This package consists of two separate enhancements to MVS 3.8J, specifically to VTAM and to JES2, in order to more conveniently operate MVS 3.8J as a guest under VM. The enhancements can be used individually, or together.

Both enhancements were written for use on MVS 3.8J TK4-. However, they can be adapted for TK3 if needed.

This document assumes that the reader has a good working knowledge of how to run and operate a MVS guest under VM.

As always, please make sure you have a good backup of your MVS dasd before applying either of these enhancements.

The two enhancements are:

1. VMEXIT. This enhancement to the VTAM logon interpret table routine provides the ability to DROP a VM DIALed connection to MVS. That is, a CP-owned 3270 terminal can DIAL to MVS and use VTAM and TSO, and when desired the terminal user can drop the dial connection back to VM, so that the terminal can then logon to a VM userid.

2. ZBP0001. This enhancement to JES2 provides the capability to automatically have JES2 issue a CP CLOSE command at the completion of writing job output to a printer or punch. In addition, the enhancement provides the ability to automatically spool job output to a CMS user. The userid, if desired, is specified in the programmer name field of the JOB statement and used to identify the destination for the output.

Loading the Enhancements From Tape

A small PDS is required to hold the two enhancements, one member for each. The following JCL can be used to load the enhancement dataset:

```
//HERC01C JOB CLASS=A,MSGCLASS=A
//C1      EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//SYSUT3   DD UNIT=VIO,SPACE=(CYL,5)
//SYSUT4   DD UNIT=VIO,SPACE=(CYL,5)
//IN1      DD UNIT=480,DSN=MVSVM.JCL,LABEL=(1,SL),DISP=OLD,
//            VOL=SER=MVSVM1
//OUT1     DD DSN=HERC01.MVSVM.JCL,DISP=(NEW,CATLG),UNIT=SYSDA,
//            SPACE=(TRK,(2,1,2)),
//            DCB=(BLKSIZE=3120,LRECL=80,RECFM=FB)
//SYSIN DD *
 COPY INDD=IN1,OUTDD=OUT1
/*
```

The dataset created is HERC01.MVSVM.JCL and contains two members, called VMEXIT and ZBP0001. The members contain JCL needed to execute them for installation; additional details below.

For convenience to VM users, after the IEBCOPY dataset image on the tape, a copy of these same members can be loaded to CMS if you would rather submit them for execution via the virtual reader. To load the members, use VMFPLC2 as shown below:

```
ATTACH 480 * 181
(ready the AWS tape with Hercules)
VMFPLC2 FSF 3
VMFPLC2 LOAD * * A
```

This action will load the files VMEXIT JCL, and ZBP0001 JCL to your A-disk.

Installing the Enhancements

1. Installing VMEXIT.

To install this enhancement, verify the JCL and submit the job. The updated logon interpret exit will be assembled and linked into SYS1.LPALIB. This will not replace your existing logon interpret table exit; the enhanced version uses a new name.

It will be necessary to re-IPL with CLPA in order for the exit to take effect but before you do, it may be helpful to update the VTAM 3270 major node parameters so that they will use the new exit. In TK4-, the major node parameters are in SYS1.VTAMLST(L3274).

Replace the existing name of the logon interpret exit (ETHLOGON) with the name of the new exit, ETHLOGVM. A partial example is shown below of the L3274 member:

```
L3274    LBUILD SUBAREA=2
CUU0C0   LOCAL TERM=3277,CUADDR=0C0,ISTATUS=ACTIVE,
               LOGTAB=ETHLOGVM,LOGAPPL=NETSOL,
               FEATUR2=(MODEL2,PFK)
CUU0C1   LOCAL TERM=3277,CUADDR=0C1,ISTATUS=ACTIVE,
               LOGTAB=ETHLOGVM,LOGAPPL=NETSOL,
               FEATUR2=(MODEL2,PFK)
   .
   .
   .
```

After you have edited all of the individual terminal descriptions that you wish to have use the new exit, save your changes. Then delete the L3274 member from SYS1.VTAMOBJ in order to cause VTAM to rescan the new L3274 parameters on its next start up.

To create virtual terminals that you can dial to, from the MVS machine virtual console define several GRAF devices, e.g.:

#CP DEF GRAF 0C0
#CP DEF GRAF 0C1

Optimally, you can make this permanent and more convenient by using SPECIAL statements in the CP directory entry for user MVS.

Now re-IPL MVS and reply to the first prompt, R 00,CLPA. Once initialized, start VTAM and TSO.

Once the system is active, you can use a VM terminal to DIAL MVS if MVS is running under VM as a guest. This will connect you to one of the GRAF devices defined above. If VTAM is active, you should immediately be presented with the VTAM TK4 logo screen. Now you can log on to TSO as usual or use another VTAM application. In order to return to VM, exit your application back to the VTAM TK4 logo screen and simply type in 'vm'. There will be a very brief pause while VTAM issues a message back to the terminal (which can be ignored) and then the terminal will drop back to VM control. At that point you can log on to a CMS userid or DIAL MVS again.

If you are running MVS native (not under VM), then typing VM from the VTAM TK4 logo screen has no effect, except that VTAM will issue a message about invalid input. Effectively though, it is a no-op.

2. Installing ZBP0001.

To install this enhancement, verify the JCL and submit the job. The changes are applied to JES2 and JES2 is relinked. If the job runs successfully, then proceed next to update the JES2 parameters.

To update the JES2 parameters, you need to specify which printers or punches known to JES2 that will operate with the enhancement. In TK4-, the JES2 parameters are located in SYS1.JES2PARM(JES2PARM). I recommend you first make a copy of JES2PARM in the same dataset, (e.g., JES2BACK or JES2COPY), in case of troubles. Edit the JES2PARM member and locate the PRINTERnnn statements. Add the "VM" parameter to any PRINTER that you wish to use for spooling printouts to CMS users and to issue CP CLOSE against. For example:

```
PRINTER1  CLASS=A,NOSEP,OPERATOR,DSPLTCEL,NOPAUSE,UNIT=00E,DRAIN, +
          UCS=QN,FCB=6,VM
PRINTER2  CLASS=Z,SEP,OPERATOR,DSPLTCEL,NOPAUSE,UNIT=00F,DRAIN,   +
          UCS=QN,FCB=6
PRINTER3  CLASS=X,SEP,AUTO,DSPLTCEL,NOPAUSE,UNIT=002,DRAIN,       +
          UCS=QN,FCB=6
```

If you wish to have a PUNCH have similar controls, add the "VM" parameter to your desired PUNCH definitions, as shown:

```
PUNCH1      CLASS=B,NOSEP,AUTO,PAUSE,UNIT=00D,START,VM
```

Note that for JES2 printers or punches to be used for VM spooling, NOSEP is a desirable option on the JES2 PRINT or PUNCH statements.

Save your changes. You must restart JES2 (warm-start is sufficient) for this change to take effect. It is probably easier to just re-IPL MVS.

Once JES2 is active, you can try to submit a job from a CMS userid and have the job output returned back to that CMS userid in his virtual reader queue. Create a job on your CMS A-DISK called TEST JCL. For example:

```
//HERC01A  JOB  1,BOB,CLASS=A
//X        EXEC PGM=IEFBR14
//
```

In this example, the CMS userid is BOB. Note that BOB is placed as the name in the programmer name field of the JOB statement. JES2 will use the first 8 characters of the programmer name field as the userid for VM designated printers. The userid is delimited by a blank, period, or comma, if you wish to have other information in the name field as well.

Submit the job:

```
CP SPOOL PUN MVS
PUNCH TEST JCL (NOH
```

If the JES2 reader is active, the job should be received and begin execution. Once the job completes which should be nearly immediate, the output will be queued to the printer. You may have to start the printer in JES2, (e,g, $S PRT1) the first time. The output from the job should then be spooled to the CMS userid named BOB.

From the CMS side, you should have a file in your virtual reader queue:

```
     PRT FILE 0033 FROM MVS      COPY 01 NOHOLD
```

Then you could query your reader queue to see what has arrived:

```
CP Q R ALL
OWNERID FILE CLASS RECDS  CPY HOLD DATE  TIME     NAME     DIST
BOB     0033 A PRT 000039  01 NONE 01/04 15:50:53 HERC01A  MVS
Ready; T=0.01/0.01 15:51:48
```

You can then read in the spool file onto the A-disk with the READCARD command, view or purge the file, or use other facilities available to VM users.

Notes about using the JES2/VM spooling enhancement

- If you are running MVS native (not under VM), then no CP SPOOL or CP CLOSE commands will be issued to the printer or punch. Output will be spooled to the native device as per usual JES2 operation.

- For clarity, if you wish you may optionally specify NOVM on the PRINTER or PUNCH statements that will not be using CP SPOOL/CLOSE services.

- If the userid cannot be recognized in the JOB statement programmer name field, or if the userid is not defined in the CP system directory, then the output is automatically spooled to SYSTEM and the output will either be held in the VM spool with the MVS virtual machine's userid as the owner, or immediately printed on a CP controlled printer if it is active.

- The sysout class of the output in JES2 is used as the output class in VM.

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