

## Lab for z/VM and Linux on System z

First, you are going to logon to your CMS userid on BERVM.

1. Connect your 3270 terminal emulator to zeuszvm.moppssc.com:  
Using Host On-Demand, logon this week with userid "hio"  
and use the icon for "ZEUSZVM SSL-protected".
2. Tab to the ==> prompt, type DIAL BERVM and hit Enter.
3. At the resulting BERVM logon screen, logon with userid  
CMSnn and your CMS password.

Now you are going to create an XEDIT PROFILE on your A-disk to personalise your XEDIT editor settings.

4. Type XEDIT PROFILE XEDIT A and hit Enter. Insert the lines  
SET SCALE OFF  
SET CASE MIXED IGNORE  
Save and exit by typing the command FILE or by typing the command  
SAVE followed by the command QUIT.

Now you are going to create a PROFILE EXEC on your A-disk (the script which runs whenever you logon to CMS or IPL CMS).

5. Type X PROFILE EXEC A and hit Enter. Insert the lines  
/\* REXX comment (required) \*/  
SET PF12 RETRIEVE  
Say 'Welcome to CMS'  
FILE the edit (or SAVE and QUIT).

Now you are going to login to a Linux guest running in a virtual machine in BERVM.

6. Start a new Host On-Demand session (using userid "berlin") and choose the "BER Linux SLES10Cn" icon for your group (n = 1 to 8). Or you can instead use any ssh client (such a ssh or putty) to connect to zeus.moppssc.com on the appropriate port as follows:

```
SLES10C1 2207
SLES10C2 2208
SLES10C3 2209
SLES10C4 2210
SLES10C5 2222
SLES10C6 2223
SLES10C7 2224
SLES10C8 2225
```

Login as root, using the password you have been given.

7. Display the mounted filesystems (including the underlying device names) and the swap devices by using the commands

```
df
swapon -s
```

Display network devices with  
ifconfig

Use System z Linux utilities to see what devices are configured to the machine in which Linux is running (in this case, a virtual machine in BERVM but similar would hold for running in an LPAR or on "bare metal").

8. To see what DASD devices are available, use the command  
lsdasd -a

Look for the device number, the type of disk, the Linux device name string as allocated by the kernel, the major/minor device node numbers, the device status, blocksize and number of blocks.

9. To see all devices available to Linux, use the command  
lscss

Look for the device number, the subchannel number, the device type (and subtype), the control unit type (and subtype), the "in-use" status, the 8-bit masks showing which channel paths to the devices are installed (PIM), administratively available (PAM) and operational (POM) and the 8 channel path number (each 2 hex digits) associated

with the above masks.

The command "vmcp" invokes the underlying z/VM hypervisor (CP), passes it commands and displays the results. (Such CP commands can be typed directly into CMS which will pass them to CP if they are not understood as CMS commands).

10. To display the underlying configuration of the Linux guest, type

```
vmcp q v stor
```

In this and following commands "q v" is short for "query virtual" and you can type the full words if you wish.

```
vmcp q v dasd
```

```
vmcp q v cpus
```

```
vmcp q v osa
```

Note that one QDIO OSA-Express network interface consists of three virtual "wires" each with a device number (one for indicating "read" events, one for "write" events, and one associated with the actual data movement).

```
vmcp q names
```

This shows all other guests in the z/VM system (the second-level BERVM system, not the top-level ZEUSZVM system). This "query names" command is about the only way that an unprivileged guest like this Linux one can "see" the existence of other guests.

```
vmcp q userid
```

This shows your guest userid (virtual machine name) and the nodename of the z/VM system it runs in. z/VM systems can be clustered together in ways which make the whole cluster behave (in some ways) like one big z/VM system.

11. When you've finished with using the Linux guest and your CMS userid you can logoff from Linux ("exit") and logoff from CMS ("logoff").