   ```
   DEFINE MDISK linkaddr start size vollabel
   ```

   In this example:

   ```
   DEFINE MDISK 2190 280 214 IBMRES
   ```

   e. Access the MDISK defined for *targetaddr*:

```
ACCESS linkaddr fm
```

In this example:

```
ACCESS 2190 H
```

2. Issue the VMFERASE command to erase the files from the *targetaddr*.

   **When *fname ftype* is \* \***, use VMFERASE to erase all the files in the VMSES PARTCAT for *targetprodid* on *targetaddr*:

```
VMFERASE PROD targetprodid FROM targetfm
```

   In Example 1:

```
VMFERASE PROD 6VMCMS40%PERFTK FROM H
```

   **When *fname ftype* is a file on the MIGMAINT 2CF0 disk, use the**, use VMFERASE to erase only the files listed in the file *fname ftype*. Issue the following command for each entry in the named file:

```
VMFERASE FILE filename filetype targetfm
```

   In Example 2, for each *filename filetype* entry in file 6VMCMS40 E490CMS, enter the following command:

```
VMFERASE FILE filename filetype H
```

_____

**9**

The PARTNOTIFY keyword writes a message to the *systemname* $WRNFILE file on the MIGMAINT 2CF0 disk that needs to be addressed after the upgrade is complete.

**Syntax:**

```
PARTNOTIFY msgnumber formatnumber substitutiondata
```

**Example:**

```
PARTNOTIFY 8555 1 MPROUTE SCF++002 , 7VMTCP10 491 , MPROUTE SCONFIG
```

**Manual Instructions:** Make a note of the messages specified by the PARTNOTIFY keyword and refer to *z/VM: CP Messages and Codes* for explanations of the messages. The actions indicated by these messages should be addressed after the upgrade is complete.

_____

**10**

The SESCMD keyword issues the command specified after the *keyword*.

**Syntax:**

```
SESCMD keyword sescommand
```

**Example:**

```
SESCMD FINSBLD VMFINS BUILD PPF SERVP2P REXX (SERVICED LINK
```

**Manual Instructions:** Ignore the value specified in *keyword* and issue the command specified in *sescommand*. In this example:

```
VMFINS BUILD PPF SERVP2P REXX (SERVICED LINK
```

--------------------------------------------------------------------------------
**11**

The SESMOVE COPY keywords use the VMFCOPY command to copy a file from the MIGMAINT 2CF0 disk to the PMAINT 550 OR 551 disk.

**Syntax:**

```
SESMOVE COPY prodid targetfname targetftype LINK USER PMAINT 550|551
              sourcefnamesourceftype LINK IDENTITY MIGMAINT 2CF0
```

**Example:** Use the VMFCOPY command to copy the file CPFMTXA EXEC from the MIGMAINT 2CF0 disk to the file CPFMTXA EXEC on the PMAINT 551 disk, associating the file with *prodid* 7VMCPR10%CP:

```
SESMOVE COPY 7VMCPR10%CP CPFMTXA EXEC LINK USER PMAINT 551
              CPFMTXA EXEC LINK IDENTITY MIGMAINT 2CF0
```

**Manual Instructions:**

1. Link and access the PMAINT 550 or 551 disk in write mode. In this example:

```
LINK PMAINT 551 551 WR
ACCESS 551 H
```

2. Link and access the MIGMAINT 2CF0 disk. In this example:

```
LINK MIGMAINT 2CF0 2CF0 MR
ACCESS 2CF0 G
```

3. Issue the VMFCOPY command:

```
VMFCOPY sourcefname sourceftype fm_2CF0 targetfname targetftype fm_550|fm_551
        ( PRODID sourceprodid OLDDATE REPLACE
```

   In this example:

```
VMFCOPY CPFMTXA EXEC G CPFMTXA EXEC H ( PRODID 7VMCPR10%CP OLDDATE REPLACE
```

--------------------------------------------------------------------------------
**12**

The SESMOVE ERASE keywords use the VMFERASE command to erase a file from the PMAINT 550 or 551 disk.

**Syntax:**

```
SESMOVE ERASE fname ftype LINK USER PMAINT 550|551
```

**Example:** Use the VMFERASE command to erase the file CPFMTXA EXEC from the PMAINT 551 disk:

```
SESMOVE ERASE CPFMTXA EXEC LINK USER PMAINT 551
```

**Manual Instructions:**

1. Link and access PMAINT's 550 or 551 disk in write mode. In this example:

```
LINK PMAINT 551 551 WR
ACCESS 551 G
```

2. Issue the VMFERASE command:

```
VMFERASE FILE fname ftype fm_550|fm_551
```

In this example:

```
VMFERASE FILE CPFMTXA EXEC G
```

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**13**

The UPDDISK COPY keywords copy either a single file or an entire disk. UPDDISK COPY uses COPYFILE with the OLDDATE REPLACE options.

**Syntax:**

```
UPDDISK COPY sourcelinktype sourceidtype sourceuserid sourceaddrdir sourcefname
sourceftype
            targetlinktype targetidtype targetuserid targetaddrdir targetfname
targetftype
```

*sourcelinktype*
    Method used to access the disk where the file resides: LINKACC, ACCDIR, or MDISK. LINKACC is specified if the source location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the source location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the source location is located on a work system volume that must be accessed using the DEFINE MDISK command. For instructions on how to access a disk using DEFINE MDISK, see the DDRMDISK keyword.

*sourceidtype*
    Type of userid: USER or IDENTITY.

*sourceuserid*
    User ID that owns the disk where the file resides. If the file is in an SFS directory, the value of this field is "DIR".

*sourceaddrdir*
    Minidisk or SFS directory where the file resides.

*sourcefname*
    File name of the file to be copied or NOFN if the entire disk is to be copied.

*sourceftype*
    File type of the file to be copied or NOFT if the entire disk is to be copied.

*targetlinktype*
> Method used to access the disk where the file will be copied: LINKACC, ACCDIR, or MDISK. LINKACC is specified if the target ("to") location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the target location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the target location must be accessed using the DEFINE MDISK command. For instructions on how to access a disk using DEFINE MDISK, see the DDRMDISK keyword.

*targetidtype*
> Type of userid: USER or IDENTITY.

*targetuserid*
> User ID that owns the disk where the file will be copied. If the file is in an SFS directory, the value of this field is "DIR".

*targetaddrdir*
> Minidisk or SFS directory where the file will be copied.

*targetfname*
> File name given to the file when it is copied or NOFN if the entire disk is to be copied.

*targetftype*
> File type given to the file when it is copied or NOFT if the entire disk is to be copied.

**Example:**

```
UPDDISK COPY LINKACC USER PMAINT 550 CPFMTXA EXEC LINKACC USER PMAINT 551
CPFMTXA EXEC
```

**Manual Instructions:**

1. Link and access the source disk. In this example:

```
LINK PMAINT 550 1550 RR
ACCESS 1550 H
```

2. Link and access the target ("to") disk in write mode. In this example:

```
LINK PMAINT 551 1551 WR
ACCESS 1551 H
```

3. Copy the file from the source disk to the target disk, using OLDDATE REPLACE. In this example:

```
COPYFILE CPFMTXA EXEC G CPFMTXA EXEC A H (OLDDATE REPLACE
```

4. Release and detach, if necessary, the SFS directories and minidisks accessed above. In this example:

```
RELEASE G
RELEASE H (DETACH
```

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

**14**

The UPDDISK ERASE keywords erase either a single file or an entire disk.

**Syntax:**

```
UPDDISK ERASE sourcelinktype sourceidtype sourceuserid sourceaddrdir
sourcefname sourceftype
```

*sourcelinktype*
> Method used to access the disk where the file resides: LINKACC, ACCDIR, or MDISK. LINKACC is specified if the source location is a minidisk, accessed using the LINK and ACCESS commands. ACCDIR is specified if the source location is an SFS directory which is just accessed with the ACCESS command. MDISK is specified if the source location is located on a work system volume that must be accessed using the DEFINE MDISK command. For instructions on how to access a disk using DEFINE MDISK, see the DDRMDISK keyword.

*sourceidtype*
> Type of userid: USER or IDENTITY.

*sourceuserid*
> User ID that owns the disk where the file resides. If the file is in an SFS directory, the value of this field is "DIR".

*sourceaddrdir*
> Minidisk or SFS directory where the file resides.

*sourcefname*
> File name of the file to be copied or NOFN if the entire disk is to be copied.

*sourceftype*
> File type of the file to be copied or NOFT if the entire disk is to be copied.

**Example:**

```
UPDDISK ERASE ACCDIR * DIR VMPSFS:7VMTCP10.TCPIP.OBJECT LDAPDS SAMPENVR
```

**Manual Instructions:**

1. Link, if necessary, and access the disk. In this example:

```
ACCESS VMPSFS:7VMTCP10.TCPIP.OBJECT G
```

2. Erase the file from the source disk. In this example:

```
ERASE LDAPDS SAMPENVR G
```

3. Release and detach, if necessary, the SFS directory or minidisk accessed above. In this example::

```
RELEASE G
```

# Appendix Q. Removing changes made by STAGE1 (optional)

This appendix provides instructions on how to undo any changes that have been made to your current system during STAGE1 of the upgrade installation procedure.

# Step 1. Back out changes made in Chapter 21, "Finish your upgrade installation"

If you did not complete any steps in Chapter 17, "Finish the STAGE1 upgrade," on page 169, go on to "Step 2. Choose your backout option" on page 293. If you did complete steps in Chapter 17, "Finish the STAGE1 upgrade," on page 169, you must back out some of those changes by hand.

1. During the backout process, the MAINT710 user ID will be deleted. If you had local modifications to rework, you might want to save any files you reworked on a different user ID, for future reuse.

2. If you are upgrading a non-SSI system, a one-member SSI cluster, or the first member of a multimember SSI cluster, the 7VMDIR10 user ID will be deleted during the backout process. If DirMaint is enabled as your directory manager and you made changes to configuration files, authorization files, or both, those changes will be lost if they were saved on a minidisk that is owned by 7VMDIR10.

3. If you are using an external security manager (ESM), you should review the documentation for your ESM to determine whether any authorizations you added need to be removed prior to backing out, because the user IDs that were added will be deleted during backout processing. If you are using RACF as your ESM, you do not need to remove any authorizations.

4. Before you begin to back out the remainder of the changes made during STAGE1, you should make sure that the MIGMAINT user ID is not linked to any MAINT710 minidisks. Enter the QUERY MDISK command for the 5E5 and 51D minidisks (QUERY MDISK 5E5 and QUERY MDISK 51D) and check the owning user ID. If the OwnerID is MAINT710, detach the minidisks (DETACH 51D and DETACH 5E5). Then link and access your current system 51D and 5E5 disks:

```
LINK MAINT640 51D 51D MR
ACCESS 51D D
LINK MAINT640 5E5 5E5 RR
ACCESS 5E5 B
```

5. If you are using DirMaint as your directory manager and you are backing out changes to a non-SSI system, a one-member SSI cluster, or the first member of a multimember SSI cluster, the automated BACKOUT process might encounter an error using DirMaint after the 7VMDIR10 user ID is deleted. If this happens, recycle your DirMaint server user IDs (DIRMAINT, DIRMSAT*x*, and DATAMOV*x*) and restart the backout by re-entering this command:

```
INSTUPGR STAGE1 (BACKOUT
```

6. If you are backing out a member of a multimember SSI cluster, you should make sure the updated directory is online for all members of your SSI cluster. If you are using a directory manager, this should have been done automatically by the directory manager. If you are not using a directory manager, follow your normal procedures (directxa) to put the updated directory online everywhere.

## Step 2. Choose your backout option

If you used the INSTUPGR command with the COMMIT option to make changes to your system, a file named $BACKOUT $TABLE$ was created. This file contains entries that will undo the changes made by the INSTUPGR command. If you made some or all of the STAGE1 changes manually, you should have documented those changes and you must remove those changes yourself.

If you made all or some changes to your system using the INSTUPGR command, go to "Step 3. Undo STAGE1 changes using INSTUPGR" on page 294.

If you made all the STAGE1 changes to your system yourself, go to "Step 4. Undo STAGE1 changes manually" on page 295.

## Step 3. Undo STAGE1 changes using INSTUPGR

1. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Access the 24CC minidisk as file mode C.

   ```
   access 24cc c
   Ready; T=n.nn/n.nn hh:mm:ss
   ```

3. Run INSTUPGR to undo the changes made by INSTUPGR STAGE1 (COMMIT.

   ```
   instupgr stage1 (backout
   * Now processing $BACKOUT $TABLE$ E. File is processed from the
   * last record to the first to assure proper backout.
   Now processing line nnn of nnn
   Now processing line nnn of nnn
      ⋮
   IUGUPG8392I INSTUPGR ended successfully
   Ready; T=n.nn/n.nn hh:mm:ssReady; T=n.nn/n.nn hh:mm:ss
   ```

4. If any error conditions occur, review the error messages in file INSTUPGR $CONSLOG on the MIGMAINT 2CF0 minidisk (accessed as filemode E) and correct the condition that is causing the error. Then return to substep "3" on page 294.

5. If you also made changes to your system manually, refer to the backout document that you created to manually undo your changes. Remember that the order in which you made the $STAGE1$ updates is the reverse order in which the updates should be removed.

6. Log off the MIGMAINT user ID.

If you undid the STAGE1 changes to your system because you need to correct errors, correct the errors now and then return to Chapter 15, "Generate the STAGE1 changes file," on page 159. If you are not continuing with the upgrade installation at this time, IBM recommends that you log back on to MIGMAINT and erase all of the files on the MIGMAINT 24CC and the 2CF0 disks. This will prevent accidental use of out-of-date information should you decide to use the upgrade installation procedure later. You may return the volumes you used to install the work system to your DASD pool. If you decide later to use the upgrade installation procedure for this system, you should start over again, at the beginning of Part 4, "Upgrade installation," on page 101.

# Step 4. Undo STAGE1 changes manually

1. Log on to the MIGMAINT user ID on the system being upgraded. Make sure the user ID meets the MIGMAINT user ID requirements.

2. Refer to the backout documentation you created while making the STAGE1 updates manually to undo your changes.

3. Access the 24CC minidisk as file mode C.

```
access 24cc c
Ready; T=n.nn/n.nn hh:mm:ss
```

4. Once all the changes are complete, run the INSTUPGR command to update the appropriate status tables so that you can restart your upgrade installation when you are ready.

```
instupgr stage1 (backout done
IUGUPG8392I INSTUPGR ended successfully
Ready; T=n.nn/n.nn hh:mm:ss
```

5. Log off the MIGMAINT user ID.

If you undid the STAGE1 changes to your system because you need to correct errors, correct the errors now and then return to Chapter 15, "Generate the STAGE1 changes file," on page 159. If you are not continuing with the upgrade installation at this time, IBM recommends that you log back on to MIGMAINT and erase all of the files on the MIGMAINT 24CC and the 2CF0 disks. This will prevent accidental use of out-of-date information should you decide to use the upgrade installation procedure later. You may return the volumes you used to install the work system to your DASD pool. If you decide later to use the upgrade installation procedure for this system, you should start over again, at the beginning of Part 4, "Upgrade installation," on page 101.

# Appendix R. Upgrade installation directory manager exit interface

This appendix defines a program interface that can be used by a directory manager program to code an upgrade exit program. This exit program is provided by a directory manager product to allow upgrade installation processing to use the directory manager functions. Upgrade installation processing will call the exit with the defined syntax. The exit will then invoke the directory manager commands and return the appropriate return code to the calling program.

An exit that is coded for a release of z/VM will need to be made available to run on any release of z/VM that can be upgraded. So an exit coded for V7.1 will need to be made available on V6.4. The exit will need to incorporate release and version information (as discussed below) to allow verification that it is compatible with the level of z/VM to which an upgrade is being performed.

If updates are necessary for the directory manager to operate with a newer level of z/VM, a customer will first need to upgrade the directory manager to the required level (by applying any necessary service updates, or installation of a new level) before the customer can upgrade the system.

The exit needs to be named UPGDMIXT EXEC and must be installed on the MAINT 19E disk.

## Requirements

1. File modes C and E are reserved for z/VM installation use.
2. The exit must contain a version indicator in the format *vrm*.*nn*, where: *vrm* is a z/VM version, release, and modification level (710, for example), and *nn* is an exit version number (01, for example). The installation upgrade utilities will make an initial call to the exit to confirm that the exit version indicator is suitable for use with the current system upgrade.
3. For a given release of z/VM, the exit must run in all prior releases of z/VM that can be upgraded to the given release using the upgrade installation process.
4. If a failure occurs while performing the function requested by the installation upgrade utilities, the exit will need to:

   - Roll back any changes that had been made during a given function request. For example, if the exit must issue multiple commands to complete a requested function and several of those commands are completed prior to a command failure, then the exit will need to roll back the completed commands before returning control to the installation upgrade utilities.
   - Return one of the defined failure codes to the calling installation upgrade utility.
5. The exit must generate a log file named UPGDMIXT $LOGFILE E (the appropriate disk will have been accessed by the installation upgrade utilities prior to any exit calls). It should be appended with information appropriate for each invocation of the exit.

   At a minimum, the $LOGFILE should include the following:

   - Name of the calling exec
   - A date/time stamp
   - The function request made by the calling exec
   - Actual command(s) issued to complete the request
   - Successful or failed status
   - If necessary, pointers to additional data or logs (such as server-base logs)
6. The exit will be able to use the A-disk for work space. It will need to clean up any files created on the A-disk before returning control to the calling installation upgrade utility.
7. Whenever possible, the exit should suppress output to the user's console.

## Syntax of the call to the exit

The exit is called with a parameter list that contains four tokens and a data stem, as follows:

**token1**
The name of the program that is calling the exit.

**token2**
A keyword.

**token3**
The exit interface data stem variable name (*stem_name*).

**token4**
An integer value that indicates the number of records loaded into the exit interface data stem.

The data stem is a REXX stem variable. The following records make up the data stem:

**stem_name.0**
The number of records that are loaded into the data stem. This value can be compared to **token4** to confirm that the correct/expected number of records have been acquired.

**stem_name.1**
A keyword.

**stem_name.2**
The object type.

**stem_name.3**
The object modifier.

**stem_name.4**
An action.

**stem_name.5-*n***
Data records.

A sample call to the exit follows:

```
"PIPE COMMAND EXEC UPGDMIXT" pgm_name keyword stem_name count
```

## Contents of the exit interface data stem

The exit interface data stem will contain at least one record. Records 2-*n* are optional, depending on the function to be performed by the exit.

**Record 1: Keyword (required)**
Valid keywords:

- SETUP
- VERIFY
- CLEANUP
- CRYPTO
- ENTRY
- LINK
- MDISK
- VSTOR
- PRIV
- OPTION
- IUCV

- COMMAND
- IPL
- LOADDEV
- NAMESAVE

**Record 2: Object type (optional)**
Valid object types:

- USER
- IDENTITY
- SUBCONFIG
- PROFILE
- VERSION

**Record 3: Object modifier (optional)**
Valid object modifiers:

- If the object type is VERSION, the exit version indicator (*vrm.nn*).
- If the object type is SUBCONFIG, the name of the subconfig, node, and identity (*subname node identname*).
- Otherwise, the name of the affected object type (*name*). The name can be any valid name for an object type, as defined by the CP user directory

**Record 4: Action (Optional)**
Valid actions:

- ADD
- DELETE
- REPLACE
- COPY
- GET
- UNLOCK

**Records 5 to *n*: Data (optional)**
The data that is needed to perform a given function. The data varies based on the action or object that is being manipulated.

## Options of the exit interface data stem



*Figure 19: Main syntax diagram*
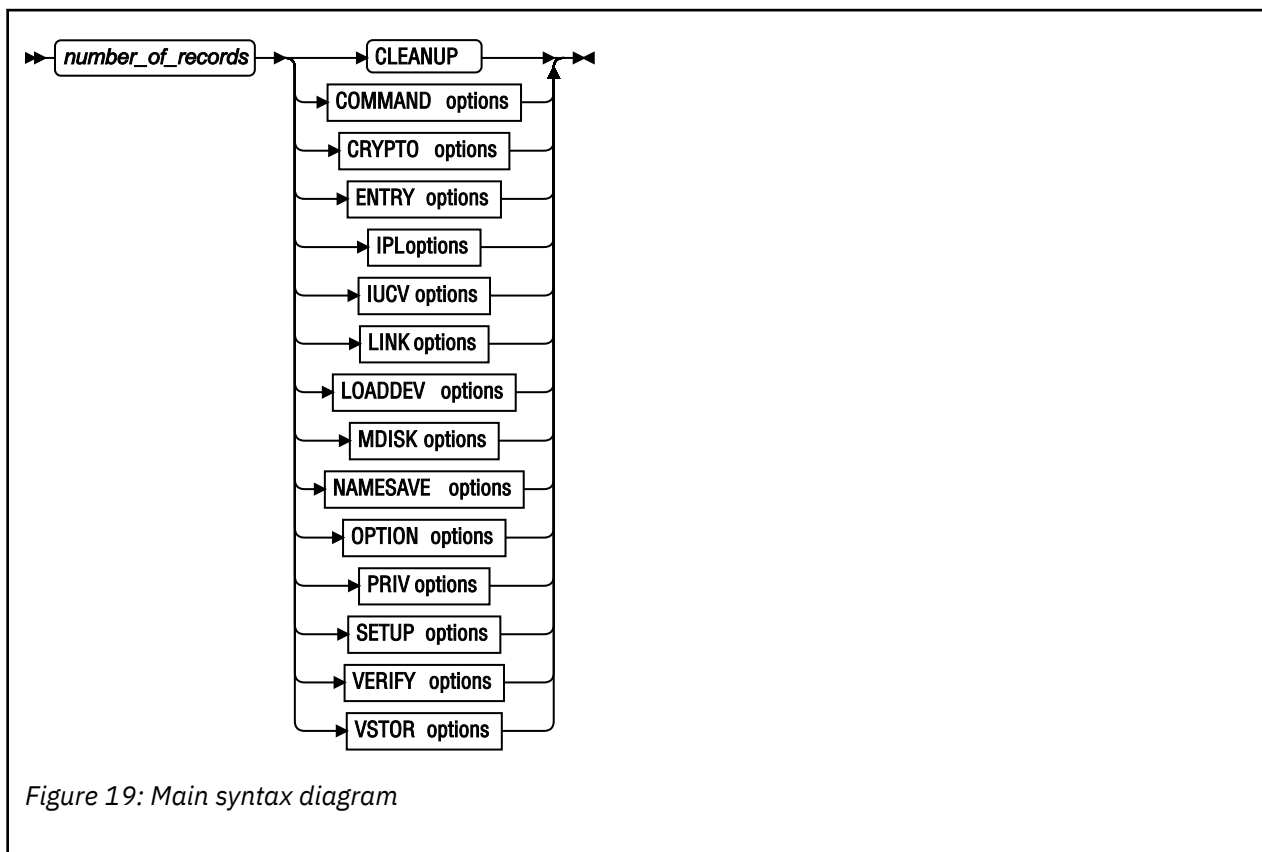
### CLEANUP

Use the CLEANUP keyword to clean up directory manager environment and files left on the work (A) disk.

It is anticipated that only one CLEANUP call will be made to an exit, during a given processing stage. Cleanup processing can be used to restore/undo SETUP environment changes made for handling directory change requests. There are no arguments for this keyword.

### COMMAND

Use the COMMAND options to add a new COMMAND statement or to delete an existing COMMAND statement.
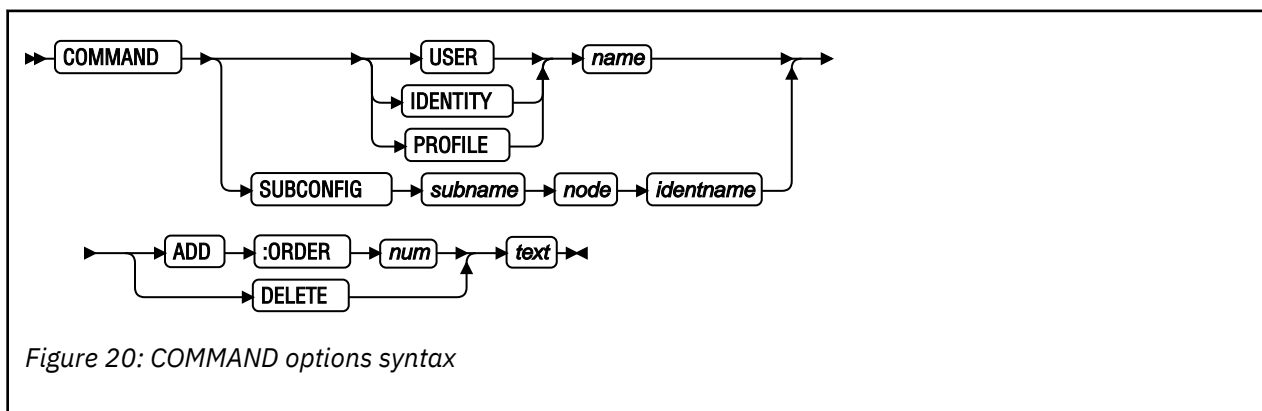


*Figure 20: COMMAND options syntax*

where:

*name*
   is the user, identity, or profile name.

*subname*
   is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

*node*
   is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

*identname*
   is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**:ORDER**
   indicates the ordinal value of the command follows (ADD only).

*num*
   is the ordinal placement of the COMMAND statement (ADD only).

*text*
   is the information to be appended to the keyword "COMMAND" to derive the statement to be added to or deleted from the directory.
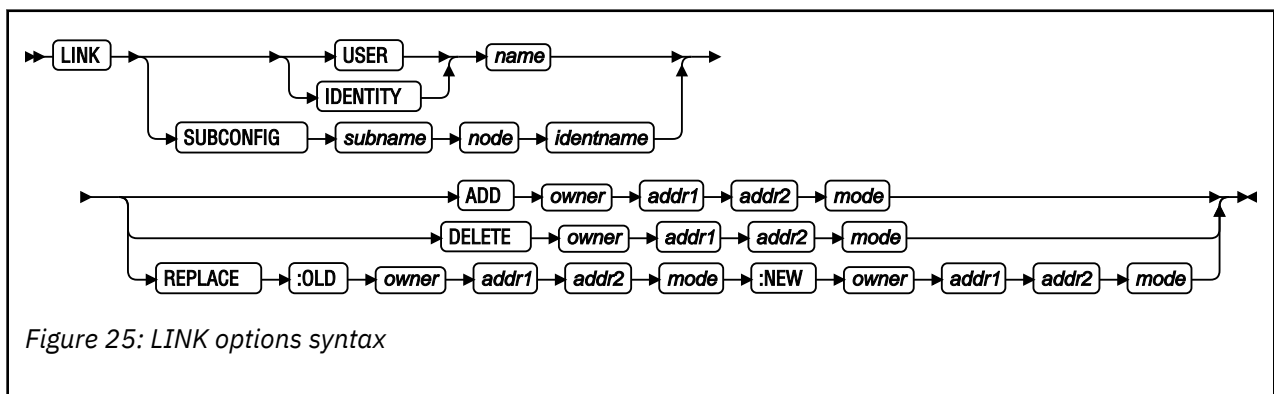
 **Notes:**

   1. Only one command statement can be added or deleted at a time.

   2. A new statement must be created for each command. Statements cannot be added to existing COMMAND statements.

   3. The statement will be inserted as the *num*th COMMAND statement in the directory entity.

   4. If there are no COMMAND statements in the directory entity, this statement will be added as the first COMMAND statement.

   5. If *num* is larger than the number of COMMAND statements in the directory entity, this statement will be added following the last COMMAND statement.

 **Examples:**

```
COMMAND USER pmaint ADD :ORDER 1 SET RUN ON
COMMAND IDENTITY zvmlxapp ADD :ORDER 9 SET D8ONECMD * OFF
COMMAND PROFILE tcpcmsu ADD :ORDER 3 SET RUN ON
COMMAND SUBCONFIG lohcos-1 memb2 lohcost ADD :ORDER 4 TERM LINEND #
COMMAND USER pmaint DELETE SET RUN ON
COMMAND PROFILE ibmdflt DELETE SPOOL CONS START *
COMMAND IDENTITY zvmlxapp DELETE SET D8ONECMD * OFF
COMMAND SUBCONFIG UNKNOWNSUB memb2 vmservr DELETE SET RUN ON
```

# CRYPTO

Use the CRYPTO options to add or delete a new CRYPTO APVIRTUAL control statement.

If ADD is specified:

- If no CRYPTO statements exist in the section we are trying to update, add the statement.

- If the CRYPTO APVIRTUAL statement exists in the section we are trying to update, return RC=1.

- If CRYPTO statements other than the APVIRTUAL staement exist in the section we are trying to update, return RC=2:

```
2 Pre-existing Crypto statements in directory. No action taken.
```

If DELETE is specified:

- If the only CRYPTO statement is APVIRTUAL, delete the statement.
- If the CRYPTO APVIRTUAL statement does not exist in the section we are trying to update, return RC=1.
- If CRYPTO statements other than the APVIRTUAL statement exist in the section we are trying to update, return RC=2:

```
2 Pre-existing Crypto statements in directory. No action taken.
```



*Figure 21: CRYPTO options syntax*

where:

**name**
   is the user, identity, or profile name.

**subname**
   is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

**node**
   is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

**identname**
   is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**statement**
   is the CRYPTO APVIRTual control statement to be added.

**Examples:**

```
CRYPTO  SUBCONFIG lohcos-1 memb2 lohcost ADD CRYPTO  APVIRTual
CRYPTO  SUBCONFIG UNKNOWNSUB memb2 lohcost ADD CRYPTO APVIRTual
CRYPTO  USER pmaint ADD CRYPTO  APVIRTual
CRYPTO  IDENTITY zvmlxapp ADD CRYPTO  APVIRTual
CRYPTO  PROFILE ibmdflt ADD CRYPTO APVIRTual
CRYPTO  SUBCONFIG lohcos-1 memb2 lohcost DELETE CRYPTO APVIRTual
CRYPTO  SUBCONFIG UNKNOWNSUB memb2 lohcost DELETE CRYPTO APVIRTual
CRYPTO  USER pmaint DELETE CRYPTO APVIRTual
CRYPTO  IDENTITY zvmlxapp DELETE CRYPTO APVIRTual
CRYPTO  PROFILE ibmdflt DELETE CRYPTO APVIRTual
```

## ENTRY

Use the ENTRY options to add a new USER, IDENTITY, or SUBCONFIG, exactly as defined, to delete an existing USER, IDENTITY, or SUBCONFIG, or to get, replace, lock, or unlock a userid entry.

If ADD is specified, the records passed on the call contain the exact directory entry that should be added. No changes should be made to the records. If there are MDISK statements in the file, add the MDISK statements just as they are.

If GET is specified, the specified userid entry from the user directory will be obtained and written to the E disk as *userid* DIRECT. If LOCK is specified, the userid entry will be locked in the user directory. If NOLOCK is specified, the userid entry will *not* be locked.

If REPLACE is specified, the existing userid directory entry will be replaced with the directory entry passed on the call, and the userid will be unlocked.

If UNLOCK is specified, the userid will be unlocked.

If LOCK is specified, the user ID will be locked.
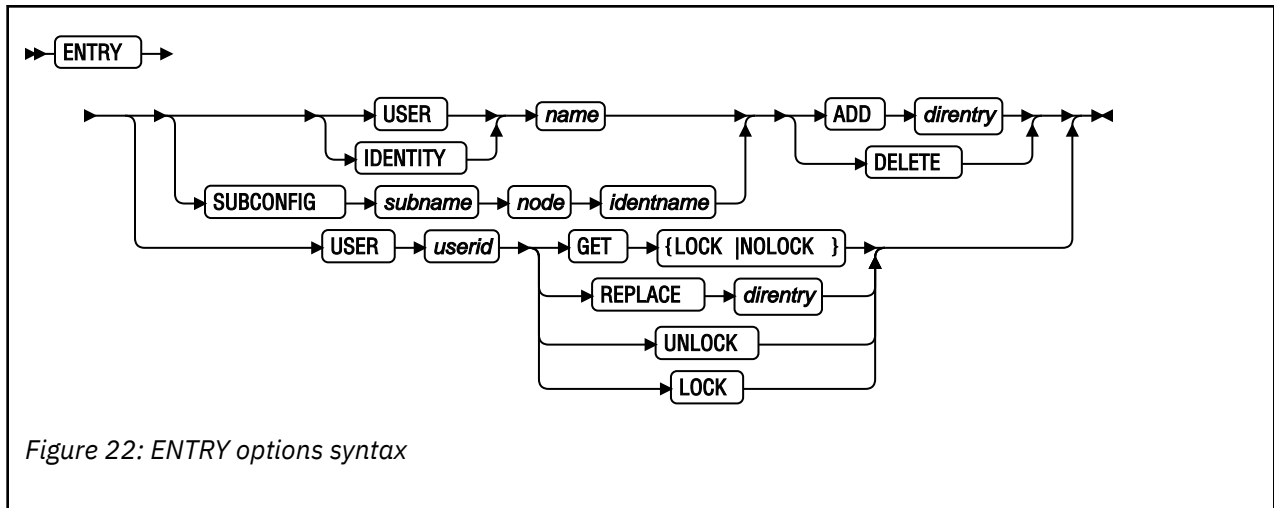


*Figure 22: ENTRY options syntax*

where:

**name**
is the user or identity name.

**subname**
is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

**node**
is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

**identname**
is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**direntry**
is the complete directory entry.

**userid**
is the user ID.

**Notes:**

1. For IDENTITY:

   a. When adding, the BUILD ON statement will not be included in the definition.

   b. When deleting, an IDENTITY with a SUBCONFIG will never be deleted. The SUBCONFIG will always be deleted first.

2. For SUBCONFIG:

   a. When adding, the BUILD ON statement will be added to the IDENTITY when the SUBCONFIG is defined.

   b. When deleting, the BUILD ON statement will be removed from the IDENTITY when the SUBCONFIG is deleted.

3. For DELETE, the files on any disks that are deleted must *not* be erased.

**Examples:**

```
ENTRY USER MAINT710 ADD direntry
ENTRY IDENTITY OPERNEW ADD direntry
ENTRY SUBCONFIG OPER-2 MEMB2 OPERNEW ADD direntry
ENTRY USER MAINT710 DELETE
ENTRY IDENTITY OPERNEW DELETE
ENTRY SUBCONFIG OPER-2 MEMB2 OPERATOR DELETE
ENTRY SUBCONFIG UNKNOWNSUB MEMB2 SERVERW DELETE
ENTRY USER 5684042J GET LOCK
ENTRY USER 5684042J REPLACE direntry
ENTRY USER 5684042J UNLOCK
ENTRY USER 5684042J LOCK
```

## IPL

Use the IPL options to add a new IPL control statement or delete an existing IPL control statement.
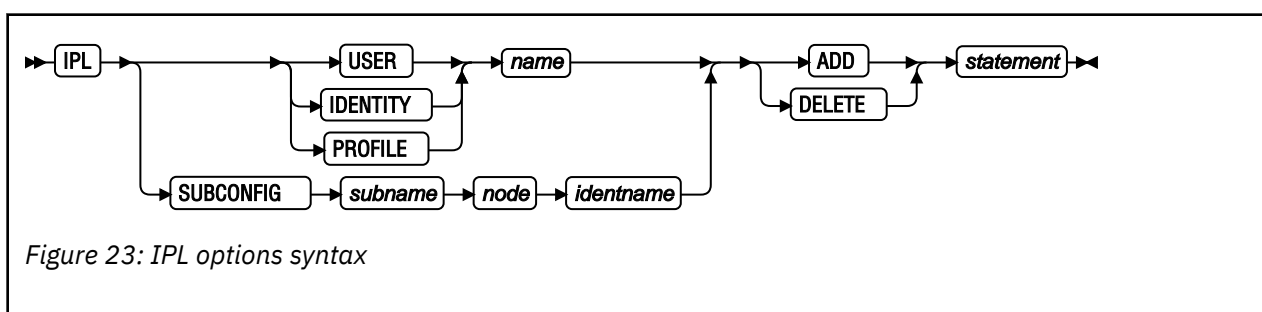


*Figure 23: IPL options syntax*

where:

**name**
    is the user, identity, or profile name.

**subname**
    is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

**node**
    is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

**identname**
    is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**statement**
    is the IPL COMMAND statement to be added or deleted.

**Examples:**

```
IPL SUBCONFIG lohcos-1 memb2 lohcost ADD IPL 190
IPL SUBCONFIG UNKNOWNSUB memb2 lohcost ADD IPL CMS
IPL USER pmaint ADD IPL 190 PARM AUTOCR
IPL IDENTITY avsvm ADD IPL CMS PARM AUTOCR
IPL PROFILE ibmdflt ADD IPL CMS
IPL SUBCONFIG lohcos-1 memb2 lohcost DELETE IPL 190
IPL SUBCONFIG UNKNOWNSUB memb2 lohcost DELETE IPL CMS
IPL USER pmaint DELETE IPL 190 PARM AUTOCR
IPL IDENTITY avsvm DELETE IPL CMS PARM AUTOCR
IPL PROFILE ibmdflt DELETE IPL CMS
```

## IUCV

Use the IUCV options to add a new IUCV statement or delete an existing IUCV statement.

```
▶▶─ IUCV ─┬─ USER ─────┬─ name ─┬─ ADD ────┬─ text ─◀
          ├─ IDENTITY ─┤        └─ DELETE ─┘
          └─ PROFILE ──┘
```

*Figure 24: IUCV options syntax*
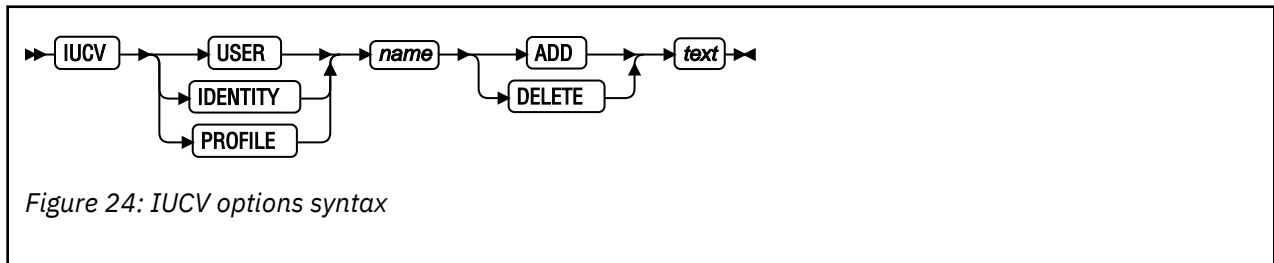
where:

***name***
    is the user, identity or profile name.

***text***
    is the information to be appended to the keyword "IUCV" to derive the statement to be added to or deleted from the directory.

**Notes:**

1. Only one IUCV statement can be added or deleted at a time.
2. When adding, a new IUCV statement must be created. The new information cannot be added to an existing statement.

**Examples:**

```
IUCV USER pmaint ADD *IDENT GATEANY GATEWAY REVOKE
IUCV IDENTITY avsvm ADD *MSG
IUCV PROFILE tcpcmsu ADD ALLOW
IUCV IDENTITY avsvm DELETE *IDENT GATEANY GATEWAY REVOKE
IUCV USER pmaint DELETE *MSG
IUCV PROFILE tcpcmsu DELETE ALLOW
```

## LINK

Use the LINK options to add, delete, or replace a LINK statement.

```
▶▶─ LINK ─┬──────────┬─ USER ─────┬─ name ──────────────┬───
          │          ├─ IDENTITY ─┘                     │
          └─ SUBCONFIG ─ subname ─ node ─ identname ────┘

───┬─ ADD ──── owner ─ addr1 ─ addr2 ─ mode ───────────────────────────────────────┬─◀
   ├─ DELETE ─ owner ─ addr1 ─ addr2 ─ mode ───────────────────────────────────────┤
   └─ REPLACE ─ :OLD ─ owner ─ addr1 ─ addr2 ─ mode ─ :NEW ─ owner ─ addr1 ─ addr2 ─ mode ─┘
```

*Figure 25: LINK options syntax*

where:

***name***
    is the user or identity name.

*subname*
is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname.*

*node*
is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

*identname*
is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

*owner*
is the user whose disk will be linked (for ADD), or whose disk is currently being linked (for DELETE or REPLACE).

*addr1*
is the disk that will be linked (for ADD), or is currently being linked (for DELETE or REPLACE).

*addr2*
is the address at which the disk will be linked (for ADD), or is currently being linked (for DELETE or REPLACE).

*mode*
is the link mode to be used (for ADD), or is the current link mode (for DELETE or REPLACE).

**:OLD**
indicates the start of the information to be replaced (REPLACE only).

**:NEW**
indicates the start of the replacement information (REPLACE only).

*naddr2*
is the new address at which the disk will be linked (REPLACE only).

*nmode*
is the new link mode to be used (REPLACE only).

**Note:** The *owner* and *addr1* cannot change in a LINK REPLACE statement. Only the *addr2* and *mode* can be changed (to *naddr2* and *nmode*).

 **Examples:**

```
LINK USER cms1 ADD pmaint 2cc 2cc wr
LINK SUBCONFIG maint-3 memb2 maint ADD maint710 201 201 rr
LINK SUBCONFIG UNKNOWNSUB memb2 maint ADD maint710 201 201 rr
LINK USER bldcms DELETE maint 407 407 rr
LINK SUBCONFIG maint-3 memb2 maint DELETE maint640 201 201 rr
LINK SUBCONFIG UNKNOWNSUB memb2 maint DELETE maint640 201 201 rr
LINK USER bldcms REPLACE OLD maint 407 407 rr :NEW maint 407 409 rr
LINK SUBCONFIG maint-3 memb2 maint REPLACE :OLD maint640 201 201 rr :NEW
maint640 201 201 wr
LINK SUBCONFIG UNKNOWNSUB memb2 maint REPLACE :OLD maint640 201 201
rr :NEW maint640 201 199 rr
```

## LOADDEV

Use the LOADDEV options to add a new LOADDEV control statement or delete an existing LOADDEV control statement.
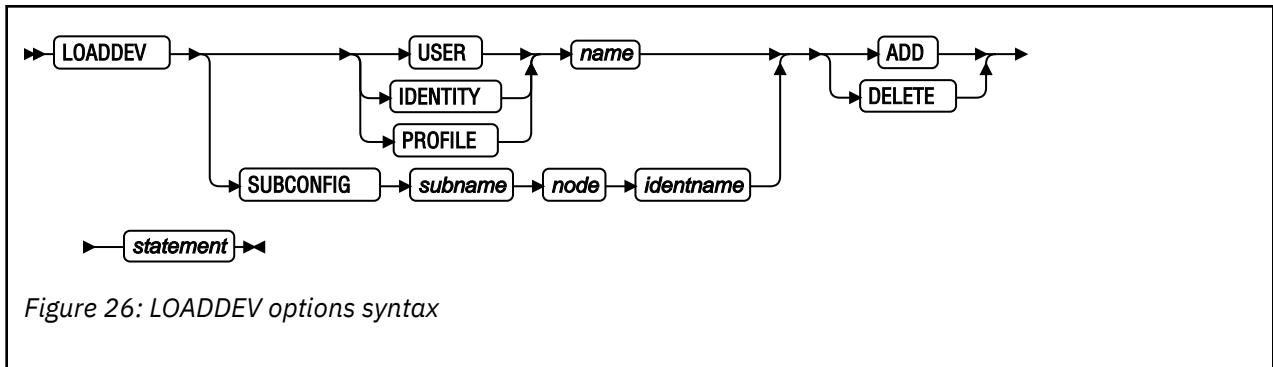
*Figure 26: LOADDEV options syntax*

where:

**name**
    is the user, identity, or profile name.

**subname**
    is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

**node**
    is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

**identname**
    is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**statement**
    is the LOADDEV control statement to be added or deleted.

 **Examples:**

```
LOADDEV SUBCONFIG lohcos-1 memb2 lohcost ADD LOADDEV PORT 0
LOADDEV SUBCONFIG UNKNOWNSUB memb2 lohcost ADD LOADDEV BOOT 0
LOADDEV USER pmaint ADD LOADDEV LUN 0
LOADDEV IDENTITY zvmlxapp ADD LOADDEV SCPDATA 'text'
LOADDEV PROFILE ibmdflt ADD LOADDEV BR_LBA 0600
LOADDEV SUBCONFIG lohcos-1 memb2 lohcost DELETE LOADDEV PORT 0
LOADDEV SUBCONFIG UNKNOWNSUB memb2 lohcost DELETE LOADDEV BOOT 0
LOADDEV USER pmaint DELETE LOADDEV LUN 0
LOADDEV IDENTITY zvmlxapp DELETE LOADDEV SCPDATA 'text'
LOADDEV PROFILE ibmdflt DELETE LOADDEV BR_LBA 0600
```

**Note:** In the above examples, *text* could be anything up to 4096 (4K) characters of data.

## MDISK

Use the MDISK options to:

• Add a new MDISK.

• Delete an existing MDISK.

• Redefine the placement of an existing minidisk (to increase the size or move it to a different volume), with no data copied.

• Redefine the placement of an existing minidisk (to increase the size or move it to a different volume), with all data copied.
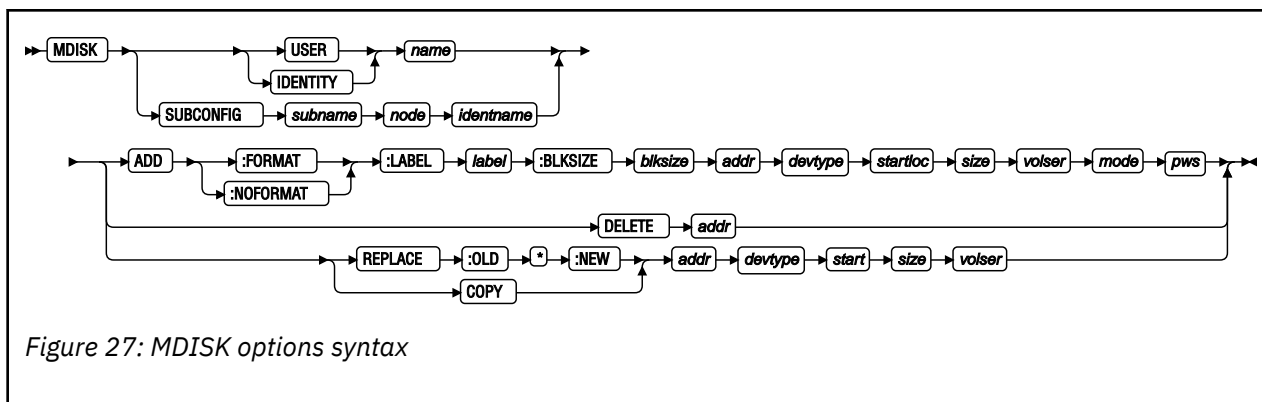
Figure 27: MDISK options syntax

where:

**name**
> is the user or identity name.

**subname**
> is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

**node**
> is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

**identname**
> is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**:FORMAT**
> specifies the disk should be formatted (ADD only).

**:NOFORMAT**
> specifies the disk should be unformatted (ADD only).

**:LABEL** *label*
> specifies the label to put on the minidisk when formatting (ADD only).

**:BLKSIZE** *blksize*
> specifies the blocksize to use when formatting (ADD only).

**addr**
> is the virtual device address of the minidisk being added, deleted, or defined.

**devtype**
> is the device type of the minidisk to be added or defined (ADD, REPLACE, or COPY only).

**startloc**
> is a starting cylinder/block number of the disk (ADD, REPLACE, or COPY only). If *startloc* is an integer, the provided extents will be used. If startloc is NULL, the directory manager will define the extents.

**size**
> is the size in cylinders or blocks of the disk (ADD, REPLACE, or COPY only).

**volser**
> is the label of the volume where the minidisk will reside (ADD, REPLACE, or COPY only).

**mode**
> specifies the user's mode of access at logon (ADD only).

**pws**
> optionally specifies the string to be used as passwords (ADD only).

**:OLD * :NEW**
> specifies to replace all old information with the new information that follows (REPLACE ONLY).

> **Notes:**

1. For REPLACE and COPY, the *label* and *blksize* for the new minidisk should be the same as for the current minidisk. The access mode and passwords should also be the same as for the current minidisk.

2. For REPLACE, the contents of the current disk will *not* be copied to the new disk. For COPY, the contents of the current disk will be copied to the new disk.

3. For DELETE, the files on any disks that are deleted must *not* be erased.

**Examples:**

```
MDISK USER pmaint ADD :NOFORMAT 199 3390 1050 20 m01w01 MR R199 W199 M199
MDISK SUBCONFIG lohcos-1 memb2 lohcost ADD :FORMAT :LABEL loh199 :BLKSIZE
2K
      111 FB-512 18000 14400 vmc0m1 MR R111 W111 M111
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost ADD :FORMAT :LABEL
loh199 :BLKSIZE 2K
      111 FB-512 180000 14400 vmc0m1 MR R111 W111 M111
MDISK SUBCONFIG lohcos-1 memb2 lohcost ADD :FORMAT :LABEL loh199 :BLKSIZE
2K
      199 3390 NULL 20 m01w01 MR R199 W199 M199
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost ADD :FORMAT :LABEL
loh199 :BLKSIZE 2K
      199 3390 NULL 20 m01w01 MR R199 W199 M199
MDISK USER pmaint ADD :NOFORMAT 111 FB-512 NULL 14400 vmc0m1 MR R111 W111
M111
MDISK USER pmaint DELETE 199
MDISK SUBCONFIG lohcos-1 memb2 lohcost DELETE 111
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost DELETE 111
MDISK SUBCONFIG lohcos-1 memb2 lohcost REPLACE :OLD * :NEW 199 3390 1050
20 m01w01
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost REPLACE :OLD * :NEW 199 3390 1050
20 m01w01
MDISK USER pmaint REPLACE :OLD * :NEW 111 FB-512 18000 1440 vmc0m1
MDISK SUBCONFIG lohcos-1 memb2 lohcost REPLACE :OLD * :NEW 199 3390 NULL
20 m01w01
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost REPLACE :OLD * :NEW 199 3390 NULL
20 m01w01
MDISK USER pmaint REPLACE :OLD * :NEW 111 FB-512 NULL 14400 vmc0m1
MDISK SUBCONFIG lohcos-1 memb2 lohcost COPY 199 3390 20 m01w01
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost COPY 199 3390 20 m01w01
MDISK USER pmaint COPY FB-512 14400 vmc0m1
MDISK SUBCONFIG lohcos-1 memb2 lohcost COPY 199 3390 NULL 20 m01w01
MDISK SUBCONFIG UNKNOWNSUB memb2 lohcost COPY 199 3390 NULL 20 m01w01
MDISK USER pmaint COPY 111 FB-512 NULL 14400 vmc0m1
```

## NAMESAVE

Use the NAMESAVE options to add a new NAMESAVE statement or delete an existing NAMESAVE statement.



*Figure 28: NAMESAVE options syntax*
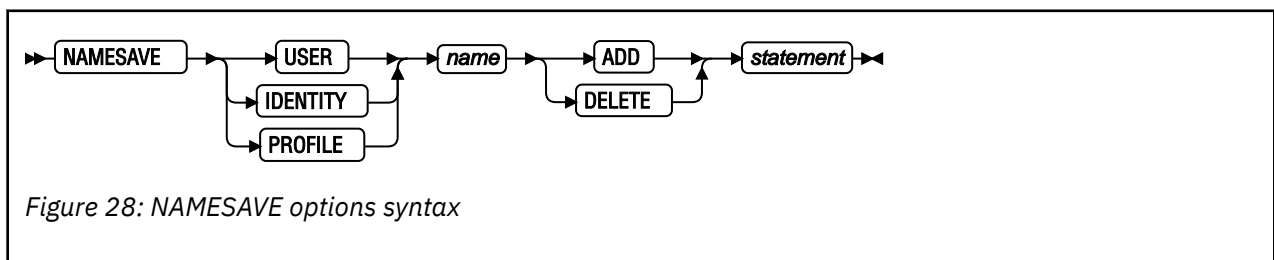
where:

**name**
> is the user, identity or profile name.

**statement**
> is the NAMESAVE statement to be added or deleted.

**Examples:**

```
NAMESAVE USER pmaint ADD NAMESAVE GCS
NAMESAVE IDENTITY avsvm ADD NAMESAVE VTAM
NAMESAVE PROFILE tcpcmsu ADD NAMESAVE MONDCSS
NAMESAVE USER pmaint DELETE NAMESAVE MONDCSS
NAMESAVE IDENTITY avsvm DELETE NAMESAVE TCPIP
NAMESAVE PROFILE tcpcmsu DELETE NAMESAVE VSMDCSS
```

## OPTION

Use the OPTION options to add a new option to a directory entry or profile, or delete an existing option from a directory entry or profile.
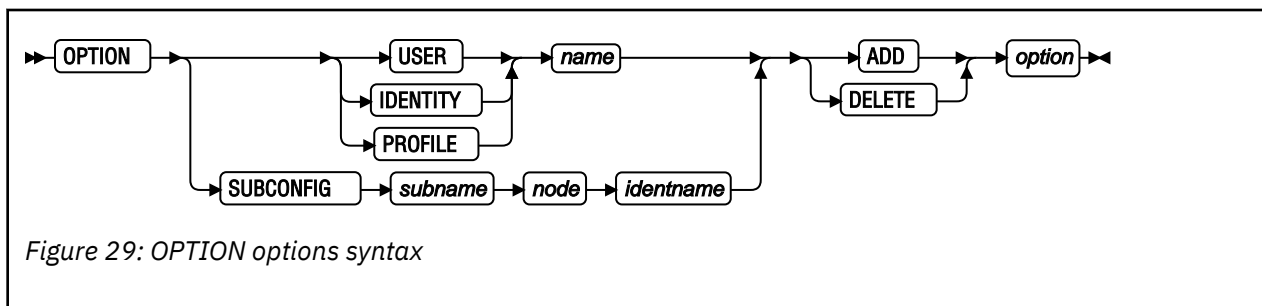


Figure 29: OPTION options syntax

where:

**name**
> is the user, identity, or profile name.

**subname**
> is the subconfig name. If the subconfig name is UNKNOWNSUB, the name must be determined from the *node* and *identname*.

**node**
> is the name of the member that owns the subconfig, if running in an SSI, or an asterisk (*), if running on a non-SSI (only valid with SUBCONFIG object type).

**identname**
> is the name of the IDENTITY for the subconfig (only valid for SUBCONFIG object type).

**option**
> is the option to be added to or deleted from the directory entry or profile.

**Notes:**

1. Only one option may be added or deleted at a time.

2. When adding, if there is no existing OPTION statement in the entity that is being updated, the entire OPTION statement will be added. If an OPTION STATEMENT already exists, the new option can be added to the existing OPTION statement, or else a new statement can be added.

3. When deleting, if this is the last option on an OPTION statement, the entire statement should be removed.

**Examples:**

```
OPTION SUBCONFIG lohcos-1 memb2 lohcost ADD LANG AMENG
OPTION SUBCONFIG UNKNOWNSUB memb2 lohcost ADD DIAG88
OPTION USER pmaint ADD MAINTCCW
OPTION IDENTITY avsvm ADD LNKS
OPTION PROFILE ibmdflt ADD MAINTCCW
OPTION SUBCONFIG vsmwrk-1 memb2 vsmwork1 DELETE MAXCONN 2000
OPTION SUBCONFIG UNKNOWNSUB memb2 lohcost DELETE DIAG88
OPTION USER pmaint DELETE QUICKDSP
OPTION IDENTITY tsafvm DELETE COMSRV
OPTION PROFILE tcpsslu DELETE MAXCONN 1024
```

## PRIV

Use the PRIV options to add a privilege class to a user or identity, or delete a privilege class from a user or identity.



*Figure 30: PRIV options syntax*
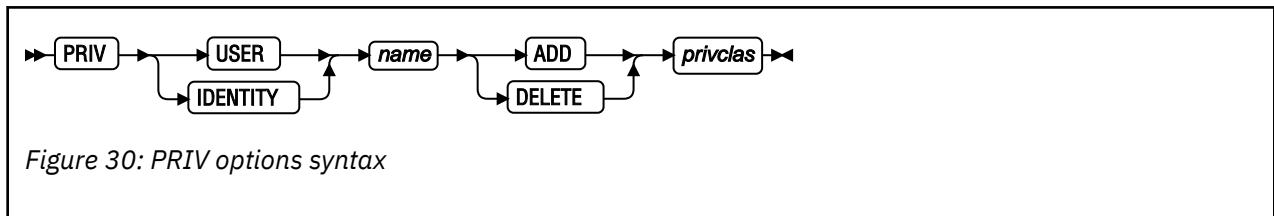
where:

**name**
    is the user or identity name.

**privclas**
    is the privilege class to be added or deleted.

**Notes:**

1. Only one privilege class may be added or deleted at a time.

2. If a privilege class to be added is already in the directory entry, the calling program will be returned to with RC=1.

3. If a privilege class to be deleted is *not* in the directory entry, the calling program will be returned to with RC=1.

**Examples:**

```
PRIV IDENTITY lohcost ADD B
PRIV IDENTITY cmsuser ADD C
PRIV USER vmservp ADD F
PRIV IDENTITY lohcost DELETE B
PRIV IDENTITY cmsuser DELETE C
PRIV USER vmservp DELETE F
```

## SETUP

Use the SETUP options to set up and validate the environment necessary for the exit to perform directory update functions.

It is anticipated that only one SETUP call will be made to an exit, during a given processing stage. Setup processing can be used to establish a persistent environment for handling ensuing directory change requests. Actions performed would include:

• Validating the version.

• Validating that any required resources (such as disks) are available.

- Ensuring that the directory manager is running.
- Ensuring that the requesting user ID is authorized to perform directory functions.



*Figure 31: SETUP options syntax*

where:

***vrm.nn***
    is the release and update level of the exit (710.01, for example).

**Note:** Upgrade processing will not preserve the exit's operating environment between calls to the exit. If the exit must link and access specific disks, that must be done every time the exit is called.

## VERIFY

Use the VERIFY options to verify that the exit supports the version level provided.

It is anticipated that only one VERIFY call will be made to an exit, to confirm compatibility for use during the upgrade process as a whole.



*Figure 32: VERIFY options syntax*

where:

***vrm.nn***
    is the release and update level of the exit (710.01, for example).

## VSTOR

Use the VSTOR options to modify the virtual storage size of a user or identity.
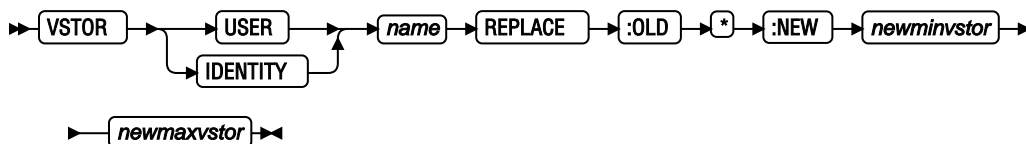


*Figure 33: VSTOR options syntax*

where:

***name***
    is the user or identity name.
**:OLD * :NEW**
    specifies to replace all old information with the new information that follows.
***newminvstor***
    is the new minimum virtual storage value.
***newmaxvstor***
    is the new maximum virtual storage value.

**Note:** If the current VSTOR values are larger than the new VSTOR values, they will not be changed. The calling program will be returned to with RC=1.

## Return codes

These are the return codes that the exit program should use when returning control to the calling installation upgrade utility. In general, 0 is a successful return code, return codes 1-7 are reserved for warning messages, and return codes of 8 and higher are used for an error condition that requires the upgrade process to stop.

The following defines the return codes that should be returned by the exit to the calling program. No other return codes should be used.

**0**

Function requested completed successfully.

**1**

Directory update was already in place so no action taken.

**2**

Pre-existing Crypto statements in directory. No action taken.

**3-7**

Reserved for future use. Do not use.

**8**

General error (not defined by the installation upgrade utilities).

**9**

Version not compatible.

**10**

Directory manager not functional.

**11**

Userid not authorized for directory manager command(s).

**12**

The requested update is not recognized.

**13**

Setup processing failed.

**14**

Rollback failure.

**15**

Logging failure.

**19**

Insufficient space.

**20**

Directory manager timeout.

**21**

Userid not found in directory.

**22**

Userid already locked.

**23**

Userid was not locked.

**24**

Unexpected error trying to GET userid.

## Coding sample for acquiring the contents of a data stem

The content of the data stem can be acquired using a CMS PIPELINE command, as illustrated in this REXX coding sample:

```
/*-----------------------------------------------------------------------*/
/* Obtain input arguments.                                               */
/*-----------------------------------------------------------------------*/
Parse Arg Input 1 CallerName Keyword DataStem DataCount .
...
/*-----------------------------------------------------------------------*/
/* Acquire the data that pertains to the given keyword, via a CMS PIPELINE  */
/* command, and perform basic confirmation that this command has succeeded.  */
/*-----------------------------------------------------------------------*/
'PIPE' '(Name Get_Stem_Data)' ,
  'Stem' DataStem '1' ,
  '| Stem DMX_data.'
If (rc <> 0) | (Symbol('DMX_DATA.0') <> 'VAR')
  Then Do
   /* Error Handling...*/
   End
```

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# Bibliography

This topic lists the publications in the z/VM library. For abstracts of the z/VM publications, see *z/VM: General Information*.

## Where to get z/VM information

The current z/VM product documentation is available in IBM Knowledge Center - z/VM (www.ibm.com/support/knowledgecenter/SSB27U).

## z/VM base library

### Overview

- *z/VM: License Information*, GI13-4377
- *z/VM: General Information*, GC24-6286

### Installation, migration, and service

- *z/VM: Installation Guide*, GC24-6292
- *z/VM: Migration Guide*, GC24-6294
- *z/VM: Service Guide*, GC24-6325
- *z/VM: VMSES/E Introduction and Reference*, GC24-6336

### Planning and administration

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- *z/VM: CMS Planning and Administration*, SC24-6264
- *z/VM: Connectivity*, SC24-6267
- *z/VM: CP Planning and Administration*, SC24-6271
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- *z/VM: Group Control System*, SC24-6289
- *z/VM: I/O Configuration*, SC24-6291
- *z/VM: Running Guest Operating Systems*, SC24-6321
- *z/VM: Saved Segments Planning and Administration*, SC24-6322
- *z/VM: Secure Configuration Guide*, SC24-6323
- *z/VM: TCP/IP LDAP Administration Guide*, SC24-6329
- *z/VM: TCP/IP Planning and Customization*, SC24-6331
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### Customization and tuning

- *z/VM: CP Exit Customization*, SC24-6269
- *z/VM: Performance*, SC24-6301

**Operation and use**

- *z/VM: CMS Commands and Utilities Reference*, SC24-6260
- *z/VM: CMS Primer*, SC24-6265
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- *z/VM: CMS Application Multitasking*, SC24-6258
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- *z/VM: CMS Macros and Functions Reference*, SC24-6262
- *z/VM: CMS Pipelines User's Guide and Reference*, SC24-6252
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- *z/VM: CPI Communications User's Guide*, SC24-6273
- *z/VM: ESA/XC Principles of Operation*, SC24-6285
- *z/VM: Language Environment User's Guide*, SC24-6293
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- z/OS: MVS Program Management Advanced Facilities (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3sa231392/$file/ieab200_v2r3.pdf), SA23-1392
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# z/VM facilities and features

**Data Facility Storage Management Subsystem for VM**

- *z/VM: DFSMS/VM Customization*, SC24-6274
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**Directory Maintenance Facility for z/VM**

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- Open Systems Adapter-Express Integrated Console Controller User's Guide (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3sc279003/$file/ioaq100_v2r3.pdf), SC27-9003
- Open Systems Adapter-Express Integrated Console Controller 3215 Support (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3sa232247/$file/ioan100_v2r3.pdf), SA23-2247
- Open Systems Adapter/Support Facility on the Hardware Management Console (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3sc147580/$file/ioas100_v2r3.pdf), SC14-7580

**Performance Toolkit for VM**

- *z/VM: Performance Toolkit Guide*, SC24-6302
- *z/VM: Performance Toolkit Reference*, SC24-6303

**RACF Security Server for z/VM**

- *z/VM: RACF Security Server Auditor's Guide*, SC24-6305
- *z/VM: RACF Security Server Command Language Reference*, SC24-6306
- *z/VM: RACF Security Server Diagnosis Guide*, GC24-6307
- *z/VM: RACF Security Server General User's Guide*, SC24-6308
- *z/VM: RACF Security Server Macros and Interfaces*, SC24-6309
- *z/VM: RACF Security Server Messages and Codes*, GC24-6310
- *z/VM: RACF Security Server Security Administrator's Guide*, SC24-6311
- *z/VM: RACF Security Server System Programmer's Guide*, SC24-6312
- *z/VM: Security Server RACROUTE Macro Reference*, SC24-6324

**Remote Spooling Communications Subsystem Networking for z/VM**

- *z/VM: RSCS Networking Diagnosis*, GC24-6316
- *z/VM: RSCS Networking Exit Customization*, SC24-6317
- *z/VM: RSCS Networking Messages and Codes*, GC24-6318
- *z/VM: RSCS Networking Operation and Use*, SC24-6319
- *z/VM: RSCS Networking Planning and Configuration*, SC24-6320
- z/OS: Network Job Entry (NJE) Formats and Protocols (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3sa320988/$file/hasa600_v2r3.pdf), SA32-0988

# Prerequisite products

**Device Support Facilities**

- Device Support Facilities (ICKDSF): User's Guide and Reference (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3gc350033/$file/ickug00_v2r3.pdf), GC35-0033

**Environmental Record Editing and Printing Program**

- Environmental Record Editing and Printing Program (EREP): Reference (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3gc350152/$file/ifc2000_v2r3.pdf), GC35-0152
- Environmental Record Editing and Printing Program (EREP): User's Guide (www.ibm.com/servers/resourcelink/svc00100.nsf/pages/zosv2r3gc350151/$file/ifc1000_v2r3.pdf), GC35-0151

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