User's Guide and Reference

for IBM z/OS®

Remote Access Programs

August 9, 2016

International Business Machines Corporation
Dallas ISV z Center
Dallas, TX
USA

This document is intended for the sole use of participants in an Dallas ISV z Center Remote Development or Early Test Program and is not to be distributed to non-participants or used for purposes other than intended.

This is version 3.8 of the User's Guide and Reference for IBM z/OS Remote Access Programs document.

Preface

This document is intended to assist the user in accessing and using the z/OS Remote Development or Early Test system.

For terminology used in this document, please refer to **Terms and definitions** on page 72.

Comments on this document may be addressed to:

ETPAdmin@us.ibm.com

For assistance please refer to **Section 2: Technical support** on page 10

Table of Contents

Illustration Index

1   Overview – remote access environment

The remote access environment is provided by the Dallas ISV z Center organization in conjunction with various IBM development laboratories. z/OS is an operating system from IBM which runs on z Systems® server hardware.

1.1   Hardware / software platform

The remote access program is implemented on an IBM z Systems server which is accessible to Solution Developers participating in the remote access program via the INTERNET. The z Systems server runs the IBM z/VM® (Virtual Machine) operating system which supports multiple guest systems, each capable of supporting multiple users in a unique environment. Each remote access participant is provided with a dedicated guest system, which appears to the user as a z Systems server running a native z/OS operating system.[1]

1.2   Introduction to the virtual machine, z/VM, concept

Virtual Machine (VM) is a software facility that allows one physical processor complex to be configured with multiple "virtual" processors or machines. Each virtual machine, known as a guest, runs independently of every other virtual machine and can run any z Systems operating system (z/OS, VSE, z/VM, Linux, CMS, etc.) and software.   Please refer to the IBM Redbook **Introduction to the New Mainframe: z/VM Basics SG247316** **http://www.redbooks.ibm.com/redbooks/pdfs/sg247316.pdf**

1.3   z/OS remote access environment

z/OS is available as part of the remote access program as a "dedicated" second-level guest system on the z/VM platform. The guest z/OS system will Initial Program Load (IPL) automatically when an authorized z/VM Personal user ID logs on and issues the SVXLOG command to start the process. Please see "Initialize the guest z/OS system (IPL)" on page 17 for additional information. Users can request to be added to an autostart program that will be run after scheduled system re-cycles. Please contact the IBM Dallas ISV z Center support team using one of the methods described in "Technical support " on page 10 to be added to the autostart program.

Users will be responsible for performing z/OS console operations (such as issuing commands to start tasks associated with IBM IMS™, IBM DB2®, IBM CICS®, etc. as needed), TSO user ID administration, security administration (if desired), etc.   The operator commands required to perform basic initialization, operation and termination of the system are included in this document. For additional information regarding console operations, refer to IBM publication SA22-7627 z/OS MVS System Commands. The z/OS manuals are available on the IBM z/OS bookserver website: http://www-03.ibm.com/systems/z/os/zos/bkserv/

---

1   Remote access program participants will be required to logon to the z/VM host system and perform a limited number of z/VM tasks in order to IPL and access their guest z/OS system in it's virtual machine environment. Required z/VM commands and tasks are described in this document; no previous knowledge of the z/VM operating system is required.

The guest z/OS system and z/OS console are confined within a virtual machine "owned" by the Solution Developer. Use is dedicated and restricted to the assigned Solution Developer and is not accessed by the support staff at the Dallas ISV z Center without prior permission.

Detailed information of this z/OS system may be found in **Guest z/OS system structure** on page 56.

IMPORTANT - READ THIS

Each Solution Developer is assigned a "virtual machine" under IBM's z/VM operating system which runs continuously and accumulates CPU time regardless of actual use by interactive users, batch jobs, etc. The Solution Developer's account will be charged for CPU time used by the virtual machine even if no users are logged on and no batch activity is recorded. The amount of work units (CPU time) consumed by the virtual machine is available via the SESSREPT command. See "**Obtaining program account information**" on page 48.   To avoid unnecessary charges, always remember to stop the guest z/OS system's virtual machine when not using it by either putting it to sleep or shutting it down and logging it off. See "**Putting the guest z/OS system to SLEEP from z/VM control user ID**" on page 30 and "**How to shutdown a guest z/OS system**" on page 26. Solution Developers must logoff the guest z/OS system's virtual machine or put it to sleep, otherwise the machine will continue to run (idle) and the Solution Developer will be charged for the time used by the virtual machine.

1.4   Printers

There are no *real* printers attached to the z Systems server. Each guest z/OS system has unit 002 defined as a *virtual* printer for JES. All printers are drained at IPL and starting a printer will cause JES to write the output to the virtual printer. This just means it will move from one SPOOL to another but will not physically print on paper.

In a JES2 environment, use SDSF, the TSO OUTPUT command or ISPF OUTLIST utility (option 3.8) to browse printer files online.

In a JES3 environment, use the TSO OUTPUT command or ISPF OUTLIST utility (option 3.8) to browse printer files online.

The TSO OUTPUT command and ISPF OUTLIST utility require the system output be in a HOLD queue. Typically this is defined as SYSOUT class "H" - see "**JES2 information**" on page 64 for specific information.

1.5   System availability

The remote access program host systems are generally available 24 hours per day, 7 days per week except for scheduled maintenance windows. Technical and administrative support is available from 07:00 to 19:00 US Central time Monday through Friday only.

1.6   Maintenance window

The Dallas ISV z Center has implemented the following policy regarding maintenance
windows:

Every Sunday between the hours of 09:30 and 15:30 US Central time the Dallas ISV z Center may
choose to make any of the processors unavailable. This time will be used to perform system IPL's and to
implement new or updated releases of software.   All Solution Developers requiring an orderly guest
z/OS system shutdown should perform the shutdown prior to that time and should not plan to resume
operation until after 15:30 US Central time on Sunday.

A maintenance window will not be required every Sunday, therefore Solution Developers may choose to
work during this time *but only at their own risk*. Notices will be posted whenever possible (via host
system broadcast messages) but all activity during this window is subject to immediate interruption.

Solution Developers with special requirements for this time period should contact the Dallas ISV z
Center as early as possible.

1.7   Remote access system backup

The z/VM disks that contain the remote access system are backed up to tape every week and are
available for 3 months. The intent of these backups is to enable us to recover from a DASD failure. The
backup and restore process operates only at the z/VM disk level, therefore the restoration of
individual files from these backups is difficult and time-consuming and not generally available. For
information on how you can back up your data, please refer to 'Backing up and restoring user data' on
page 44.

All participants in IBM Dallas ISV z Center z Systems programs are encouraged to maintain a copy of
their data / information on another system physically located at another site. Although the staff managing
the Dallas ISV z Center z Systems complex, in accordance with the program agreements, may maintain a
copy of each participant's system on tape, it is always possible that an issue with the backup process or
backup media would invalidate the copy. Please also note the backups of each systems are performed
externally to the system of entire volumes and are not kept off-site.

The techniques used for saving data will vary depending on the guest operating system in use and may
be discussed in the User's Guide and Reference applicable to your guest operating system.

To obtain details of the backups for the remote access system, or to change the frequency of the backups,
please contact the Dallas ISV z Center.

2   Technical support

Technical Support is provided via e-mail. Hours of attended operation are 07:00 to 19:00 US Central time Monday through Friday except IBM USA holidays. Emails received after hours, on weekends, or on holidays will be processed the next business day.   If you require technical support, please follow the instructions shown at URL http://dtsc.dfw.ibm.com/contact.html

3   How to access the IBM Dallas ISV z Center z Systems server

Before utilizing the guest z/OS system, Solution Developers must first follow the steps below to access the IBM z Systems server (e.g., SVSCDR2) and initialize (IPL) the guest z/OS system. Access to the IBM z Systems server requires access to the Internet. The method, line speed, and choice of Internet Service Provider are determined by the Solution Developer.

First, a word about user IDs...

There are several different user IDs described in this document:
- *Guest system ID* - z/VM ID which executes z/OS. ***This ID is the guest z/OS system.***
- *z/VM Personal user ID* - z/VM user ID used as an individual identifier for security verification when accessing the z/OS virtual machine (via the DIAL command). We expect you to use one ID per person using your system.
- *z/VM Control user ID* - The term *z/VM Control user ID* is used to reference the specific z/VM Personal user ID used to initialize the guest z/OS system and currently holds the ability to perform functions for the guest z/OS system.

In this guide, we refer to the guest z/OS system ID as ETPGyyy and the z/VM Personal user ID and z/VM control user ID as ETPDxxx

All Solution Developers have been provided a guest z/OS system ID which is the guest z/OS system.

All of the z/VM Personal user IDs provided as part of this program have the authority to activate the guest z/OS system IDs by way of the **SVXLOG** command. Once the Solution Developer activates the guest z/OS system ID, the user ID that does the activation becomes the z/VM control user ID. This z/VM control user ID is the only user ID that can send commands to the guest z/OS system. This is done via the z/VM **SEND** command. The z/VM control user ID will remain the same until it is changed by someone with proper authority to do so (please see "Switching the z/VM control user ID" on page 49) or until the guest z/OS system ID is shut down.

Also, as applicable, Solution Developers may have:

- TSO user ID - used to access TSO within a guest z/OS system.
- CICS user ID - used to access CICS within a guest z/OS system.

If not previously supplied with passwords for the z/VM Personal user IDs, contact the Dallas ISV z

Center and request to have the z/VM Personal user IDs RESUMED and an initial password set.

Second, a word about TN3270 emulators...

- Consult the TN3270 emulator documentation to determine the appropriate key sequences required for the ENTER, PA2, F12 and CLEAR keys.

- The TN3270 emulator must be TLS capable.

NOTE: IBM Corporation has taken steps to enhance the security of the internet connections to the IBM Dallas ISV z Center remote access systems, by blocking various ports from "INBOUND" traffic. Information about the blocked ports can be found on the IBM Dallas ISV z Center website at URL: http://dtsc.dfw.ibm.com/MVSDS/'HTTPD2.DSN01.PUBLIC.SHTML(BLKPORTS)'

To access the z Systems server, an Internet connection must first be established. Once that is established, perform the following steps:

Step 1. Direct an TLS enabled TN3270 connection to the Dallas ISV z Center Secure Portal at IP address *198.81.193.6,* **p**ort *23.*

- o   For additional information on configuring IBM Personnel Communication 3270 Emulator Software, please refer to the Dallas ISV z Center public website:**http://dtsc.dfw.ibm.com/**

Note: IBM Personnel Communication 3270 Emulator Software is available as part of the IBM Host Access Client Package (HACP): http://www.ibm.com/software/network/hostaccess/. Partners who have access to the Software Access Catalog (SAC) as part of their PartnerWorld membership will find this software by searching the SAC for "IBM Rational Host Access Client Package (HACP) for Multiplatforms eAssembly Multilingual Multiplatform ". There are usage restrictions on the software that is provided by PartnerWorld through the Software Access Catalog. Consult the PartnerWorld web site for this information: https://www.ibm.com/partnerworld/wps/servlet/ContentHandler/isv/sac.

```
  =======    ============    ======       ======
  =======    ============    =======      =======
     ===          ===    ===    ======    ======
     ===       ==WELCOME==TO  THE====== ======
     ===     IBM INNOVATION CENTER ==DALLAS== ==
     ===          ===    ===    ===  ===== ===
  =======    ============    =====   ===  =====
  =======    ============    =====    =   =====
              z/OS TCPIP Telnet
        for Help follow directions on web page:
             http://dtsc.dfw.ibm.com/contact.html

IBM's internal systems must only be used for conducting
IBM's business or for purposes authorized by IBM
management.
Use is subject to audit at any time by IBM management.

  Choose from the following commands:
  DR2    - Logon SVSCDR2
  SY3    - Logon SVSCSY3
  SY7    - Logon SVSCSY7
```

Illustration 3.3: Remote Access System Portal Example

Step 2. Type DR2 for example. Once the connection is set up, the Remote Access Portal screen
(below) will be shown. Choose the system identified in the delivery email by entering in the
system name and pressing the ENTER key.

Illustration 3.3: z/VM LOGO screen example

Step 3. The next screen displayed will be the Dallas ISV z Center system LOGO screen, indicating that the Dallas ISV z Center z Systems server has been reached.

Step 4. On the LOGO screen, logon to a z/VM Personal user ID by typing in a z/VM Personal user ID and password and pressing the `ENTER` key.

    o   The password will be expired on first use of the z/VM Personal user ID or anytime after the Dallas ISV z Center has reset the password. The system will prompt you to change the password (as shown below).

```
LOGON ETPDxxx
RPIMGR042I PASSWORD EXPIRED
To change your password - enter: nnn/nnn  where nnn = new
password or, enter LOGOFF to cancel
```

        Enter a new password in the format of *new_password/new_password* and press the `ENTER` key. **The text you type will not be visible** to help assure the privacy of the z/VM Personal user ID password.

PASSWORD RULES. The PASSWORD MUST:

- Be eight characters in length
- Only contain alphabetic, numeric and national characters i.e., **$** **#** and **@**
- Contain at least one alphabetic and one non-alphabetic character
- Have the first and last characters be non-numeric
- Contain no more than three identical consecutive characters in any position from the previous password
- Contain no more than two identical consecutive characters
- Not contain the userid as part of the password
- Not be reused until after at least eight iterations

Step 5. System "log messages" with information of general interest, are broadcast to all users on the system. **Be sure to review the broadcast messages for important notices regarding scheduled outages.** When the z/VM status indicator in the lower right-hand corner of the screen shows **HOLDING** or **MORE...**, press the `CLEAR` or `PA2` key to continue[2].

Step 6. Successful logon has occurred when the screen displays the "CMS ready prompt" and the z/VM status indicator in lower right-hand corner shows **Running SVSCxxx.**

---

2   The `CLEAR` and `PA2` keys are part of the IBM 3270 terminal architecture. Refer to the TN3270 emulator's documentation for information on these keys.
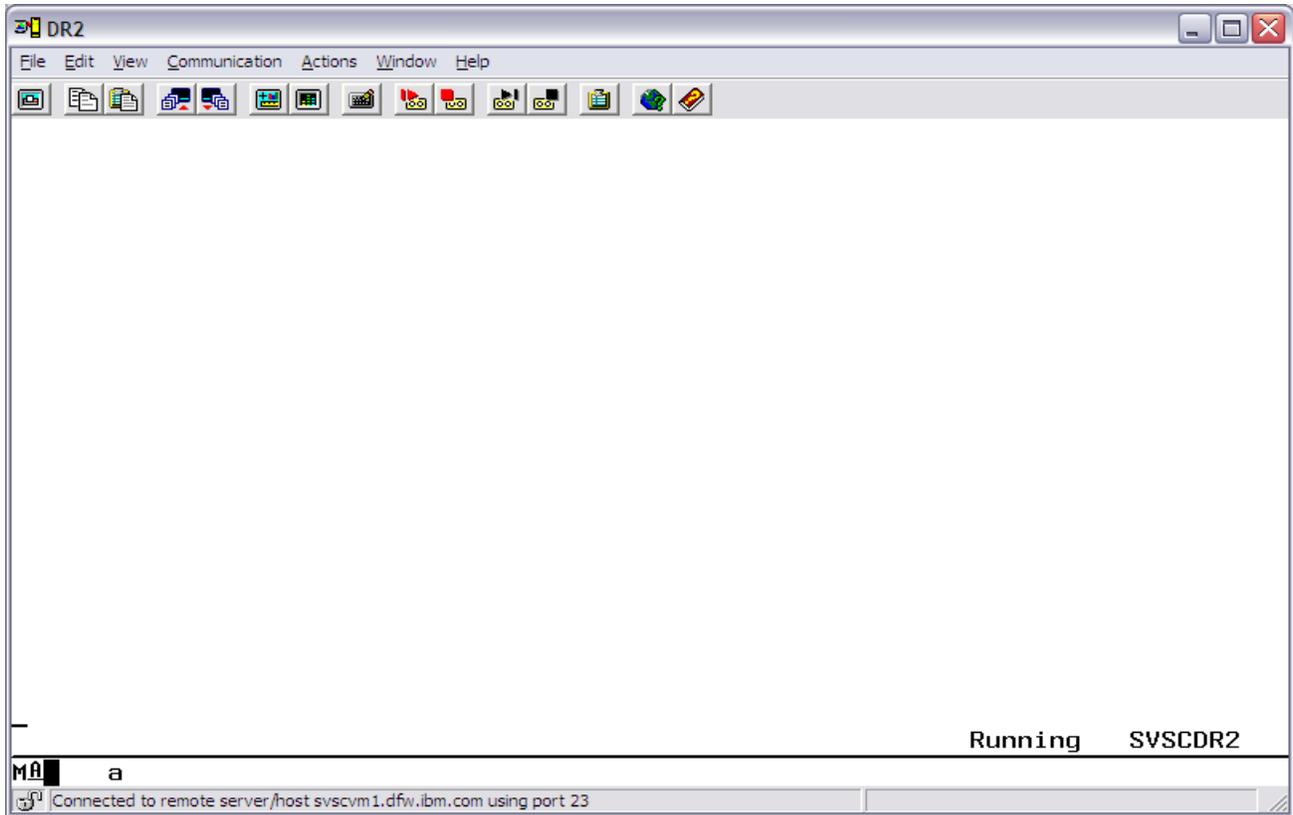
Illustration 3.3: CMS Ready Prompt on SVSCDR2

4　IPL of the guest z/OS system

4.1　How to IPL the guest z/OS system (quick steps)

This section provides a list of quick steps to IPL a z/OS system. The section **"How to IPL the guest z/OS system (detailed description)"** on page 16 provides detailed instructions, including examples of screens, to initialize a system.

1. Access the z Systems server over the Internet through the Dallas ISV z Center Secure Portal using an TLS enabled TN3270 emulator. See "How to access the IBM Dallas ISV z Center z Systems server" on page 10 for detailed instructions.

2. Logon a z/VM Personal user ID which will be used to control the guest z/OS system. The user ID is now referred to as the z/VM control user ID. **Do NOT logon to the guest z/OS system ID.**

3. Initialize the guest z/OS system with the command **SVXLOG** *guest system ID:*

    SVXLOG ETPGyyy

4. Open the service processor console interface to the z/OS system. Look for the message: **IEE389I MVS COMMAND PROCESSING AVAILABLE,** then enter the following command:

    SEND ETPGyyy \CP VI VMSG V CN(*),ACT

4.2　How to IPL the guest z/OS system (detailed description)

4.2.1　Logon the z/VM control user ID

The messages which result from the initialization of the system cover more than one screen. In this documentation, be careful to review all of the screen examples associated with a particular event. Each part contains important information describing the IPL of the guest z/OS system in this environment.

The F12 key has been defined to retrieve the last command(s) entered. This will be handy as several of the next steps require that you enter various z/OS commands prefixed by the same z/VM command syntax.

Before continuing, please follow the directions in "How to access the IBM Dallas ISV z Center z Systems server" on page 10 for information on establishing a session and logging on to the z/VM Personal user ID that will be used for initialization of the guest system.

4.2.2   Initialize the guest z/OS system (IPL)

Step 1. After logging on to the z/VM Personal user ID, initialize the guest z/OS system by typing **SVXLOG** *guest system ID* command at the CMS Ready Prompt and then press the `ENTER` key. For guest system ID ETPGyyy, type the following command and press the `ENTER` key:

   SVXLOG ETPGyyy

Once the SVXLOG command is entered, this z/VM Personal user ID becomes the z/VM control user ID for the guest system ID.

NOTE: You can enter an alternate IPL parm to the SVXLOG command. Please issue command '*SVXLOG ?'* for additional information about specifying an alternate parm.

The guest z/OS system will return messages to the z/VM control user ID screen:
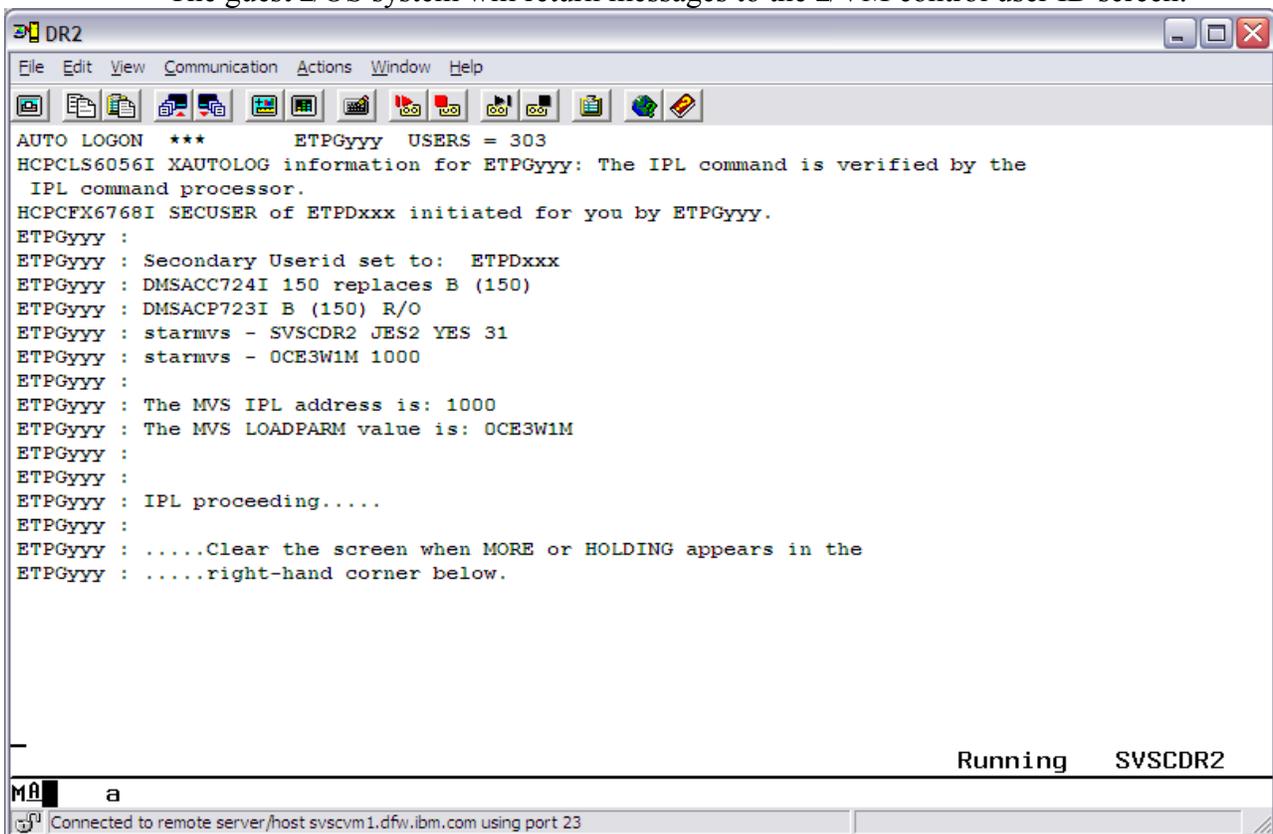

```
DR2                                                                    _ □ ✕
File  Edit  View  Communication  Actions  Window  Help

AUTO LOGON  ***           ETPGyyy   USERS = 303
HCPCLS6056I XAUTOLOG information for ETPGyyy: The IPL command is verified by the
 IPL command processor.
HCPCFX6768I SECUSER of ETPDxxx initiated for you by ETPGyyy.
ETPGyyy :
ETPGyyy : Secondary Userid set to:   ETPDxxx
ETPGyyy : DMSACC724I 150 replaces B (150)
ETPGyyy : DMSACP723I B (150) R/O
ETPGyyy : starmvs - SVSCDR2 JES2 YES 31
ETPGyyy : starmvs - 0CE3W1M 1000
ETPGyyy :
ETPGyyy : The MVS IPL address is: 1000
ETPGyyy : The MVS LOADPARM value is: 0CE3W1M
ETPGyyy :
ETPGyyy :
ETPGyyy : IPL proceeding.....
ETPGyyy :
ETPGyyy : .....Clear the screen when MORE or HOLDING appears in the
ETPGyyy : .....right-hand corner below.




_
                                                      Running    SVSCDR2
MA     a
Connected to remote server/host svscvm1.dfw.ibm.com using port 23
```

Illustration 4.4: z/OS system IPL messages part 1

At this point in the IPL of the guest system ID, there is a brief pause before more messages are displayed. Once the messages start flowing again, watch for the message:

IEE389I MVS COMMAND PROCESSING AVAILABLE

The messages shown in Illustration 4.4: z/OS system IPL messages part 2 below show this message as well as the ones which immediately precede it.

Illustration 4.4: z/OS system IPL messages part 2

Step 2. After seeing the **IEE389I** message above, open the hardware console interface (HWCIF) to allow the remaining IPL messages to flow to the z/VM control user ID and to allow z/OS commands to be sent to the guest system ID for execution. Type the following z/VM command and press the ENTER key.

SEND ETPGyyy \CP VI VMSG V CN(*),ACT

The z/OS will return with the following message:

```
ETPGyyy :  IEE712I VARY CN  PROCESSING COMPLETE
```

By opening the HWCIF interface there may also be other messages presented to the z/VM control user ID. The guest system ID sending the message is always written to the left of the message itself. The more guest z/OS systems to which the HWCIF interface is open, the larger the volume of message traffic particularly during the initial stages of IPL.

There are situations when messages similar to those listed below will appear during IPL.

Until the HASP441 message is answered, JES2 will not start.

```
*$HASP478 CONFIRM INITIAL CHECKPOINT READ FROM CKPT1
          (SYS1.HASPCKPT ON VPSPOL)
          LAST WRITTEN TUESDAY, 16 MAY 2000 AT 23:00:38
          (LOCAL TIME)
          COMPANION DATA SET IS CKPT2
          (SYS1.HASPCKP2 ON VPSPOM)
          LAST WRITTEN TUESDAY, 16 MAY 2000 AT 23:00:38
          (LOCAL TIME)
*01 $HASP441 REPLY 'Y' TO CONTINUE INITIALIZATION OR 'N' TO
TERMINATE IN RESPONSE TO MESSAGE HASP478
```

When required, answer HASP441 with the following z/VM command

SEND ETPGyyy \CP VI VMSG *nn*,Y

where ***nn*** is the message number immediately preceding $HASP441.

The following messages may also appear during IPL. Although they may be highlighted, they are not usually cause for concern. No actions are required.

```
*ASB010I THE SUBSYSTEM JES2 EXISTS BUT IT IS NOT ACTIVE.
*$HASP493 JES2 ALL-MEMBER WARM START IS IN PROGRESS
*$HASP400 ENTER REQUESTS
*IEA405E WTO BUFFER SHORTAGE - 80% FULL
```

Step 3. Depending on when the HWCIF interface is opened, multiple messages from the IPL process may be received. Once the messages seem to have stopped, use the following z/VM command to check for outstanding messages:

SEND ETPGyyy \CP VI VMSG D R,L

The response should be as shown below.

```
IEE112I 13.36.22 PENDING REQUESTS 790
RM=0    IM=0    CEM=0    EM=0    RU=0    IR=0    NOAMRF
NO MESSAGES OUTSTANDING
```

When the response is a HASP441 message as shown below, respond as instructed in the previous step.

```
*01 $HASP441 REPLY 'Y' TO CONTINUE INITIALIZATION OR 'N' TO TERMINATE IN
RESPONSE TO MESSAGE HASP478
```

Step 4. Monitor the console messages during IPL and look for the **ALL** task to start (**NOTE:** On z/OS 1.9 and later systems, this task may be started automatically.), if it does not, then look for the message: **BPXI004I OMVS INITIALIZATION COMPLETE**, then enter the following z/VM command below to start it:

SEND ETPGyyy \CP VI VMSG S ALL

The guest z/OS system will return with messages similar to the following:
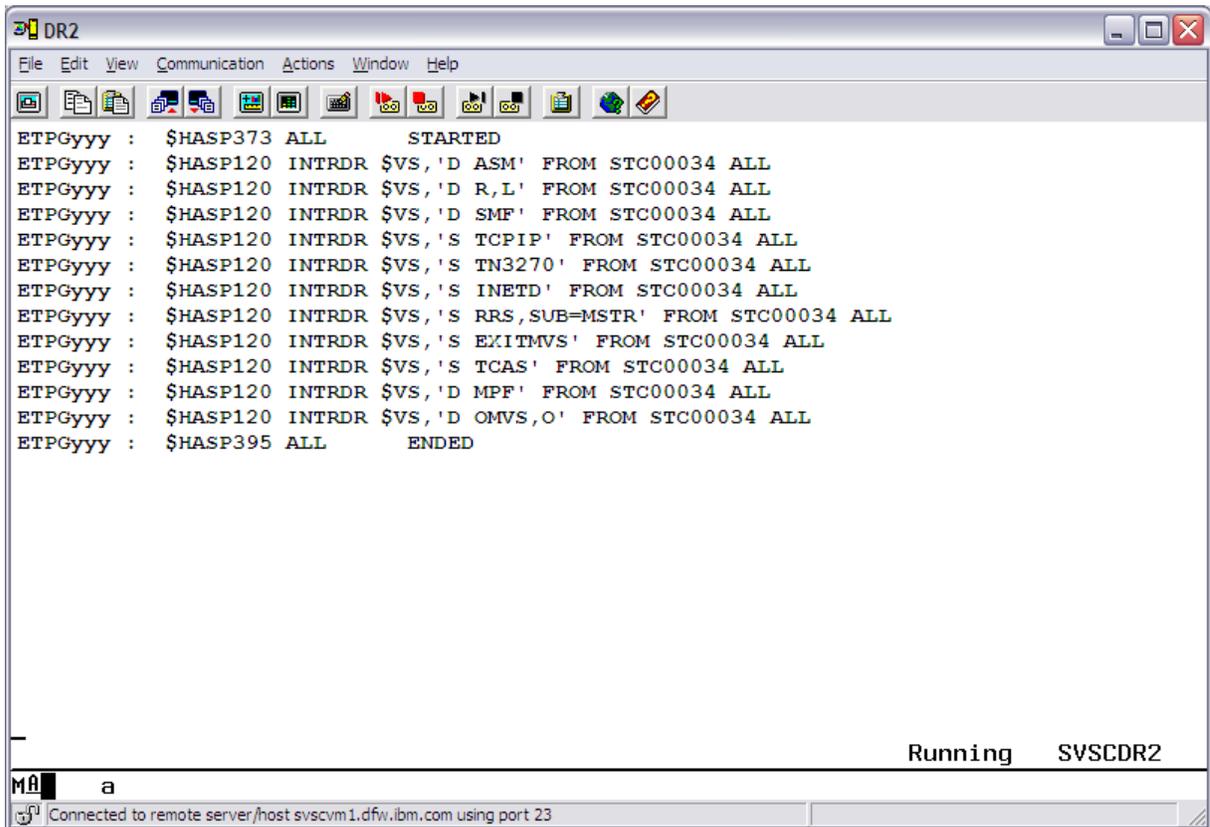

```
ETPGyyy :   $HASP373 ALL      STARTED
ETPGyyy :   $HASP120 INTRDR $VS,'D ASM' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'D R,L' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'D SMF' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'S TCPIP' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'S TN3270' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'S INETD' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'S RRS,SUB=MSTR' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'S EXITMVS' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'S TCAS' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'D MPF' FROM STC00034 ALL
ETPGyyy :   $HASP120 INTRDR $VS,'D OMVS,O' FROM STC00034 ALL
ETPGyyy :   $HASP395 ALL      ENDED
```

Illustration 4.4: IPL messages – S ALL command example

Continue to use the z/VM control user ID to control the guest z/OS system with IBM MVS™ and JES commands using the same method shown previously during IPL.

Step 5. While it is preferable to access the guest z/OS system from another TN3270 emulator session, it is not required. When using a TN3270 terminal emulator that only provides for one session, "disconnect" from the z/VM control user ID so that the same session can be used to access the guest z/OS system. See **"Disconnect the z/VM control user ID"** on page 20.

The guest z/OS system is now up and running. TSO is up on the guest z/OS system and can be utilized as described in **"Connecting to the guest z/OS system"** on page 32. z/OS commands can be sent to any guest z/OS system where the HWCIF interface is open. The z/VM control user ID will also receive messages from the z/OS system.

After disconnecting the z/VM Control user ID, follow the instructions in the chapter "How to reconnect the z/VM control user ID" on page 21, to reconnect to the z/VM Control user ID.

4.2.3   Disconnect the z/VM control user ID

Step 1. Disconnect the z/VM control user ID using the z/VM **DISCONNECT** command, which can be abbreviated to **DISC.** On the z/VM command line, type **DISC** and press the ENTER key. The z/VM system will return with the following messages:
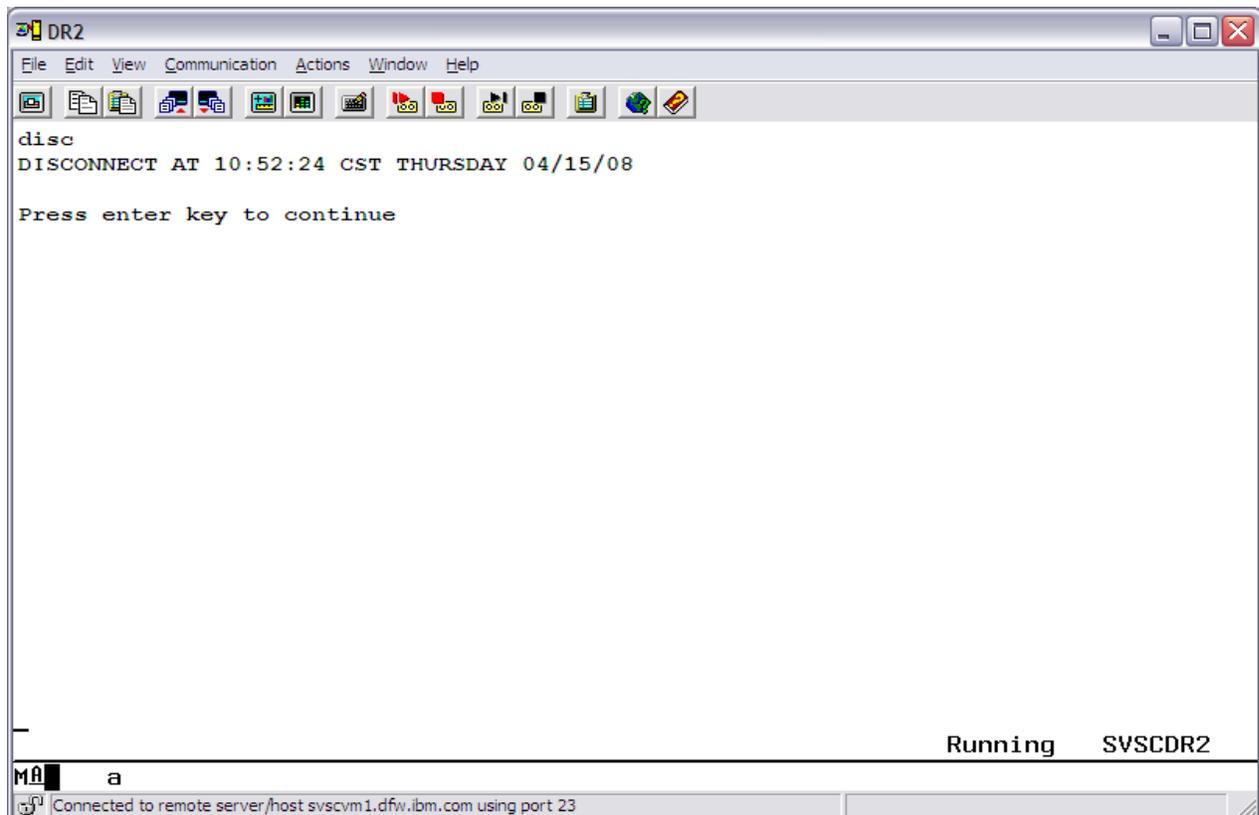
Illustration 4.4: z/VM Disconnect messages

Step 2. Press the ENTER key as the message indicates. The z/VM system will return to the z/VM System LOGO as shown in Illustration 3.3: CMS Ready Prompt on SVSCDR2 on page 15.

Step 3. From the LOGO screen, enter **VMEXIT** on the line titled **COMMAND** to drop the connection to the z/VM system.

It is possible to logon to another z/VM Personal user ID or connect to the guest z/OS system using the **DIAL** command. (The **DIAL** command is discussed in "**Connecting to the guest z/OS system**" on page 32.)

4.2.4   How to reconnect the z/VM control user ID

To reconnect the z/VM control user ID, follow these steps:

1. From the CMS Ready Prompt on SVSCDR2, enter the z/VM control user ID and the

associated password and press the ENTER key. Refer to "How to access the IBM Dallas ISV z Center z Systems server" on page 10.

2. Once logged back on, notice that displayed in the lower right-hand corner of the screen is CP READ. Type B and press the ENTER key. When required, clear the screen afterwards by pressing the CLEAR or PA2 key to complete the reconnect process.


```
DR2
File  Edit  View  Communication  Actions  Window  Help

ICH70001I ETPGyyy LAST ACCESS AT xx:xx:xx ON MONDAY, OCTOBER 13, xxxx
FILES: 0027 RDR, NO PRT, NO PUN
RECONNECTED AT 11:30:52 CDT MONDAY 10/13/xx




















                                                        Running    SVSCDR2
MA        a
Connected to remote server/host svscvm1.dfw.ibm.com using port 23
```
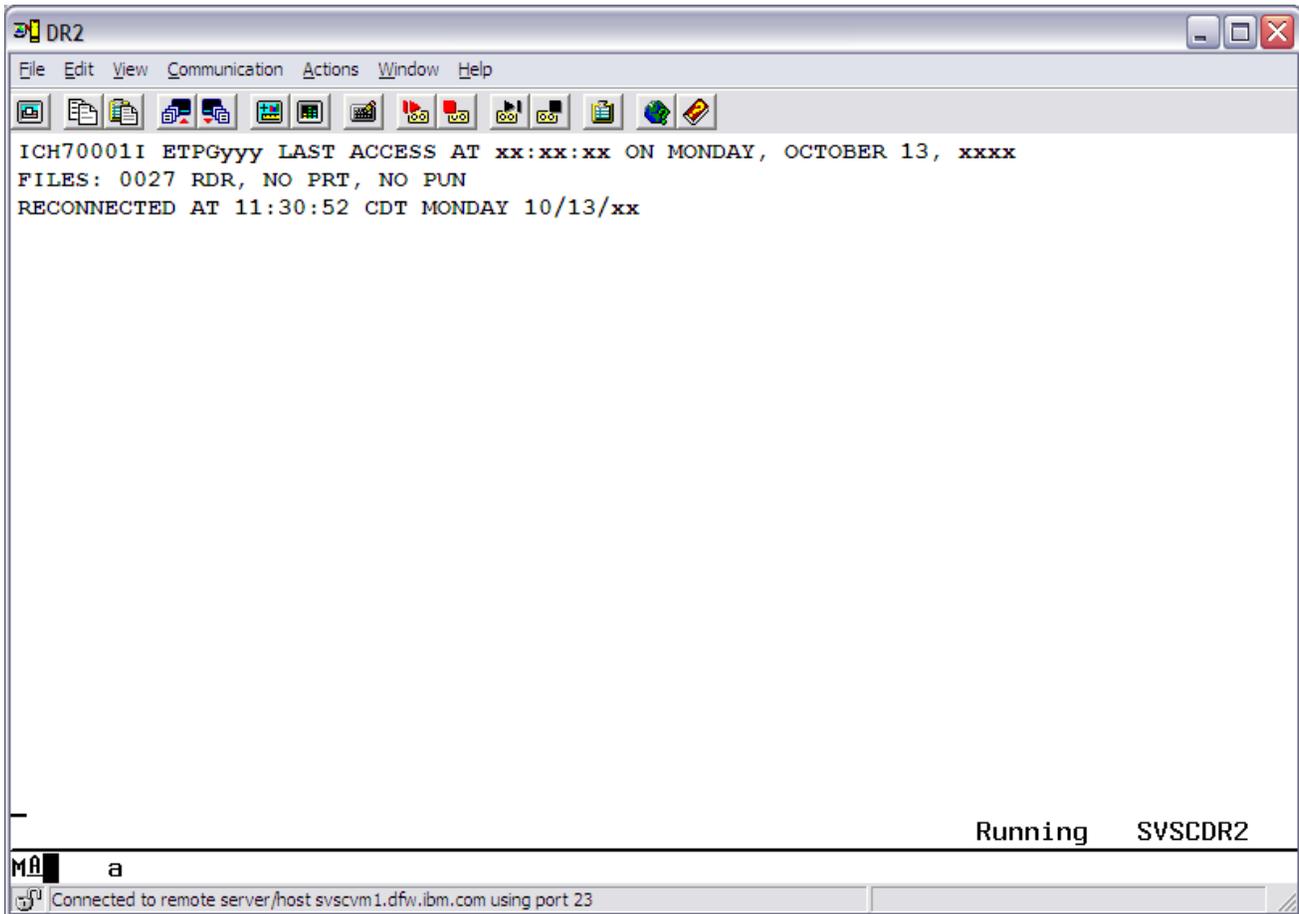
Illustration 4.4: Reconnect to z/VM control user ID

4.2.5   What happened with this IPL of z/OS...

z/OS is capable of IPL'ing without a dedicated system console. When z/OS determines no usable console exists, it attempts to use the service server console through the HWCIF. z/VM simulates a service server console. By exploiting the zVM and z/OS HWCIF, z/OS consoles can be managed from one z/VM user ID, called the z/VM control user ID in this document.   **Therefore, do not logon to the guest z/OS system ID.**

In this guest z/OS system configuration, the guest z/OS system has been configured to present all important messages to the hardware console. z/VM is simulating the hardware console which means the z/OS messages are presented to z/VM. The z/VM control user ID will receive all of these z/OS messages.

Any z/VM or z/OS commands which need to be routed to the guest z/OS system can be sent to the system by the z/VM control user ID using the z/VM CP command **SEND**.

Once the guest z/OS system is started, commands are sent to it via the HWCIF implemented by z/VM. For commands to be presented to z/OS as if they came from a hardware console, use the z/VM CP command **VI VMSG**.

The z/VM TERMINAL LINEND character has been changed from the default of '#' to '\' to further assist in managing the guest z/OS system from the z/VM control user ID. (The z/VM control user ID is not considered part of the guest z/OS system.)

What is SVXLOG?

The z/VM command **SVXLOG *user ID*** is a routine written in IBM REXX by the Dallas ISV z Center to implement the z/VM CP command XAUTOLOG with *console_input_data* and the z/VM CP command SET SECUSER to create the environment discussed in this document.

The z/VM command **SVXLOG *user ID*** uses the invoking *user ID* as the *console_input_data* for the z/VM CP command XAUTOLOG. The z/VM CP command XAUTOLOG causes the system *user ID* to begin logon processing (IPL). The PROFILE EXEC routines, which begin execution when a system *user ID* starts, sets the invoking *user ID* as the z/VM control user ID.

The result is the *user ID* which issues the SVXLOG command becomes the z/VM control user ID for the system *user ID*. Each system *user ID* leverages the Hardware Console Integration Facility such that all important messages are routed to the *user ID* which issued the SVXLOG command.

Hardware Configuration Definition (HCD) is enabled in the guest z/OS system. Because the z/OS system is a guest of z/VM, only HCD software changes can be implemented. The guest z/OS system also takes full advantage of the Input Output Definition File (IODF) facilities to provide maximum flexibility in configuring devices.

The system exploits symbolic parameters whenever possible. For example, the page datasets, the storage index dataset, and the logrec dataset contain the system name.

This system exploits the concatenated parmlib feature. All changes traditionally implemented by changing members in SYS1.PARMLIB should be made in VENDOR.PARMLIB. All references throughout this document to SYS1.PARMLIB should be considered as references to the parmlib concatenation.

The Dallas ISV z Center set the parmlib concatenation order as VENDOR.PARMLIB, SVTSC.PARMLIB, LVL0.PARMLIB and SYS1.PARMLIB. This means entries in VENDOR.PARMLIB override entries in SVTSC.PARMLIB which override entries in LVL0.PARMLIB, which in turn, override entries in SYS1.PARMLIB. This order can be changed in SYS1.IPLPARM in the appropriate load parm member, usually SYS1.IPLPARM(LOADW1).

This system has been organized in such a way that z/VM will not allow changes in SVTSC.PARMLIB, LVL0.PARMLIB or SYS1.PARMLIB. Additionally, SVTSC.PARMLIB, LVL0.PARMLIB and SYS1.PARMLIB reside on Read Only DASD volumes that cannot be updated by the Solution Developer. ***All changes must be made in VENDOR.PARMLIB***.

Listed below are several of the options used to start the system.

- The IPL load parameter and system name for the guest z/OS system is:
  Load Parameter = 0CE3W1M
  System Name = S0W1

  The Load Parameter for each guest z/OS system is provided by z/VM in the same format used at the Hardware console of a physical machine. To change the start options please consult the Dallas ISV z Center.

- SYS1.IPLPARM contains LOADW1 for the guest z/OS system. Members LOADW2, LOADW3, etc. are used for a sysplex infrastructure.

- The LOADW1 member names the sysplex SVSCPLEX.

- The LOADW1 member of SYS1.IPLPARM references PARMLIB members IEASYMW1, IEASYMSV, and IEASYMVN which contain system symbolics. These members contain symbolics the Dallas ISV z Center expects to be static including the system name of S0W1. Member IEASYMVN is included in the system to provide an easy place to add unique symbolics to each guest z/OS system.

- The LOADW1 member references PARMLIB members IEASYS00, IEASYSLV, IEASYSSV, and IEASYSVN. Member IEASYS00 contains a small number of z/OS initialization parameters the Dallas ISV z Center expects to be static. Member IEASYSLV contains the bulk of the parameters which influence the characteristics of the guest z/OS system. Changes should be made in member VENDOR.PARMLIB(IEASYSVN).

- SYS1.IODF00 is the production IODF dataset from which the system is IPL'd. It contains the following esoteric unit names.

SYSDA	DASD units with VIO enabled.
DASD	DASD units with VIO disabled.
DB2NOV	DASD units CA0-CAF with VIO disabled.
DB2ARC	DASD units CA0-CAF with VIO enabled. Specifically intended for DB2 archiving. DO NOT USE for other purposes.

- SYS1.IODF00 also includes the standard IBM esoteric unit names.

- SYS1.IODF00.WORK is a work IODF dataset to use when making configuration updates through HCD.

4.2.6   AUTOR – Auto reply policy during IPL

Beginning with z/OS V1R12.0 AUTOR is enabled in SYS1.PARMLIB to activate auto-reply processing. This parameter enables an installation to specify its own auto-reply policy during IPL. The Dallas ISV z Center specific AUTORxx member activation is located in LVL0.PARMLIB. This option can be overridden by coding a AUTORxx member in VENDOR.PARMLIB, and adding the AUTOR=xx stanza to the IEASYSVN member. To deactivate auto-reply processing,
specify AUTOR=OFF in IEASYSVN member in VENDOR.PARMLIB.

References:
z/OS V1R12.0 MVS Initialization and Tuning Reference:
http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/BOOKS/iea2e2b0/54.8.3?SHELF=iea2bkb0.bks&DT=20100707150358

z/OS V1R12.0 MVS System Commands:
http://publibz.boulder.ibm.com/cgi-bin/bookmgr_OS390/SEARCH?SEARCHREQUEST=autor&Book=IEA2G1B1&DN=SA22-7627-24&DT=20100917152331&TYPE=FUZZY&RANK=RANK&SEARCHTOPIC=TOPIC&SEARCHTEXT=TEXT&SEARCHINDEX=INDEX&SHELF=iea2bkb0.bks

5   How to shutdown a guest z/OS system

The process described below orderly terminates the guest z/OS system. To force error recovery or to terminate only a portion of the system to reduce the charges, please contact the Dallas ISV z Center for assistance.

> **NOTE:** To save typing time, use the F12 key while logged on to the z/VM control user ID to recall previous commands entered. Then type over the part following the word VMSG[3].

Step 1. Logon to the z/VM control user ID as described in "Logon the z/VM control user ID" on page 16

Step 2. Enable the Hardware Console Integration Facility interface with the following command:

> **SEND ETPGyyy \CP VI VMSG V CN(*),ACT**

The guest z/OS system will return with the following message:

```
ETPGyyy :   IEE712I VARY CN  PROCESSING COMPLETE
```

Step 3. Terminate any applications and subsystems that may have started (such as IMS, DB2, or CICS).

Step 4. Terminate any system tasks that are currently up and running on the guest z/OS system. **Please note** depending on the RDP/ETP program, some tasks may not exist.

- **TSO:** Ensure all TSO users have logged off the system, then enter

    > **SEND ETPGyyy \CP VI VMSG P TCAS**

    TCAS is down when the message `IKT006I TCAS ENDED` is sent from the guest z/OS system.

- **SDSF**: To terminate SDSF enter:

    > **SEND ETPGyyy \CP VI VMSG P SDSF**

    The system will respond with several messages. SDSF is down when the message `$HASP395 SDSF ENDED` is sent from the guest z/OS system.

- **TN3270:** If running, terminate it with command:

    > **SEND ETPGyyy \CP VI VMSG P TN3270**

---

3   If you have z/VM REXX EXEC programming skills, you can create an EXEC to enter the shutdown commands automatically. A sample SHUTSYS EXEC can be provided. Contact the IBM Dallas ISV z Center.

- **IBM RMF™:** If running**,** terminate it with command:

    SEND ETPGyyy \CP VI VMSG P RMF

- **INETD1:** If running**,** terminate it with command:

    SEND ETPGyyy \CP VI VMSG C INETD1

- **RRS:** If running, terminate RRS with the command:

    SEND ETPGyyy \CP VI VMSG SET RRS SHUTDOWN

- **Health Checker:** If running, terminate Health Checker with the command:

    SEND ETPGyyy \CP VI VMSG P HZSPROC

- **TCPIP:** If TCPIP is up, terminate it with command:

    SEND ETPGyyy \CP VI VMSG P TCPIP

- **VTAM:** Terminate VTAM with the following command:

    SEND ETPGyyy \CP VI VMSG Z NET,QUICK

    The system will respond with several messages. VTAM is down when the message `IST102I VTAM IS NOW INACTIVE` is sent from the guest z/OS system.

- **RESOLVER**: Bring down the RESOLVER address space with the following command:

    SEND ETPGyyy \CP VI VMSG P RESOLVER

    The system will respond with several messages. RESOLVER is down when messages `EZZ9292I RESOLVER ENDING,` `IEF352I ADDRESS SPACE UNAVAILABLE` and `$HASP395 IEESYSAS ENDED` are sent from the guest z/OS system.

- **OMVS:** For z/OS release 1.8 and later, issue the following command:

    SEND ETPGyyy \CP VI VMSG F OMVS,SHUTDOWN

- **JES2:** After JES2 has issued message `$HASP099 ALL AVAILABLE FUNCTIONS COMPLETE`, bring down JES2 with the command:

    SEND ETPGyyy \CP VI VMSG $PJES2

The message `$HASP085 JES2 TERMINATION COMPLETE` indicates that JES2 has terminated. See Illustration 7.7: Dialing to a guest system ID below.
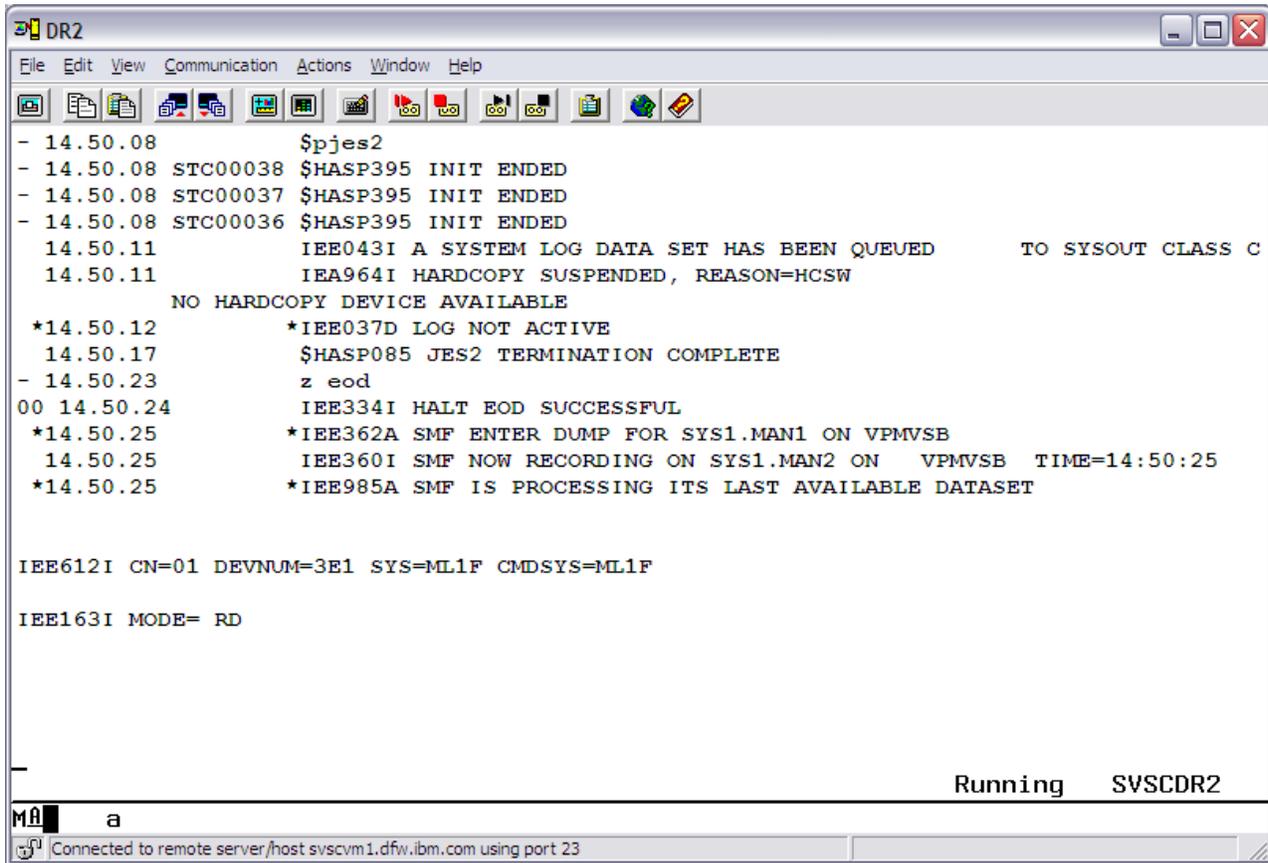
```
DR2                                                                     _ □ ✕
File  Edit  View  Communication  Actions  Window  Help

□ ▤▤  ▦▦  ▦▦  ▦▦  ▦▦  ▦  ▦▦  ▦  ▦▦

- 14.50.08              $pjes2
- 14.50.08 STC00038 $HASP395 INIT ENDED
- 14.50.08 STC00037 $HASP395 INIT ENDED
- 14.50.08 STC00036 $HASP395 INIT ENDED
  14.50.11              IEE043I A SYSTEM LOG DATA SET HAS BEEN QUEUED      TO SYSOUT CLASS C
  14.50.11              IEA964I HARDCOPY SUSPENDED, REASON=HCSW
          NO HARDCOPY DEVICE AVAILABLE
 *14.50.12             *IEE037D LOG NOT ACTIVE
  14.50.17              $HASP085 JES2 TERMINATION COMPLETE
- 14.50.23              z eod
00 14.50.24              IEE334I HALT EOD SUCCESSFUL
 *14.50.25             *IEE362A SMF ENTER DUMP FOR SYS1.MAN1 ON VPMVSB
  14.50.25              IEE360I SMF NOW RECORDING ON SYS1.MAN2 ON   VPMVSB  TIME=14:50:25
 *14.50.25             *IEE985A SMF IS PROCESSING ITS LAST AVAILABLE DATASET


IEE612I CN=01 DEVNUM=3E1 SYS=ML1F CMDSYS=ML1F


IEE163I MODE= RD




_

                                                               Running    SVSCDR2
MA    a
🖳 Connected to remote server/host svscvm1.dfw.ibm.com using port 23
```

Illustration 5.5: MVS Console – System Halted

Step 5. Flush all SMF data to the SMF datasets and write a record in the SMF datasets indicating an orderly system shutdown with the command:

SEND ETPGyyy \CP VI VMSG Z EOD

The message `IEE334I HALT EOD SUCCESSFUL` will be returned by the system. See Illustration 7.7: Example of password messages after DIAL command.

Step 6. Logoff the guest z/OS system with the command:

SEND ETPGyyy \CP LOGOFF

Step 7. To re-IPL the guest z/OS system, go to topic "How to IPL the guest z/OS system (detailed description)" on page 16. When leaving the guest z/OS system in a dormant state for a period of time, issue a LOGOFF command and, once back to the z/VM logo screen, enter 'VMEXIT' in the command field and press the ENTER key.

6 Managing the guest z/OS system with SLEEP and BEGIN

Or how to turn the lights out as you leave..

It is possible, with a guest z/OS system running under z/VM, to put the guest z/OS system to "sleep" (overnight, for example) at any given point without having to drain, halt or quiesce the guest z/OS system. The effect of z/VM CP SLEEP command is that of temporarily "freezing" the guest z/OS system at any given point with the ability to resume at that same point at a later time and with additional benefit of not using CPU cycles when they are not needed.

Once a virtual machine is placed into the CP SLEEP state it will remain inactive until it is awakened with the CP BEGIN command (see "Using BEGIN to awaken the guest z/OS system" on page 31).

To verify that the guest z/OS system is sleeping, issue the **QSLEEP** (Query SLEEP) command from any one of the z/VM Personal user IDs (i.e. the user IDs used for DIAL and/or online documentation) or the z/VM control user ID. Put the guest z/OS system to sleep as usual, wait at least 60 seconds and then issue the QSLEEP command from the CMS Ready prompt of the z/VM Personal user ID. For example:

QSLEEP ETPGyyy   (where ETPGyyy is the guest z/OS system name)

While it is possible to place the virtual machine in an inactive state at any given moment, it is highly recommended that all batch and interactive activity be quiesced first, and that subsystems be halted or quiesced if possible to reduce the "shock" of waking up several hours (or days) later. The effect is similar to pushing the "STOP" button on the processor system console. The base z/OS system and IBM subsystems recover with no problems, however the Dallas ISV z Center cannot be responsible for adverse side effects in vendor software systems under these circumstances.

Never put the system to sleep with an attached tape device. *Always* detach tape devices before putting the system to sleep. Failure to do so will result in an automatic forced detach of the tape device from the system after five minutes; when this is done it often results in a permanent I/O error condition which causes the virtual tape device to be unusable after the system is reconnected.

There are two methods for putting a virtual machine into SLEEP mode. They are both described below.

IMPORTANT - READ THIS

Each Solution Developer is assigned a "virtual machine" under IBM's z/VM (Virtual Machine) operating system which runs continuously and accumulates CPU time regardless of actual use by interactive users, batch jobs, etc. The Solution Developer's account will be charged for CPU time used by the virtual machine even if no users are logged on and no batch activity is recorded. The amount of work units consumed by virtual machine is available via the SESSREPT command. See "**Obtaining program account information**" on page 48.   To avoid unnecessary charges, always remember to stop the guest z/OS system's virtual machine when not in use, by either putting it to sleep or shutting it down and logging it off. See "**Putting the guest z/OS system to**

> **SLEEP from z/VM control user ID**" on page 30 and "**How to shutdown a guest z/OS system**"
> on page 26. Failure to correctly logoff (terminate) the guest z/OS system's virtual machine or put
> it to sleep, will cause the machine to run (idle) and the Solution Developer will be charged for the
> time used by the virtual machine.

6.1   Putting the guest z/OS system to SLEEP from z/VM control user ID

From the z/VM control user ID, issue the following command:

      SEND ETPGyyy \CP SLEEP

6.2   Putting the guest z/OS system to SLEEP from a TSO session

It is possible to put the guest z/OS system to sleep from a TSO session without the inconvenience
of logging off TSO.

Type **%SLEEP** from an ISPF command line and logoff from TSO within the next 60 seconds.
%SLEEP is a REXX exec which submits a batch job from a TSO session. The batch job waits a
specified amount of time and then issues the appropriate z/VM CP commands to put the system
to sleep. The time delay may be specified as a parameter on the **%SLEEP** command; the default
is 60 seconds.

When other terminals are connected (DIALed) to the system, the **%SLEEP** command will
prompt to either continue or quit (cancel) before submitting the batch job. Another prompt will
be issued if there are attached tape devices on the system (Never put the system to sleep with
attached tape devices, always finish tape processing and vary the device offline, then detach the
tape device before putting the system to sleep).

Note: Accidentally issuing the **%SLEEP** command and failing to log off TSO before the time
delay expires, causes the guest z/OS system to stop and the TSO session will appear to go "dead".
To recover from this situation, locate an alternate terminal or terminal session and "wakeup" the
sleeping system as described in "Using BEGIN to awaken the guest z/OS system" on page 31.
Next, logoff TSO normally and subsequently put the system to sleep using the technique
described in "Putting the guest z/OS system to SLEEP from z/VM control user ID" on page 30.

Warning: Be careful not to modify the system in any way (such as installing certain JES exits)
which will cause the batch job submitted by %SLEEP to fail, as this would cause the system to
continue running after issuing %SLEEP. The SLEEPER batch job should be exempt from
modifications or use an alternate method to put the system to sleep (such as the one described in
"Putting the guest z/OS system to SLEEP from z/VM control user ID" on page 30).

6.3 Using BEGIN to awaken the guest z/OS system

From the z/VM control user ID, issue the following command:

SEND ETPGyyy \CP BEGIN

7 Connecting to the guest z/OS system

There are two types of applications on a guest z/OS system. One type of application is accessed through a full screen interface and the other through a line mode interface. The following sections describe using the z/VM DIAL command or a TN3720 client session connected directly to an IP address for accessing applications through a full screen interface. The sections continue by describing TELNET for accessing applications through a line mode interface.

For Early Test Program (ETP) systems, users are required to **DIAL** to the individual *guest system IDs* in order to interact with applications such as TSO, CICS or IMS running on that guest z/OS system.

7.1 Connecting using z/VM DIAL

1. Connect to the Dallas ISV z Center Secure Portal, as instructed in **"How to access the IBM Dallas ISV z Center z Systems server"** on page 10.

2. Select the z Systems server on which the guest z/OS system was started (See Illustration 3.3: CMS Ready Prompt on SVSCDR2 on page 15).

3. There are two options when using the DIAL command. Both are described below:

   a) Enter the z/VM **DIAL** command on the COMMAND line of the z Systems SVSCDR2 LOGO screen specifying the name of the guest z/OS system ID. The system will automatically connect the terminal to the first available VTAM terminal in the guest z/OS system. For example, to DIAL to system name ETPGyyy, type the following command:

   DIAL ETPGyyy

   Note: D may be used as an abbreviation for the DIAL command.

   b) To use data transfer (IND$FILE) from a TN3270 emulator specify an address in the range of F00-F07 to the end of the DIAL command. For example, to DIAL to system name ETPGyyy using specific terminal address F04, type the following command:

   DIAL ETPGyyy F04
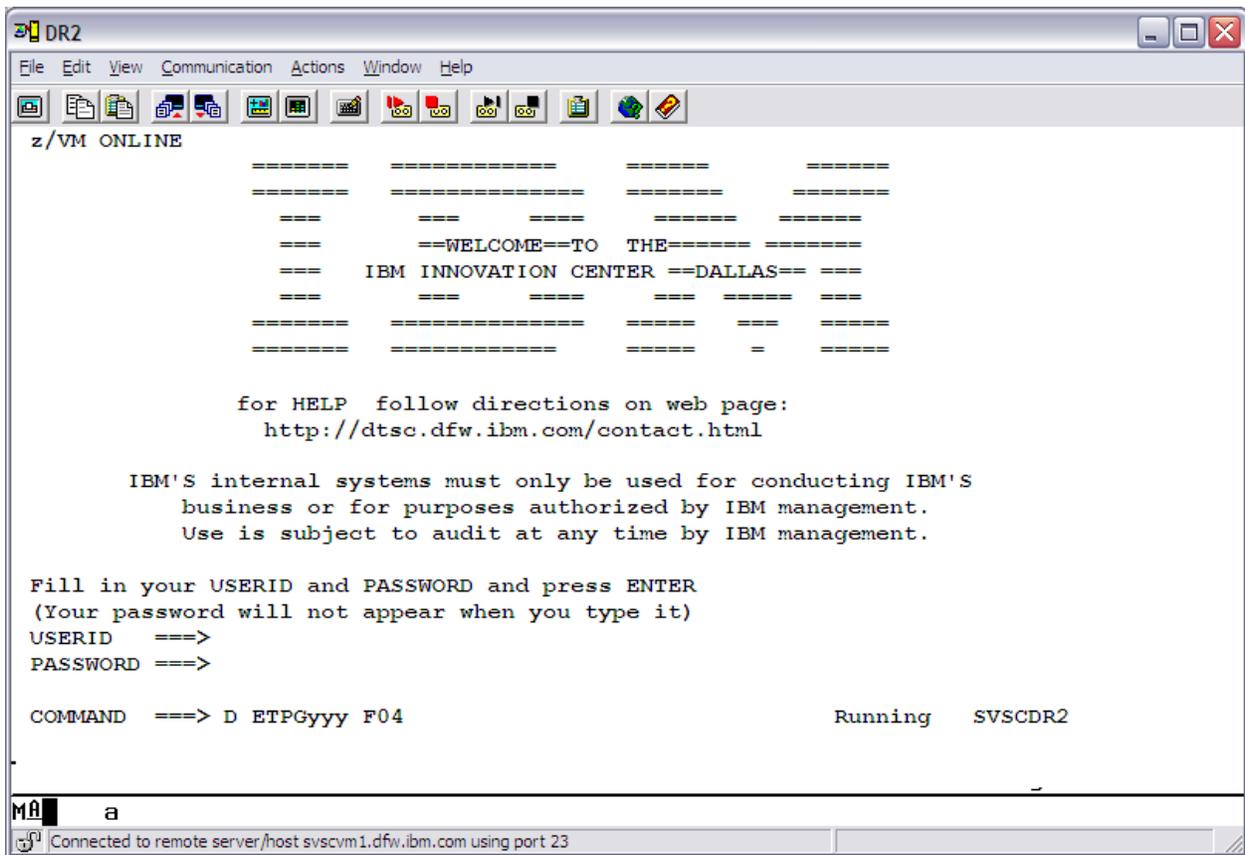
Illustration 7.7: Dialing to a guest system ID

Respond to message `E120001: Enter your USERID:` with the z/VM Personal user ID. See the system delivery email for the list of z/VM Personal user ID assigned for use in accessing the guest system. Respond to message "Enter your password:" with the password associated with that z/VM Personal user ID.[4]

Note: Passwords for the z/VM Personal user IDs have been set to expire immediately and must be changed during first logon, and at least every 60 days thereafter. See the system delivery password email for details.

A common full screen application is TSO. To logon to TSO, proceed to "Accessing TSO" on page 36 below. Other full screen applications such as CICS or IMS are described in separate documents. Please contact the Dallas ISV z Center to obtain a copy of these documents.

---

4   If message HCPDIA056E appears instead, see Help for common problems on page 68.
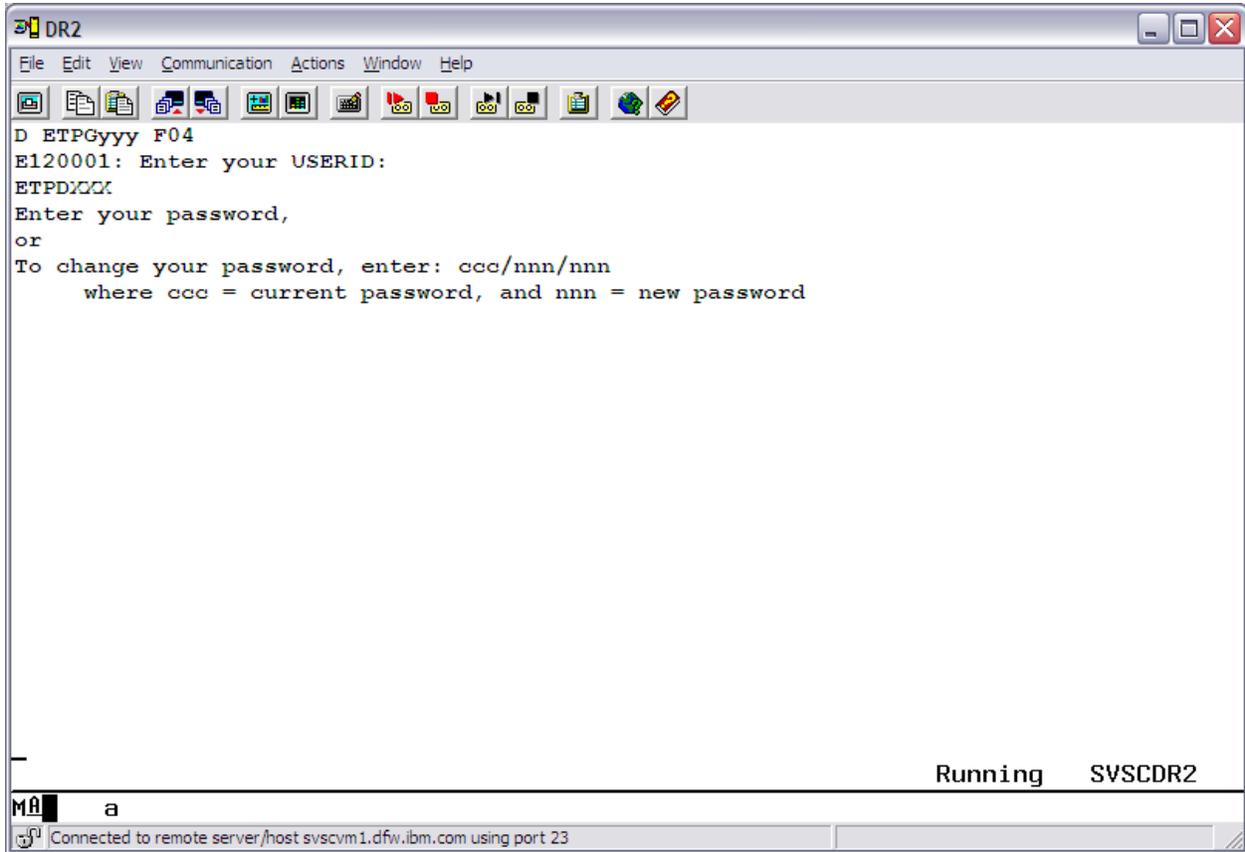
```
DR2                                                                    _ □ ⊠
File  Edit  View  Communication  Actions  Window  Help
□ ▣▣  ▤▥  ▦▩  ▨  ▩▩  ▨▨  ▤  ◆◆

D ETPGyyy F04
E120001: Enter your USERID:
ETPDXXX
Enter your password,
or
To change your password, enter: ccc/nnn/nnn
        where ccc = current password, and nnn = new password




                                                          Running    SVSCDR2

MA▮     a
🖳 Connected to remote server/host svscvm1.dfw.ibm.com using port 23
```
*Illustration 7.7: Example of password messages after DIAL command*

7.2   Connect a TN3270 client session directly to an IP address

Refer to the system delivery email to obtain the assigned TCPIP address. If the assigned IP
address requires the use of Client VPN, please refer to the system delivery email for instructions
for downloading the Cisco VPN Client software and using it to log into the VPN.

Configure a TN3270 client session using the assigned IP address and port ***623.*** Do Not
configure or enable SSL support for this session. Once the session is configured, select the
option to connect to the system.

A common full screen application is TSO. To logon to TSO, proceed to "Accessing TSO" on
page 36 below. Other full screen applications such as CICS or IMS are described in separate
document. Please contact the Dallas ISV z Center to obtain a copy of these documents.

7.3   Connect directly to an IP address using telnet

There are several options available for line mode clients. The instructions below describe how to
connect to the system using telnet through a command line interface.

From a workstation command prompt, enter telnet followed by your IP address. For example:

telnet 192.168.1.1

Before connecting with telnet, the INETD daemon must first be started on the guest z/OS system using the following command from the z/VM control user ID:

SEND ETPGyyy \CP VI VMSG S INETD

7.4   Connect using FTP

Using any FTP client to connect to z/OS FTPD, issue the following command:

FTP *guest_system_ip_address*

You will be prompted for TSO user ID and password.   Change the directory to an MVS dataset name or UNIX file name by enclosing the MVS dataset or UNIX file name in quotes.

7.5   Connect using SSH

Issue the following command from the z/VM control user ID to start SSHD:

SEND ETPGyyy \CP VI VMSG S SSHD

Once SSHD is started, use any SSH client to connect to the guest z/OS system.

8   Accessing TSO

Below are instructions for logging on to and logging off of TSO on the guest z/OS system.

8.1   *Logging onto TSO*

All remote access guest z/OS systems are predefined with one TSO user ID (IBMUSER) for use by the Solution Developer's system administrator. This user ID has full TSO ACCOUNT, OPERATOR, and IBM RACF® SPECIAL authority. Use it to add additional TSO user IDs to the guest z/OS system, see "**Adding more TSO user IDs**" on page **44**. The initial password for IBMUSER is set to IBMUSER; this password has been set to expire immediately and must be changed during first logon.

To reset the password for IBMUSER, issue the following command from the z/VM control user ID:

> **SEND ETPGyyy \CP VI VMSG S RACFUR**

This will reset the password to IBMUSER, which will expire immediately upon logon.

****NOTE All TSO user IDs will be revoked after 6 consecutive unsuccessful logon attempts.

> A second TSO user ID, SVTSCU, has been included in the guest z/OS system for use by the Dallas ISV z Center to provide maintenance to the system and to assist in the event of a problem which requires access to the system. It is recommended that this user ID NOT be removed as the Dallas ISV z Center staff may be unable to assist in the event of a problem requiring access to the system. Access to this user ID is strictly controlled by the Dallas ISV z Center and the user ID will **not** be used without prior permission.

> Step 1. After connecting to the guest z/OS system using z/VM DIAL or a TN3270 client, the z/OS VTAM LOGO screen will be presented:

```
          ======    ============    =======         =======
          ======    ============    =======         =======
           ===         ===   ====     ======        ======
           ===         ==========     ======= =======
           ===         ==========      === ======  ===
           ===         ===   ====      ===  =====  ===
          ======    ============      =====   ===   =====
          ======    ============      =====    =    =====

    *******************************************************************
    *******              IBM Innovation Center Dallas         *******
    *******                 Welcomes you to your              *******
    *******              z/OS   Version  2 Release 2          *******
    *******      System Name - MVS3GA   : USSTAB - USSTAB1    *******
    *******************************************************************
        Lu Name= LE01     Date  = 07/21/16 Time = 09:36:36
              Please choose from the following commands
        (Not all applications are available in every system)


      TSO    - Logon TSO (24x80)      TS04B3 - Logon TSO (32x80)
      TS04B4 - Logon TSO (43x80)      TS04B5 - Logon TSO (24x132)
      CICS   - Logon CICS             IMS    - Logon IMS
      Type EXITMVS to Return to VM
```

Illustration 8.8: One Example of a z/OS VTAM LOGO screen

NOTE: Connecting a TN3270 client directly to the IP address assigned to the guest z/OS system will present a similar z/OS VTAM LOGO screen.

Type **TSO** and press the ENTER key. Any of the other TSO selections may also be picked, based on the screen size configured in the TN3270 session (this option is only available when connected using z/VM DIAL).

Message **IKJ56700A ENTER user ID** will prompt for a TSO user ID. Reply with the TSO user ID and press the ENTER key.

The standard TSO logon screen will be presented:

```
────────────────────────── TSO/E LOGON ──────────────────────────────

    Enter LOGON parameters below:                RACF LOGON parameters:

    Userid    ===> IBMUSER

    Password  ===> __                            New Password ===>

    Procedure ===> SPFPROCE                      Group Ident  ===>

    Acct Nmbr ===> FB3

    Size      ===> 100000

    Perform   ===>

    Command   ===>

    Enter an 'S' before each option desired below:
           -Nomail          -Nonotice          -Reconnect        -OIDcard
                                                                 PF1/PF13 ==> Help
 PF3/PF15 ==> Logoff    PA1 ==> Attention    PA2 ==> Reshow
  You may request specific help information by entering a '?' in any entry field
```

Illustration 8.8: TSO Logon Menu

Step 2. Type in the TSO password and press the `ENTER` key.

NOTE: Logon PROC SPFPROCE is the default logon proc. For information on access to DB2 libraries for the specific version of DB2 running on the guest z/OS system, please contact the Dallas ISV z Center.

Continue to press the `ENTER` key when the screen fills and *** appears on the last line displayed.

After successful logon to TSO, the ISPF Primary Option Menu[5] will be presented:

---

5   Note: The presence of an IBM product on an ISPF selection panel does *not* necessarily indicate the presence of the product within the system.
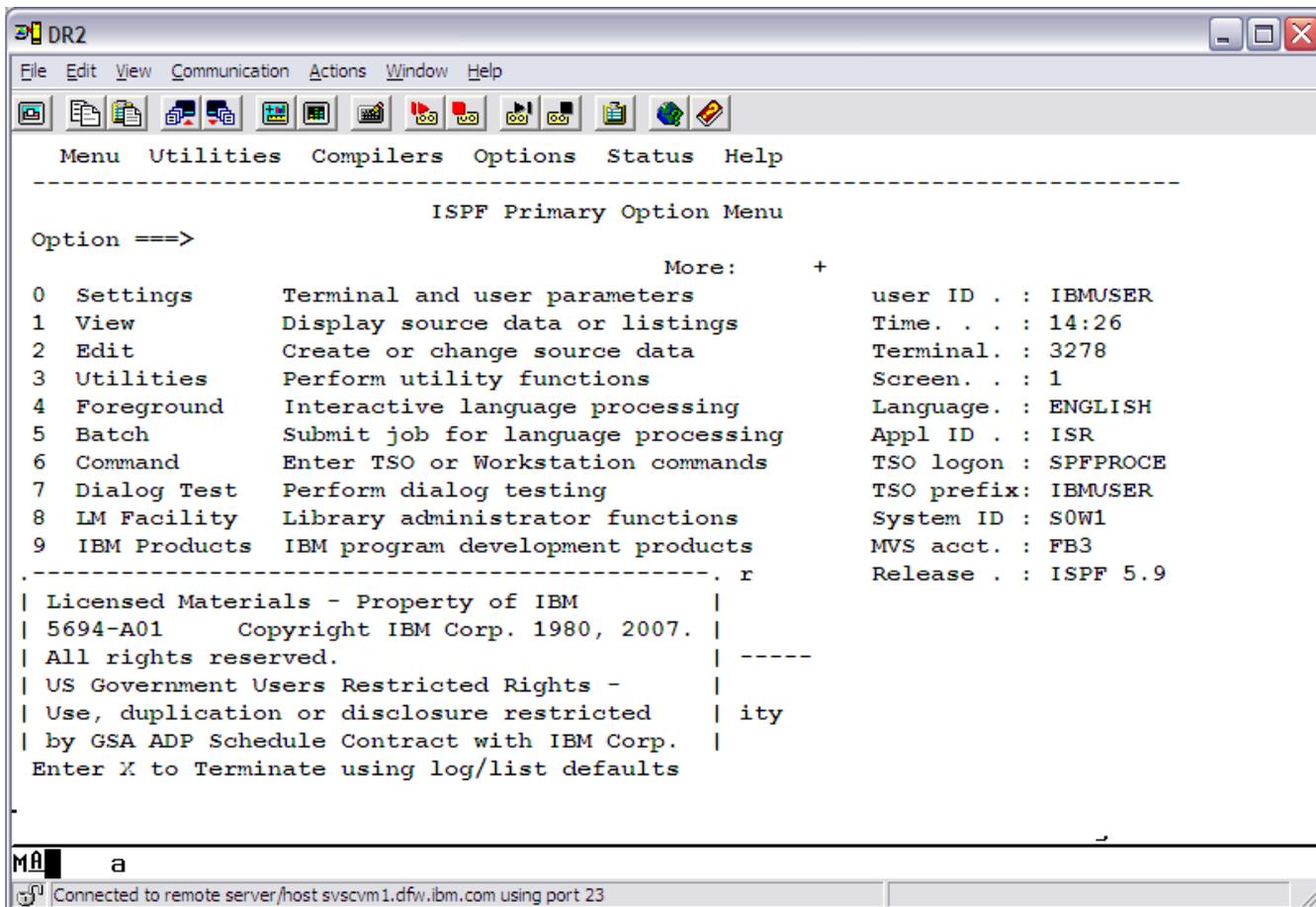
Illustration 8.8: ISPF Primary Option Menu

Note: Press the ENTER key to clear the Copyright information. Press F8 and F7 to page forward and backward through additional ISPF Primary menu options.

The first TSO logon after any IPL will cause the following messages to be generated. The messages can be ignored. They appear because many of the data sets in the system are configured on read-only disk volumes. The read-only disk volumes allow the Dallas ISV z Center to correct problems and deliver maintenance with a minimal amount of disruptions to participants.

```
IEF196I IEF237I 0CD0 ALLOCATED TO SYS00005
IOS000I 0CD0,98,WRI,05,0200,,00010000,VPCOMA,CATALOG , 586
 80020000280000000000010320000042301641900420F0000004CE100000000
IEF196I IEF237I 0CD0 ALLOCATED TO SYS00006
IOS000I 0CD0,98,WRI,05,0200,,00010000,VPCOMA,CATALOG , 588
 80020000280000000000010320000042301641900420F0000004CE100000000
IEF196I IEF237I 0CD0 ALLOCATED TO SYS00007
IOS000I 0CD0,98,WRI,05,0200,,00010000,VPCOMA,CATALOG , 590
 80020000280000000000010320000042301641900420F0000004CE100000000
```

8.2 Logging off TSO

To log off TSO, press the F3 key until you are back to the ISPF Primary Option Menu. Type 'X' on the Option line and press the ENTER key.
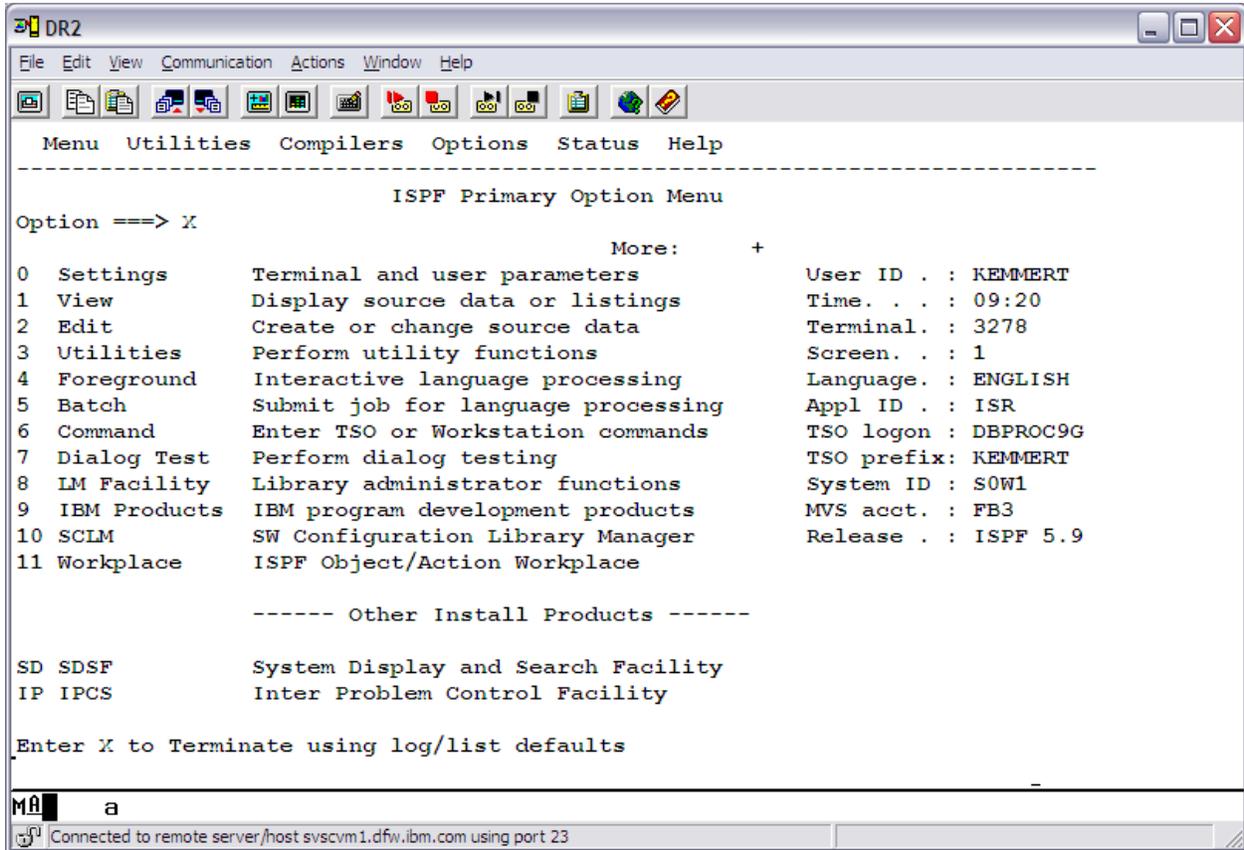

Illustration 8.8: Log Off TSO

In some cases, the following screen will be presented after typing 'X' and pressing the ENTER key. This screen requires disposition of log data set information. The normal response is '2' on the process options line, when there is no need to retain the userid.SPFLOG2.LIST dataset and press the ENTER key.
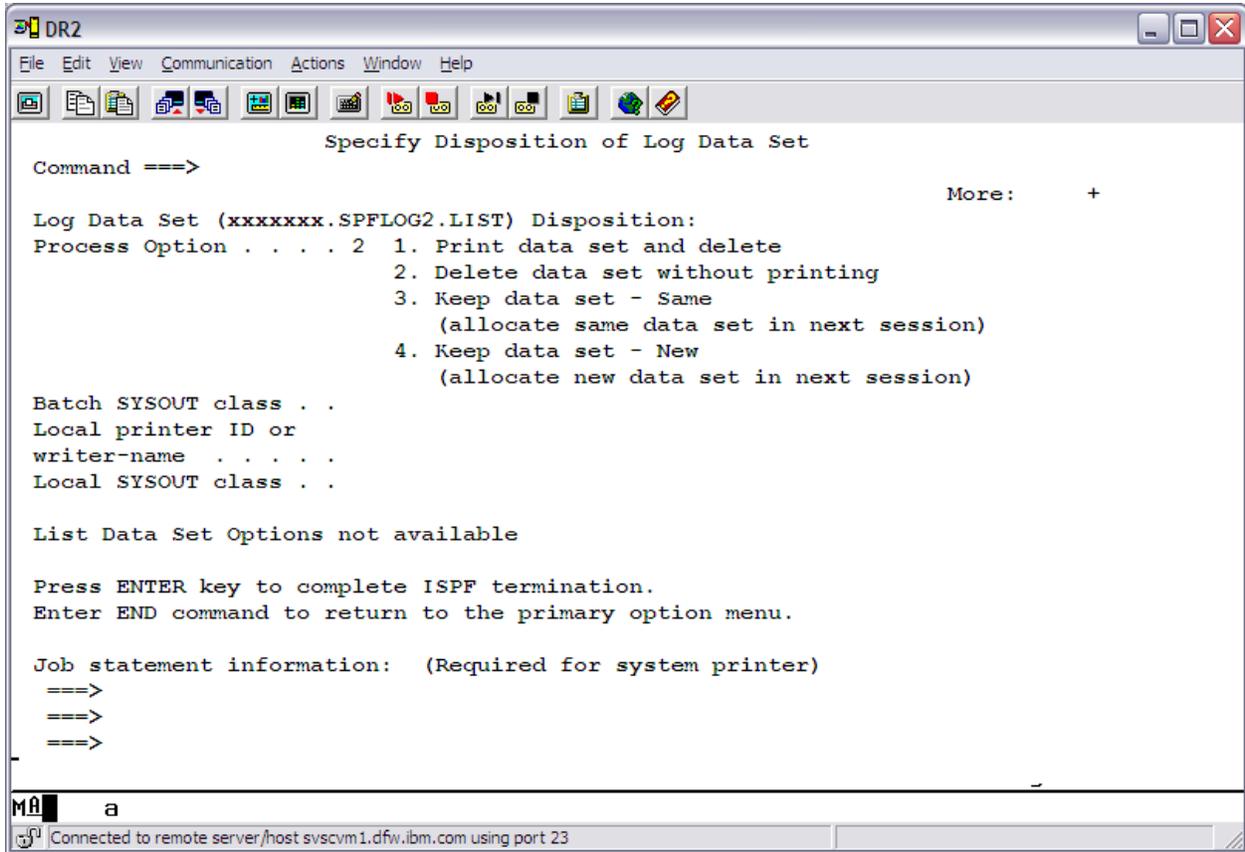
Illustration 8.8: Example of setting TSO print dataset disposition during logoff

The next screen will be the READY prompt, type in logoff and press the `ENTER` key

```
 READY
logoff
```

9 How to return to z/VM when using z/VM DIAL

This chapter describes how to return to z/VM when connected using z/VM DIAL.

In order to allow users to return to the first level z/VM system from the VTAM LOGO screen, a VTAM application program called EXITMVS has been installed to issue a CP RESET command on session disconnect and return to the z/VM LOGO screen.

After logging off the guest z/OS system and returning to the VTAM LOGO screen, type **EXITMVS** and press the ENTER key.


```
=======  ============     =======       =======
=======  ============     =======        =======
  ===       ===    ====     ======   ======
  ===       ============     ======= =======
  ===       ============     === ====== ===
  ===       ===    ====     ===  ===== ===
=======  ============     =====   ===  =====
=======  ============     =====    =   =====

************************************************************
*******           IBM Innovation Center Dallas       *******
*******              Welcomes you to your            *******
*******           z/OS   Version  2 Release 2        *******
*******    System Name - MVS3GA   : USSTAB - USSTAB1  *******
************************************************************
      Lu Name= LE02     Date  = 07/21/16 Time = 14:32:47
            Please choose from the following commands
        (Not all applications are available in every system)


  TSO    - Logon TSO (24x80)     TSO4B3 - Logon TSO (32x80)
  TSO4B4 - Logon TSO (43x80)     TSO4B5 - Logon TSO (24x132)
  CICS   - Logon CICS            IMS    - Logon IMS
  Type EXITMVS to Return to VM
```

Illustration 9.9: EXITMVS command

NOTE: To disconnect from the z/VM LOGO screen, type **VMEXIT** on the next screen and press the Enter key.
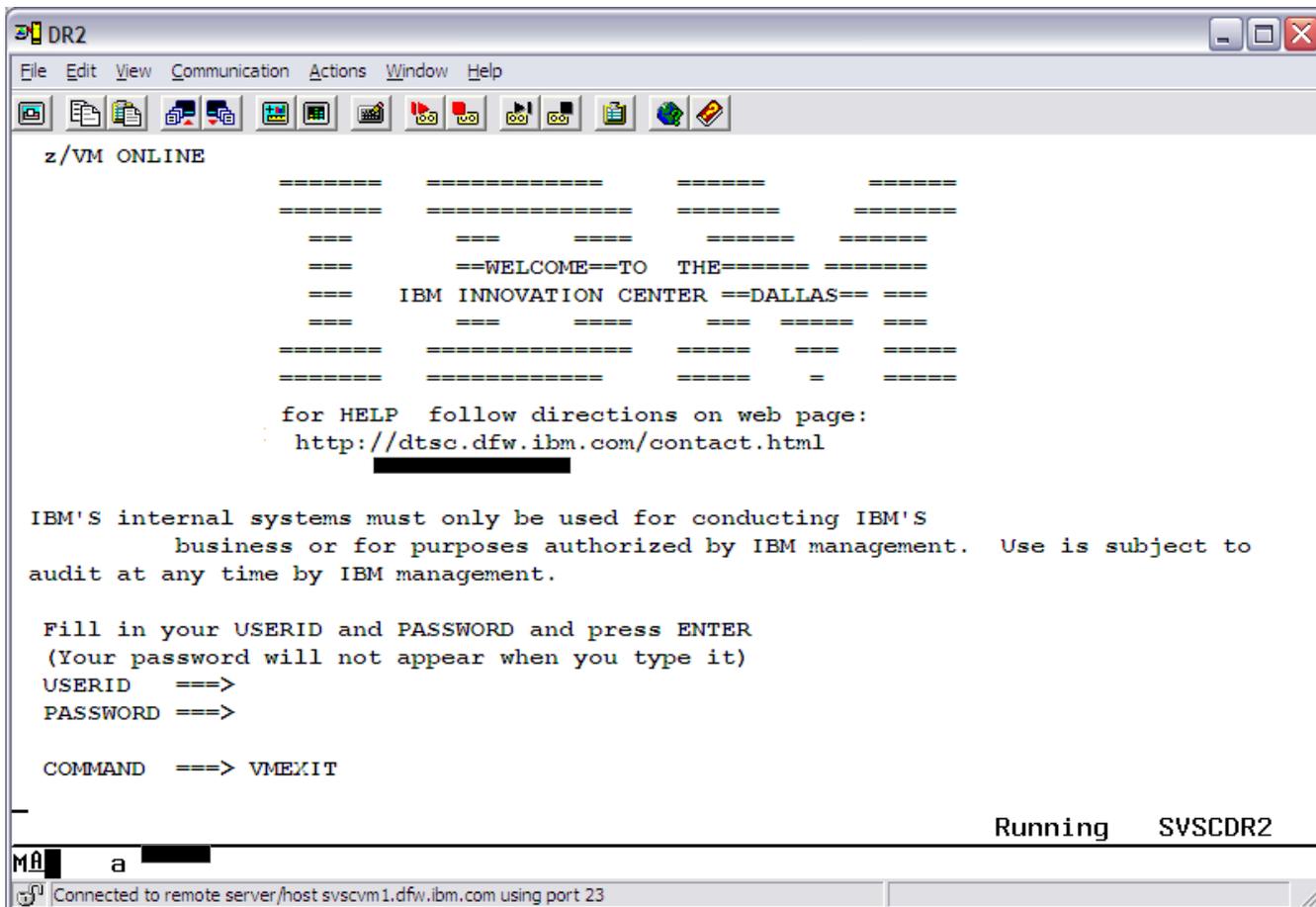
Illustration 9.9: VMEXIT command

VMEXIT will drop the connection to the Dallas ISV z Center Secure Portal.

10   Guest z/OS system administration

The following topics will cover basic guest z/OS system administration functions required to maintain the system.

10.1   Adding more TSO user IDs

To add TSO user IDs, log into TSO with the TSO Administrator id, IBMUSER. Type **%ADDUROM** at the TSO READY prompt. Every parameter can be specified. There are default values that can be taken. Please *read* **Appendix A "RACF information"** on page 61 for more information before executing this command.

After executing the %ADDUROM CLIST, create the OMVS home directory in the following format /u/xxxxxxx where 'xxxxxxx' is the userid. We also recommend that you create your own UNIX file system to be mounted on this directory.

When more than one user will be using the guest z/OS system, it is recommended to run the RACF DSMON (Data Security Monitor program) and review the system SETROPTS parameters, making adjustments as necessary to define the system as required.

System Security and Isolation

Please note that RACF protection is **not** needed to protect the resources from other users in other guest z/OS systems – they are isolated from this guest z/OS system by the z/VM operating system and the z/VM security system (RACF).

10.2   Backing up and restoring user data

There may be times when the Solution Developer will need to backup user data and compress it to send off-site. It may also be necessary to restore data that has been previously backed up. This section will provide guidelines to accomplish these tasks.

DFSMSdss

DFSMSdss logical dump and restore will be used to backup and restore user data. Sample JCL is listed below for both backup and restore processes.

TRSMAIN

TRSMAIN is a utility program to compress and decompress data. Output from TRSMAIN creates fixed length 1024 byte records. TRSMAIN also includes information in the fixed length records to rebuild data in its original format. The fixed length records make the data easily transportable using FTP. When the data arrives at the target system and the fixed length 1024 byte records are recreated, the original data can be rebuilt.

On the guest z/OS systems there are two sample JCL jobs that can be copied and modified to help perform the PACK or UNPACK functions. Sample JCL members TRSMAINP and TRSMAINU can be found in dataset LVL0.SVSC.CNTL.

FTP
FTP can be used to upload or download the TRSMAIN packed data.

10.2.1 Backing up user data steps

Step 1. DFSMSdss logical dump

To backup user data, use DFSMSdss **logical** dump format. Below is sample JCL for performing this function:

```
//ST1       EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//OUTPUT      DD DSN=User.data.LDUMP,UNIT=SYSDA,
//            DISP=(NEW,CATLG),
//            SPACE=(CYL,(xxx,yyy),RLSE),VOL=SER=(VPWRKx))
//SYSIN    DD *
 DUMP DS (INCLUDE(                       -
               User.DATA.**              -
              )                          -
             EXC(SYS1.VTOCIX.**  -
               SYS1.VVDS.**  -
               )) -
         ODD(OUTPUT)                -
      CANCELERROR ALLDATA(*) ALLEXCP COM TOL(ENQFAILURE) SHR
```

The ALLDATA(*) and ALLEXCP parameters mean the data sets will be restored as allocated.

Please refer to the following IBM publication for more detailed information and available functions and parameters for dump and restore:

DFSMS Storage Administration Reference
(for DFSMSdfp, DFSMSdss, DFSMShsm)

Point your browser to url http://www.ibm.com/systems/z/os/zos/bkserv/
Select the appropriate z/OS operating system level you are configuring.

Step 2. TRSMAIN

TRSMAIN is the utility used to compress the backed up data. Use sample JCL member TRSMAINP found in dataset LVL0.SVSC.CNTL to perform the PACK

Step 3. Downloading data using FTP

The following text assumes that the FTP server is located on the guest z/OS system.

Output that has been 'packed' can be transmitted from the guest z/OS system using FTP. Logon to the z/OS FTP daemon (refer to section "Connect using FTP" on page 35) and use the GET command to retrieve a packed output file. Be sure to set the transfer type to BINARY before using the GET commands as shown below.

Additional information regarding use of the GET command can be found in the z/OS Communications Server IP User's Guide and Commands manual.

```
ftp> bin
ftp> get terse.dump
ftp> exit
```

10.2.2   Restoring user data steps

To restore user data, use DFSMSdss restore format. First upload the compressed dataset using FTP to the system and then use the TRSMAIN program to UNPACK it before performing the restore.

Step1. Uploading data using FTP

The following text assumes that the FTP server is located on the guest z/OS system.

FTP to the guest z/OS system using PUT command:

Output that has been 'packed' can be transmitted to the guest z/OS system using FTP. Logon to the z/OS FTP daemon (refer to section "Connect using FTP" on page 35) and use the PUT command to send a packed backup file. Be sure to set the transfer type to BINARY before using the PUT commands as shown below.

Additional information regarding use of the PUT commands can be found in the z/OS Communications Server IP User's Guide and Commands manual.

```
ftp> bin
ftp> quote site cyl pri=xxx sec=yyy
ftp> quote site lrecl=1024 blksize=55296 recfm=fb
ftp> quote site unit=3390 volume=VPWRKx
ftp> put terse.dump
ftp> quit
```

Step 2. TRSMAIN

TRSMAIN is the utility used to decompress the uploaded data. Use sample JCL member TRSMAINU found in dataset LVL0.SVSC.CNTL to perform the UNPACK.

Step 3. DFSMSdss Restore

Below is sample JCL for performing a restore.

```
//ST4       EXEC PGM=ADRDSSU
//SYSPRINT DD SYSOUT=*
//TAPE      DD DSN=user.data.LDUMP,
//             DISP=(OLD,KEEP),UNIT=3390,
//             VOL=SER=VPWRKx
//SYSIN     DD *
 RESTORE DS(INC( -
              user.DATA.**            -
            ) -
          EXC(SYS1.** -
            )) ODY(VPWRKx) IDD(TAPE) CAN -
            NULLSTORCLAS BYPASSACS(**) TOL(ENQF)
 /*
```

10.3 IPCS

Prior to using IPCS for the first time, each user must specify the volume that IPCS will use. Issue the following command from the ISPF command line:

TSO BLSCDDIR VOLUME(VPxxxx)

Once this command has been issued, start IPCS using ISPF option IP.

10.4 Issuing CP commands

CP commands can be issued in one of two ways, from the z/VM control user ID or from the TSO environment using REXCPCMD.

Any CP[6] commands issued on behalf of a guest z/OS system from the z/VM control user ID follows the format **SEND** *guest system ID* **\CP** *cp_command*. For example, to query the tape drives attached to guest system ID ETPGyyy, issue the following command from the z/VM control user ID:

---

6 CP is the Control Program which operates within the first-level z/VM system.

SEND ETPGyyy \CP Q V TAPE

Any CP commands issued on behalf of a guest z/OS system from a TSO environment will follow the format **REXCPCMD** *cp_command*.

REXCPCMD Q V TAPE

10.5   Accounting information

Many of the Dallas ISV z Center Remote Access Program fees include a specified amount of CPU work units in the base fee and any extra work units used for a month are charged at a specified per work unit rate. The number of work units included in the base fee and the additional per work unit rate are documented in the **Program Charges** section of the Exhibit included in the program enrollment package.   The session report (SESSREPT) command is provided for you to monitor the work unit usage of your guest system. Accounting records are stored for each guest system that has had usage during the twelve hour period ending at 07:00 and at 19:00 US Central time each day.

10.5.1   Obtaining program account information

Work unit accounting information may be obtained for the guest z/OS system, for a specified date range by issuing a CP command from a z/VM Personal user ID.

The command is:

MSG SVUTIL SESSREPT ETPGyyy FDATE LDATE

where **FDATE** is the first date in the range and **LDATE** is the last date in the range.

An explanation of the syntax is provided in the SESSREPT help text which is retrieved with the command:

MSG SVUTIL HELP SESSREPT

```
SVUTIL: SVUTIL SESSREPT COMMAND SYNTAX:
SVUTIL:
SVUTIL:   "MSG SVUTIL SESSREPT UUUUUUUU FDATE LDATE"
SVUTIL:
SVUTIL:      WHERE UUUUUUUU = USERID FOR SESSION REPORT
SVUTIL:  FDATE = FIRST DATE TO BE REPORTED   (MM/DD/YY)
SVUTIL:  LDATE = LAST DATE TO BE REPORTED    (MM/DD/YY)
SVUTIL:
SVUTIL: ALL PARAMETERS ARE REQUIRED.  DATES MUST BE BETWEEN
1989 AND THE CURRENT DATE.  ONE OR TWO DIGITS OK FOR MONTH
AND DAY.
```

After a short time, the SVUTIL service machine will send a detailed usage report to the z/VM Reader of the z/VM Personal user ID that sent the command.

When the report is returned, a message will be displayed on the z/VM Personal user ID CMS screen with an identifying file number. To view the contents of the file, enter the command:

PEEK *file_number* **(FOR ***

Alternatively, access the file using the z/VM ReadList command:

RL

From the list of reader files, cursor to the line of the file to view and press **F11** (Peek).

While 'peek'ing the file, it may be easier to view after entering the command **V 1 78** on the command line. Use F7 and F8 to scroll the file forward and backward. Use F3 to quit looking at the file.

10.6   Switching the z/VM control user ID

The z/VM control user ID for a system can be changed using one of three methods. In the below examples, ETPGyyy is the guest system ID and ETPDxxx is the desired new z/VM control user ID:

- From the current z/VM control user ID, issue the following command:

    SEND ETPGyyy \CP SET SECUSER ETPDxxx

- From any z/VM Personal user ID owned by the customer, issue the following command:

    MSG SVUTIL SECUSER ETPGyyy ETPDxxx

- From ISPF main menu in TSO, select option 6 and then enter command:

    REXCPCMD SET SECUSER ETPDxxx

SVUTIL is a service machine that does a variety of things. To find out what it does, issue command **MSG SVUTIL ? .** To get the syntax of any of the options, issue command **MSG SVUTIL HELP xxx** where xxx is the option.

11   z/OS System Customization

The User's Guide and Reference contains basic information about working with the guest z/OS system. For more detailed information about customizing the guest z/OS, please visit the "*Getting Started at IBM Innovation Center - Dallas"* link on the IBM Innovation Center - Dallas webpage at URL http://dtsc.dfw.ibm.com/

12   Tape handling procedures

12.1   Using tapes

Please be a responsible user and help others by detaching tape devices as soon as they are no longer needed.

Hours of Operation

> Tape operators will mount tapes continuously from 23:00 Sunday to 23:00 Friday, and from 07:00 to 15:00 on Saturday. All times are US Central time and exclude IBM USA holidays. From time to time the tape mount hours are changed to meet business requirements. For tape mounts at a particular time of day, please contact the Dallas ISV z Center.

If you have questions regarding handling tapes, please refer to "Technical support " on page 10.

Problems with pending tape mounts can be reported 07:00 to 19:00 US Central time Monday through Friday except IBM USA holidays. Please send an email to zTech@us.ibm.com describing the problem. Include all appropriate messages, the guest z/OS system name, and contact information.

Tape devices are a limited **real** resource and are only attached to the guest z/OS system when needed to satisfy a tape mount request. When the tape is loaded on the tape drive by the tape operator the mount request will be satisfied.

Note: *Never* put the z/OS system to sleep with an attached tape device. *Always* detach tape devices before putting the system to sleep. Failure to do so will result in an automatic forced detach of the tape device from the system after five minutes; when this is done it will result in a permanent I/O error condition which causes the virtual tape address to be unusable until the system is IPL'd.

Scratch Tapes: The Dallas ISV z Center does not provide scratch tapes. Scratch tapes are the responsibility of the Solution Developer and should be handled the same as any tape (i.e. product tape) during the duration of the Test Program.

12.2   Mounting tapes

There are two methods described below, by which to request a tape mount. Although the methods are different, the underlying process is the same. Here is a brief outline of the process followed by a description of the two tape mounting methods.

1. The tape is received by the Dallas ISV z Center, logged and stored in a secure room. Email notification will be sent when the tape is available for use.

2. A mount request is sent in the form of a message to a z/VM service machine called SVUTIL using one of the two methods described.

3. The SVUTIL service machine reads the message. When the tape number requested is in the virtual tape library, the SVUTIL service machine will:
   - Verify that the request is from an authorized user ID.
   - Translate the requested tape number to a physical rack number.
   - Attach a tape drive to the requesting system at the requested address.
   - Send a message to the tape operator requesting that the tape be mounted on the attached drive.
   - Send informational messages to SYSLOG on the guest z/OS system.

4. A message is displayed on the Master Console of the requesting system: DEVICE <vdev> IS NOW READY FOR USE.

5. The Solution Developer issues the VARY <vdev>, ONLINE command and then may submit his/her job.

6. The tape operator retrieves the tape from the physical tape library and mounts the tape on the tape drive displayed in the message generated by the mount request. This may take a few minutes.

7. The job runs.

8. The Solution Developer issues the VARY <vdev>, OFFLINE command when finished with the tape device.

9. The Solution Developer detaches the tape device from the guest z/OS system.

12.2.1   z/OS tape device definitions

Tape device numbers for a guest z/OS system are defined in the table below:

Tape Drive Type	Device number range	Comments
3592	550 – 55F	3592 devices(3592A and 3592B)

12.2.2   Method 1 - from the z/VM control user ID

Mount...

To request a tape mount, issue the following from the z/VM control user ID:[7]

SEND ETPGyyy \CP MSG SVUTIL MOUNT <refno> ON <vdev> <mode> <devtype>

---

[7] Use the **SEND ETPGyyy \CP MSG SVUTIL LISTTAPES** command to list the tape inventory including reference numbers.

where <refno> is the reference number assigned to the tape, <vdev> is the virtual tape device number in the guest z/OS system on which to mount the tape, <mode> is either **R/O** or **R/W** indicating READ ONLY or READ/WRITE (may also be indicated as RO or RW), and <**devtype**> is the correct device type for the media being used. All parameters except devtype are required.

For example, to mount the tape with reference number ETP123 on virtual tape device 550 Read/Only, enter command:

SEND ETPGyyy \CP MSG SVUTIL MOUNT ETP123 ON 550 R/O 3592A

For cartridge tapes, optionally specify up to six tapes to be loaded simultaneously in the autoloader. For example, to mount tapes ETP001 and ETP002(in that order) on virtual tape device 550 Read/Write (all must be either Read/Only or Read/Write), enter command:

SEND ETPGyyy \CP MSG SVUTIL MOUNT ETP001 ETP002 ON 550 R/W 3592A

This command will send a message to the SVUTIL service machine requesting a tape mount for the guest z/OS system from which the request was issued. An error response (if there is one) will be sent back within seconds in the form of a z/VM message to the z/VM control user ID. Some of the more common error messages with suggested responses may be found in Help for common problems on page 68.

To display syntax help for MOUNT, enter the CP command:

MSG SVUTIL HELP MOUNT

When the following message is displayed on the Master Console of the requesting system: **DEVICE <vdev> IS NOW READY FOR USE,** issue the VARY online command as follows:

SEND ETPGyyy \CP VI VMSG V <vdev>,ONLINE

To remount the same tape, simply reissue the original **MOUNT** request to SVUTIL. It is also possible to mount a different tape on the same device in this manner.

Detach...

When finished with the tape(s) and the tape device, please issue the CP commands to VARY offline and DETACH the virtual device from the guest z/OS system. For example, to vary offline and DETACH virtual device 590, enter commands:

SEND ETPGyyy \CP VI VMSG V 590,OFFLINE
SEND ETPGyyy \CP DETACH 590

12.2.3   Method 2 – From TSO

Mount...

Tape mount requests can be issued from a TSO session with **%MOUNT**. **%MOUNT** is a REXX exec which internally sends the **"MSG SVUTIL MOUNT"** CP command to the z/VM SVUTIL service machine, which process mount requests.

The **%MOUNT** command uses the same syntax as the **MSG SVUTIL MOUNT** command described above in Method 1, and performs some syntax and error checking before internally issuing the proper command to SVUTIL. Errors found by the REXX exec result in messages sent to the TSO terminal user.[8]

Type **%MOUNT HELP** or **%MOUNT ?** from any TSO ISPF command line for a brief description and syntax information.

Detach...

Once finished with a tape device, it must be varied offline and detached from the guest z/OS system so that other users may attach it to their systems and use it to mount their tapes. The easiest way to do this from a TSO session is with the **%DETACH** command. **%DETACH** is a REXX exec which internally issues the appropriate CP command or commands required to detach one or more virtual tape devices from the guest z/OS system.

There is only one parameter to the **%DETACH** command – the virtual tape device address (ex: 590) or the keyword "ALL" which is a request to detach all attached tape devices from the system.

Type **%DETACH HELP** or **%DETACH ?** from any TSO ISPF command line for a brief description and syntax information.

12.3   Sending tapes to and receiving tapes from the Dallas ISV z Center

Please attach an external reference number that is easily identifiable and unique to each tape sent to IBM. This reference number will be used when requesting a tape mount for the guest   z/OS system.

All tapes (including scratch tapes) to be used on the system should be mailed to:

IBM Corporation
Attn: ETP Administration /

---

[8] Note that it is not possible to perform all error checking from the **%MOUNT** exec, and as a result some error messages will still be sent to the z/OS console user ID.

z ISV Lab
3rd Flloor
1000 Belleview St.
 Dallas, TX. 75215

Proper Tape Identification: Please include the following information with ALL TAPES (product, scratch, etc.) mailed to IBM for use in the Remote Access Program.

Remote Access Program Name and Guest System (IPL Console) ID
External Reference Number (to be used when requesting a tape mount)
Company Name, Program Contact, Phone Number and Email Address
Company Return Address

Reference Number: Remember to attach an external reference number that is easily identifiable and unique to each tape sent to IBM. It may (but need not be) the same as the volume ID for an IBM standard label tape. The reference number must be 1-10 alpha-numeric characters with no imbedded blanks or special characters. This reference number will be used when requesting a tape mount for the guest z/OS system.

Please allow sufficient lead time for the tape to be received and logged in the tape library. IBM (RDP/ETP Administration) will contact via email to verify receipt of the tape.

Tapes will not be returned at the end of the program unless otherwise requested. Please call one of the numbers listed below if tapes must be returned before the end of the program.

Note: The Dallas ISV z Center cannot support 3420 tape reels.

12.4   Listing the tapes Available to your system

To retrieve a listing of all the tapes in the IBM Dallas ISV z Center Tape Library available to your system ETPGyyy, log on to the z/VM control user ID and issue the following command:

SEND ETPGyyy \CP VI MSG SVUTIL LISTTAPES

A complete list of tapes will be written to z/VM control user ID console as in the following example:

SEND ETPGyyy \CP VI MSG SVUTIL LISTTAPES
```
Ready; T=0.01/0.01 16:41:47
ETPGyyy : SVUTIL: List Tape Inventory for: ETPGyyy in Group:
ACCOUNT
ETPGyyy : SVUTIL: TAP001 Your Company comments mm/dd/yy
ETPGyyy : SVUTIL: TAP003 Your Company comments mm/dd/yy
ETPGyyy : SVUTIL: TAP004 Your Company comments mm/dd/yy
ETPGyyy : SVUTIL: TAP005 Your Company comments mm/dd/yy
ETPGyyy : SVUTIL: TAP006 Your Company comments mm/dd/yy
```

13   Guest z/OS system structure

This section contains specific information about the virtual machine environment and customized features of the guest z/OS system.

13.1   DASD configuration

A guest z/OS system for the z/OS program is comprised of the 3390 DASD volumes[9] shown in Table 1.

Note: Other volumes may be available to the guest z/OS system. To display the volumes in the guest z/OS system use ISMF or enter the following command from the SDSF log display:

/D U,DASD,ONLINE,,256

Table 1: DASD Volume Serial Label in the guest z/OS System.

Volume Serial	Access	VOLSTATE	Description
VPMVSB	Read/Write	PRIV/RSDNT	z/OS datasets including the Master Catalog, SMF datasets, Dump datasets which must be available to the guest z/OS system in write mode.
VPMVSC	Read/Write	STRG/RSDNT	Approximately 213 MB of free disk space for user datasets. (252 cylinders on a 3390 DASD unit.) This volume contains participant data that has been customized for the remote access program. In many cases, this volume can be moved to other programs facilitating productive data transitions.
VPMVSE	Read/Write	STRG/RSDNT	Approximately 420 MB of free disk space for user datasets. (420 MB is approximately 495 cylinders on a 3390 DASD unit.) This volume contains participant data that has been customized for the remote access program. In many cases, this volume can be moved to other programs facilitating productive data transitions.

---

9   These are mini-volumes, not full sized DASD volumes.

VPMVSD	Read/Write	PRIV/RSDNT	Datasets which have the high level qualifier of VENDOR. These datasets are integrated into the system to assist participants with the customization of the system. This volume contains participant data that has been customized for the remote access program. In many cases, this volume can be moved to other programs facilitating productive data transitions.
VPHFSB	Read/Write	PRIV/RSDNT	Small amount of free disk space under the control of DFSMS. This volume contains HFS files for OpenEdition.
VPSMSB	Read/Write	PRIV/RSDNT	Small amount of free disk space under the control of DFSMS. This volume contains the couple datasets required in a sysplex and some of the HFS files for OpenEdition.
VPSMSC	Read/Write	PRIV/RSDNT	Small amount of free disk space under the control of DFSMS. This volume is for user datasets like HFS files. This volume contains participant data that has been customized for the remote access program. In many cases, this volume can be moved to other programs facilitating productive data transitions.
VPSMSD	Read/Write	PRIV/RSDNT	Small amount of free disk space under the control of DFSMS.
VPSPOL	Read/Write	PRIV/RSDNT	JES2 Spool and Checkpoint volume.
VPSPOM	Read/Write	PRIV/RSDNT	JES2 Duplex Checkpoint volume.
VPPAGA	Read/Write	PRIV/RSDNT	PLPA, Common and Local page datasets.
VPPAGB	Read/Write	PRIV/RSDNT	Local page dataset.
VPPAGC	Read/Write	PRIV/RSDNT	Local page dataset.

13.1.1   System Managed Storage

- System Managed Storage (SMS) is active in the system.

- The member IEFSSNSM in LVL0.PARMLIB activates SMS at IPL.

- The member IEASYSLV in LVL0.PARMLIB contains the parameter SMS=SM to activate the IGDSMSSM member in LVL0.PARMLIB.

- The member IGDSMSSM in LVL0.PARMLIB contains the SMS configuration parameters.

- Three small SMS DASD volumes are provided with the system. This volume is initialized with a VTOC, indexed VTOC, and VVDS. The volume serial labels are VPSMSB, VPSMSC, VPSMSD.

- The JCL in dataset LVL0.SVSC.CNTL(DEFSCDS) allocated the SCDS dataset

SMS.SCDS1.SCDS.

- The JCL in dataset LVL0.SVSC.CNTL(DEFACDS) allocated the ACDS dataset SMS.ACDS1.ACDS.

- The JCL in dataset LVL0.SVSC.CNTL(DEFCOMM) allocated the COMMDS dataset SMS.COMMDS1.COMMDS.

- The system ACDS is named SMS.ACDS1.ACDS.

- The system COMMDS is named SMS.COMMDS1.COMMDS.

- The only SCDS is named SMS.SCDS1.SCDS.

- The system has one storage group, SG1. It is connected to one volume, VPSMSB.

- The system has one storage class, SC1. It has the guaranteed space attribute set to yes.

- The system has one management class, MCDEF. It is the system default management class.

- The system has no data classes.

- The member ACSSTORG of LVL0.SVSC.CNTL contains the source for the Storage Group ACS routine. This routine points all request to storage group SG1.

- The member ACSSTORC of LVL0.SVSC.CNTL contains the source for the Storage Class ACS routine. The routine does the following tasks.

  1. **Ignores all**   datasets with a high level qualifier (HLQ) of SYS1.
  2. **Manages all**   datasets with a HLQ of MANAGED assigning them to storage class SC1. For example, a dataset named MANAGED.JCL.DATA will be assigned to storage class SC1.
  3. Honors any storage class specified in JCL for datasets not covered by rules 1 and 2.

- The system contains no management class ACS routine.

- The system contains no data class ACS routine.

13.2   Dallas ISV z Center provided datasets

Most of the datasets listed below are located on the disk volume labeled VPMVSD. Volume VPMVSD is available to the system in Read/Write mode. There are also datasets on volume VPMVSB which influence the operation of the guest z/OS system. Most other volumes are available to the system Read/Only. Datasets on Read/Only volumes cannot be modified.

Dataset Name	Intended Usage
VENDOR.PARMLIB	PDS for users' provided parameters. Useful to hold "SYSIN" data for

Dataset Name	Intended Usage
	PROCLIB members.
VENDOR.PROCLIB	Empty procedure library in the JES2 default procedure concatenation for user created procedures (PROCS.)
VENDOR.ISPLLIB	Empty ISPF library dataset in the ISPF default ISPLLIB DD concatenation for user ISPF load modules.
VENDOR.ISPMLIB	Empty ISPF messages dataset in the ISPF default ISPMLIB DD concatenation for user ISPF messages.
VENDOR.ISPPLIB	Empty ISPF panel dataset in the ISPF default ISPPLIB DD concatenation for user panels.
VENDOR.ISPSLIB	Empty ISPF skeleton dataset in the ISPF default ISPSLIB DD concatenation for user ISPF skeletons.
VENDOR.ISPTLIB	Empty ISPF table dataset in the ISPF default ISPTLIB DD concatenation for user tables.
VENDOR.CLIST	TSO CLIST dataset in the TSO default SYSPROC DD concatenation for user provided global CLISTs.
user ID.CLIST	TSO CLIST dataset, when found at logon will be included in the TSO default SYSPROC DD concatenation for individual user CLISTs.
VENDOR.HELP	Empty dataset in the default SYSHELP DD concatenation for user HELP text.
VENDOR.LPALIB	Empty dataset included in the LPA list concatenation for user provided modules which need to be in PLPA. This dataset has also been APF authorized.
VENDOR.LINKLIB	Empty dataset included in the link list concatenation for user provided modules which need to be in the link list. This dataset has also been APF authorized.
VENDOR.SYSEXEC	Empty dataset in the default SYSEXEC DD concatenation for user REXX language EXEC source.
VENDOR.VTAMLIB	Empty dataset included in VTAMLIB concatenation in member VTAM for user supplied VTAM exits, USS tables, etc..
VENDOR.VTAMLST	Empty dataset included in VTAMLST concatenation in member VTAM for user supplied VTAM exits, USS tables, etc..

13.3   Default LINKLIST concatenation

This system implements dynamic linklist. Please see the PROG= parameter in LVL0.PARMLIB(IEASYSLV). The easiest way to review the linklist is with the Operator command:

D PROG,LNKLST

The PROG= parameter is used for APF authorization also. Please be sure to review all the PROGxx members referenced in the PROG= parameter. The easiest way to review the APF list is with the Operator command:

D PROG,APF,ALL

13.4   Default LPA list

To determine the LPALST concatenation please review the LPA= parameter of LVL0.PARMLIB(IEASYSLV).

13.5   Default PROCLIB concatenation

The following list describes the PROCLIB concatenation as initially delivered, in order of concatenation:

1. VENDOR.PROCLIB
2. SVTSC.PROCLIB
3. LVL0.PROCLIB
4. SYS1.PROCLIB

13.6   CATALOG structure

- The master catalog is named MASTERV.CATALOG.
- All user catalogs have a high level qualifier of CATALOG.
- Most datasets will get cataloged in the master catalog unless additional aliases are added.

13.7   Highlights from LVL0.PARMLIB

This system exploits the concatenated parmlib feature. All changes traditionally implemented by changing members in SYS1.PARMLIB should be made in VENDOR.PARMLIB. All references through out this document to SYS1.PARMLIB should be considered as references to the Parmlib concatenation

Member IEASYS00 contains very few parameters and the Dallas ISV z Center expects these to be static. The one parameter that might be changed is CLPA.

Member IEASYSLV contains most of the parameters used to influence system initialization.

Member CLOCKSV is set to US Central time. Modify this to a different time zone if desired.

Member JES2420A contains the JES2 initialization parameters.

13.8   SMP/E datasets and maintenance information

The SMP/E control information for z/OS and other closely related products can be referenced in MVS.GLOBAL.CSI.

NOTICE:

> Because these VSAM datasets are located on Read/Only disk volumes several error messages will be issued during dataset open and close. These messages have no effect on the retrieval of information from the datasets and may be ignored.

Listed below is an example of the messages which are issued to TSO users during the initial access of the SMP/E dataset MVS.GLOBAL.CSI using the ISPF SMP/E Dialogs.

```
IEC251I 037(246,000,IGG0CLHA)-006,SVTSCU,SPFPROCESPFPROCE,SMPCSI,,,
IEC251I MVS.GLOBAL.CSI,MVS.GLOBAL.CSI.DATA,CATALOG.OS390
IEC251I 037(246,000,IGG0CLHA)-006,SVTSCU,SPFPROCESPFPROCE,SMPCSI,,,
IEC251I MVS.GLOBAL.CSI,MVS.GLOBAL.CSI.INDEX,CATALOG.OS390
```

Listed below are examples of the messages which are issued to the z/OS Operator console during the same initial access of the SMP/E dataset MVS.GLOBAL.CSI using the ISPF SMP/E Dialogs. Each of these messages will be issued several times.

```
IEF196I IEC331I 050-018(00201110),SVTSCU  ,SPFPROCE,,IGG0CLE2
IOS000I 222,16,WRI,05,0200,80020000C4BC2000,02BC0000,VDMVSB,SVTSCU
IOS000I 222,16,WRI,05,0200,80020000C4BF2000,02BF0000,VDMVSB,CATALOG
IEC331I 050-018(00201110),SVTSCU  ,SPFPROCE,,IGG0CLE2
IEC251I 037(246,000,IGG0CLHA)-006,SVTSCU,SPFPROCESPFPROCE,SMPCSI,,,
IEC251I MVS.GLOBAL.CSI,MVS.GLOBAL.CSI.DATA,CATALOG.OS390
```

13.9   RACF information

- The RACF Data Security Monitor (DSMON) should be executed. This RACF utility will give details about the specific RACF implementation which have not been included in this document. JCL for this utility can be found in member DSMON of dataset LVL0.JCLLIB.

- CLIST ADDUROM located in LVL0.CLIST will add user IDs to RACF, TSO and optionally SYS1.UADS. The CLIST requests all the required information by prompting the invoker with questions. To use the CLIST from the TSO READY prompt, type: ADDUROM and press the ENTER key. TSO user IDs cannot be greater than 7 characters.

Note: The ADDUROM procedure assumes that pre-defined RACF groups, TSO accounts, and TSO logon procedures will be used. The following have been pre-defined for use on the guest z/OS system:

```
Example 1:
        RACF group for new users... GROUP2
        TSO account number......... GROUP2
        TSO logon procedure........ SPFPROCE
        USS UID.................... 7xxx
        USS User Directory......... /u
        USS SHELL.................. /bin/sh
Example 2: (for more authority)
        RACF group for new users... GROUP1
        TSO account number......... FB3
        TSO logon procedure........ SPFPROCE
        USS UID.................... 0
        USS User Directory......... /u
        USS SHELL.................. /bin/sh
```

These items would be used in response to the ADDUROM prompts.

- Unless there is a real need, it is *not recommended* to create new RACF groups, TSO account numbers, or TSO logon procedures. However, these are the general steps required to accomplish the corresponding RACF definitions:

  o To define a new RACF group, issue the TSO ADDGROUP command (e.g. "AG GROUP3"). This group will then need to be permitted to the TSO account number and logon procedure to be used (see below). In addition, issue the command to PERMIT this group to the TSOAUTH commands RECOVER and JCL and possibly others (e.g. "PE xxxx CL(TSOAUTH) ID(GROUP3) ACCESS(READ)", substituting for xxxx with ACCT, PARMLIB, OPER, RECOVER, and/or JCL as desired).

  o To define a new TSO account, first issue the TSO RDEFINE command (e.g. "RDEF ACCTNUM GROUP3"), then issue the TSO PERMIT command (e.g. "PE GROUP3 CL(ACCTNUM) ID(GROUP3) ACCESS(READ)"), and then issue the TSO SETROPTS command to refresh the in-storage profiles (e.g. "SETR RACLIST(ACCTNUM) REFRESH").

  o To define a new TSO logon procedure, first issue the TSO RDEFINE command (e.g. "RDEF TSOPROC PROCXX"), then issue the TSO PERMIT command (e.g. "PE PROCXX CL(TSOPROC) ID(GROUP3) ACCESS(READ)"), and then issue the TSO SETROPTS command to refresh the in-storage profiles (e.g. "SETR RACLIST(TSOPROC) REFRESH").

- The user password interval is 60 days.

- The INITIAL password for IBMUSER is IBMUSER. RACF will require the initial password to be changed the first time this user ID is logged on.
        (S RACFUR to resume and reset password)

Note: All TSO user IDs will be revoked after 6 consecutive unsuccessful logon attempts.

- RACF Exit Routines.
  - ICHRDSNT - The RACF dataset name table specifies the RACF database names as SYS1.RACFPRM1 for the primary and SYS1.RACFBCK1 for the backup.

  - ICHRIN03 - The RACF started task table associates an user ID and group with all started tasks. Member ICHRIN03 in LVL0.SVSC.CNTL contains the source. Member ICHRIN3@ will assemble and link edit a new table.

- RACF Groups.
  - SYS1
  - GROUP1
  - GROUP2 (empty)
  - GROUPZ
  - SYSCTLG
  - VSAMDSET
  - Run DSMON to determine the hierarchy.

- RACF General Resource Class TSOPROC is active. The only profile is SPFPROCE.

- RACF General Resource Class ACCTNUM is active. The only profiles are FB3 and GROUP2.

- RACF General Resource Class PERFGRP is active. No profiles have been defined.

- RACF General Resource Class TSOAUTH is active. Profiles for this class are ACCT, JCL, MOUNT, OPER, PARMLIB, and RECOVER.

13.10   VTAM definitions

- The terminals defined at E00-E07 do **not** have the extended data stream attribute. Specifically, the VTAM parameters FEATUR2=MODEL2 and DLOGMOD=S3270 have been coded in the VTAM terminal definition.

- The terminals defined at F00-F07 have the extended data stream attribute. Specifically, the VTAM parameters FEATUR2=EDATS and DLOGMOD=NSX32702 have been coded in the VTAM terminal definition. Use this for data transfer (IND$FILE) from a TN3270 emulator.

- VTAM USS Tables - Only one VTAM USS table exists in the system. Member USSTAB1 in LVL0.SVSC.CNTL contains the source.   Member USSTAB1@ will assemble and link edit a new table.

- Below are pieces from LVL0.PROCLIB(VTAM).
  ```
  //VTAMLST DD DISP=SHR,DSN=VENDOR.VTAMLST
  ```

```
//           DD DISP=SHR,DSN=SVTSC.VTAMLST
//           DD DISP=SHR,DSN=LVL0.VTAMLST
//           DD DISP=SHR,DSN=SYS1.VTAMLST

//VTAMLIB DD DISP=SHR,DSN=VENDOR.VTAMLIB
//           DD DISP=SHR,DSN=SVTSC.VTAMLIB
//           DD DISP=SHR,DSN=LVL0.VTAMLIB
//           DD DISP=SHR,DSN=SYS1.VTAMLIB
```

Using this structure, custom changes for VTAMLST should be placed in VENDOR.VTAMLST. Changes for VTAMLIB should be placed in VENDOR.VTAMLIB.

13.11   JES2 information

- Initiators 1-5 and 9 are activated at JES2 initialization. These initiators service execution classes A, B, H, K, L, S, 4, and 7.

- There are no installation required job card parameters.

- The default output class is A.

- The default HOLD output class is H. Use this output class to place TSO and batch job output in a HOLD queue for browsing with the TSO OUTPUT command and the ISPF OUTLIST utility (option 3.8).

JES2 Automatic Purge Warning

- Output class **Z** is defined as a JES2 purge class – all output directed to this class will be automatically purged immediately. Use this output class with care.
- Output classes **D** and **W** are periodically purged by a JES2 automatic command - output directed to these classes will be automatically purged at the next automatic command interval (every 60 minutes for class W, every 2.5 hours for class D). Some of the system started tasks (such as TCAS) direct their output to class W. This output will remain in the output queue for a period of time and then will be purged permanently. Use these output classes with care.

Note: The JES2 automatic commands may be found at the bottom of the JES2 parmlib member SYS1.PARMLIB(JES2420A).

- Printer1 at address 002 is defined as a 3211 to z/OS and z/VM. It is placed in a drained status during JES2 initialization.

  Note: This is a *virtual* printer, and should normally remain drained. Starting a virtual printer will write the output to the z/VM SPOOL (where it will be inaccessible from the

guest z/OS system.) The data will not actually print on a *real* printer.

13.12   TSO logon procedures and dataset concatenation

There are two TSO logon procedures defined in LVL0.PROCLIB. These members are named SPFPROCE and IKJACCNT. These logon procedures contain very few DD statements. Most dataset allocation is completed through CLIST/REXX procedures invoked at logon. Additional procedures may exist for other software products like DB2.

Listed below, in the order of invocation, are the CLIST/REXX procedures which get executed during logon. Beside each procedure is a brief description of its function. All CLIST/REXX procedures are located in LVL0.CLIST, except as noted.

CLIST/REXX	Function
SETUP	Invoked from the logon procedure. Invokes the other CLIST/REXX described below and then PDF.
SYSPROC	Invoked by the CLIST SETUP. Creates the SYSPROC DD concatenation.
SYSEXEC	Invoked by the CLIST SETUP. Creates the SYSEXEC DD concatenation.
SYSHELP	Invoked by the CLIST SETUP. Creates the SYSHELP DD concatenation.
LOGMSG	Invoked by the CLIST SETUP. Delivers any messages that the Dallas ISV z Center needs to broadcast to users. Please do not override this CLIST or the call to this CLIST.
ISPPROF	Invoked by the CLIST SETUP. Allocates the ISPF/PDF profile dataset.
ISPFDS	Invoked by the CLIST SETUP. Allocates the ISPF/PDF DD concatenations for ISPLLIB, ISPPLIB, ISPMLIB, and ISPSLIB.
ISPFTAB	Invoked by the CLIST SETUP. Allocates the ISPF/PDF DD concatenations for ISPTABL, SMPTABL, and ISPTLIB.
VENDORC	Invoked by the CLIST SETUP. This REXX is provided by the Dallas ISV z Center in VENDOR.CLIST. This REXX is the place during TSO LOGON where the user should perform any customizations.

13.12.1   Sample jobs and CLIST/REXX availability

- See "RACF information" on page 61 for details on DSMON and adding user IDs.

- Task CLRLGREC located in LVL0.PROCLIB will clear SYS1.sysname.LOGREC. (See "What happened with this IPL of z/OS..." starting on page 22 for a discussion of sysname which makes the actual disk dataset name SYS1.S0W1.LOGREC, or SYS1.S0W2.LOGREC, etc.) To use this task from the z/OS console, type command

START CLRLGREC and press the `ENTER` key.

- Task CLRMAN1 located in LVL0.PROCLIB will clear the SYS1.sysname.MAN1 SMF dataset. (See "What happened with this IPL of z/OS..." starting on page 22 for a discussion of sysname which makes the actual disk dataset name SYS1.S0W1.MAN1, or SYS1.S0W2.MAN1, etc.) To use this task from the z/OS console, type command **START CLRMAN1** and press the `ENTER` key.

- Task CLRMAN2 located in LVL0.PROCLIB will clear the SYS1.sysname.MAN2 SMF dataset. (See "What happened with this IPL of z/OS..." starting on page 22 for a discussion of sysname which makes the actual disk dataset name SYS1.S0W1.MAN2, or SYS1.S0W2.MAN2, etc.) To use this task from the z/OS console, type command **START CLRMAN2** and press the `ENTER` key.

- Task RACFUR located in LVL0.PROCLIB will resume the IBMUSER TSO user ID and set the initial password back to "IBMUSER". This may be used if access to the IBMUSER user ID is required and the user ID has been revoked by RACF.

  Warning!

When security internal to the guest z/OS system is required (i.e. between users of the guest z/OS system), remove or otherwise protect this procedure from casual use as it enables access to a RACF SPECIAL user ID. To effectively remove the procedure, create a dummy procedure of the same name and place it in the VENDOR.PROCLIB data set.

- Dynamic system dump datasets have been enabled in the guest z/OS system. The dump dataset names have the format

  MVS1.SVCDUMP.&SYSNAME..D&DATE..T&TIME..S&SEQ

  For example, MVS1.SVCDUMP.S0W2.D941230.T221214.S00001 contains an SVC dump from system S0W2 on 12/30/94 at 22:12:14. The dump datasets are written to DASD volume VPMVSB.

- REXX exec MOUNT in LVL0.SYSEXEC is used to issue tape mount requests to the SVUTIL service machine. See "Mount..." on page 54 for more information on use of the MOUNT exec.

- REXX exec DETACH in LVL0.SYSEXEC is used to issue commands to detach one or more tape devices. See "Detach..." on page 54 for more information on use of the DETACH exec.

- REXX exec SLEEP in LVL0.SYSEXEC is used to issue commands to put the guest z/OS system to sleep after a specified time delay. See "Putting the guest z/OS system to

SLEEP from a TSO session" for more information on use of the SLEEP exec.

14 Help for common problems

PROBLEM	ACTION TO BE TAKEN
'HCPSEC068E SEND command failed; receiver has not authorized sender '	Read "Switching the z/VM control user ID" on page 49
'HCPSEC068E SEND command failed; receiver has console input waiting' after issuing 'SEND ETPGyyy \CP VINPUT VMSG V CN(*),ACT' with control user-id	Make sure to use the correct slash '\' instead of '/' . If that is not the issue and you are using a non-US English code page, then the problem is likely that the 'host code page' being used in the TN3270 emulator does not properly create the '\' character required to send commands to the guest system ID. Either change the code page (1047 and 037 will work) or use the character in this code page which translates to a X'E0'.
"HOLDING" in lower right-hand corner of screen.	Press the CLEAR key to clear the screen and continue normal operation[10].
"MORE..." in lower right-hand corner of screen.	Press the CLEAR key to clear the screen and continue normal operation. If no action is taken, the screen will clear automatically after 60 seconds. A beep will be issued 10 seconds before this happens.
"NOT ACCEPTED" in lower right-hand corner of screen.	Wait for the NOT ACCEPTED to clear, backspace to the left margin, erase the command, and reenter it.
Message **"HCPDIA056E Line yyyy busy on xxxxxxxx"** appears after issuing a DIAL command.	The terminal address being DIALed to is busy (in use). Repeat the DIAL command with a different terminal address, or do not specify a terminal address.
Message "Device <vdev> already attached <mode>, MOUNT rejected" in response to SVUTIL MOUNT command.	You have asked to mount a tape READ/ONLY on a device which was previously attached by you in READ/WRITE mode, or vice versa. Either correct the MOUNT command or detach the virtual device and reissue the MOUNT command to reallocate the virtual device.
Message "Internal SVUTIL error x-xx, notify SVSC" in response to SVUTIL MOUNT command.	An internal processing error has occurred in the SVUTIL service machine. Contact the Dallas ISV z Center with this information.

---

10 See also Terms and definitions on page 72.

PROBLEM	ACTION TO BE TAKEN
Message "Tape xxxxxx not found. Check typing, use 'MSG SVUTIL LISTTAPES' to review list of tapes, or notify SVSC" in response to SVUTIL MOUNT command.	The tape requested was not found in the tape library database for the user/account requesting the tape mount. Ensure the reference number was typed correctly. Use the SVUTIL LISTTAPES function to display a list of tapes in the database (see "Tape handling procedures" on page 51). If necessary, contact the Dallas ISV z Center for assistance.
Message "**IEE362A SMF ENTER DUMP FOR SYS1.sysname.MANx ON vvvvvv**" appears on MVS console and system log.	Use the SMF dump program to dump the dataset for future processing. If SMF data does not need to be retained, clear the condition by starting task CLRMAN1 for SYS1.sysname.MAN1 or CLRMAN2 for SYS1.sysname.MAN2. The term sysname is discussed in "What happened with this IPL of z/OS..." on page 22. See "Sample jobs and CLIST/REXX availability" on page 65 for additional details about CLRMAN1 and CLRMAN2. **Note:** Only the inactive SMF dataset may be cleared. Use the "I SMF" MVS command to switch SMF datasets if necessary.
Message "**IOS152E DEVICE dddd BOXED BY SUBCHANNEL RECOVERY**" appears on MVS console and system log.	For tape devices, this message is usually caused by putting the system to sleep without first detaching the attached tape device (Always vary offline and detach the tape device before putting the guest z/OS system to sleep). The tape device was forcibly detached without first being varied offline to MVS, resulting in the boxed condition. The device address will be unusable until the next IPL. Substitute another tape device address for the next tape mount request (e.g. if you were using address 590 and now 550 is boxed, use 551).
Messages **$HASP488, $HASP479**, and **$HASP454** appear on the MVS console and system log.	Reply "Y" to message $HASP454 to bypass the multi-system integrity lock and allow JES2 to continue initialization (the actual command entered would be "R nn,Y" where "nn" is the reply number to the left of message $HASP454).
Message **$HASP601** appears on the MVS console and system log.	Enter the "$S A,ALL" command to restart JES2 automatic command processing. This message may appear as a result of an extended period during which the system was halted (for example, put to sleep over a weekend). The JES2 automatic commands are used to periodically cleanup unwanted SPOOL output files from TCAS, etc.

PROBLEM	ACTION TO BE TAKEN
Message **UNABLE TO ESTABLISH SESSION - INIT SELF FAILED WITH SENSE 08570002** appears after typing "TSO" on the MVS VTAM screen to access TSO.	The TSO application is not active. On the MVS Master Console, start the TSO application with the "START TCAS" command. After TSO has started (messages IKT005I and IKT007I appear), reenter the "TSO" command. **Note:** It is not necessary to clear the screen or re access the VTAM logo - type "TSO" on the same screen with the "UNABLE TO ESTABLISH SESSION" error message.
Message **HCPGIR450W CP entered; disabled wait PSW 000A0000 000000xx** appears after attempting to IPL a guest z/OS system (xx is usually 32, 33, or 64).	LOGOFF and then LOGON to retry the IPL (possibly several times if needed). If the problem persists, contact the Dallas ISV z Center for assistance.
HCPSEC068E SEND command failed; receiver has console input waiting	Be sure you are using a backward slash (\) preceding CP in the SEND command. If you are using a backward slash (\) and receiving this message, try setting the code page associated with your session emulator to 1047
HCPLGA054E Already logged on disconnected	The guest z/OS system is already up and running. Refer to Chapter 6 "Managing the guest z/OS system with SLEEP and BEGIN" on page 29 to see if the system is in SLEEP mode.
HCPLGA054E Already logged on LUNAME ... when logging onto a z/VM Personal user ID (ETPDxxx)	Type LOGOFF and press the ENTER key to return to the logo screen. On the logo screen, tab to the COMMAND line and type L ETPDxxx HERE and press the ENTER key.
Guest z/OS system fails to complete IPL or $HASP454 SHOULD JES2 BYPASS THE MULTI-MEMBER INTEGRITY LOCK? ('Y' OR 'N')	Issue command SEND ETPGyyy \CP VI VMSG D R,L Look for $HASP454 message. Respond 'Y' to this message SEND ETPGyyy \CP VI VMSG R 2,y Please complete the remaining steps to IPL the guest z/OS system. Review the information in section "How to IPL the guest z/OS system (detailed description)" on page16.
Trouble accessing the Remote Development system from a remote application.	Information about blocked ports can be found on the IBM Dallas ISV z Center Website at URL: **http://dtsc.dfw.ibm.com/MVSDS/'HTTPD2.DSN01.PUBLIC.SHTML %28BLKPORTS%29'**

PROBLEM	ACTION TO BE TAKEN
$HASP050 JES2 RESOURCE SHORTAGE	To verify the problem, issue command: $DSPL To cleanup all spool older than seven(7) days issue command: $POJOBQ,ALL,PROTECTED,DAYS>7 Automatic cleanup of syslog output can be done to help prevent the spool space full condition. This can be done by placing the following command at the bottom of the JES2 parameter deck: $TA,T=00.30,I=86400,'$POJOBQ,Q=C,DAYS>7' This will delete any class C output every 24 hours at 00:30 am, that is greater than seven(7) days old. Class C output is the normal class specified in IEASYSLV in LVL0.PARMLIB for the syslog output class. If the class is changed then the command will need to be modified as well.
Unable to logon to TSO or IEA602I ADDRESS SPACE CREATE FAILED. A STORAGE SHORTAGE EXISTS or IRA200E AUXILIARY STORAGE SHORTAGE	This condition is caused by a shortage of slots in the Auxiliary storage configuration. This can be resolved by removing unneeded tasks that are currently running. If you require all tasks, contact the Dallas ISV z Center to obtain additional storage needed. Prior to logoff and restarting the guest z/OS system for problem determination, please issue the following commands: D ASM D R,L D A,L W
Unable to connect to the guest z/OS system	Please see section "Managing the guest z/OS system with SLEEP and BEGIN" on page 29. Please review the information in section "How to IPL the guest z/OS system (detailed description)" on page16. If you are still unable to connect, please contact the Dallas ISV z Center referencing section "Technical support " on page 10.

15   Terms and definitions

Guest system   An operating system running in a virtual machine managed by the z/VM Control program.

Control ID   The term z/VM control user ID is used to reference the specific **z/VM Personal user ID** used to initialize the guest z/OS system and currently holds the ability to perform functions for the system.

Virtual Machine   A functional equivalent of either a System/370 computing system, a System/370-XA (Extended Architecture) computing system, a System/370-ESA (Enterprise Systems Architecture), or a System/390 computing system. Each virtual machine is controlled by an operating system.

z/VM   Virtual Machine. A software facility which enables multiple users to share the resources of a single physical processor complex such that each user appears to have the equivalent of a dedicated processor.

The following are CP and CMS Status Indicators - these indicators may at times appear in the lower right hand corner of the display.

CP READ   Means that CP issued a read request to the display and is waiting for something to be entered before it continues processing.

VM READ   Similar to CP READ but issued from CMS (Conversational Monitor System, a component of z/VM).

RUNNING   Means that CP or CMS either is ready for the next CP or CMS command or is processing a previously entered command.

MORE...   Means that the output display area is full and that CMS or CP has more lines to display. The data currently on the screen will be displayed for one minute. To get to the next screen, press CLEAR or PA2. To keep the current information on the screen, press the ENTER key. The HOLDING indicator then appears in the status area. If you do not respond to the MORE... indicator within 1 minute, the next screen will automatically be displayed (your display device will beep 10 seconds prior to display of the next screen).

HOLDING   Means that the ENTER key was pressed in response to a MORE... status indicator, or that the display screen contains priority messages from CP. To get to the next screen, press CLEAR or PA2.

Special Keys   The PA1, PA2, and CLEAR keys are part of the IBM 3270 terminal architecture, and may be emulated by a different key or combination of keys depending on the actual terminal or personal computer emulation package being used.

NOT ACCEPTED   Means that previous input has not yet been processed. Recommended response is to wait for the NOT ACCEPTED to clear, backspace to the left margin, erase the command, and reenter it.

16   Links

Here you will find links that will enhance the use of the remote development program guest z/OS systems:

IBM Innovation Center - Dallas Technical Services and Support for z/OS and OS/390:
http://dtsc.dfw.ibm.com/

Getting Started at IBM Innovation Center:
http://dtsc.dfw.ibm.com/common/include/gettingstarted.html

z/OS Basic Skills Information Center:

http://www.ibm.com/support/knowledgecenter/zosbasics/com.ibm.zos.zbasics/homepage.html

LookAt – z/OS message lookup:
http://www-03.ibm.com/systems/z/os/zos/bkserv/lookat/

z/OS Internet Library:
http://www-03.ibm.com/systems/z/os/zos/bkserv/

IBM Redbooks online:
http://www.redbooks.ibm.com/

TecDocs – IBM Technical Sales Library:
http://www-1.ibm.com/support/techdocs/atsmastr.nsf/Web/TechDocs

17 Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing, IBM Corporation, North Castle Drive, Armonk, NY 10504-1785 U.S.A.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

18 Trademarks

The following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml

ADSP
CICS®
DB2®
DFSMS
IBM®
IMS™
MVS™
RACF®
REXX
RMF™
z Systems®
VTAM®
z/OS®
z/VM®

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.

19   Glossary

The following is a partial glossary of terms and acronyms which may be useful to the reader. For more information, please refer to the appropriate IBM publication.

ADSP Automatic Data Set Protection - a RACF capability.

CMS Conversational Monitor System - a z/VM operating system providing a basic terminal-oriented command structure.

CP Control Program - The component of z/VM that manages the resources of a single guest system so that multiple computing systems appear to exist. Each virtual machine is the functional equivalent of a z/OS computing system.

DSMON Data Security Monitor - a RACF reporting capability.

ETP Early Test Program. A program administered by the Dallas ISV z Center to enable Solution Developers to access selected IBM software and products prior to General Availability.

GA Generally Available.

Guest An operating system running in a virtual machine managed by the z/VM Control program.

Dallas ISV z Center An IBM organization located at the IBM Diplomat Drive Facility in Dallas, TX dedicated to providing technical support to Solution Developers.

IPL Initial Program Load.

ISPF Interactive System Productivity Facility.

JES2 Job Entry Subsystem 2.

JES3 Job Entry Subsystem 3.

PDF Program Development Facility.

RACF Resource Access Control Facility.

RDP Remote Development Program

RMF Resource Measurement Facility.

SDSF System Display and Search Facility.

SETROPTS SET RACF Options – RACF command.

SMF System Management Facility.

SV Solution Developer. Also previously called Software Vendor.

SVSC Software Vendor Systems Center. See Dallas ISV z Center.

SVSCDR2 Network name for one of the z Systems servers on which the remote access program is located.

SVTSC Software Vendor Technical Support Center. See Dallas ISV z Center.

z Systems A series of computer hardware systems and control programs.

UACC Universal Access - a RACF parameter.

z/VM Virtual Machine.

z/VM secondary user ID In z/VM terminology, it is the secondary user for the guest system ID.

z/OS Operating system that runs on the z Systems server.

Index