



Configuring, Customizing and Modifying Your z/VM System

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Topics

- *The Basics*
- *Using the Stand Alone Program Loader*
- *Defining and Modifying the System Configuration*
 - ▶ Configuration File Statements and CP Commands
- *Logos*
- *More Configuration File Statements*

Configuring z/VM: The Basics

CP Configurability

Change system-wide definitions and defaults without IPL

- ▶ timezone
- ▶ system operator
- ▶ log messages
- ▶ security features
- ▶ paging and spooling areas
- ▶ command privilege classes
- ▶ CP Exits and extensions to CP such as user Diagnose codes

Change definitions without rebuilding the system

- ▶ Checkpoint and Warmstart locations and size
- ▶ Size of CP Trace Table

Add new devices without an IPL

- ▶ no need to update configuration files

Dynamic I/O Configuration

Modify the hardware I/O definitions (IOCDs) without an outage

- ▶ Add, change, delete
 - CHPID
 - CNTLUNIT
 - IODEVICE
- ▶ Manage I/O definitions for all LPARs on a processor
- ▶ Commands based on hardware requirements

Modify the software view of I/O definitions

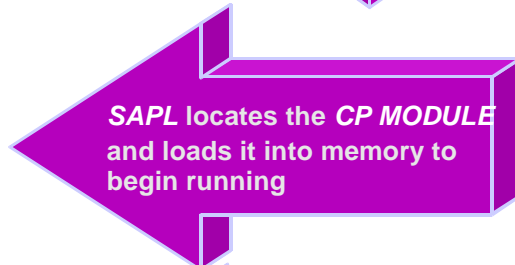
- ▶ Reset I/O control blocks
 - Devices that do not support Sense commands
 - Clear control blocks of devices with errors

CP Configurability - The Big Picture

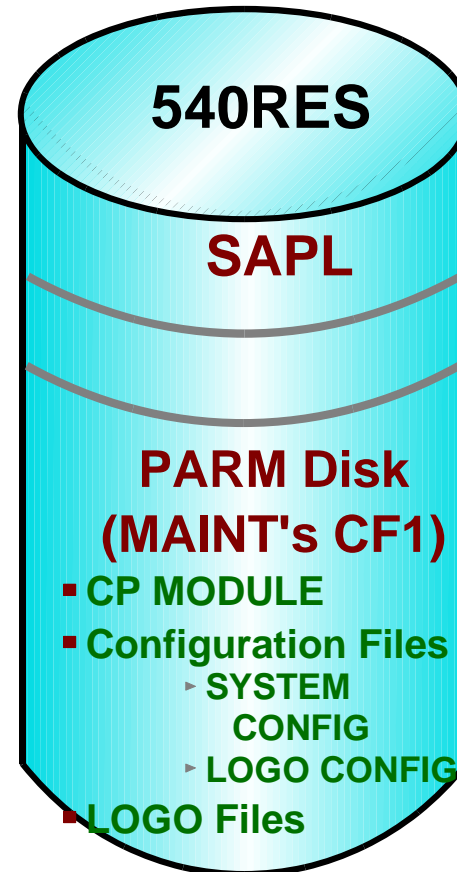
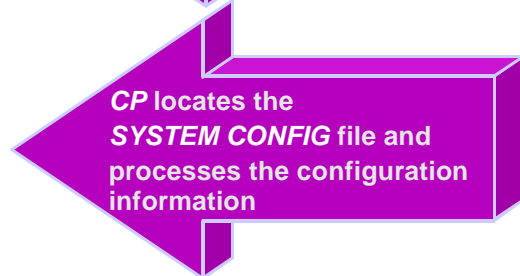
1. Set up IPL Volume



2. IPL CP



3. IPL CP (cont.)



The PARM Disk

A CMS-formatted disk that CP uses during initialization

- ▶ Default PARM disks:
 - MAINT CF1 (Primary)
 - MAINT CF2 (Test)
 - MAINT CF3 (Backup)

Usually on the IPL volume

- ▶ Multiple PARM extents may be defined on the IPL and other volumes
- ▶ IPLPARMS may be used to locate the PARM disk by
 - Address of device containing PARM disk
 - Cylinder offset
 - Number of PARM extent

Contains

- ▶ System and logo configuration files
- ▶ CP module to be IPLed (usually)

The PARM Disk...

- *PARM disks may be accessed by CP after IPL*
 - ▶ CP_ACCESS statement in system configuration file
 - ▶ CPACCESS command
 - ▶ CPRELEASE command releases disk accessed by CP
- *Files may be cached by CP to reduce I/O to parm disk*
 - ▶ CPCACHE command for specific files
 - ▶ List in file CPCACHE FILES
 - Read into storage when parm disk is CPACCESSEd
 - Sample:

```
*          CONFIG
*          LOGMS*
*          LOGO
INPTAREA  DEFAULT
```

Changing Files on a CPACCESSed Disk

To change files on a CPACCESSed disk:

1. QUERY CPDISKS
 - Determine what mode CP is accessing the disk
2. CPRELEASE fm
 - Release the disk from CP
3. LINK/ACCESS the disk in R/W mode
4. Update files as required
 - Logo Files
 - Configuration Files
5. RELEASE/DETACH disk
6. LINK to disk in R/O mode
7. CPACCESS owner vdev fm mode
 - CP will read updated files

Using the Stand Alone Program Loader

Stand Alone Program Loader (SAPL)

Loads CP module from IPL disk

- ▶ Can be used to load programs other than your default CP module
 - DDR Stand-alone DDR
 - DIRECTXA Stand-alone DIRECTXA
 - ICKSADSF Stand-alone ICKDSF

Allows you to specify or modify

- ▶ IPL information
 - CP module location (minidisk extent or offset)
 - CP MODULE name
- ▶ IPL parameters
 - Console address
 - PARM disk location
 - System configuration filename and filetype
 - Whether to PROMPT for date/time and warm/cold start
 - Amount of available real memory to be used by CP

SALIPL Utility

Writes SAPL to cylinder zero of IPL volume (default)

- ▶ Starting on block 5 of FBA volume

Saves default IPL information and parameters

Allows SAPL defaults to be altered

- ▶ CP load module name
- ▶ Location of CMS minidisk containing load module

Up to 4 lines of operator instructions may be specified

SALIPL Utility...

Default SALIPL command (issued during z/VM installation):

```
salipl 123 (extent 1 origin 2000
```

A more interesting example:

```
salipl 123 (extent 1 module cpnew comments ? iplparms fn=syszvm
```

```
HCPSAL6803I ENTER UP TO 4 LINES OF COMMENTS
```

```
Use the CPNEW module to IPL the newest release of z/VM
```

```
HCPSAL6798I VOLUME ID IS 540RES
```

```
HCPSAL6797I MINIDISK VOLID AT OFFSET 5 IS IPLDSK
```

```
Ready;
```

SAPL Panel

- *May be displayed using LOADPARM option*
- *Allows all saved SAPL settings to be changed*

▶ **IPL 123 LOADPARM 0009**

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 5 RELEASE 4.0

DEVICE NUMBER:  0123      MINIDISK OFFSET:  00000000  EXTENT:  1
MODULE NAME:    CPNEW     LOAD ORIGIN:      2000

-----IPL PARAMETERS-----
fn=syszvm

-----COMMENTS-----
Use the CPNEW module to IPL the newest release of z/VM

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


SAPL Filelist Example

STAND ALONE PROGRAM LOADER: z/VM VERSION 5 RELEASE 4.0

FILENAME	FILETYPE	FORMAT	LRECL	RECORDS	BLOCKS	DATE	TIME
SYSZVM	CONFIG	F	80	206	5	2009/02/22	11:32:03
SYSTEM	CONFIG	F	80	206	5	2009/02/21	23:37:01
CPNEW	SMALLMAP	V	39	2286	23	2009/02/21	23:19:10
CPNEW	MODULE	V	65535	222	3533	2009/02/21	23:19:10
CPLOAD	MODULE	V	65535	222	3533	2009/02/21	23:18:52
CPLOAD	SMALLMAP	V	39	2286	23	2009/02/21	23:18:45
LASTING	GLOBALV	V	22	4	1	2009/02/21	23:18:30
SYSNOCSE	CONFIG	F	80	207	5	2007/02/04	12:47:29
INPTAREA	SAMPLE	F	78	6	1	2005/06/17	16:28:42
LOGO	CONFIG	F	80	35	1	2005/06/17	16:28:33
ONMESS	SHARE	F	78	1	1	2004/02/06	15:15:06
ONMESS	LOGO	F	78	1	1	2004/02/06	15:15:06
ONMESS	SAMPLE	F	78	1	1	2004/02/04	14:11:54
JAF1RDEV	CONFIG	F	80	76	2	2003/06/10	14:29:23
JAF1CSE	CONFIG	F	80	36	1	2002/12/05	11:11:39
MINIMUM	LOGO	F	78	16	1	2001/08/17	15:26:04
PRINTSEP	LOGO	F	49	16	1	2001/08/17	15:25:49

3=QUIT 4=SORT (TYPE) 5=SORT (DATE) 6=SORT (NAME) 7=BACK 8=FORWARD 11=SELECT

IPLing z/VM from a SCSI Disk

SCSI disks emulated as 9336 Model 20 FBA DASD

- ▶ Larger emulated sizes supported (up to 381 GB)

All disks containing IPL information must be on same WWPN and LUN

- ▶ IPL (FCP) Device (where SAPL is)
- ▶ SYSRES disk (where CP module is)
- ▶ Parm Disk (where system configuration file is)

SAPL contains small SCSI device driver

- ▶ Loads CP module from SCSI disk

CP uses SCSI device driver to

- ▶ Initialize PARM disk
- ▶ Read system configuration file

IPLing z/VM from a SCSI Disk...

- *SAPL is loaded by the machine loader*
- *SCSI-specific parameters specified on Hardware Management Console*

The screenshot shows a 'Load' dialog box with the following fields and values:

CPC:	P0016F5A
Image:	TPAT
Load type:	<input type="radio"/> Normal <input type="radio"/> Clear <input checked="" type="radio"/> SCSI <input type="radio"/> SCSI dump
<input type="checkbox"/> Store status	
Load address	2C00
Load parameter	
Time-out value	060 60 to 600 seconds
World wide port name	5005076300C204DA
Logical unit number	5153000000000000
Boot program selector	0
Boot record logical block address	0000000000000078
OS specific load parameters	20

Buttons at the bottom: OK, Reset, Cancel, Help

IPLing z/VM from a SCSI Disk...

"PDVOL= addr" IPL parameter is required

- ▶ Defines emulated FBA address of SCSI IPL Device to CP
- ▶ Should **NOT** match address of any real devices
 - Error message; real device is ignored by CP
- ▶ May be specified on SALIPL command or SAPL panel

```
salipl 123 (extent 1 module cpnew comments ? iplparms fn=syszvm pdvol=555
```

```
STAND ALONE PROGRAM LOADER: z/VM VERSION 5 RELEASE 4.0

DEVICE NUMBER:  0123      MINIDISK OFFSET:  00000000  EXTENT:  1
MODULE NAME:    CPNEW     LOAD ORIGIN:    2000

-----IPL PARAMETERS-----
fn=syszvm pdvol=555

-----COMMENTS-----
```

Defining and Modifying the System Configuration

The System Configuration File

CMS file which resides on the PARM disk

- ▶ Default name/type is SYSTEM CONFIG

Defines characteristics of z/VM system at IPL time

- ▶ System definition parameters
- ▶ Device definitions when:
 - Characteristics other than defaults need to be defined for specific device(s)
 - A device does not respond to sense ID commands
 - Handling of a specific device at IPL time is other than default

The System Configuration File...

Defines system-wide options

- ▶ which devices to bring online at IPL time
- ▶ which timezone to select
- ▶ whether to autolog special user IDs
- ▶ whether to automatically do a specified type of IPL
- ▶ system owned disk volumes
 - CP
 - User
- ▶ etc...

CPSYNTAX Utility

Checks syntax of system configuration file statements

- ▶ Includes imbedded files if on the same disk as base file

Does not check configuration logic or integrity

Consists of 2 files

- ▶ CPSYNTAX EXEC
- ▶ CPSYNCHK MODULE

Recommend ALWAYS running after changing configuration file

- ▶ Remove errors that may keep your system from completing IPL

Dynamically Changing Your CP Configuration

- *CP commands change characteristics defined by configuration file statements*
 - ▶ DEFINE/QUERY
 - CPOWNED
 - (spooling device)
 - TIMEZONE

 - ▶ SET/QUERY
 - LAN
 - PROMPT
 - RDEVICE
 - EDEVICE
 - TIMEZONE
 - RETRIEVE
 - VSWITCH

 - ▶ START/DRAIN DASD

Configuration Statements and CP Commands

RDEVICE Statement

Tell CP what kind of devices are at specific addresses

- ▶ Unit Record
 - Printers, Card punches/readers
- ▶ Communication controllers and line adapters
- ▶ DASD
- ▶ Graphic display devices
- ▶ Special devices
- ▶ Tape units
- ▶ Unsupported devices

Use:

- ▶ To define characteristics of specific devices
 - Alter default characteristics
- ▶ When devices can't be sensed

SET RDEVICE Command

Modify an active system's definition of specific device(s)

- ▶ Add devices to configuration
- ▶ Remove devices from configuration
- ▶ Modify definition of specific device(s)
- ▶ Change the type of device at a specific address

Devices must be varied offline before they can be changed

Changing a CP Command Definition

MODIFY COMMAND / CMD Statement

- ▶ Change privilege class(es) of a command
- ▶ Change entry point that processes a command
- ▶ Suppress responses for ATTACH, DETACH, GIVE commands

```
MODIFY Command LOCATE IBMclass C Privclasses G
```

```
QUERY CPCMDS LOCATE
```

```
Command: LOCATE
```

```
Status:      Enabled      Not Silent
IBM Class:   C             PrivClasses: G
CMDBK Address: 00E9C6B0   Entry Point: HCPCFDLO
```

```
Command: -----
```

```
Status:      Enabled      Not Silent
IBM Class:   C             PrivClasses: C
CMDBK Address: 01200780   Entry Point: HCPCFDLO
```

```
Command: LOCATE
```

```
Status:      Enabled      Not Silent
IBM Class:   E             PrivClasses: E
CMDBK Address: 00E9C720   Entry Point: HCPCFDLO
```

MODIFY COMMAND / CMD Command

- ▶ Change same attributes of CP commands on active system

Privilege Classes

A user's privilege class(es) are defined in the directory

```
USER OPERATOR U 32M 2047M ABCDEG
USER U1        U 32M 32M    G
```

User is given directory privilege classes at LOGON

```
QUERY PRIVCLASS OPERATOR
Privilege classes for user OPERATOR
    Currently: ABCDEG
    Directory: ABCDEG
The privilege classes are not locked against changes.
```

```
QUERY PRIVCLASS U1
Privilege classes for user U1
    Currently: G
    Directory: G
The privilege classes are not locked against changes.
```

Privilege Classes...

SET PRIVCLASS command can be used to change a logged on user's privilege classes

- ▶ Self (Any privilege class)
 - ◆ Can set to privilege classes allowed in directory
- ▶ Others (Privilege class C)
 - ◆ Can set any privilege classes

```
SET PRIVCLASS OPERATOR -E
Privilege classes for user OPERATOR
    Currently: ABCDG
    Directory: ABCDEG
The privilege classes are not locked against changes.
```

```
SET PRIVCLASS U1 +CD
Privilege classes for user U1
    Currently: CDG
    Directory: G
The privilege classes are not locked against changes.
```

Requires SET_PRIVCLASS to be enabled on FEATURES statement in system configuration file

Modifying Commands and Privilege Classes - Example

Modify SHUTDOWN and FORCE commands to limit usage

- ▶ Requires privilege class A

```
MODIFY COMMAND SHUTDOWN PRIVCLASS Z
```

```
MODIFY COMMAND FORCE PRIVCLASS Z
```

```
Q CPCMDS SHUTDOWN
```

```
Command: SHUTDOWN
```

```
Status: Enabled Not Silent  
IBM Class: A PrivClasses: Z  
CMDBK Address: 00E9DFA0 Entry Point: HCPSHUTD
```

```
Command: -----
```

```
Status: Enabled Not Silent  
IBM Class: A PrivClasses: A  
CMDBK Address: 01169A88 Entry Point: HCPSHUTD
```

```
Q CPCMDS FORCE
```

```
Command: FORCE
```

```
Status: Enabled Not Silent  
IBM Class: A PrivClasses: Z  
CMDBK Address: 00E9BF40 Entry Point: HCPUSOFL
```

```
Command: -----
```

```
Status: Enabled Not Silent  
IBM Class: A PrivClasses: A  
CMDBK Address: 01169768 Entry Point: HCPUSOFL
```


Modifying Commands and Privilege Classes - Example...

Allow only user OPERZ to issue SHUTDOWN and FORCE when needed

From user OPERZ:

```
QUERY PRIVCLASS
Privilege classes for user OPERZ
    Currently: AG
    Directory: AG
The privilege classes are not locked against changes.

FORCE U1
Unknown CP/CMS command
```

From user with Class C privilege:

```
SET PRIVCLASS OPERZ +Z
Privilege classes for user OPERZ
    Currently: AGZ
    Directory: AG
The privilege classes are not locked against changes.
```

From user OPERZ:

```
FORCE U1
USER DSC LOGOFF AS U1          USERS = 2          FORCED BY OPERZ
```

Defining Disk Areas for CP System Use

CP_OWNeD statement

- ▶ Define disk areas that contain system areas
 - Page, Spool, TDISK, DRCT
- ▶ Up to 255 slots may be defined
- ▶ RESERVED slots should be defined
 - Allow volumes to be added dynamically
 - **HINT:** Gaps in specified slot numbers result in RESERVED slots
- ▶ Default CP_OWNeD statements for z/VM 5.4.0

```

CP_Owned  Slot  1  540RES
CP_Owned  Slot  2  540SPL
CP_Owned  Slot  3  540PAG
CP_Owned  Slot  4  540W01
CP_Owned  Slot  5  540W02
CP_Owned  Slot  6  540W03
CP_Owned  Slot  7  RESERVED
CP_Owned  Slot  8  RESERVED
          .
          .
CP_Owned  Slot 20  RESERVED

```

DEFINE CPOWNeD command

- ▶ Define new entries or change existing entries in CP-Owned list

Stop and Start use of CP-Owned Space

DRAIN/START (Disk) statements and commands

- ▶ Stop and start the following on CP-owned disk volumes:
 - writing pages
 - allowing links to minidisks
 - allocating spool space
 - allocating TDisk space

Specify by

- ▶ rdev
- ▶ rdev range
- ▶ volid

Existing data and allocations remain on DRAINED volumes

DRAIN/START (Disk) Statements...Examples

Example #1 - Have CP:

- ▶ Stop all operations on all DASD between X'0700' and X'07FF',
- ▶ Allow users to link to minidisks on DASD X'0700', and
- ▶ Ensure that CP can write pages to the CP-owned paging pack (SYSPG1)

```

Drain DASD 0700-07ff All
Start DASD 0700 Links
Start Volid SYSPG1 Page

```

Example #2 - Have CP start allowing:

- ▶ All new operations on all DASD between X'0700' and X'07FF',
- ▶ SPOOLing on DASD at real device number X'0800'
- ▶ Paging on volume SYSPG1 (previously defined on a CP_OWNED statement)

```

Start DASD 0700-07ff All
Start DASD 0800 Spool
Start Volid SYSPG1 Page

```

Dynamically Adding a CP Owned Volume

1. Define reserved slots in CP_Owned list in config file

```
CP_Owned Slot 1 JF1RES
CP_Owned Slot 2 SPOOL0
CP_Owned Slot 3 MDSP0
CP_Owned Slot 4 RESERVED
CP_Owned Slot 5 RESERVED
```

2. Query CP_Owned list for available slots

query cpowned

Slot	Vol-ID	Rdev	ype	Status
1	JF1RES	0A40	Own	Online and attached
2	SPOOL0	0780	Own	Online and attached
3	MDSP0	0880	Own	Online and attached
4	-----	----	----	Reserved
5	-----	----	----	Reserved

Dynamically Adding a CP Owned Volume..

3. Replace a reserved entry in the config file with the new volume

- For next IPL

```
CP_Owned Slot 1 JF1RES
CP_Owned Slot 2 SPOOL0
CP_Owned Slot 3 MDSP0
CP_Owned Slot 4 NEWVOL
CP_Owned Slot 5 RESERVED
```

4. CPFMTXA to format and allocate new volume

5. Define new volume to active system

- (in same slot as config file)

```
define cpowned slot 4 newvol
```

6. Attach new volume to system

```
att 980 system
```

```
query cpowned
```

Slot	Vol-ID	Rdev	Type	Status
1	JF1RES	0A40	Own	Online and attached
2	SPOOL0	0780	Own	Online and attached
3	MDSP0	0880	Own	Online and attached
4	NEWVOL	0980	Own	Online and attached
5	-----	----	-----	Reserved

Dynamically Deleting a CP Owned Volume...

1. Stop all CP activity on the volume

```
drain vold newvol all
```

2. Determine when volume is no longer being used

```
q alloc NEWVOL
```

```
DASD 0980 NEWVOL 3380 CKD-CKD (UNITS IN CYLINDERS)
TDISK TOTA L=000500 INUSE=000000 AVAIL=000000, DR
PAGE TOTAL =000500 INUSE=000000 AVAIL=000000, DR
SPOOL TOTAL=000500 INUSE=000000 AVAIL=000005, DR
DRCT TOTAL =000025 INUSE=000000 AVAIL=000000
```

3. Detach volume from system and vary offline

```
det 980 system
vary offline 980
```

Slot	Vol-ID	Rdev	Type	Status
1	JF1RES	0A40	Own	Online and attached
2	SPOOL0	0780	Own	Online and attached
3	MDSP0	0880	Own	Online and attached
4	NEWVOL	----	Own	Offline
5	-----	----	-----	Reserved

Removing Spool File Data from a DRAINEd Volume

1. *Issue DRAIN DASD command to stop new allocations*
2. *Use SPFPACK from VM Download Library to locate spool files which have information on the volume*
 - <http://www.vm.ibm.com/download/>
 - <http://www.vm.ibm.com/download/packages/>
3. *Dump those files to tape and purge from system*
 - SPXTAPE DUMP with PURGE option
4. *Reload files from tape; space will be allocated on non-DRAINEd volumes*
 - SPXTAPE LOAD

Defining and Modifying Guest LANs

DEFINE LAN statement

- ▶ Creates a persistent Guest LAN segment at IPL time
 - Owner can be system or a user

MODIFY LAN statement

- ▶ Modify some characteristics of an existing guest LAN

DEFINE LAN command

- ▶ Add a guest LAN to a running system
 - Transient (default) or persistent

SET LAN command

- ▶ Modify some characteristics of an existing guest LAN

Example:

```
DEFINE LAN JFLAN1 Ownerid SYSTEM Maxconn 100 Accounting OFF
```

```
q lan details
```

```
LAN SYSTEM JFLAN1          Type: HIPERS  Connected: 0      Maxconn: 100
PERSISTENT UNRESTRICTED IP      MFS: 16384      Accounting: OFF
IPTimeout: 5
```

Defining and Modifying Virtual Switches

DEFINE VSWITCH statement

- ▶ Creates a CP system owned switch (z/VM Virtual Switch) at IPL

MODIFY VSWITCH statement

- ▶ Modify some characteristics of a previously defined virtual switch

DEFINE VSWITCH command

- ▶ Add a virtual switch to a running system

SET VSWITCH command

- ▶ Modify some characteristics of an existing virtual switch

Example:

```
DEFINE VSWITCH JFSW1 RDEV FD00
```

```
q vswitch details
```

```
VSWITCH SYSTEM JFSW1      Type: VSWITCH Connected: 0      Maxconn: INFINITE
  PERSISTENT RESTRICTED   NONROUTER                      Accounting: OFF
  VLAN Unaware
  MAC address: 02-00-00-00-00-01
  State: Defined
  IPTimeout: 5             QueueStorage: 8
  RDEV: FD00.P00          Controller: NONE
```

Defining and Changing Timezones

TimeZone_Definition statements

- ▶ Tell CP how to set the local time relative to the hardware clock

DEFINE TIMEZONE command

- ▶ Define new timezone or change existing timezone definition

TimeZone_Boundary statements

- ▶ Tell CP which previously defined TimeZone should be active at IPL.
 - Must be at least one boundary with a date/time prior to the IPL time or CP will default to the hardware clock date/time
 - Does not cause the time zone of a running system to be changed

SET TIMEZONE command

- ▶ Change a running system's active time zone definition and offset

Defining and Changing Timezones...Example

Configuration File statements

```
TimeZone_Definition EST West 05.00.00  
TimeZone_Definition EDT West 04.00.00
```

```
Timezone_boundary on 2008-03-09 at 02:00:00 to EDT  
Timezone_boundary on 2008-11-02 at 02:00:00 to EST  
Timezone_boundary on 2009-03-08 at 02:00:00 to EDT  
Timezone_boundary on 2009-11-01 at 02:00:00 to EST
```

Changing timezone on an active system

```
q time
```

```
TIME IS 12:40:06 EST SUNDAY 02/22/09
```

```
CONNECT= 00:32:45 VIRTCPU= 000:00.03 TOTCPU= 000:00.06
```

```
set timezone edt
```

```
HCPTZN6759I The time zone has changed to EDT.
```

```
q time
```

```
TIME IS 13:40:18 EDT SUNDAY 02/22/09
```

```
CONNECT= 00:32:57 VIRTCPU= 000:00.03 TOTCPU= 000:00.06
```

Logos

Logo Configuration Files

LOGO CONFIG (default name/type)

- ▶ Specify information about logos for terminals and printers
- ▶ Specify text for status area of terminals

Logos may be selected based on criteria

- ▶ Screen size
- ▶ Device address
- ▶ The ID of the virtual machine creating a logical device.
- ▶ The ID of the VTAM service machine (VSM) managing a terminal session

You can alter:

- ▶ The format of the input area for user IDs, passwords, and commands
- ▶ The contents of the online message at the top of the screen
- ▶ The contents of the status areas, such as CP READ, VM READ, and so forth.

Logo Configuration File: Example

```

/*****/
/*          Logo Configuration File          */
/*****/
/*-----*
*   Status Area Definition   *
*-----*/
Status VM_Read      'VM READ '      ,
      CP_Read       'CP READ '      ,
      Running       'RUNNING '      ,
      More          'MORE... '      ,
      Hold          'HOLDING '      ,
      Not_Accepted  'NOT ACCEPTED'
/*-----*
*   Online Message Definition *
*-----*/
      Online_Message      ONMESS LOGO
/*-----*
*   Logo Definifions        *
*-----*/
Choose_Logo Default      LOCAL  LOGO
Choose_Logo Local        LOCAL  LOGO
Choose_Logo Ldev         LDEV   LOGO
Choose_Logo VSM_VMid     VTAM   SNA  LOGO
Choose_Logo Print_Separator PRINTSEP LOGO
Choose_Logo Minimum     DEFAULT LOGO
Input_Area  INPTAREA     SAMPLE

```

Logo Files

Logo files can be updated dynamically

- ▶ Located on a CPACCESSed PARM disk
- ▶ CPACCESS the disk to cause CP to re-read the files
- ▶ Changes activated with CP commands
 - CP REFRESH LOGOINFO filename CONFIG
 - CP REFRESH LOGOVSM user-id

DRAWLOGO tool supplied to help in drawing LOGO files

- ▶ Located on MAINT 2C2 disk
 - DRAWLOGO SAMPEXEC
 - X\$DRWL\$X SAMPXEDI

Changing Logo Information

```
THIS IS JAF1's z/VM TEST LOGO SYSTEM

          / VV          VVV MM          MM
         / VV          VVV MMM         MMM
        / VV          VVV MMMM        MMMM
       / VV          VVV MM MM MM MM
      / VV          VVV MM  MM  MM
     / VVVV         MM  M   MM
    / VVV          MM          MM
   / VVV          MM          MM
  / VVV          V          MM          MM
 / VVV          V          MM          MM
/ VVV          V          MM          MM

built on IBM Virtualization Technology

Fill in your USERID and PASSWORD and press ENTER
(Your password will not appear when you type it)
USERID   ==> _
PASSWORD ==> _

COMMAND ==>

RUNNING JOHN1
```

Update Logo Configuration File

```
cprelease a
16:25:28 CPRELEASE request for disk A scheduled.
16:25:28 HCPZAC6730I CPRELEASE request for disk A completed.

link maint 1000 1000 mr u

acc 1000 z

x logo config z
  Status  VM_Read      'VM READ '  ,
          CP_Read      'CP READ '  ,
          Running      'GLIDING '  ,

          Online_Message  ONMESS SHARE

rel z (det
16:29:17 DASD 1000 DETACHED

cpaccess maint 1000 a
16:29:23 CPACCESS request for mode A scheduled.

16:29:23 HCPZAC6732I CPACCESS request for MAINT's 1000 in mode A complete

cp refresh logoinfo logo config
```

New Logo

```
THIS IS JAF1's z/VM SHARE SYSTEM

                                     / VV          VVV MM          MM
                                   / VV          VVV  MMM          MMM
                                / VV          VVV  MMMM          MMMM
                               / VV  VVV          MM  MM  MM  MM
                              / VV  VVV          MM  MMM  MM
                             / VVVV          MM  M  MM
                            / VVV          MM          MM
                           / VV          MM          MM
                          / V          MM          MM

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Fill in your USERID and PASSWORD and press ENTER
(Your password will not appear when you type it)
USERID   ==>
PASSWORD ==>
COMMAND  ==>

                                     GLIDING   JOHN1
```

More Configuration File Statements

Conditional Statements/Imbeds

Conditional Statements are based on System_Identifier labels

```
System_Identifier 2064 012345 MYVM1
System_Identifier_Default MYVM2
```

```
MYVM1: Operator_Consoles 0C00 0C01
MYVM2: Operator_Consoles 1C00 1C01
```

```
MYVM1: MYVM2: Features ,
Enable ,
Auto_Warm_IPL
```

Imbeds allow statements to be included from other files

- ▶ Useful for sections common to multiple systems
 - Command privilege class modification
 - User diagnose

DEVICES Statement

Tell CP how to handle specified devices at initialization

- ▶ Whether to:
 - Accept
 - Allow dynamic changes
 - Initialize at IPL
 - Measure subchannels
 - Assign tape drive to system
 - Use sense ID information to define device
 - Share dasd between operating systems
 - Throttle I/O rate

Consoles Statement

Operator_Consoles tell CP where to try to display IPL messages

- ▶ Console addresses
 - Integrated 3270 Console (SYSTEM_3270)
 - Locally attached 3270-type displays
 - System Console (SYSTEM_CONSOLE)
- ▶ Must have 3270 to display SAPL screen
 - Enter device number in LOADPARM on processor console
- ▶ If no devices in the list are functional, IPL Wait State 1010

Emergency_Message_Consoles tell CP where to display critical messages such as ABEND and RESTART

- ▶ Include most IPL consoles (except SYSTEM_3270)
- ▶ Also include System Programmer consoles

Example:

```

MYVM1:  Operator_Consoles           SYSTEM_3270 0C00 0E00
MYVM1:  Emergency_Message_Consoles 0C00 0E00 1234

MYVM2:  Operator_Consoles           0D00 0F00
MYVM2:  Emergency_Message_Consoles 0D00 0F00 1235

```

FEATURES Statement

Set system attributes at system initialization time

- ▶ IPL Attributes
 - AUTO_WARM_IPL
 - PROMPT...
 - AFTER_REStart
 - AFTER_SHUTDOWN_REIPL
 - AFTER_POWERoff

- ▶ Authorize users system-wide to use certain functions
 - SET_DYNamic_i/o, SET_DYNamic_io
 - SET_DEVices
 - SET_PRIVclass

FEATURES Statement...

Tell CP whether, and how, to activate certain system functions

- ▶ CPCHECKING
 - ABEND
 - VMSTOP
- ▶ CLEAR_TDisk at initialization
- ▶ LOGMSG_FROM_File
 - SHOW_ACCount Yes/No
 - SHOW_ACGroup Yes/No
 - SHOW_Userid Yes/No
- ▶ NEW_DEVICES_initialized_when_added
- ▶ THROTTLE_ALL

FEATURES Statement...

Misc. system and user functions

- ▶ Number of MAXusers (or NOLimit)
- ▶ PASSWORDS_ON_CMDS
 - AUTOLog Yes/No
 - LINK Yes/No
 - LOGon Yes/No
- ▶ Number of RETRIEve buffers per user
 - DEFault
 - MAXimum
- ▶ VDISK/VDSK installation default limits
 - Syslim
 - Userlim
 - Infinite

FEATURES Statement...Automatic IPL

AUTO_IPL features

- ▶ AUTO_IPL
- ▶ AUTO_IPL_AFTER_REStart
- ▶ AUTO_IPL_AFTER_SHUTDOWN_REIPL

All types of IPL may be specified for each AUTO_IPL feature

- ▶ CLEAN
- ▶ COLD
- ▶ FORCE
- ▶ WARM

IPL Options may also be specified

- ▶ NOENABLE
- ▶ DRAIN
- ▶ NOAUTOLOG
- ▶ NODIRECT

FEATURES Statement...Misc.

IPL_MESSAGES

- ▶ tell CP whether or not to display IPL messages or prompts

DISCONNECT_TIMEOUT

- ▶ nnnnnn
 - Sets interval between a forced disconnect and its logoff to specified number of minutes
- ▶ OFF
 - Disables automatic logoff

Summary

Summary

VM's configurability support allows changes to be made while system remains up and running

- ▶ No source code changes
- ▶ No compiles/assemblies
- ▶ Re-IPL not necessary in most cases

Additional information:

- ▶ z/VM CP Planning and Administration
- ▶ z/VM Dynamic I/O Configuration Planning and Administration
- ▶ z/VM CP Command and Utility Reference
- ▶ z/VM System Operation
- ▶ z/VM CP Exit Customization