Virtel Installation Guide

Release 4.62

Virtel SAS, Syspertec Group

Feb 12, 2025

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Version : 4.62

Release Date : 23/06/2024. Publication Date : 17/02/2024

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CHAPTER

ONE

SUMMARY OF AMENDMENTS

1.1 Virtel version 4.62 (17th Feb 2024)

Note: For further details see the Virtel Technical Newsletter TN202403: Whats new in Virtel 4.62.

1.2 Virtel version 4.61 (10th Oct 2021)

Note: For further details see the Virtel Technical Newsletter TN202303: Whats new in Virtel 4.62.

1.3 Virtel version 4.60 (11th Nov 2020)

Note: For further details see the Virtel Technical Newsletter TN202003: Whats new in Virtel 4.60.

1.4 Virtel version 4.59 (12th Jul 2019)

Note: For further details see the Virtel Technical Newsletter TN201902: Whats new in Virtel 4.59.

CHAPTER

TWO

INTRODUCTION

2.1 Required Environment

VIRTEL operates in the z/OS or z/VSE environments. Throughout the VIRTEL documentation, the term "z/OS" should be understood to include OS/390 and z/OS, and the term "z/VSE" should be understood to include z/VSE/ESA and z/VSE.

2.1.1 z/OS environment

In the z/OS environment, VIRTEL runs under the OS/390 or z/OS operating systems. If the VIRTEL MQ interface is used, then MQSeries Version 6 or later is required. Support for the cryptographic functions of VIRTEL requires ICSF Version HCR7740 or later.

2.1.2 z/VSE environment

In the z/VSE environment, VIRTEL runs under the z/VSE/ESA or z/VSE operating systems. TCP/IP access (XOT, VIRTEL Web Access) requires z/VSE/ESA 2.5.1 or later, or any version of z/VSE.

2.1.3 Browser pre-requisities

VIRTEL Web Access requires a standard web browser on the user's workstation. Supported browsers include:

- Microsoft Edge (For Windows 10)
- Firefox Version 15 or above (for Windows 7 or Vista)
- Firefox Version 17 or above (for Windows XP)
- Chrome Version 23 or above
- Opera Version 15 or above
- Safari Version 5 or above

VIRTEL Web Access requires JavaScript to be enabled in the browser.

CHAPTER

THREE

INSTALLING VIRTEL UNDER Z/OS

3.1 Installation procedure

In the z/OS environment, VIRTEL is delivered as a zipped XMIT file containing the VIRTEL datasets compressed in DF/DSS dump format. The following sections provide details of the installation method. A quick "installation check-list" to start the VIRTEL installation procedure follows. For customers who do not have DF/DFSS, a non-DF/DFSS install package is available on request. Contact Syspertec Support for further details.

3.1.1 z/OS Installation Check-list

Here is a standard "check-list" to start the WEB to HOST VIRTEL function:

Warning: If you are upgrading to a new version of Virtel, plan to move any user transactions or customisations out of W2H-DIR as this directory will be overriden as part of the installation process.

1. Download the following files from our FTP server http://ftp-group.syspertec.com
   - Virtelvrrmvs.zip.
   - allptfs-mvsvrr.txt if available.
   - virtelvrrupdtnnnn.zip if available.
2. Run job $ALOCDSU to create the TRANSFER.XMIT file.
3. Upload the virtelvrrmvs.xmit file to the TRANSFER.XMIT file in binary mode.
4. Edit job $RESTDSU specifying the high-level qualifiers and SMS or volume serial information for the VIRTEL datasets. Run job $RESTDSU to create the VIRTEL datasets yourqual.VIRTvrr.xxxxxx
5. Apply the PTFs in the allptfs-mvsvrr.txt file using job ZAPJCL in the VIRTEL CNTL library. If this file does not exist, skip this step.
6. Use the SETPROG APF command to add the VIRTEL LOADLIB to your system APF authorized program library list

```
SETPROG APF,ADD,DSN=yourqual.VIRTvrr.LOADLIB,VOL=volser
```

7. Edit member VIRTCT01 in the VIRTEL CNTL library:-
   a) Set a default APPLID= parameter to the VTAM ACBNAME. You can override this in the VIRTEL PROC using the APPLID= symbolic. Use this to log on to VIRTEL (the suggested default value is APPLID=VIRTEL)

b) The TCP1= parameter must match the jobname of your z/OS TCP/IP stack (the suggested value TCPIP is usually correct)

c) If you prefer VIRTEL to display English language panels, then set LANG='E'

d) Set the COUNTRY and DEFUTF8 parameters according to your country.

e) Set the COMPANY ADDR1 ADDR2 LICENCE EXPIRE CODE parameters using the license key supplied to you by Syspertec.

8. Run the job ASMTCT in the VIRTEL CNTL library to assemble VIRTCT01 into VIRTvrr.LOADLIB.
9. Edit member ARBOLOAD in the VIRTEL CNTL library:

a) Change LANG=EN to LANG=FR if French language is desired

b) Set LOAD= the name of your VIRTEL LOADLIB

c) Set SAMP= the name of your VIRTEL SAMPLIB

d) Set ARBO= the name of your VIRTEL ARBO file

e) Set VTAMLST= the name of a your VIRTEL CNTL library. The job will create a sample VTAMLST member in this library.

f) CHANGE ALL 'DBDCCICS' 'xxxxxx' where xxxxxx is the APPLID of your CICS system.

g) If you changed the APPLID of VIRTEL in step 7 from its default value VIRTEL, then you must also change the ACBNAME= parameter in step VTAMDEF near the end of the ARBOLOAD job. The value of ACBNAME= in ARBOLOAD must match the value of APPLID= in VIRTCT01. Submit the ARBOLOAD job. This creates your VIRTEL configuration (the ARBO file) and a sample VTAMLST member VIRTAPPL.

Note: If you need to rerun the ARBOLOAD job, you must change PARM='LOAD,NOREPL' to PARM='LOAD,REPL'. If you wish to completely start over from the beginning, you can run the job ARBOBASE to delete and reinitialize the ARBO file, followed by a rerun of the ARBOLOAD job.

---

10. If using APPC or X25, submit the job ASMMOD from the VIRTEL CNTL library. This job assembles the VIRTEL logon mode table (MODVIRT) into your SYS1.VTAMLIB dataset. You will need to set the QUAL= parameter to match the high-level qualifiers of your SAMPLIB dataset.
11. Copy the VIRTAPPL member (created by the ARBOLOAD job in step 8) from the VIRTEL CNTL library into your SYS1.VTAMLST dataset. Now activate the VTAMLST member using this command:

```
V NET,ACT,ID=VIRTAPPL
```

12. Edit the procedure VIRTEL4 in your VIRTEL CNTL library so that the high-level qualifiers match the names you used when you loaded the files in step 4. Copy the procedure to your system PROCLIB, renaming it as VIRTEL.
13. Ask your security administrator to create a userid for the VIRTEL started task, and to authorize this userid to access the datasets you created in step 3. This userid must also have an OMVS segment which authorizes VIRTEL to use TCP/IP. Your security administrator can use the job RACFSTC in the VIRTEL SAMPLIB as an example.
14. Start VIRTEL

You can now logon to VIRTEL from a 3270 terminal using the APPLID specified in the VIRTCT01, and you can display the VIRTEL Web Access menu in your web browser using URL http://n.n.n.n:41001 where n.n.n.n is the IP address of your z/OS system.

15. Apply any Virtel Web Access (See VWA maintenance) according the instructions in the Readme-updtnnnn.txt file included in the zip file. If the zip file does not exist, skip this step. If yo do apply maintenance then refresh the browser (CTRL-R) after updating the relevant TRSF directories. Check that the updtnnn is the correct number in the Administration Portal Screen.
16. The supplied system is configured with security disabled. If you wish, you can activate external security using RACF, ACF2, or TOP SECRET; please refer to the *"Security Chapter"*.

3.1.2 Restoring from the XMIT file

All the VSAM and non-VSAM datasets required for the installation of VIRTEL are contained in a zipped XMIT file which can be downloaded from the Syspertec file server. The size of the zipped file is approximately 2MB. Two JCL files ($ALOCDSU and $RESTDSU) are also included in the zip file. The procedure for obtaining and uploading the file is as follows:

Step 1

Login to the Syspertec file server http://ftp-group.syspertec.com using the userid and password supplied to you by Syspertec. Navigate to the Public directory "VIRTEL - 4.62- Products" and download the virtel462mvs.zip file. Unzip this file into a folder on your workstation.

Step 2

Run the job $ALOCDSU to allocate a sequential file named userid.TRANSFER.XMIT with DCB attributes (RECFM=FB, LRECL=80):

```
//SPALODSU JOB 1,MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
//*--------------------------------------------------------------------*
//*--* BINARY FILE TRANSFER - STEP NO.1                                *--*
//*--*                                                                 *--*
//*--* Function : Allocate a sequential XMIT type file                 *--*
//*--*                                                                 *--*
//*--* Following step $RESTDSU                                         *--*
//*--*                                                                 *--*
//*--------------------------------------------------------------------*
// SET TYPE=CYL                                          /* TYPE ALLOC */
// SET ALLOCPRI=30                                       /* PRIM ALLOC */
// SET ALLOCSEC=1                                        /* SECO ALLOC */
// SET VOLM=SPT001                                           /* VOLUME */
// SET UNIT=3390                                          /* DISK UNIT */
//*--------------------------------------------------------------------*
//* DELETE OLD .XMIT file                                               *
//*--------------------------------------------------------------------*
//STEP1 EXEC PGM=IKJEFT01,PARM='DEL ''&SYSUID..TRANSFER.XMIT'''
//SYSTSPRT DD SYSOUT=*
//SYSOUT DD *
//SYSTSIN DD *
PROF                                              /* POUR GENERER CC=0 */
//*
//*--------------------------------------------------------------------*
//* Allocate new reception .XMIT file                                   *
//*--------------------------------------------------------------------*
//STEP2 EXEC PGM=IEFBR14
//SYSOUT DD *
//SYSUT2 DD DSN&SYSUID..TRANSFER.XMIT,
// UNIT=&UNIT,VOL=SER=&VOLM,DISP=(NEW,CATLG),
// SPACE=(&TYPE,(&ALLOCPRI,&ALLOCSEC)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120,DSORG=PS)
//*
//*--------------------------------------------------------------------*
//*--* BINARY FILE TRANSFER - STEP NO.2                               *--*
//*--* Make a binary transfer of the given file                       *--*
//*--* BIN                                                            *--*
//*--* PUT filename.xmit TRANSFER.XMIT                                *--*
//*--------------------------------------------------------------------*
```

JCL for allocating an XMIT file (z/OS)

The parameters SET VOLM=SPT001 and SET UNIT=3390 at the start of this job should be changed as appropriate to match the volume on which the userid.TRANSFER.XMIT dataset is to be allocated.

Step 3

Using FTP or IND$FILE, upload the file virtelvrrmvs.xmit to the host transfer file created in step 1. It is very important to ensure that the upload is performed in binary mode. The following is an example of an FTP session to perform the upload:

```
C:\temp>ftp 192.168.0.1
Connected to 192.168.0.1.
220-FTPD1 IBM FTP CS V1R4 at ZOS1.COMPANY.COM, 08:41:36 on 2004-05-24.
220 Connection will close if idle for more than 5 minutes.
User (192.168.0.1:(none)): sptuser
331 Send password please.
Password:
230 SPTUSER is logged on. Working directory is "SPTUSER.".
ftp> bin
200 Representation type is Image
ftp> put virtelvrrmvs.xmit TRANSFER.XMIT
200 Port request OK.
125 Storing data set SPTUSER.TRANSFER.XMIT
250 Transfer completed successfully.
ftp: 4067120 bytes sent in 5,59Seconds 727,83Kbytes/sec.
ftp> quit
221 Quit command received. Goodbye.
C:\temp>
```

FTP session for uploading an XMIT file (z/OS)

Step 4

Run the job $RESTDSU to unpack the transfer file and to restore the VIRTEL datasets by means of the ADRDSSU utility program:

```
//SPRESDSU JOB 1,MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
//*-------------------------------------------------------------------*
//*--* Binary File Transfer - STEP No 3 *--*
//*--* *--*
//*--* Function : Reception and reload of the files *--*
//*--* *--*
//*--* Replace '??????' by target volume serial number *--*
//*--* Replace 'yourqual' by target DSN high-level qualifier
*--*
//*-------------------------------------------------------------------*
//*-------------------------------------------------------------------*
//* Reception of the .XMIT File *
//*-------------------------------------------------------------------*
//BATCHTS EXEC PGM=IKJEFT1A,REGION=4M
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//XMITFILE DD DSN=&SYSUID..TRANSFER.XMIT,DISP=OLD
//SYSTSIN DD *
RECEIVE INFILE(XMITFILE) DA(TRANSFER.DSSDUMP)
//*
//*-------------------------------------------------------------------*
```

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```
//* Reload of the initial files *
//*-------------------------------------------------------------------*
//DSSREST EXEC PGM=ADRDSSU,REGION=6M,COND=(0,NE)
//SYSPRINT DD SYSOUT=*
//DUMPFILE DD DSN=&SYSUID..TRANSFER.DSSDUMP,DISP=(OLD,DELETE)
RESTORE -
DS(INCLUDE(SPRODUIT.VIRTEL.BASE*.**)) -
OUTDYNAM(??????,3390) /* <==== VOLUME, UNIT ===== */ -
RENAMEUNC( -
    (SPRODUIT.VIRTEL.BASEvrr.LOADLIB, -
            yourqual.VIRTvrr.LOADLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.MACLIB, -
            yourqual.VIRTvrr.MACLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.SAMPLIB, -
            yourqual.VIRTvrr.SAMPLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.SERVLIB, -
            yourqual.VIRTvrr.SERVLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.DBRMLIB, -
            yourqual.VIRTvrr.DBRMLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.CNTL, -
            yourqual.VIRTvrr.CNTL), -
    (SPRODUIT.VIRTEL.BASEvrr.SAMP.TRSF, -
            yourqual.VIRTvrr.SAMP.TRSF), -
    (SPRODUIT.VIRTEL.BASEvrr.CONFGEN.MACLIB, -
            yourqual.VIRTvrr.CONFGEN.MACLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.FA29API.MACLIB, -
            yourqual.VIRTvrr.FA29API.MACLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.SCRNAPI.MACLIB, -
            yourqual.VIRTvrr.SCRNAPI.MACLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.VIRAPI.MACLIB, -
            yourqual.VIRTvrr.VIRAPI.MACLIB), -
    (SPRODUIT.VIRTEL.BASEvrr.ARBO, -
            yourqual.VIRTvrr.ARBO), -
    (SPRODUIT.VIRTEL.BASEvrr.CAPT, -
            yourqual.VIRTvrr.CAPT), -
    (SPRODUIT.VIRTEL.BASEvrr.CMP3, -
            yourqual.VIRTvrr.CMP3), -
    (SPRODUIT.VIRTEL.BASEvrr.HTML, -
            yourqual.VIRTvrr.HTML), -
    (SPRODUIT.VIRTEL.BASEvrr.HTML.TRSF, -
            yourqual.VIRTvrr.HTML.TRSF), -
    (SPRODUIT.VIRTEL.BASEvrr.PLUG.TRSF, -
            yourqual.VIRTvrr.PLUG.TRSF), -
            (SPRODUIT.VIRTEL.BASEvrr.SWAP, -
                    yourqual.VIRTvrr.SWAP), -
            (SPRODUIT.VIRTEL.BASEvrr.STAT, -
                    yourqual.VIRTvrr.STAT), -
                    ) -
    /* NULLSTORCLAS BYPASSACS(**) */ /* <==== SMS OVERRIDE ===== */ -
    /* ADMIN TOL(ENQF) */                    /* <==== OPTIONAL ========= */ -
    /* REPLACE SHR */                              /* <==== SI EXISTE DEJA
↪=== */ -
```

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```
            CATALOG INDD(DUMPFILE)
    //*
    //
```

JCL for restoring from an XMIT file (z/OS)

The following changes should be made to this job before submitting it:

- If the VIRTEL datasets are not to be managed by SMS, alter the statement OUTDYNAM(??????,3390) to specify the volume on which the datasets are to be allocated.
- If the VIRTEL datasets are to be managed by SMS, remove the NULLSTORCLAS BYPASSACS(**) statement and replace it by STORCLAS(classname) where classname is the name of the SMS storage class on which the VIRTEL datasets are to be allocated. Do not delete the OUTDYNAM parameter, ADRDSSU requires it even though its value is ignored for SMS.
- In the RENAMEUNC parameter, replace yourqual by the high-level qualifiers to be used for your VIRTEL datasets.
- The ADMIN and TOL(ENQF) parameters may be uncommented if you are authorized to the necessary STGADMIN profiles.
- Allocate the optional control library VIRCNTL using the following DCB PDS, LRECL=80, RECFM=FB, BLKSIZE=3120, SPACE=(TRK,(5,5,10)). This PDS contains command members. Create a STARTUP member of Virtel commands that are to be executed at start up.

Example of STARTUP member: -

```
* ADD SILENCE MESSAGES *
SILENCE=VIR0018I
SILENCE=VIR0012I
* SWITCH SILENCE *
SILENCE
* SET TRACE *
TRACE,L=C-HTTP,ON
* LIST SILENCE MESSAGES *
SILENCE=LIST
* DISPLAY TCT     *
TCT
* DISPLAY STAT STATUS'
STAT,D
* DISPLAY LOG STATUS
LOG,D
* DISPLAY SNAPMSG TABLE
SNAPMSG,LIST
```

Other members can be created which can contain Virtel commands. These can be executed through the z/OS modify command: -

```
F  VIRTEL,EXEC=membername
```

3.2 Applying Maintenance

As a general rule the application of **PTFs** is necessary and recommended. PTFs are maintenance files which must be applied to the VIRTEL LOADLIB to correct problems which have been discovered subsequent to the building of a VIRTEL version, or to add new function which will be included as standard in the next version. PTF files are called allptfs-mvsvrr.txt.

A second type of PTF, known as **Updates** consists of web elements or artifacts such as HTML pages, style sheets, and JavaScript files, which must be uploaded into VIRTEL internal directories contained in the SAMPTRSF VSAM file. This type of PTF is delivered with the naming convention of Virtelvr-rUpdtnnnnn.zip where vrr is the Virtel release number and nnnn the update number. Updates may be distributed either by e-mail, or available on Syspertec FTP Server. An update is a ZIP file containing the cumulative update for a version Virtel. Once unzipped, the file content is in the form of a tree where each folder contains one or more files grouped by directory, the root contains a file named updtnnnn.txt which summarized the history of changes and any special instructions to operate.

The Virtel Administration portal is used to upload **Updates** to the SAMPTRSF file. An alternative batch process, using a Virtel maintenance package (VMP), can also be deployed. Updates may sometimes be supplied as a complete replacement for the SAMPTRSF file in the form of a DF/DSS dump in XMIT format. See the section "Uploading HTML Pages" from document "Virtel Web Access User Guide" for further information.

3.2.1 Obtaining PTFs and Updates

To download PTFs from the Syspertec file server, use your web browser to login to the file server as described 13, navigate to the Public directory "VIRTEL-V.462-PTFS" and download the ptf and update files if they exists. Virtel maintenance packages (VMP) are used to load updates via a batch process rather than the manually process required for updates. The naming convention is VirtelvrrVMPnnnn.zip. VMP's are released periodically and are only applicable to z/OS.

3.2.2 Applying PTFs

The allptfs-z/OSvrr.txt file should be uploaded in text format to member PTFvrrMV of the VIRTEL CNTL library.

For PTFs which contain elements to be uploaded to VIRTEL, first unzip the elements to a directory on your workstation. Then use the "Upload" link from the VIRTEL Web Access page at http://n.n.n.n:41001 to upload the elements one by one to the W2H-DIR directory.

In the case of a PTF containing a replacement SAMPTRSF file in DF/DSS XMIT format, use the procedure previously described ($ALOCDSU and $RESTDSU) to upload the file in binary and retrieve the SAMPTRSF VSAM file.

3.2.3 Applying PTFs

The recovered PTFs are applied to the VIRTEL LOADLIB by using AMASPZAP with the IGNIDRFULL parameter. The ZAPJCL member in the VIRTEL CNTL library (shown below) performs the apply. This job should complete with return code 0000 or 0004.:

```
//VIRPTF JOB 1,ZAPJCL,CLASS=A,MSGCLASS=X,NOTIFY=&SYSUID
//*
//* PTF à APPLIQUER
```

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```
//*
// SET LOAD=yourqual.VIRTvrr.LOADLIB
// SET CNTL=yourqual.VIRTvrr.CNTL
// SET MEMBER=PTFvrrMV
//*
//PTFZAP EXEC PGM=AMASPZAP,PARM='IGNIDRFULL'
//SYSPRINT DD SYSOUT=*
//SYSLIB DD DSN=&LOAD,DISP=SHR
//SYSIN DD DSN=&CNTL(&MEMBER),DISP=SHR
```

Member ZAPJCL for applying PTFs (z/OS)

3.2.4 Restarting VIRTEL and validation of PTF level

VIRTEL must be stopped and restarted to allow the newly-applied PTFs to take effect. The list of PTFs applied is displayed near the beginning of the SYSMSGLG dataset during VIRTEL startup by message VIR0018I, as shown in the following example:

```
    VIR0018I VIRTEL 4.6x HAS THE FOLLOWING PTF(S) APPLIED
VIR0018I 5887,5901,5903,5904,5912,5912A

*Validation of the VIRTEL PTF level*
```

3.2.5 Upgrading from a previous version

Datasets to be upgraded

If you already have a previous version of VIRTEL installed (version 4.00 or later) then you only need the datasets shown in the figure below:

```
yourqual.VIRTvrr.LOADLIB
yourqual.VIRTvrr.MACLIB
yourqual.VIRTvrr.SAMPLIB
yourqual.VIRTvrr.SERVLIB
yourqual.VIRTvrr.DBRMLIB
yourqual.VIRTvrr.CNTL
yourqual.VIRTvrr.SAMP.TRSF
yourqual.VIRTvrr.CONFGEN.MACLIB
yourqual.VIRTvrr.FA29API.MACLIB
yourqual.VIRTvrr.SCRNAPI.MACLIB
yourqual.VIRTvrr.VIRAPI.MACLIB
```

Datasets upgraded during version change

For the remaining datasets, shown in the figure below, you should continue to use your existing datasets, as these may containing customer-specific configuration information which you do not want to overwrite:

```
yourqual.VIRTnnn.ARBO
yourqual.VIRTnnn.CAPT
yourqual.VIRTnnn.CMP3
```

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```
yourqual.VIRTnnn.HTML
yourqual.VIRTnnn.HTML.TRSF
yourqual.VIRTnnn.SWAP
yourqual.VIRTnnn.STAT
```

Datasets to be retained from previous version

Note: It is also possible to copy your existing files into the files of the new version using IDCAMS REPRO (or by ARBOLOAD for the VIRARBO file).

3.3 Upgrading from a previous version

The procedure for upgrading from a previous version of VIRTEL (version 4.00 or later) is as follows. Customers upgrading from earlier versions of VIRTEL should contact Syspertec for technical support. This process should not change you CLI-DIR or other directories which resilde in the HTML.TRSF dataset.

Danger: If you have modified default settings or added customized elements to the W2H-DIR directory these will be overridden when upgrading. The upgrade process installs a new SAMP.TRSF VSAM file which is the VSAM file associated with W2H-DIR. See note 9. You are advised not to use the Administration port 41001 for user transasctions as this port is reserved for Virtel administration and is tied to web elements distributed in W2H-DIR. User transaction should be associated with another port. The sample provide is port 41002 which is associated with the CLI-DIR directory. This directory is not affected by an upgrade.

1. Upload and unpack the virtelnnnmvs.xmit file as described in the previous section.
2. Apply PTFs as described in the previous section.
3. Copy your VIRTCTnn from the old VIRTnnn.CNTL library to the new VIRTnnn.CNTL
4. Reassemble your VIRTCTnn module using the ASMTCT job in VIRTnnn.CNTL
5. If you have any scenario or user exit load modules, copy them to the VIRTnnn.CNTL library and reassemble them using the ASMSCEN and ASMEXIT jobs respectively.
6. Add the new VIRTnnn.LOADLIB library to the system APF list in the z/OS PARMLIB and use the SETPROG command to authorize the VIRTnnn.LOADLIB library.
7. Edit your VIRTEL procedure in the z/OS PROCLIB, to ensure that the STEPLIB, DFHRPL, and SERVLIB DD statements reference the new VIRTnnn.LOADLIB, and that the SAMPTRSF DD statement references the new VIRTnnn.SAMP.TRSF dataset.

   Copy and rename the following files from the previous Virtel version to the VIRTnnn naming standard. You can delete the new ARBO and HTMLTRSF files that came with VIRTnnn install before the copy and rename : -

   - VIRARBO Configuration file
   - HTMLTRSF (CLI-dir) which includes, all customization files

   If you are currently using Centralized USERPARM or Centralized Macros, Copy and rename the following files from the previous Virtel version to the VIRTnnn naming standard. You can delete or backup the new files that came with VIRTnnn : -

   - HTML Correspondent file used with USERPARM
   - USERTRSF Userparm directory
   - HTMLTRSF Global/Group/User Macros
8. If you have modified the default values for the VIRTEL Web Access Settings (as described in the VIRTEL Web Access Guide) and these changes reside in the W2H-DIR then the upgrade procedure will loose these changes. You are strongly advised not to keep any user modifications in the W2H-DIR but instead move them to the CLI-DIR or any other user directory and modify transactions accordingly. User customizations, such as defaults for w2hparm settings, should be uploaded to a user directory such as the CLI-DIR directory. See the technical newsletter *TN201611 - Customising Virtel in V4.56* for further details.
9. Stop and restart VIRTEL.

Copy and rename the following files from the previous Virtel version to the VIRTnnn naming standard. You can delete the new ARBO and HTMLTRSF files that came with VIRTnnn install before the copy and rename : -

- VIRARBO Configuration file
- HTMLTRSF (CLI-dir) which includes, all customization files

If you are currently using Centralized USERPARM or Centralized Macros, Copy and rename the following files from the previous Virtel version to the VIRTnnn naming standard. You can delete or backup the new files that came with VIRTnnn : -

- HTML Correspondent file used with USERPARM
- USERTRSF Userparm directory
- HTMLTRSF Global/Group/User Macros

3.4 Executing Virtel in a z/OS environment

VIRTEL can run as a JOB or as an STC. An example JCL procedure is contained in member VIRTEL4 of the VIRTEL SAMPLIB. If VIRTEL is to be run as an STC, this member must be copied into a system PROCLIB and renamed as VIRTEL.

```
//VIRTEL PROC QUAL=yourqual.VIRTvrr,
//* QUALMQ=CSQ600,   <-- MQSeries qualifier
//  APPLID=,         <-- Default is in VIRTCT
//  TCT=01           <-- Suffix of VIRTCT
//*--------------------------------------------------------------------*
//* PROCEDURE LANCEMENT VIRTEL                                         *
//*--------------------------------------------------------------------*
//VIRTEL EXEC PGM=VIR6000,
// TIME=1440,REGION=128M,
// PARM=(&TCT,&APPLID)
//STEPLIB DD DSN=&QUAL..LOADLIB,DISP=SHR
//* DD DSN=&QUALMQ..SCSQANLE,DISP=SHR
//* DD DSN=&QUALMQ..SCSQAUTH,DISP=SHR
//DFHRPL DD DSN=&QUAL..LOADLIB,DISP=SHR
//SERVLIB DD DSN=&QUAL..SERVLIB,DISP=SHR
//VIRARBO DD DSN=&QUAL..ARBO,DISP=SHR
//VIRSWAP DD DSN=&QUAL..SWAP,DISP=SHR
//VIRSTAT DD DSN=&QUAL..STAT,DISP=SHR
//*VIRCMP3 DD DSN=&QUAL..CMP3,DISP=SHR
//*VIRCAPT DD DSN=&QUAL..CAPT,DISP=SHR
//VIRHTML DD DSN=&QUAL..HTML,DISP=SHR
//SAMPTRSF DD DSN=&QUAL..SAMP.TRSF,DISP=SHR
//HTMLTRSF DD DSN=&QUAL..HTML.TRSF,DISP=SHR
//VIRCNTL DD DSN=&QUAL..CNTL,DISP=SHR
//SYSOUT DD SYSOUT=*
//VIRLOG DD SYSOUT=*
//VIRTRACE DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
```

VIRTEL started task JCL procedure for (z/OS)

3.4.1 Required and optional files for Virtel

- Files STEPLIB, DFHRPL are always required
- Files VIRARBO, VIRSWAP are always required
- File SERVLIB must be present if the VIRSV1 parameter is coded in the VIRTCT or Virtel is running authorized(PGM=VIR6000)
- File VIRSTAT must be present if the parameter STATS=YES is coded in the VIRTCT
- File VIRCMP3 must be present if the parameter COMPR3=AUTO or COMPR3=FIXED is coded in the VIRTCT
- File VIRCAPT must be present if the parameter FCAPT=VIRCAPT is coded in the VIRTCT

- File VIRHTML must be present if the parameter HTVSAM=VIRHTML is coded in the VIRTCT (parameter required for clients wishing to use e-mail or the centralised parameters feature of VIRTEL Web Access)
- Files SAMPTRSF, HTMLTRSF must be present if referenced by the parameters UFILEn (and their corresponding ACBs) in the VIRTCT (required for clients wishing to use VIRTEL Web Access functions)
- File PLUGTRSF must be present if referenced by a parameter UFILEn (and its corresponding ACB) in the VIRTCT (required for clients wishing to use the Videotex Plug-In function)
- Files SYSOUT, VIRLOG, VIRTRACE, SYSPRINT, SYSUDUMP are always required
- The libraries SCSQANLE, SCSQAUTH must be concatenated to the STEPLIB unless these libraries are in the system link list or LPA list (only for clients wishing to use VIRTEL with MQSeries)
- The CSF.SCSFMOD0 library must be concatenated to the STEPLIB or must be present in the system link list (only if the CRYPTn=(…,ICSF,…) parameter is coded in the VIRTCT)
- File VIRCNTL is optional. It contains command member lists.

3.5 z/OS APF authorisation, userid and priority

VIRTEL must run from an APF-authorized library if either of the following is true:

- External security (RACF, TOP SECRET, or ACF2) is selected by means of the SECUR parameter of the VIRTCT
- VIRTEL is made non-swappable by means of the DONTSWA parameter of the VIRTCT

Normally VIRTEL is started in APF-authorized mode via the VIR6000 module, and in this case all of the libraries specified in the STEPLIB and DFHRPL concatenations must be APF-authorised. For certain specialised applications (Videotex server), the DFHRPL concatenation may include screen image libraries which cannot be APF authorised. In this case it is possible to start VIRTEL via the module VIR0APF which can be isolated in an authorised library. In this way, the other libraries declared in DFHRPL do not necessarily need to be APF-authorized.

VIRTEL must be run under a userid which has an OMVS segment defined in its profile. If VIRTEL is started as an STC, define a profile in the RACF STARTED class (or equivalent if using another security product) to assign the VIRTEL STC to the appropriate userid.

It is necessary for VIRTEL to run at the same priority as VTAM and TCP/IP. This is usually done by assigning VIRTEL to service class SYSSTC in the workload manager. It is also recommended that VIRTEL run non swappable (DONTSWA=YES in the VIRTCT).

Virtel can run non-authorised by changing the PGM=VIR6000 to PGM=VIR0000. This will prevent the use of any authorized functions, for example external security.

3.5.1 Optional JCL parameters

Some parameters have a value taken by VIRTEL either from the VIRTCT or from some definition contained in the VIRARBO file. The purpose of using JCL parameters is to lower the coupling between the TCT, ARBO and instances of VIRTEL so that there is less dependency on the parameters defined in the ARBO and TCT for any one VIRTEL instance. If running under z/OS, the parameter list can be transmitted by using the PARM card. If under z/VSE, it can be done by using a SYSIN card. In both cases, parameters are positionnals and coma separated as above:-

```
TCT,APPLID,VTOVER,IP,CLONE
```

TCT parameter

All the general information necessary for VIRTEL to run is contained in a table known as the VIRTCT. By default, VIRTEL try to use the module VIRTCT01. If you want to use another specific VIRTCT module for startup you must specify its suffix in the first position of the PARM card.

APPLID parameter

The APPLID parameter of the VIRTCT specifies the label or ACBNAME parameter of the VTAM APPL for the primary VIRTEL ACB. The value specified in the second position of the PARM card will overide this value.

VTOVER parameter

The VTOVER parameter may overrides any VIRTCT MQn parameter defined with the "%" wildchar characters. This feature is depending on the presence of VTOVER=VTDYNAM within the VIRTCT. For exemple:-

In the VIRTCT:

```
VIRTERM
../..
MQ1=(CSQ%), -> wild char in MQ1 parm
MQ2=(CSQ%,'A%%%'),
VTOVER=VTDYNAM, -> new VIRTCT parm
VTDYNAM VTOVERH -> new table after the VIRTCT
MQ1 VTOVER PARM=MQ1, modify MQ1(1) *
TARGET='%', find % char *
FROM=0, replace % with VTOVER(0) *
ERRORC=12 Virtel RC if replace failed
MQ21 VTOVER PARM=(MQ2,1),TARGET='%',FROM=1
MQ22 VTOVER PARM=(MQ2,2),TARGET='%%%',FROM=2
```

In the JOB:

```
//VIR0000 EXEC SPVIR5,APPLID='SP3VIR5',VTOVER='67BCD'
```

At execution time:

```
VIRQ903W LINE lin1name HAS A SESSION STARTED WITH MQM CSQ7
VIRQ923E lin1name REQ MQOPEN COMPLETION CODE 00000002 REASON CODE 00000825
 ↪(00002085) MQM CSQ7
VIRQ923E lin1name PARAM ABCD.VIRTELOUT
VIRRW01I INITIALISATION FOR lin2name (MQI-XX ), VERSION 4.62
VIRQ903W LINE lin2name HAS A SESSION STARTED WITH MQM CSQ6
```

Note: The value specified must be placed in the third position of the PARM card.

IP parameter

Currently the IP address used by VIRTEL for a particular line can be derived from being:-

1. Explicitly defined in the LINE definition in the ARBO statements
2. Defaults to the IP stack HOME address.

The TCP/IP GETHOSTID function is used to obtain this address. This change implements the possibility to override option (2) with the ability to specify the IP address as a keyword in the JCL PARM field. As an example:-

```
//S01 EXEC PGM=VIR6000,PARM='01,MYAPPL,,192.168.1.123'
```

This reduces the need to specify the HOME address in the ARBO for inbound lines thereby reducing the coupling between the various VIRTEL instances that could be running within a complex and the ARBO structures. Inbound address can just define the port via the :port structure only rather than the full nnn.nnn.nnn.nnn:port specification. The IP= keyword will provide the nnn.nnn.nnn.nnn address structure for a particular instance of Virtel. So one ARBO file could provide common port addresses and the VIRTEL instance complements this with a specific IP address using the JCL IP= parameter. This also allows VIRTEL to utilize a multi TCP/IP stack environment without the need for duplicated ARBO files. This value can be placed ine the fourth position of the PARM card.

CLONE parameter

Currently, VIRTEL makes use of the System Symbolic &SYSCLONE to enable substitution of the "+" character with the two character symbolic value of the System Symbolic. This can be used with the TCT APPLID field and terminal relay names defined in the ARBO. The purpose is to facilitate the common use of an ARBO file across multiple instances of VIRTEL, however, this feature is restricted to supporting only one instance of VIRTEL per LPAR. When multiple instances are required on any one LPAR the System Symbolic &SYSCLONE and SYSPLUS=YES feature do not provide sufficient uniqueness, consequently multiple ARBO files are required. This feature endeavours to remove the restriction by providing an override through the use of the CLONE=nn in the JCL parameter. When specified, the CLONE value will override the IBM system symbolic value and will be used to replace the "plus" character as defined in the APPLID or terminal relay names. CLONE value must be 2 characters. JCL example:-

```
//S01 EXEC PGM=VIR6000,PARM='EH,,,192.168.170.30,00'
```

This will start Virtel with the TCT called VIRTCTEH, use a default home address of 192.168.170.30 and override and "+" character with the value "00". The APPLID=APPLEH+ keyword, as defined in the TCT, will become APPLID=APPLEH00. The CLONE= value replaces the IBM symbolic value, consequently the SYSCLONE-SYMBOL within scenario statements will now represent the JCL CLONE= value in scenario statements such as:-

```
VALUE-OF (SYSCLONE-SYMBOL)
```

or

```
COPY$ SYSTEM-TO-VARIABLE,VAR='VAR1',                    *
  FIELD=(VALUE-OF,SYSCLONE-SYMBOL)
```

The CLONE= value will also override any &SYSCLONE symbolic that may be specified in dataset names within the TCT. For example:-

```
STATDSN=(HLQ.VIRTEL.SYS&&SYSCLONE..STATA,          STATS=MULTI       *
HLQ.VIRTEL.SYS&&SYSCLONE..STATB),                  STATS=MULTI       *
```

The STATDSN keyword as defined in the TCT will allocate and use datasets:-

```
HLQ.VIRTEL.SYS00.STATA and HLQ.VIRTEL.SYS00.STATB.
```

3.5.2 Executing Virtel as a Started Task

VIRTEL is started by executing the command S VIRTEL from the system console. Message VIR0000I indicates that the product started properly.

3.5.3 Stopping Virtel

VIRTEL may be stopped by issuing the following command:-

```
P VIRTEL
```

CHAPTER

FOUR

INSTALLING UNDER Z/VSE

4.1 z/VSE Check List

Installation of VIRTEL under z/VSE consists of the following steps. Each step is described in detail in the sections which follow.

- Load the installation jobs into the POWER READER QUEUE
- Define the VIRTvrr.SUBLIB sublibrary
- Load the CIL and SSL libraries
- Define the files VIRARBO, VIRSWAP and VIRSTAT
- Define the files VIRCMP3, VIRCAPT and SAMPTRF
- Define the files HTMLTRF and VIRHTML
- Assemble the VIRTCT
- Assemble the VTAM mode table
- Update the VIRARBO file (ARBOLOAD)
- Define the VTAM application relays
- Define the VIRTEL start procedure

4.1.1 Loading the installation jobs

The installation jobs are delivered in a file format that can be mounted on a VTS tape as a 3480 tape cartridge. To load the installation jobs into the POWER reader queue, enter the command S RDR,cuu at the z/VSE console (where cuu represents the address of the tape drive on which you have mounted the cartridge). The following jobs will be loaded into your Reader:-

```
Queue with DISP=L, CLASS=0:
```

Module	Description
VIRTLIB	define the VIRTvrr.SUBLIB sublibrary
VIRTCIL	load executable modules into the CIL
VIRTSSL	load source modules into the SSL
VIRSAPI	load the VIRAPI macro library
VIRFA29	load the FA29 macro library
VIRSAPI	load the SCRNAPI macro library
VIRTVS	**VIRTVS1** - define VIRARBO and VIRSWAP files
	VIRTVS2 - initialise VIRARBO file
	VIRTVS3 -define VIRSTAT file
	VIRTVS4 - define VIRCMP3 file
	VIRTVS5 - define VIRCAPT file
	VIRTVS6 - define SAMPTRF file
	VIRTVS7 - define HTMLTRF file
	VIRTVS8 - load SAMPTRF file
	VIRTVS9 - define VIRHTML file
VIRTCT	VIRTEL parameter table assembly example
VIRCONF	VIRARBO batch update (ARBOLOAD)
VIRMOD	VTAM mode table assembly
VIRTAPPL	VTAM application major node example
VIRGROUP	CICS resource definition example
VIRTEL	VIRTEL execution JCL example

Note: You will need to modify certain of the installation jobs before submitting them. Once the jobs have been read onto the POWER queue, you can copy them to an ICCF library (using ICCF option 3224 Operations - Manage Batch Queues – Input Queue – Copy to Primary Library) or read them into your VM machine for editing.

4.1.2 Sites installing VIRTEL for the first time

Jobs VIRTLIB, VIRTCIL, VIRTSSL, VIRTVS, VIRTCT, VIRMOD, and VIRTAPPL must be executed as described below.

4.1.3 Sites upgrading from a previous version

Execute jobs VIRTLIB, VIRTCIL and VIRTSSL to create a new VIRTvrr.SUBLIB. Change your VIRTEL execution JCL to reference the new sublibrary You can retain your existing VSAM files except SAMPTRSF. **You must install the new version of SAMPTRSF** as delivered with the new version of Virtel.

4.1.4 Sites using VIRTEL Web Access

The files required for VIRTEL Web Access base functions are loaded in steps VIRTVS6, VIRTVS7, VIRTVS8, and VIRTVS9 of job VIRTVS. If you wish to use VIRTEL Host-Web Services to script your 3270 applications, run job VIRSAPI also. See Host-Web-Services in the Virtel User Guide for further information.

4.1.5 Sites using VIRTEL A2A

Customers wishing to use VIRTEL Application-to-Application functions should also run jobs VIRFA29 and VIRAPI.

4.1.6 Defining the library

```
* $$ JOB JNM=VIRTLIB,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRTLIB
* ********************************************************************
* * VIRTLIB * CREATE VIRTvrr LIBRARY                                  *
* ********************************************************************
* *                                                                   *
* * THIS JOB IS SUPPLIED AS AN EXAMPLE ONLY AND MUST BE MODIFIED  *
* * BEFORE EXECUTION                                                  *
* *                                                                   *
* ********************************************************************
// EXEC IDCAMS,SIZE=AUTO
 DELETE (VSE.VIRTvrr.LIBRARY ) -
          CLUSTER -
          PURGE -
    CATALOG (VSESP.USER.CATALOG )
 SET MAXCC=0
 DEFINE CLUSTER ( -
            NAME (VSE.VIRTvrr.LIBRARY ) -
            TRACKS (150 25) -
            SHAREOPTIONS (3) -
            RECORDFORMAT (NOCIFORMAT) -
            VOLUMES (SYSWK1) -
            NOREUSE -
            NONINDEXED -
            TO (99366)) -
            DATA (NAME (VSE.VIRTvrr.LIBRARY.DATA ) ) -
            CATALOG (VSESP.USER.CATALOG )
 IF LASTCC NE 0 THEN CANCEL JOB
/*
// OPTION STDLABEL=ADD
```

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```
// DLBL VIRTvrr,'VSE.VIRTvrr.LIBRARY',,VSAM,CAT=VSESPUC
/*
// EXEC IESVCLUP,SIZE=AUTO
A VSE.VIRTvrr.LIBRARY        VIRTvrr VSESPUC OLD KEEP
/*
// EXEC LIBR,PARM='MSHP'
              DEFINE LIB=VIRTvrr REPLACE=YES
              DEFINE SUBLIB=VIRTvrr.SUBLIB REPLACE=YES
/*
/&
* $$ EOJ
```

VIRTLIB : JCL to define the sublibrary (z/VSE)

Job VIRTLIB contains an example of JCL to define the library which will contain the VIRTEL executable modules and source books. This job is provided as an example, and may need to be modified prior to execution. The name VIRTnnn.SUBLIB indicates the VIRTEL version, for example VIRTvrr.SUBLIB for version 4.62. Parameters VOLUMES(SYSWK1), and possibly the cluster name and catalog name, may need to be modified.

4.1.7 Loading the executable modules

```
* $$ JOB JNM=VIRTCIL,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRTCIL
* ********************************************************************
* * VIRTCIL * CATALOG PROGRAM PHASES IN CORE IMAGE LIBRARY          *
* ********************************************************************
* *                                                                  *
* * AT THE PAUSE, ENTER YOUR DLBL AND LIBDEF FOR THE CIL SUBLIB     *
* *                                                                  *
* * // DLBL VIRTvrr,'VSE.VIRTvrr.LIBRARY',,VSAM,CAT=VSESPUC         *
* * // LIBDEF PHASE,CATALOG=VIRTvrr.SUBLIB                         *
* *                                                                  *
* ********************************************************************
// PAUSE ENTER YOUR LIBDEF PHASE STATEMENT AS IN THE ABOVE EXAMPLE
// OPTION CATAL
        INCLUDE
        (object modules)
/*
// EXEC LNKEDT,SIZE=512K
/&
* $$ EOJ
```

VIRTCIL : JCL to load the executable modules (z/VSE)

Start the job to load the executable modules by entering the POWER command

```
R RDR,VIRTCIL
```

When this job executes, a // PAUSE card will ask you to enter the statements to specify the name of the library into which the modules are to be loaded. Enter

```
// DLBL VIRTvrr,'VSE.VIRTvrr.LIBRARY',,VSAM,CAT=VSESPUC
// LIBDEF PHASE,CATALOG=xxxxx
```

where xxxxx represents the name of the sublibrary you defined in the previous job.

As an example here is the commands entered in a VSE system:-

```
BG-0000 // PAUSE ENTER YOUR LIBDEF PHASE STATEMENT AS IN THE ABOVE EXAMPLE
0 // DLBL VIRTEL,'VSE.VIRTEL.LIBRARY',,VSAM,CAT=SYSPUC1           <USER INPUT>
BG-0000
0 // LIBDEF PHASE,CATALOG=VIRTEL.SUBLIB
 ↪                  <USER INPUT>
BG-0000
0                                                                  <USER
 ↪INPUT>
BG 0000 // OPTION CATAL
BG 0000  INCLUDE
BG 0000 // EXEC LNKEDT,SIZE=512K
BG 0000 EOJ VIRTCIL   MAX.RETURN CODE=0000
```

4.1.8 Loading the source modules

```
* $$ JOB JNM=VIRTSSL,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRTSSL
* ********************************************************************
* * VIRTSSL * CATALOG SOURCE BOOKS IN SSL                            *
* ********************************************************************
* *                                                                  *
* * AT THE PAUSE, ENTER THE NAME OF THE SUB-LIBRARY                  *
* * FOR CATALOGING THE VIRTEL SOURCE BOOKS                          *
* *                                                                  *
* * EXAMPLE: // SETPARM SUB='VIRTvrr.SUBLIB'                        *
* *                                                                  *
* ********************************************************************
// PAUSE ENTER YOUR SETPARM CARD AS SHOWN ABOVE
// EXEC PGM=LIBR,PARM=' ACCESS SUBLIB=&SUB'
        (source books)
/*
/&
* $$ EOJ
```

VIRTSSL : JCL to load the source modules (z/VSE)

Start the job to load the source modules by entering the POWER commands:

```
R RDR,VIRTSSL
R RDR,VIRFA29
R RDR,VIRAPI
R RDR,VIRSAPI
```

When these jobs execute, a // PAUSE card will ask you to enter a SETPARM statement specifying the name of the library into which the modules are to be loaded. Enter:

```
// SETPARM SUB='xxxxxxx'
```

where xxxxxxx represents the name of the sublibrary you defined in the first job.

```
* $$ JOB JNM=VIRFA29,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRFA29
* ********************************************************************
* * VIRFA29 * CATALOG SOURCE BOOKS FOR FA29 API                      *
* ********************************************************************
* *                                                                  *
* * AT THE PAUSE, ENTER THE NAME OF THE SUB-LIBRARY                  *
* * FOR THE FA29 MACRO SOURCE BOOKS                                 *
* *                                                                  *
* * EXAMPLE: // SETPARM SUB='VIRTvrr.SUBLIB'                        *
* *                                                                  *
* ********************************************************************
// PAUSE ENTER YOUR SETPARM CARD AS SHOWN ABOVE
// EXEC PGM=LIBR,PARM=' ACCESS SUBLIB=&SUB'
        (FA29API source books)
/*
/&
* $$ EOJ
```

VIRFA29 : JCL to load the FA29 macros (z/VSE)

```
* $$ JOB JNM=VIRAPI,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRAPI
* ********************************************************************
* * VIRAPI * CATALOG SOURCE BOOKS FOR VIRAPI                         *
* ********************************************************************
* *                                                                  *
* * AT THE PAUSE, ENTER THE NAME OF THE SUB-LIBRARY                  *
* * FOR THE VIRAPI MACRO SOURCE BOOKS                               *
* *                                                                  *
* * EXAMPLE: // SETPARM SUB='VIRTvrr.SUBLIB'                        *
* *                                                                  *
* ********************************************************************
// PAUSE ENTER YOUR SETPARM CARD AS SHOWN ABOVE
// EXEC PGM=LIBR,PARM=' ACCESS SUBLIB=&SUB'
        (VIRAPI source books)
/*
/&
* $$ EOJ
```

VIRAPI : JCL to load the VIRAPI macros (z/VSE)

```
* $$ JOB JNM=VIRSAPI,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRSAPI
* ********************************************************************
* * VIRSAPI * CATALOG SOURCE BOOKS FOR SCRNAPI                       *
```

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```
* ****************************************************************
* *                                                              *
* * AT THE PAUSE, ENTER THE NAME OF THE SUB-LIBRARY              *
* * FOR THE SCRNAPI MACRO SOURCE BOOKS                          *
* *                                                              *
* * EXAMPLE: // SETPARM SUB='VIRTvrr.SUBLIB'                    *
* *                                                              *
* ****************************************************************
// PAUSE ENTER YOUR SETPARM CARD AS SHOWN ABOVE
// EXEC PGM=LIBR,PARM=' ACCESS SUBLIB=&SUB'
        (SCRNAPI source books)
/*
/&
* $$ EOJ
```

VIRAPI : JCL to load the SCRNAPI macros (z/VSE)

4.1.9 Defining the VIRARBO and VIRSWAP files

```
// JOB VIRTVS
// SETPARM TAPE=590
* ****************************************************************
* * AT THE PAUSE, ENTER THE UNIT ADDRESS OF THE TAPE DRIVE *
* * FOR THE VIRTEL INSTALLATION TAPE *
* * *
* * EXAMPLE: // SETPARM TAPE=590 *
* * *
* ****************************************************************
// PAUSE ENTER YOUR SETPARM CARD AS SHOWN ABOVE
* ****************************************************************
* * VIRTVS1 * DEFINITION OF VIRARBO AND VIRSWAP FILES *
* ****************************************************************
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.ARBO ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME (VIRTEL.ARBO ) -
    RECORDS(500 100) -
    SHAREOPTIONS (2 3) -
    RECSZ (600 4089) -
    VOLUMES (SYSWK1) -
    KEYS (9 0) -
    TO (99366))-
  DATA (NAME (VIRTEL.ARBO.DATA )) -
  INDEX (NAME (VIRTEL.ARBO.INDEX )) -
    CATALOG (VSESP.USER.CATALOG )
  IF LASTCC NE 0 THEN CANCEL JOB
```

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```
  DELETE (VIRTEL.SWAP ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME (VIRTEL.SWAP ) -
    RECORDS(500 500) -
    SHAREOPTIONS (2 3) -
    RECSZ (100 8185) -
    VOLUMES (SYSWK1) -
    REUSE -
    KEYS (16 0) -
    )-
  DATA (NAME (VIRTEL.SWAP.DATA ) -
        CISZ(8192)   ) -
  INDEX (NAME (VIRTEL.SWAP.INDEX )) -
    CATALOG (VSESP.USER.CATALOG )
  IF LASTCC NE 0 THEN CANCEL JOB
/*
```

VIRTVS1 : JCL to define the VIRARBO and VIRSWAP files (z/VSE)

Step VIRTVS1 of job VIRTVS contains an example of defining the VIRARBO and VIRSWAP files. This job is provided as an example, and may need to be modified prior to execution. The parameters SETPARM TAPE=590 and VOLUMES(SYSWK1), and possible the catalog name, may need to be modified.

4.1.10 Initialisation of the VIRARBO file

```
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
* * VIRTVS2 * INITIALISATION OF VIRARBO FILE *
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
// DLBL VIRARBO,'VIRTEL.ARBO',,VSAM,CAT=VSESPUC
// PAUSE **** VIRTEL **** MOUNT INSTALLATION TAPE
// ASSGN SYS004,&TAPE
// MTC REW,SYS004
// MTC FSF,SYS004,2 1=FRANCAIS,2=ANGLAIS
// EXEC IDCAMS,SIZE=AUTO
  REPRO IFILE(BANDE ENV(PDEV(2400) NOLABEL RECFM(VB) BLKSZ(32758))) -
  OFILE(VIRARBO)
/*
```

VIRTVS2 : JCL to initialise the VIRARBO file (z/VSE)

Step VIRTVS2 of job VIRTVS loads the base configuration definitions into the VIRARBO file. The default language is English. To load the French language version of the base configuration, change the

```
// MTC FSF,SYS004,2
```

card to

```
// MTC FSF,SYS004,1
```

before submitting this job.

4.1.11 Defining the VIRSTAT file

```
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
* * VIRTVS3 * DEFINITION OF VIRSTAT FILE *
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.STAT ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME (VIRTEL.STAT ) -
    RECORDS (500 100)-
    SHAREOPTIONS (2) -
    RECSZ (124 620) -
    RECORDFORMAT (FIXBLK (124 ))-
    VOLUMES (SYSWK1) -
    NOREUSE -
    NONINDEXED -
    FREESPACE (15 7) -
    TO (99366))-
  DATA (NAME (VIRTEL.STAT.DATA )) -
    CATALOG (VSESP.USER.CATALOG )
  IF LASTCC NE 0 THEN CANCEL JOB
 /*
```

VIRTVS3 : JCL to define the VIRSTAT file (z/VSE)

Step VIRTVS3 of job VIRTVS contains an example of defining the VIRSTAT file. This job is provided as an example, and may need to be modified prior to execution. The VIRSTAT file is required unless the STATS parameter of the VIRTCT is set to NO.

4.1.12 Defining the VIRCMP3 file

```
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
* * VIRTVS4 * DEFINITION AND INITIALIZATION OF VIRCMP3 FILE *
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.CMP3 ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME (VIRTEL.CMP3 ) -
    RECORDS(200 50)-
```

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```
    SHAREOPTIONS (2 3) -
    RECSZ (600 8185) -
    VOLUMES (SYSWK1) -
    KEYS (9 0) -
    TO (99366))-
  DATA (NAME (VIRTEL.CMP3.DATA )) -
  INDEX (NAME (VIRTEL.CMP3.INDEX )) -
    CATALOG (VSESP.USER.CATALOG )
  IF LASTCC NE 0 THEN CANCEL JOB
/*
// DLBL VIRCMP3,'VIRTEL.CMP3',2099/365,VSAM,CAT=VSESPUC
// EXEC IESVSMLD,SIZE=AUTO LOAD DUMMY RECORD INTO VIRCMP3
80,K,VIRCMP3
ZZZ
/*
```

VIRTVS4 : JCL to define the VIRCMP3 file (z/VSE)

Step VIRTVS4 of job VIRTVS contains an example of defining the VIRCMP3 file. This job is provided as an example, and may need to be modified prior to execution. The VIRCMP3 file is used by the level 3 compression feature of VIRTEL/PC, and is required unless the COMPR3 parameter of the VIRTCT is set to NO.

4.1.13 Defining the VIRCAPT file

```
* ****************************************************************
* * VIRTVS5 * DEFINITION AND INITIALIZATION OF VIRCAPT FILE *
* ****************************************************************
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.CAPT ) -
    CLUSTER -
    PURGE -
  CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME (VIRTEL.CAPT ) -
    RECORDS(200 50)-
    SHAREOPTIONS (2 3) -
    RECSZ (600 8185) -
    VOLUMES (SYSWK1) -
    KEYS (16 0) -
    TO (99366))-
  DATA (NAME (VIRTEL.CAPT.DATA )) -
  INDEX (NAME (VIRTEL.CAPT.INDEX )) -
    CATALOG (VSESP.USER.CATALOG )
  IF LASTCC NE 0 THEN CANCEL JOB
/*
// DLBL VIRCAPT,'VIRTEL.CAPT',2099/365,VSAM,CAT=VSESPUC
// EXEC IESVSMLD,SIZE=AUTO LOAD DUMMY RECORD INTO VIRCAPT
80,K,VIRCAPT
```

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```
ZZZ
/*
```

VIRTVS5 : JCL to define the VIRCAPT file (z/VSE)

Step VIRTVS5 of job VIRTVS contains an example of defining the VIRCAPT file. This job is provided as an example, and may need to be modified prior to execution. The VIRCAPT file is used by the videotext page capture feature, and is referenced by the FCAPT parameter of the VIRTCT.

4.1.14 Defining the SAMPTRF file

```
* ****************************************************************
* * VIRTVS6 * DEFINITION AND INITIALIZATION OF SAMPTRF FILE *
* ****************************************************************
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.SAMP.TRSF ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME(VIRTEL.SAMP.TRSF ) -
    TO (99365) -
    FREESPACE (0 50) -
    SHAREOPTIONS (2) -
    INDEXED -
    KEYS (16 0) -
    RECORDSIZE (100 32758) -
    USECLASS (0) -
    VOLUMES (SYSWK1)) -
  DATA (NAME(VIRTEL.SAMP.TRSF.DATA ) -
    SPANNED -
    TRACKS(75 15) -
    CISZ (4096)) -
  INDEX (NAME(VIRTEL.SAMP.TRSF.INDEX ) -
    TRACKS(5 1) -
    CISZ (512)) -
  CATALOG (VSESP.USER.CATALOG )
/*
// DLBL INWFILE,'VIRTEL.SAMP.TRSF',2099/365,VSAM,CAT=VSESPUC
// EXEC IESVSMLD,SIZE=AUTO LOAD DUMMY RECORD INTO INWFILE
80,K,INWFILE
$$$$IWS.WORKREC.INW$TEMP
/*
```

VIRTVS6 : JCL to define the SAMPTRF file (z/VSE)

Step VIRTVS6 of job VIRTVS contains an example of defining the SAMPTRF file. This job is provided as an example, and may need to be modified prior to execution. The SAMPTRF file contains sample HTML page templates and other elements for the VIRTEL Web Access feature, and is referenced by the UFILEx parameter of the VIRTCT.

4.1.15 Defining the HTMLTRF file

```
* ****************************************************************
* * VIRTVS7 * DEFINITION AND INITIALIZATION OF HTMLTRF FILE *
* ****************************************************************
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.HTML.TRSF ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME(VIRTEL.HTML.TRSF ) -
    RECORDS (2500 1000) -
    TO (99365) -
    FREESPACE (0 50) -
    SHAREOPTIONS (2) -
    INDEXED -
    KEYS (16 0) -
    RECORDSIZE (100 32758) -
    USECLASS (0) -
    VOLUMES (SYSWK1)) -
  DATA (NAME(VIRTEL.HTML.TRSF.DATA ) -
    SPANNED -
    TRACKS(75 15) -
    CISZ (4096)) -
  INDEX (NAME(VIRTEL.HTML.TRSF.INDEX ) -
    TRACKS(5 1) -
    CISZ (512)) -
    CATALOG (VSESP.USER.CATALOG )
/*
// DLBL HTMLTRF,'VIRTEL.HTML.TRSF',2099/365,VSAM,CAT=VSESPUC
// EXEC IESVSMLD,SIZE=AUTO LOAD DUMMY RECORD INTO HTMLTRF
80,K,HTMLTRF
$$$$IWS.WORKREC.INW$TEMP
/*
```

VIRTVS7 : JCL to define the HTMLTRF file (z/VSE)

Step VIRTVS7 of job VIRTVS contains an example of defining the HTMLTRF file. This job is provided as an example, and may need to be modified prior to execution. The HTMLTRF file is used by the VIRTEL Web Access feature to store HTML pages, and is referenced by the UFILEx parameter of the VIRTCT.

4.1.16 Loading the SAMPTRF file

```
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
* * VIRTVS8 * LOAD DATA INTO SAMPTRF FILE *
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
// DLBL SAMPTRF,'VIRTEL.SAMP.TRSF',,VSAM,CAT=VSESPUC
// PAUSE **** VIRTEL **** MONTEZ LA BANDE D'INSTALLATION
// ASSGN SYS004,&TAPE
// MTC REW,SYS004
// MTC FSF,SYS004,3
// EXEC IDCAMS,SIZE=AUTO
  REPRO IFILE(BANDE ENV(PDEV(2400) NOLABEL RECFM(VB) BLKSZ(32758))) -
  OFILE(SAMPTRF) REPLACE
/*
```

VIRTVS8 : JCL to load the SAMPTRF file (z/VSE)

Step VIRTVS8 of job VIRTVS contains and example of the JCL required to load the sample HTML pages into the SAMPTRF file. This job is required for sites using VIRTEL Web Access.

4.1.17 Defining the VIRHTML file

```
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
* * VIRTVS9 * DEFINITION AND INITIALIZATION OF VIRHTML FILE *
* $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
  DELETE (VIRTEL.HTML ) -
    CLUSTER -
    PURGE -
    CATALOG (VSESP.USER.CATALOG )
  SET MAXCC=0
  DEFINE CLUSTER ( -
    NAME(VIRTEL.HTML ) -
    RECORDS (50 100) -
    TO (99365) -
    FREESPACE (0 50) -
    SHAREOPTIONS (2) -
    INDEXED -
    KEYS (64 0) -
    RECORDSIZE (100 32758) -
    USECLASS (0) -
    VOLUMES (SYSWK1)) -
  DATA (NAME(VIRTEL.HTML.DATA ) -
    SPANNED -
    CISZ (4096)) -
  INDEX (NAME(VIRTEL.HTML.INDEX ) -
    CISZ (512)) -
  CATALOG (VSESP.USER.CATALOG )
/*
// DLBL VIRHTML,'VIRTEL.HTML',2099/365,VSAM,CAT=VSESPUC
// EXEC IESVSMLD,SIZE=AUTO LOAD DUMMY RECORD INTO VIRHTML
```

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```
80,K,VIRHTML
ZZZ
/*
```

VIRTVS9 : JCL to define the VIRHTML file (z/VSE)

Step VIRTVS9 of job VIRTVS contains an example of defining the VIRHTML file. This job is provided as an example, and may need to be modified prior to execution. The VIRHTML file is used by the VIRTEL Web Access feature to store the names of E-mail correspondents or centralized parameter information - UPARM= specifed in the TCT. It is referenced by the HTVSAM parameter of the VIRTCT.

4.1.18 Assembling the VIRTCT

Job VIRTCTUS contains an example of assembling the VIRTEL parameter table (the VIRTCT). Since the VIRTCT parameters are common across the z/VSE and z/OS environments, please refer to section *VIRTCT*.

Note: Users in France should use job VIRTCTFR instead of VIRTCTUS.

4.1.19 Assembling the MODVIRT mode table

```
* $$ JOB JNM=VIRMOD,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRMOD
* ****************************************************************
* * VIRMOD * ASSEMBLY OF THE VTAM MODE TABLE *
* ****************************************************************
* * *
* * THIS JOB IS SUPPLIED AS AN EXAMPLE ONLY AND MUST BE MODIFIED *
* * BEFORE EXECUTION *
* * *
* ****************************************************************
// DLBL VIRTvrr,'VSE.VIRTvrr.LIBRARY',,VSAM,CAT=VSESPUC
// LIBDEF PHASE,CATALOG=PRD2.CONFIG
// LIBDEF SOURCE,SEARCH=(VIRTvrr.SUBLIB,PRD1.BASE)
// OPTION CATAL
  PHASE MODVIRT,*
// EXEC ASSEMBLY,SIZE=512K
  COPY MODVIRT
/*
// EXEC LNKEDT,SIZE=512K
/*
/&
* $$ EOJ
```

VIRMOD : Assembling the MODVIRT mode table (z/VSE)

Job VIRMOD contains an example of the JCL required to assemble the VTAM mode table (MODVIRT) supplied with VIRTEL.

4.1.20 Updating the VIRARBO file (ARBOLOAD)

```
* $$ JOB JNM=VIRCONF,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRCONF
* ****************************************************************
* * VIRCONF * LOAD CONFIGURATION DATA (ARBOLOAD) *
* ****************************************************************
* * *
* * THIS JOB IS SUPPLIED AS AN EXAMPLE ONLY AND MUST BE MODIFIED *
* * BEFORE EXECUTION *
* * *
* ****************************************************************
// LIBDEF *,SEARCH=(VIRTvrr.SUBLIB)
// DLBL VIRARBO,'VIRTEL.ARBO',,VSAM,CAT=VSESPUC
// SETPARM LANG=EN
// SETPARM WEB=YES
// SETPARM VMACROS=NO
// SETPARM SMTP=NO
// SETPARM IMSW=NO
// SETPARM VHOST=NO
// SETPARM PLUG=NO
// SETPARM VSR=NO
// SETPARM IPAD=NO
// SETPARM MINITEL=NO
// SETPARM PCMGMT=NO
// SETPARM NTTCP=NO
// SETPARM XOT=NO
// SETPARM NPSIFC=NO
// SETPARM NPSIGAT=NO
// SETPARM ANTIFC=NO
// SETPARM CFTGATE=NO
// SETPARM CFTPCNE=NO
// SETPARM MULTSES=NO
// SETPARM VIRSECU=NO
// IF WEB NE YES THEN
// GOTO WEB
// EXEC VIRCONF,PARM='LOAD,LANG=&LANG'
  (configuration statements for VIRTEL Web Access feature)
/*
/. WEB
// IF XOT NE YES THEN
// GOTO XOT
// EXEC VIRCONF,PARM='LOAD,LANG=&LANG'
  (configuration statements for XOT feature)
/*
/. XOT
  (etc)
/&
* $$ EOJ
```

VIRCONF : ARBOLOAD job to update the VIRARBO file (z/VSE)

Job VIRCONF contains an example of a job to load configuration elements into the VIRARBO file. This is

the equivalent of the z/OS job known as ARBOLOAD. Before running this job, you will need to make the following modifications:

- Select the desired features (for example, WEB=YES, XOT=YES)
- Optional. Change all 'DBDCCICS' references to the APPLID of your CICS system.

Note: Users in France may also change LANG=EN to LANG=FR to generate French language versions of the configuration elements

4.1.21 Cataloging the VTAM application book

```
* $$ JOB JNM=VIRTAPPL,CLASS=0,DISP=L
* $$ LST DA
// JOB VIRTAPPL
* ********************************************************************
* * VIRTAPPL * EXAMPLE OF APPLICATION MAJOR NODE FOR VIRTEL *
* ********************************************************************
* * *
* * THIS JOB IS SUPPLIED AS AN EXAMPLE ONLY AND MUST BE MODIFIED *
* * BEFORE EXECUTION *
* * *
* ********************************************************************
// EXEC LIBR
ACCESS SUBLIB=PRD2.CONFIG
CATALOG VIRTAPPL.B REPLACE=YES
* ------------------------------------------------------------------- *
* Product : Virtel *
* Description : Main ACB for VIRTEL application *
* ------------------------------------------------------------------- *
VIRTEL APPL AUTH=(PASS,ACQ,SPO)
  (APPL statements for other VIRTEL relays)
/+
/*
/&
* $$ EOJ
```

VIRTAPPL : Cataloging the application major node (z/VSE)

Job VIRTAPPL contains an example of cataloging the VTAM application book. The VTAM application node VIRTAPPL must be activated before starting VIRTEL. This job is provided as an example, and may need to be modified prior to execution.

4.1.22 Defining the CICS resources

```
* $$ JOB JNM=VIRGROUP,CLASS=A,DISP=D,NTFY=YES
* $$ LST DA
// JOB VIRGROUP CREATION CICS CSD GROUP VIRTEL
* ************************************************************
* * VIRGROUP * CICS RESOURCE DEFINITIONS FOR VIRTEL *
* ************************************************************
* * *
* * THIS JOB IS SUPPLIED AS AN EXAMPLE ONLY AND MUST BE MODIFIED *
* * BEFORE EXECUTION *
* * *
* ************************************************************
* * *
* * SEE IJSYSRS.SYSLIB/STDLABUP.PROC FOR DEFAULT DLBL DFHCSD *
* * // DLBL DFHCSD,'CICS.CSD',0,VSAM,CAT=VSESPUC *
* * *
* ************************************************************
// EXEC DFHCSDUP,SIZE=AUTO
* VIRTEL 3270 TERMINALS FOR WEB2HOST
  DEFINE TE(T000) G(VIRTEL) TY(z/VSELU2Q) NE(RHTVT000) PRINTER(I000)
      DESC(VIRTEL WEB TO HOST TERMINAL)
  DEFINE TE(T001) G(VIRTEL) TY(z/VSELU2Q) NE(RHTVT001) PRINTER(I001)
      DESC(VIRTEL WEB TO HOST TERMINAL)
  DEFINE TE(T002) G(VIRTEL) TY(z/VSELU2Q) NE(RHTVT002) PRINTER(I002)
      DESC(VIRTEL WEB TO HOST TERMINAL)
      etc.
* VIRTEL 3284 PRINTERS FOR WEB2HOST
  DEFINE TE(I000) G(VIRTEL) TY(z/VSELU3Q) NE(RHTIM000)
      DESC(VIRTEL WEB TO HOST PRINTER)
  DEFINE TE(I001) G(VIRTEL) TY(z/VSELU3Q) NE(RHTIM001)
      DESC(VIRTEL WEB TO HOST PRINTER)
  DEFINE TE(I002) G(VIRTEL) TY(z/VSELU3Q) NE(RHTIM002)
      DESC(VIRTEL WEB TO HOST PRINTER)
    etc.
* ADD VIRTEL GROUP TO STARTUP LIST
  ADD GROUP(VIRTEL) LIST(z/VSELIST)
 /*
/&
* $$ EOJ
```

VIRGROUP : Defining the CICS resources (z/VSE)

Job VIRGROUP contains an example of defining the the CICS resources which are correspond to the relays and virtual printers used by VIRTEL Web Access. This job is provided as an example, and may need to be modified prior to execution.

4.2 Executing VIRTEL In A z/VSE Environment

Job VIRTEL contains an example of the z/VSE startup JCL for VIRTEL. Program VIR0000 reads a parameter card indicating the suffix of the VIRTCT to be used. This suffix must be two characters long and must start in column 1 of the parameter card. In the example supplied, the suffix is 01, indicating that parameter table VIRTCT01 is to be used. The TCT suffix may optionally be followed by a comma and the VTAM APPLID. If the APPLID is not specified then the value in the VIRTCT is used. The partition used must have a size of at least 1.5MB and must have 1MB of GETVIS. The priority of the VIRTEL partition must be immediately below that of VTAM.

```
* $$ JOB JNM=VIRTEL,CLASS=4,DISP=L,PRI=9
* $$ LST DA
// JOB VIRTEL
* ****************************************************************
* * VIRTEL * EXAMPLE JCL TO EXECUTE VIRTEL *
* ****************************************************************
* * *
* * THIS JOB IS SUPPLIED AS AN EXAMPLE ONLY AND MUST BE MODIFIED *
* * BEFORE EXECUTION *
* * *
* ****************************************************************
// OPTION SYSPARM='00' MUST MATCH PARM ID=NN IN TCP/IP PARTITION
// LIBDEF *,SEARCH=(VIRTvrr.SUBLIB,PRD2.CONFIG,PRD1.BASE)
// DLBL VIRARBO,'VIRTEL.ARBO',,VSAM,CAT=VSESPUC
// DLBL VIRSWAP,'VIRTEL.SWAP',,VSAM,CAT=VSESPUC
// DLBL VIRCAPT,'VIRTEL.CAPT',,VSAM,CAT=VSESPUC
// DLBL VIRCMP3,'VIRTEL.CMP3',,VSAM,CAT=VSESPUC
// DLBL VIRHTML,'VIRTEL.HTML',,VSAM,CAT=VSESPUC
// DLBL SAMPTRF,'VIRTEL.SAMP.TRSF',,VSAM,CAT=VSESPUC
// DLBL HTMLTRF,'VIRTEL.HTML.TRSF',,VSAM,CAT=VSESPUC
// DLBL VIRSTAT,'VIRTEL.STAT',,VSAM,CAT=VSESPUC
* * OU BIEN // DLBL VIRSTAT,'VIRTEL.STAT',0,SD
* * // EXTENT SYS001,SYSWK1,1,0,855,15
* * // ASSGN SYS001,DISK,VOL=SYSWK1,SHR
// EXEC IESWAITT
// EXEC VIR0000,SIZE=40K,DSPACE=2M
01,VIRTEL
/*
// EXEC LISTLOG
/&
* $$ EOJ
```

VIRTEL startup JCL (z/VSE)

4.2.1 Specifying the TCP/IP partition

If you have more than one TCP/IP stack, you can use the OPTION SYSPARM='nn' statement to specify the ID of the TCP/IP stack. VIRTEL will attempt to connect to the TCP/IP partition which has PARM='ID=nn' in its JCL. If OPTION is not specified, VIRTEL will attempt to connect to the default TCP/IP whose ID is 00.

4.2.2 Stopping VIRTEL

To stop VIRTEL, enter the command:

```
MSG xx,DATA=STOP
```

where xx is the identifier of the partition in which VIRTEL is running.

4.3 Applying Maintenance

4.3.1 VWA Maintenance

Under certain circumstances it may be necessary to apply maintenance in the form of User Interface Updates or Mainframe PTSs. These may be distributed either by e-mail, or available on Syspertec FTP Server. The location is the Public directory under VIRTEL V.RR/PTFs and Updates/.

VWA Updates

An update is available as a ZIP file containing the cumulative days update for a version. The file is represented in the form VirtelxxxUpdtnnnnn.zip where xxx is the version of Virtel to which it relates and nnnn the reference of the update itself. Once unzipped, the file content is in the form of a tree where each folder contains one or more files grouped by category, the root contains a file named updtnnnn.txt which summarized the history of changes and any special instructions to operate. Generally, the file still contains a sub directory named " W2H " whose content must be reloaded into the W2H-DIR using one of the methods described in section "Web Enitity Management" in the "Virtel Administration Guide".

Mainframe PTFs

Under certain circumstances it may be necessary to apply maintenance to the Virtel load library in the form of PTFs. These may be distributed through the Virtel FTP Server or by e-mail. The name of the PTF is in the format allptfs-mshpvrr.txt.

To apply the PTFs, use the following JCL:

```
* $$ JOB JNM=PTFnnnn,CLASS=0,DISP=D,PRI=9
* $$ LST DA
// JOB PTFnnnn
// EXEC MSHP
  PATCH SUBLIB=VIRTvrr.SUBLIB
  AFFECTS PHASE=modname
  ALTER xxxx vvvvvvvv:rrrrrrrr
/*
/&
* $$ EOJ
```

JCL for applying PTFs (z/VSE)

CHAPTER

FIVE

VTAM DEFINITIONS

5.1 VTAM parameters

This section describes the VTAM definitions required for VIRTEL. The same definitions are used in both the z/OS and z/VSE environments.

5.1.1 VTAM APPL Definition - VIRTEL Primary ACB

The primary ACB is defined by means of a VTAM APPL statement:

```
applname APPL AUTH=(PASS,ACQ,SPO)
```

applname - Presents the name of the ACB as it is defined in the APPLID statement of the VIRTCT.

An example of a VTAM application node is provided in member VIRTAPPL of the VIRTEL SAMPLIB dataset for z/OS, or in the VIRTAPPL installation job for VSE.

5.1.2 VTAM Application Relays

Each terminal which logs on to a VTAM application via VIRTEL requires an application relay. An application relay is a VTAM LU, defined by means of a VTAM APPL card, which VIRTEL uses to represent the terminal when connecting to the VTAM application. These APPL cards are defined as follows:

```
relaynam APPL AUTH=(PASS,ACQ),MODETAB=tablenam,DLOGMOD=modename,EAS=1
```

relaynam - Represents the name of the relay associated with the terminal. This name must match the name specified in the "Relay" field of the VIRTEL terminal definition.

tablenam - Is the name of the logon mode table. For VIRTEL Web Access, use the standard IBM-supplied table ISTINCLM. For other types of relay, use the MODVIRT table supplied by VIRTEL.

modename - Is the name of the LOGMODE to be used for communication with the host application. For VIRTEL Web Access, use a standard IBM-supplied logmode such as SNX32702.

EAS=1 - Since each application relay only uses one session, specification of this parameter may reduce common area storage requirements.

5.1.3 MODETAB For X25 and APPC

If you intend to use X25, or APPC, then a mode table named MODVIRT must be assembled and link-edited into the library from which VTAM loads its mode tables. For z/OS, a sample job is provided in the ASMMOD member of the VIRTEL SAMPLIB. For z/VSE, sample JCL is provided in the VIRMOD installation job.

The source for the MODVIRT mode table is defined as follows:

```
MODVIRT MODETAB
* LOGMODE for LUTYPE2 terminals
DLOGREL MODEENT LOGMODE=DLOGREL,      X
  FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B1', X
  SECPROT=X'90',COMPROT=X'3080',RUSIZES=X'87F8', X
  PSERVIC=X'028000000000185000007E00'
* LOGMODE for LUTYPE1 terminals
DLOGMINI MODEENT LOGMODE=DLOGMINI, X
  FMPROF=X'03', X
  TSPROF=X'03', X
  PRIPROT=X'B1', X
  SECPROT=X'90', X
  COMPROT=X'3040', CONTENTION X
  RUSIZES=X'8589', 256-4096 X
  PSERVIC=X'010000000000000000000000'
* LOGMODE for inversed GATE
DLOGANTI MODEENT LOGMODE=DLOGANTI, X
  FMPROF=X'03',TSPROF=X'03',PRIPROT=X'B1',SECPROT=X'90', X
  COMPROT=X'3040',RUSIZES=X'8989', X
  PSERVIC=X'010000000000000000000000'
* LOGMODE for inversed PCNE @416
DLOGPCNE MODEENT LOGMODE=DLOGPCNE, @416X
  FMPROF=X'03',TSPROF=X'03', @416X
  PRIPROT=X'B0',SECPROT=X'B0', @416X
  COMPROT=X'0040',RUSIZES=X'8989', @416X
  PSERVIC=X'000000000000000000000000' @416
* LOGMODE for APPC lines (LU6.2)
LU62CONV MODEENT LOGMODE=LU62CONV,FMPROF=X'13',TSPROF=X'07', X
  PRIPROT=X'B0',SECPROT=X'B0',COMPROT=X'D0B1', X
  RUSIZES=X'8686',ENCR=B'0000',TYPE=0, X
  PSERVIC=X'060200000000000000000300'
  MODEEND
  END
```

VTAM logon mode table MODVIRT

5.1.4 USSTAB Support

USSTAB Support for 3270 terminals

USSTAB support is provided by VIRTEL either as a JavaScript template or by loading the users existing VTAM MSG10 USS buffer.

USSTAB support using Javascript.

For further information on this options see the following Technical Newsletters:-

- TN201411 Building a VTAM USSTAB using Virtel's Web Access Facility.

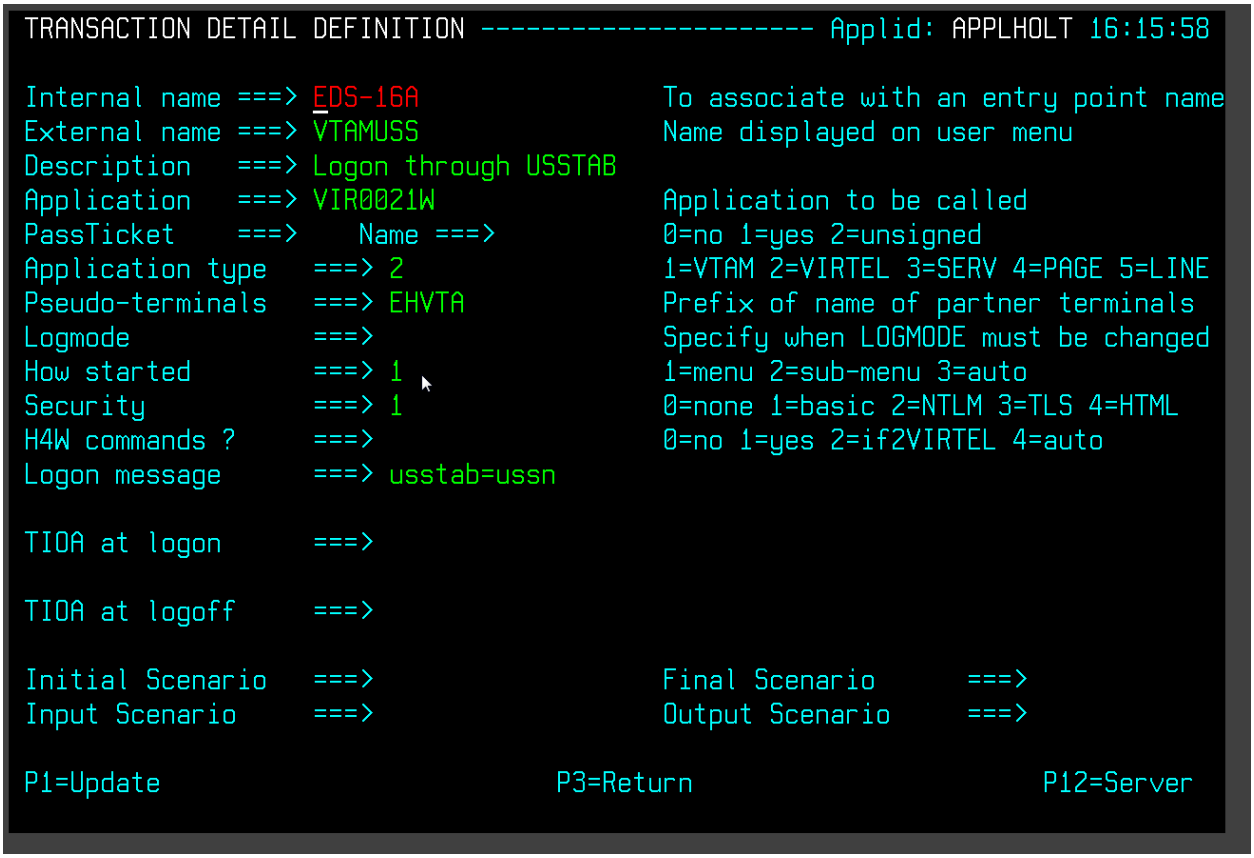
The latest versions of these newsletter documents can be found online at http://virtel.readthedocs.io/en/latest/

USSTAB Support for VTAM MSG10

The USSMSG MSG10 support is implemented by the the VIRTEL VIR0021W USSTAB menu program. This program will interrogate the customers VTAM USSTAB MSG10 module and create an equivalent 3270 MAP. The MAP will be passed to the VIR0010 routine where it will subsequently be converted into a HTML template and served to the browser. The generated template will provide similar functionality to that of the VTAM USSMSG10, that being a presentation screen and support for USSCMD and USSPARM entries. This allows customers to maintain their USSTAB MSG10 presentation for both VTAM and VIRTEL users without modification. The customers assembled USSTAB module, normally found in USER.VTAMLIB or an equivalent library, must be made available to VIRTEL. This can be done by either copying the module to a VIRTEL steplib library or concatenating the USER.VTAMLIB library into the VIRTEL started procedure.

To support this interface a transaction must be added to the Entry point defining the USSTAB module to be used. Here is an example:-

```
    TRANSACT ID=CLI-16A, -
NAME=VTAMUSS, -
DESC='Logon through USSTAB', -
APPL=VIR0021W, -
TYPE=2, -
TERMINAL=CLVTA, -
STARTUP=1, -
SECURITY=1, -
LOGMSG='usstab=USSVIRT'
```



System Symbolic support

VIR0021W supports system symbolics within the MSG10 area and in the usstab= keyword. For example in the MSG10 buffer definition any area that has a symbolic will be translated using the values defined in the SYS1.PARMLIB member IEASYMXX. The z/OS command *D SYMBOLS* can be use to list the defined system symbolics.

```
DC CL80' This is system &&SYSNAME. running on SYSPLEX &&SYSPLEX.'
```

would be translated and displayed as:-

```
DC CL80' This is system ZAMVS1 running on SYSPLEX PLEX1'
```

In the usstab=keyword, in the transaction definition, a symbolic can form part of the usstab name. This enables different usstabs to be loaded depending on the system. For example the following would load USSTAB1A if the symbolic &SYSCLONE. was defined as 1A.

```
usstab=usstab&SYSCLONE.
```

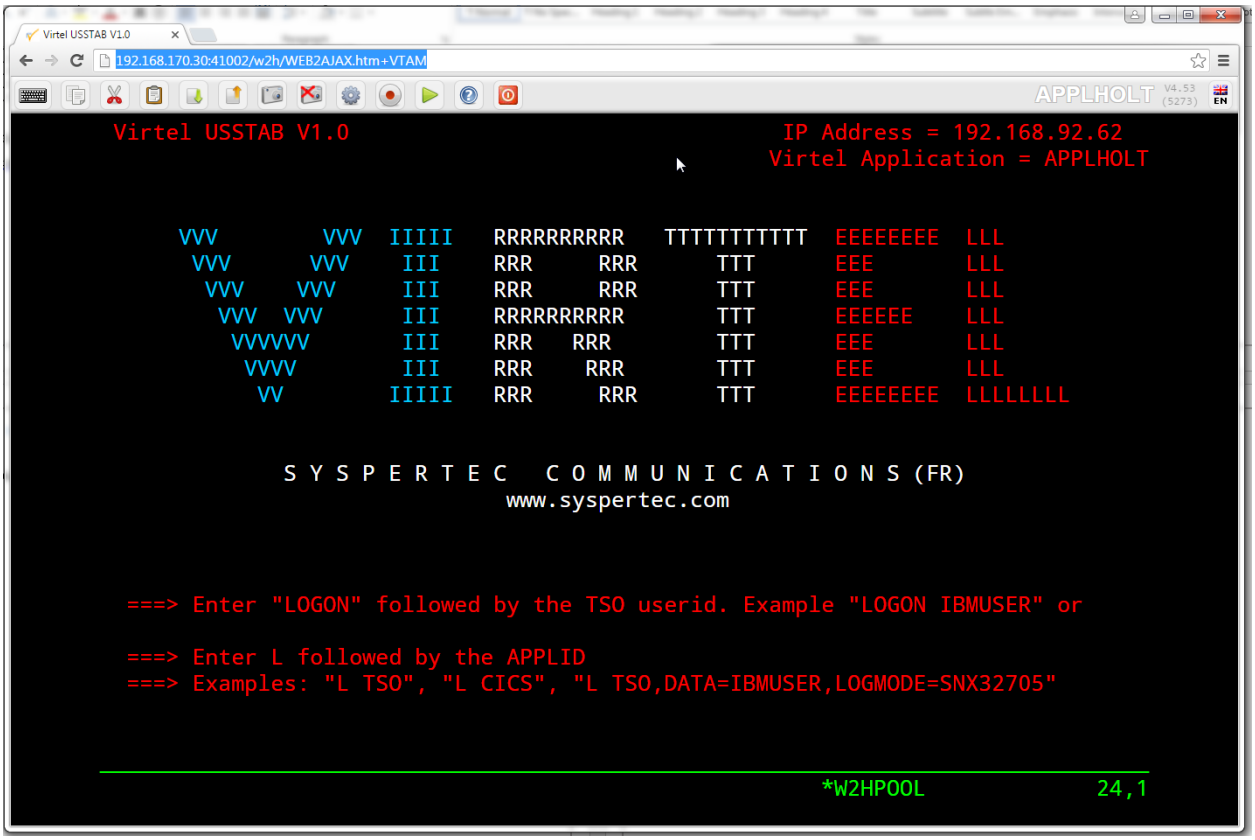
Feedback support

The errmsg=y keyword can be appended to usstab=name. This additional keyword has been added to support feedback within the support module. If errmsg=y is coded then any error messages will be displayed on line 24. If the USSTAB uses row 24 for internal presentation purposes then the errmsg= keyword should not be used. Feedback will report on invalid application selection and invalid key usage. Any other error messqges will be reported to the Virtel SYSLOG. For example:-

```
usstab=usstab&Sysclone.,errmsg=y
```

Will load a USSTAB module depending on the &SYSCLONE. system symbolic value and report error messages to line 24.

Default USSTAB module USSVIRT A default USSTAB module is shipped in the VIRTEL loadlib called USSVIRT. This USS module is loaded by default should the user's USSTAB fail to load. The default USSTAB looks like:- The source is maintained in the SAMPLIB library.



Constraints

The user USSTAB MSG10 module that VIR0021W processes must adhere to certian constraints else results will be unpredicatble. The constraints are:-

- VIR0021W attempts to simulate the functionality of USSMSG10 processing. It doesn't distinguished between PL1 and BAL code strings. So, for example, it will process either LOGON APPLID(TSO) or LOGON APPLID=TSO. Both would be accepted.
- Use only SBA Buffer addresses. Do not use displacement addresses such as AL2(((24-1)*80)+(80-1)).
- The USSTAB module should only have ONE UNPROTECTED output field. This is used for the command area. It should not exceed 78 bytes. Use the tab key to check only one input area is defined.
- Use extended attribute options rather than the basic field attributes to control colours. Some of the basic attributes imply unprotected fields.
- The SCAN parameter must be included on the BUFFER statement:-

```
MSG10    USSMSG  MSG=10,BUFFER=(MSG10BUF,SCAN)
```

- The cursor position must be preceded by a SBA and terminated with a SF:-

```
DC    X'115B5F'                    R=22,C=80
DC    X'1D40'                      UNPROTECTED ON 23
DC    X'13'                        INSERTCURSOR
DC    50C' '                       Blank command area
DC    X'1D60'                      End of command line
```

USSTAB Support for VIRTEL/PC

For VIRTEL/PC it may be necessary to provide a customized USS table in the VTAM library. An example USS table is shown in the figure below. A USS table is not necessary for VIRTEL Web Access access.

```
      USSTAB
USSCMD CMD=MA,REP=LOGON,FORMAT=BAL
USSPARM PARM=APPLID,DEFAULT=VIRTEL2
USSCMD CMD=P,REP=LOGON,FORMAT=BAL
USSPARM PARM=APPLID,DEFAULT=VIRTEL2
USSPARM PARM=DATA,DEFAULT='PC'
USSMSG MSG=00,BUFFER=MSG00
USSMSG MSG=01,BUFFER=MSG02
USSMSG MSG=02,BUFFER=MSG02
USSMSG MSG=03,BUFFER=MSG03
USSMSG MSG=04,BUFFER=MSG04
USSMSG MSG=05,BUFFER=MSG02
USSMSG MSG=06,BUFFER=MSG02
USSMSG MSG=07,BUFFER=MSG04
USSMSG MSG=08,BUFFER=MSG02
USSMSG MSG=09,BUFFER=MSG02
USSMSG MSG=10,BUFFER=MSG10
USSMSG MSG=11,BUFFER=MSG10
USSMSG MSG=12,BUFFER=MSG02
MSG00 DC Y(MSG0F-*-2)
      DC X'0D',C'DEMANDE PRISE EN COMPTE',X'0D'
MSG0F EQU *
MSG02 DC Y(MSG2F-*-2)
      DC X'0D',C'CHOIX NON PREVU',X'0D'
MSG2F EQU *
MSG03 DC Y(MSG3F-*-2)
      DC X'0D',C'CODE RETOUR INCONNU',X'0D'
MSG3F EQU *
MSG04 DC Y(MSG4F-*-2)
      DC X'0D',C'SERVEUR INDISPONIBLE',X'0D'
MSG4F EQU *
MSG10 DC Y(MSG10F-*-2)
      DC X'0C',C'TAPEZ UN IDENTIFIANT PUIS ENVOI '
      DC X'0A',C' M POUR UN MINITEL '
      DC X'0A',C' P POUR UN PC '
MSG10F EQU *
      USSEND
      END
```

VTAM USS table for Virtel/PC

5.1.5 CICS Definitions

When a VIRTEL Web Access terminal logs on via VIRTEL to CICS, the application relay LU represents the terminal as seen by CICS.The relay LU must therefore be referenced in the CICS CSD file, or alternatively configured by the AUTOINSTALL program of your site that will decide which TYPETERM to assign to which relay.

VIRTEL CICS Sample definitions

The following example shows CSD definitions for VIRTEL Web Access terminals. The NETNAME parameter must match the "Relay" name specified in the definition of the VIRTEL terminals attached to the HTTP line. For more details, refer to the section entitled "Definition of an HTTP line" in the VIRTEL Configuration Reference documentation.

```
* VIRTEL 3270 TERMINALS FOR WEB2HOST
DEFINE TERMINAL(T000) GROUP(VIRTEL) TYPETERM(DFHLU2E2)
      NETNAME(RHTVT000) PRINTER(I000)
      DESC(VIRTEL WEB TO HOST TERMINAL)
DEFINE TERMINAL(T001) GROUP(VIRTEL) TYPETERM(DFHLU2E2)
      NETNAME(RHTVT001) PRINTER(I001)
      DESC(VIRTEL WEB TO HOST TERMINAL)
DEFINE TERMINAL(T002) GROUP(VIRTEL) TYPETERM(DFHLU2E2)
      NETNAME(RHTVT002) PRINTER(I002)
      DESC(VIRTEL WEB TO HOST TERMINAL)
DEFINE TERMINAL(T003) GROUP(VIRTEL) TYPETERM(DFHLU2E2)
      NETNAME(RHTVT003) PRINTER(I003)
      DESC(VIRTEL WEB TO HOST TERMINAL)
```

CICS definitions for VIRTEL Web Access terminals

CHAPTER

SIX

THE VIRTEL TCT

6.1 introduction

All the general information necessary for VIRTEL to run is contained in a table known as the VIRTCT. After initialising the different parameters, this table must be assembled and link edited with the name VIRTCTxx, where xx are the two characters that identify the VIRTCT at start up time to the system. This xx value will be contained in the parameter of the PARM operand of the VIRTEL start procedure in z/OS, or behind the EXEC card in the z/VSE environment.

The VIRTCT must be assembled before VIRTEL can be run. At the time of the assembly the VIRTEL macro library VIRT4XX.MACLIB must be on-line. Options RENT and REUS must not be specified when assembling the VIRTCT for an z/OS environment. The resulting phase or load module must be placed in the library containing the other phases or load modules required by VIRTEL.

For z/OS, a sample VIRTCT source member is provided in the VIRTCT01 member of the VIRTEL SAMPLIB, and the assembly and link-edit JCL is in member ASMTCT. For z/VSE, a sample VIRTCT with assembly and link-edit JCL is in the VIRTCT installation job.

6.2 Parameters Of The VIRTCT

Some parameters have a default value taken by VIRTEL and do not need to be coded in your table.

6.2.1 ACCUEIL parameter

```
ACCUEIL=(YES/NO[,KEEP]) Default=YES
```

YES - Terminals not defined in VIRTEL may be connected in ACCUEIL mode. That means the terminals will have access to all functions, excepting dialogue with another application (relay). The maximum number of terminals accepted in ACCUEIL mode is a function of the parameter of the operand NBDYNAM.

NO - Terminals not defined in VIRTEL may not be connected.

KEEP - Allows the Multi-Session screen to be used as a dynamic USSTAB without the terminals being associated with the application relays (See the heading 'Using the dynamic USSTAB' in the 'VIRTEL Multi-Session' chapter only available in French)

6.2.2 ADDR1 parameter

```
ADDR1=' ' Default=' '
```

The address line 1 of the client as specified in the key at the time of installation. This parameter is unique to each client and functions in relation to the following parameters ADDR2, COMPANY, LICENSE, EXPIRE and CODE

6.2.3 ADDR2 parameter

```
ADDR2=' ' Default=' '
```

The address line 2 of the client as specified in the key at the time of installation. This parameter is unique to each client and functions in relation to the following parameters ADDR1, COMPANY, LICENSE, EXPIRE and CODE.

6.2.4 AIC parameter

```
AIC=APPLID/TRANSACT Default=APPLID
```

This parameter determines the value returned by the APPLICATION-IS-CONNECTED condition of the CREATE-VARIABLEIF tag (see "Signon and password management" in the VIRTEL Web Access Guide). This in turn affects the window title of the VIRTEL Web Access screen. The following values are possible:

APPLID - The tag returns the VTAM applid of the host application.

TRANSACT - The tag returns the external name of the VIRTEL transaction used to access the host application.

6.2.5 ANNUL parameter

```
ANNUL=xx Default=6D (Clear)
```

xx - The 3270 AID function key which will be transmitted to the application when the user presses the [ANNULATION] key. This parameter allows the user to define a general parameter by default which may be modified in the definition of the sub-server nodes. ANNUL=00 allows the cursor to be placed at the start of the field with erasure of the field.

6.2.6 APPLID parameter

```
APPLID=nappl Default=VIRTEL
```

nappl - The name of the primary VIRTEL ACB.

The APPLID parameter specifies the label or ACBNAME parameter of the VTAM APPL for the primary VIRTEL ACB. The value specified here can be overridden in the VIRTEL startup JCL (see "Executing VIRTEL in an z/OS environment", page 26 or "Executing VIRTEL in a z/VSE environment", page 46 for details). When no primary VTAM ACB is required (for example, in the VIRTCT for a VIRTEL Batch job), then this parameter may be coded as APPLID=*NOAPPL*

If SYSPLUS=YES is specified, a '+' character in the APPLID will be replaced by the value of the SYSCLONE system symbol. SYSCLONE is specified in the IEASYMxx member of SYS1.PARMLIB, and identifies the particular LPAR that VIRTEL is running on in a sysplex environment.

6.2.7 APPSTAT parameter

```
APPSTAT=YES/NO Default=NO
```

YES - The status of the applications (active or non active) is tested at the time of access to the VIRTEL Web Access Application Selection Menu and the VIRTEL Multi-Session screen. For VIRTEL Web Access the status of each application is indicated by a color (see "Application Selection Menu" in the VIRTEL Web Access Guide). For VIRTEL Multi-Session the test is based on the value contained in the "STATUS" field of the application definition screen. The function key allowing access to the application will only appear if the application is active.

NO - The function key allowing access to the application is always present.

6.2.8 ARBO parameter

```
ARBO=YES/NO Default=NO
```

YES - The program for managing the tree structure will function as a VIRTEL internal sub-application.

NO - The tree structure management software will not function.

6.2.9 BATCH1 parameter

```
BATCH1=(indd,indcb,outdd,outdcb) Default=no batch connection
```

This parameter defines the batch processing characteristics for all lines which specify type BATCH1.

indd - The batch input DD name (for example, SYSIN).

indcb - The label of the DCB macro defining the batch input file. This DCB macro must appear later in the VIRTCT (see *"Additional parameters for batch files"*).

outdd - The batch output DD name (for example, SYSPRINT).

outdcb - The label of the DCB macro defining the batch output file. This DCB macro must appear later in the VIRTCT (see *"Additional parameters for batch files"*).

6.2.10 BATCH2 parameter

```
BATCH2=(indd,indcb,outdd,outdcb) Default=no 2nd batch connection
```

This parameter defines the batch processing characteristics for all lines which specify type BATCH2. The subparameters are the same as those of the BATCH1 parameter.

6.2.11 BFVSAM parameter

```
BFVSAM=n Default=8192
```

n - Size of VSAM buffer ("CI size") used by VIRTEL for reading files such as GTVSAM. As a general rule, this value is calculated by VIRTEL and should not be modified. The size is normally 8192.

6.2.12 BUFDATA parameter

```
BUFDATA=n Default=16
```

n - The number of VSAM buffers in the pool allocated for file access.

6.2.13 BUFSIZE parameter

```
BUFSIZE=n Default=8192
```

n - The size of the largest VTAM message that may pass through VIRTEL. Generally this value should not be modified. The size is generally 8192.

6.2.14 CHARSET parameter

```
CHARSET=(charset1,charset2,...) Default=none
```

The CHARSET parameter allows tables of non-standard character sets to be loaded into VIRTEL at startup time. DBCS tables, because of their size, are not loaded by default into VIRTEL and must be explicitly requested using this parameter. The standard and non-standard tables are used for EBCDIC - UTF-8 translation and can be specified by the SET-OUTPUT-ENCODING-UTF-8 tag and by the DEFUTF8 parameter of the VIRTCT. Refer to the description of the DEFUTF8 parameter 55 for the list of standard tables which are always loaded into VIRTEL. charset

The following non-standard tables can be loaded:

- IBM933A: Korean host mixed
- IBM1364: Korean host mixed extended
- IBM1388: Chinese simplified SBCS et DBCS
- IBM1390: Japanese Katakana-Kanji
- IBM1399: Japanese Latin-Kanji
- IBM0276: French Canadian
- IBM0803: Hebrew Set A old code
- IBM4899: Hebrew Set A old code including Euro and Sheqel
- IBM0838: Thailand
- IBM1160: Thailand with Euro sign

6.2.15 CODE parameter

```
CODE='xxxxxxxx' Default=' '
```

xxxxxxx - Is the code calculated for the client as it is specified in the installation key at the time of the installation. This code is unique for each client and functions in relation to the following parameters: ADDR1, ADDR2, COMPANY, LICENSE, and EXPIRE.

6.2.16 COMPANY parameter

```
COMPANY=' ' Default=' '
```

The name of the company as it is specified in the installation key at the time of the installation. This code is unique for each client and functions in relation to the following parameters: ADDR1, ADDR2, LICENSE, EXPIRE and CODE.

6.2.17 COMPR3 parameter

```
COMPR3=NO/AUTO/FIXED Default=NO
```

NO - Level 3 compression for PC's will not be used.

AUTO - Level 3 compression for PC's will be used. VIRTEL will run in learning mode as well as processing screen types.

FIXED - Level 3 compression for PC's will be used. VIRTEL will only run processing screen types.

6.2.18 CORRECT parameter

```
CORRECT=xx Default=7C (PF12)
```

xx - The 3270 AID function key which will be transmitted to the application when the user presses the [CORRECTION] key in a blank field.

CORRECT=00 - Places the cursor at the start of the field without sending anything to the application.

6.2.19 COUNTRY parameter

```
COUNTRY=xxx Default=FR
```

xxx - Country name indicating which translation table is to be used for translation between EBCDIC and ASCII when UTF-8 is not specified.

Possible values are:

Value	Country	EBCDIC Code Page	ASCII Code Page
ALBANIA	Albania	CP 500	8859-1
AUSTRALIA	Australia	CP 037	8859-1
BE or BELGIUM	Belgium	CP 500	8859-1
BRAZIL	Brazil	CP 037	8859-1
CANADA	Canada	CP 500	8859-1
DENMARK	Denmark	CP 277	8859-1
DE or GERMANY	Germany	CP 273	8859-1
FI or FINLAND	Finland	CP 278	8859-1
FR or FRANCE	France	CP 297	8859-1
IS or ICELAND (IC)	Iceland	CP 871	8859-1
IRELAND	Ireland	CP 285	8859-1
IT or ITALY	Italy	CP 280	8859-1
L2 or ISO-LATIN-2	Eastern Europe	CP 870	8859-2
NETHERLANDS	The Netherlands	CP 037	8859-1
NO or NORWAY	Norway	CP 277	8859-1
PORTUGAL	Portugal	CP 037	8859-1
P2 or PC-LATIN-2	Eastern Europe	CP 870	CP 852
ES or SPAIN (SP)	Spain	CP 284	8859-1
SWEDEN	Sweden	CP 278	8859-1
SWITZERLAND	Switzerland	CP 500	8859-1
GB (UK)	United Kingdom	CP 285	8859-1
US or USA	United States	CP 037	8859-1

Note: The values shown in parentheses in the table above are accepted for compatibility with previous versions of VIRTEL.

The COUNTRY parameter is not used when displaying web pages which contain a {{{SET-OUTPUT-ENCODING-UTF-8}}} tag. In this case VIRTEL uses an EBCDIC-to-UTF-8 translate table determined by the "DEFUTF8 parameter", page 0 or specified in the tag itself.

6.2.20 CRYPT1 parameter

```
CRYPT1=(name1,[algs],[algp],[engine],[encoding],[chaining],[padding])
```

Default = none

This parameter defines the characteristics of the encryption performed by VIRTEL for page templates which specify the cryptographic identifier name1.

name1 - A name which serves to identify this set of encryption parameters. This name will be referenced in the PUBLIC-KEY and ENCRYPTION-PARAMETERS tags in the HTML page template which uses encrypted fields.

algs - The symmetric encryption algorithm to be used by VIRTEL for data encryption. The following values can be specified:

NONE - (default value) No encryption

DES - Data Encryption Standard (8 byte key)

2TDEA - Triple Data Encryption Algorithm, keying option 2 (16 byte key)

3TDEA - Triple Data Encryption Algorithm, keying option 3 (24 byte key)

AES-128 - Advanced Encryption Standard, key size 128 bits (16 byte key)

AES-192 - Advanced Encryption Standard, key size 192 bits (24 byte key)

AES-256 - Advanced Encryption Standard, key size 256 bits (32 byte key)

Note: In this version of VIRTEL, only NONE, DES, 2TDEA, and 3TDEA are supported

---

algp - The asymmetric encryption algorithm to be used by VIRTEL for encryption of session keys. The following values can be specified:

NONE - (default value) No encryption

RSA-512 - RSA public key encryption (512 bit key)

RSA-1024 - RSA public key encryption (1024 bit key)

RSA-2048 - RSA public key encryption (2048 bit key)

RSA-4096 - RSA public key encryption (4096 bit key)

Note: In this version of VIRTEL, only NONE, RSA-512, and RSA-1024 are supported.

---

engine - The name of the encryption engine to be used. The following values can be specified:

ICSF - VIRTEL uses the Integrated Cryptographic Service Facility of z/OS

NO-ENCRYPTION - (default value) VIRTEL uses an internal null-encryption engine. In this case, NONE must be specified or defaulted for the cryptographic algorithms.

encoding - The representation which VIRTEL will use for encrypted text. The following values can be specified:

HEX - (default value) Encrypted data is represented in hexadecimal

BASE64 - Encrypted data is represented in base64 format

Note: In this version of VIRTEL, only HEX is supported

---

chaining - The chaining method to be used for symmetric encryption. The following values can be specified:

CBC - (default value) Cipher block chaining will be used.

ECB - Electronic codebook will be used

Note: In this version of VIRTEL, only CBC is supported

---

padding - The padding method to be used for symmetric encryption. The following values can be specified:

PKCS7 - (default value) Public Key Cryptographic Standard #7 padding

X9.23 - ANSI X9.23 padding method

ISO10126 - Padding method using random padding bytes

Note: In this version of VIRTEL, only PKCS7 is supported

6.2.21 CRYPT2 parameter

```
CRYPT2=(name2,[algs],[algp],[engine],[encoding],[chaining],[padding])
```

Default=none

This parameter defines the characteristics of the encryption performed by VIRTEL for page templates which specify the cryptographic identifier name2. The subparameters are the same as those of CRYPT1.

6.2.22 DEFENTR parameter

```
DEFENTR=(xxxxxxxx,yyyyyyyy) Default=' '
```

xxxxxxxx - The name of the entry point taken by default at connection time by a 3270 terminal. This parameter may for example be used for 3270 connections functioning in ACCUEIL mode.

yyyyyyyy - The name of the default entry point for X25 asynchronous connections.

6.2.23 DEFUTF8 parameter

```
DEFUTF8=xxxxxxxx Default=IBM1147
```

xxxxxxx - Name of the default character set for EBCDIC to UTF-8 translation. This character set is used when an HTML or XML page contains a SET-OUTPUT-ENCODING-UTF-8 tag without a character set name. Any one of the following values may be specified:

Table:

Character set	Description
IBM0037	US EBCDIC (without Euro sign)
IBM1047	Latin-1 Open Systems EBCDIC
IBM1140	ECECP USA, Canada, Netherlands, Portugal, Brazil, Australia, New Zealand
IBM1141	ECECP Austria, Germany
IBM1142	ECECP Denmark, Norway
IBM1143	ECECP Finland, Sweden
IBM1144	ECECP Italy
IBM1145	ECECP Spain, Latin America (Spanish)
IBM1146	ECECP United Kingdom
IBM1147	ECECP France UCS-2
IBM1148	ECECP International 1
IBM1149	ECECP Iceland
IBM1153	Latin-2 - EBCDIC multilingual with euro
IBM1154	Cyrillic multilingual with euro
IBM1155	Turkey Latin 5 with euro
IBM1156	Baltic multilingual with euro
IBM1157	Estonia EBCDIC with euro
IBM1158	Cyrillic Ukraine EBCDIC with euro
IBM1159	T-Chinese host extended SBCS with euro
IBM1160	IBM1160
IBM1164	EBCDIC Vietnamese with euro
IBM4971	Greek (including euro)
IBM5123	Japanese Latin host extended SBCS (includes euro)
IBM12712	Hebrew (max set including euro and new sheqel)
IBM16804	Arabic (all presentation shapes) with euro
IBM1137	Devanagari (Hindi) EBCDIC (based on Unicode character set)

The values listed above are the names of the standard tables which are always available in VIRTEL. Additional tables may be loaded at startup time by means of the "CHARSET parameter".

6.2.24 DIRECT parameter

```
DIRECT=xx Default=1C (REPRO)
```

xx - Hex code of the character of the 3270 keyboard that will be used to switch directly from one session to another. If DIRECT=00 then this function will be disabled.

6.2.25 DONTSWA parameter (z/OS only)

```
DONTSWA=YES/NO Default=NO
```

YES - VIRTEL will attempt to set itself non-swappable. This option is only available if VIRTEL is run from an APF-authorized library. **NO** - VIRTEL remains swappable

Note: When VIRTEL is executed via program VIR6000, it is always non-swappable

6.2.26 EXIT1 parameter

```
EXIT1=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be called to process an incoming call packet. This exit will only function for lines running in GATE mode.

6.2.27 EXIT2 parameter

```
EXIT2=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be called when a sub-server node connects. If the line used is set to GATE mode this exit will process call packet CUD.

6.2.28 EXIT3 parameter

```
EXIT3=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be called at connection time to a VTAM application from a multi-session screen.

6.2.29 EXIT4 parameter

```
EXIT4=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be used to filter messages when a VTAM application is accessed either from the multi-session screen or from a sub-server node.

6.2.30 EXIT5 parameter

```
EXIT5=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be called to process outgoing call packets.

6.2.31 EXIT6 parameter

```
EXIT6=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be called to process messages bound for host applications.

6.2.32 EXIT7 parameter

```
EXIT7=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be used to calculate the connection costs for external server calls.

6.2.33 EXIT8 parameter

```
EXIT8=xx Default=' '
```

xx - Is the name of the VIREXxx module that will be used to process the incoming call connection packet for the HTTP server.

6.2.34 EXPIRE parameter

```
EXPIRE=(YYYY,MM,JJ) Default=(2999,12,31)
```

(YYYY,MM,JJ) - Is the expiry date of the contract specified in the key at installation time. This parameter is unique for each client and functions in relation with the following parameters: ADDR1, ADDR2, COMPANY, LICENSE and CODE.

6.2.35 FASTC parameter

```
FASTC=YES/NO Default=NO
```

This parameter specifies whether VIRTEL will use the Fast Connect mode of NPSI for X25 communications.

YES - Indicates that Fast Connect mode will be used **NO** - Indicates that Fast Connect mode will not be used.

6.2.36 FCAPT parameter

```
FCAPT=xxxxxxx Default= (none)
```

xxxxxxx - Is the DD name of the file used to save screen images captured during an external server call. To enable the screen image capture facility, specify FCAPT=VIRCAPT and include a VIRCAPT DD/DLBL statement in the VIRTEL JCL procedure. If the FCAPT parameter is omitted, the screen image capture facility is disabled.

6.2.37 FCMP3 parameter

```
FCMP3=xxxxxxx Default=VIRCMP3
```

xxxxxxx - Indicates the DD name of the file containing the screen types used in level 3 compression. To enable the level 3 compression facility, specify FCMP3=VIRCMP3 and include a VIRCMP3 DD/DLBL statement in the VIRTEL JCL procedure. The COMPR3 parameter specifies the type of compression. If COMPR3=NO is specified then the FCMP3 parameter is ignored and the VIRCMP3 file is not required.

6.2.38 GATE parameter

```
GATE=GENERAL/NO Default=GENERAL
```

GENERAL - Activates support for all types of terminal. **NO** - Activates support for incoming calls only.

6.2.39 GMT parameter

```
GMT=(x,y) Default=(0,2)
GMT=(x,SYSTZ)
GMT=SYSTZ
```

This parameter indicates the timezone adjustments which VIRTEL must take into account in order to generate the correct standard conformant timestamps in SMTP and HTTP headers. This parameter is also used to generate timestamps in local time for the VIRLOG and VIRSTAT files.

x - The first subparameter is the number of hours which must be added to the system TOD clock value to arrive at GMT. Negative values indicate that the TOD clock is ahead of GMT, positive values indicate that the TOD clock is behind GMT. For systems which run with TOD=GMT this subparameter is 0.

y - The second subparameter is the number of hours which must be added to GMT to arrive at the local time. Negative values indicate that local time is behind GMT (west), positive values indicate that local time is ahead of GMT (east).

For example, USA EASTERN DAYLIGHT SAVINGS TIME with the TOD clock set to GMT should be coded as GMT=(0,-4). If the TOD clock is set to CENTRAL EUROPEAN TIME (GMT+1) and the local time is EUROPEAN SUMMER TIME (GMT+2) then this parameter should be coded as GMT=(-1,+2). GMT=(-1,+1) indicates that both TOD clock and local time are CENTRAL EUROPEAN TIME.

To avoid the need to modify the GMT parameter when daylight savings time is in effect, you may specify GMT=SYSTZ or GMT=(x,SYSTZ)

GMT=SYSTZ - indicates that the TOD clock is set to GMT and that VIRTEL will obtain the timezone difference by inspecting the system local time offset. For z/OS the local time offset is specified in the CLOCKxx member of the system PARMLIB, which may be modified by the SET CLOCK command in the event of a transition between winter and summer time. For z/VSE the local time offset is specified by the SET ZONEDEF command in the $IPL procedure.

GMT=(x,SYSTZ) - indicates that the TOD clock is set to GMT-x, and VIRTEL will use the system local time offset to calculate the timezone difference. In this case, x is the number of hours which must be added to the TOD clock value to arrive at GMT, and VIRTEL considers the local time to be GMT + w – x where w is the system local time offset. GMT=SYSTZ is equivalent to GMT=(0,SYSTZ).

6.2.40 GRNAME parameter

```
GRNAME=grname              Default=none
```

grname - The VTAM generic resource name for VIRTEL. If GRNAME is specified, VIRTEL will identify itself to VTAM using the specified generic resource name. The VTAM generic resources function allows the assignment of a generic resource name to a group of application programs that all provide the same function. VTAM automatically distributes sessions among these application programs rather than assigning all sessions to a single resource.

Note: Use of generic resources requires a coupling facility structure.

6.2.41 GTLOAD parameter

```
GTLOAD=nn                  Default=0
```

nn - Indicates the number of GTM map load modules.

6.2.42 GTPRFE1 parameter

```
GTPRFE1=(x1,x2,..,xn)      Default=' '
```

xn - Indicates the base screen codes used in the $%F commands of GTM. Each code references one of the 'ym' prefixes defined in the GTPRFE2 parameter. The number of codes defined in GTPRFE1 may not exceed the number of prefixes defined in the GTPRFE2 parameter.

6.2.43 GTPRFE2 parameter

```
GTPRFE2=(y1,y2,..ym)       Default=' '
```

ym - Indicates base screen prefixes associated with the code 'xn' defined in the GTPRFE1 parameter. The number of prefixes defined in the GTPRFE2 parameter must equal the number of codes defined in GTPRFE1 + 1; the last position contains the prefix to be used if no code is specified in the $%F command or if the specified code does not exist.

6.2.44 GTVSAM parameter

```
GTVSAM=(filename,keylen,rkp,acbcard)        Default=' '
```

filename - Is the name of the VSAM file containing the GTM maps when these are contained in a VMO file.

keylen - length of the VSAM key

rkp - position relative to zero of the key in the record

acbcard - Name of the ACB macro referenced, if the VMO file is described by a UFILEn parameter in the VIRTCT.

6.2.45 GTVSKIP parameter

```
GTVSKIP=n                Default='0'
```

n - Is the displacement used to localise the data in the VSAM record being read.

6.2.46 GUIDE parameter

```
GUIDE=xx                 Default=F1 (PF1)
```

xx - The 3270 AID function key which will be transmitted to the application when the user presses the [GUIDE] key. This parameter allows the definition of a general value by default that may be modified when defining the subserver nodes.

GUIDE=00 allows the [GUIDE] key to display a pad offering further choices.

6.2.47 HTFORWD parameter

```
HTFORWD=(proxy1,proxy2,...)        Default=none
```

(proxy1,...) - Specifies the IP address(es) of one or more proxy servers which forward HTTP requests to VIRTEL on behalf of clients.

For all requests received from these proxies, VIRTEL obtains the client's IP address from the iv-remote-address: or the X-Forwarded-For: HTTP header generated by the proxy. This function may also be activated on a per-line basis by specifying the proxy address in the "Calling DTE" field of a rule (see "Rules" in the VIRTEL Connectivity Reference manual).

Note: IP addresses must include leading zeroes. For example, HTFORWD=(192.168.001.020,010.001.001.020)

6.2.48 HTHEADR parameter

```
HTHEADR=(h1,h2,...)                Default=none
```

(h1,h2,...) - Specifies the names of up to 5 additional HTTP headers whose value is to be made available to scenarios. The names must be specified in upper case in this parameter, although the headers in the HTTP request may be upper or lower case. Refer to the description of the COPY$ SYSTEM-TO-VARIABLE instruction in the VIRTEL Web Access Guide for further details.

6.2.49 HTMINI parameter

```
HTMINI=(len,time)                    Default=(40,100)
```

The HTMINI parameter allows control over messages sent by VIRTEL Web Access applications. Certain applications may send several 3270 messages which together make up a complete screen. VIRTEL attempts to combine such messages into a single transmission to the browser, in order to avoid the need for the user to press ENTER to retrieve each message sent by the application.

VIRTEL considers that a message is possibly incomplete if the following conditions are true:

- The flag "restore keyboard" flag is not set in the 3270 WCC
- The "start printer" flag is not set in the 3270 WCC
- The message length is less than or equal to len bytes
- The message does not contain an "insert cursor" command [R.Bowler : "Text hidden because the presence of an insert cursor command no longer inhibits the operation of the HTMINI parameter (see updt2717 in Virtel 4.23)"]

After the arrival of a possibly incomplete message, VIRTEL waits for time hundreths of a second. If no other message has arrived during this interval, the possibly incomplete message is sent to the browser anyway. Otherwise, the possibly incomplete message is combined with the following message before sending it to the browser.

6.2.50 HTPARM parameter

```
HTPARM=(n1,n2)                  Default=(30000,4096000)
```

This parameter allows you to override various VIRTEL Web Access settings. If HTPARM is specified, then all subparameters must be coded. The sub-parameters are:

n1 - HTTP segment size. Do not change from the default value of 30000 unless advised by VIRTEL support.

n2 - Maximum file size (in bytes) allowed for an IND$FILE transfer. The default value 4096000 permits a maximum transfer size of approximately 4MB. For upload, If the size is exceeded the user will see HTTP response code "413 Request Entity Too Large". For download, if the size is exceeded the user will see error message "TRANS14 Error reading file from host: file transfer canceled".

6.2.51 HTSET1 to HTSET4 parameters

```
HTSETx=(option,option,...)          Default=none
```

These parameters allow various HTML processing options to be set as defaults. Each parameter has the form HTSETx = (option, option, …) where option can take the values listed below:

HTSET1 - MAXLENGTH, ID, BLANK-BINARY-ZEROES, HTML-ESCAPES, JAVASCRIPT-ESCAPES, XML-ESCAPES, AUTO-INCREMENTVARIABLES

HTSET2 - NO-ADD-TO-CHECKBOX, NO-ADD-TO-LISTBOX, DO-NOT-IGNORE-BINARY-ZEROES

HTSET3 - Reserved for future use

HTSET4 - Reserved for future use

These processing options can be enabled or disabled within individual page templates via the SET-LOCAL-OPTIONS and UNSET-LOCAL-OPTIONS tags. Refer to the description of these tags in the VIRTEL Web Access Guide for the further details and for the meaning of each option.

6.2.52 HTVSAM parameter

```
HTVSAM=xxxxxxx                          Default= (none)
```

xxxxxxxx - Indicates the DD name in the VIRTEL JCL procedure of the VSAM file used to store the names of the e-mail correspondents for VIRTEL Web Access applications or USERID information for the centralised parameter feature; UPARM= specified in the TCT. Installations using the VIRTEL Web Access feature must specify HTVSAM=VIRHTML and include a VIRHTML DD/DLBL statement in the VIRTEL JCL procedure. If no HTTP or SMTP lines are defined in the VIRTEL configuration, then the HTVSAM parameter may be omitted, and the VIRHTML file is not required.

6.2.53 IBERTEX parameter

```
IBERTEX=YES/NO                          Default=NO
```

YES - Supports the CEPT1 (Spanish) protocol standard.

NO - Does not support the CEPT1 standard.

6.2.54 IGNLU parameter

```
IGNLU=(LuMch1,LuMch2,...)               Default=' '
```

LuMchx - The IGNLU parameter contains a list of line names which are not to be activated at VIRTEL startup time.

6.2.55 LANG parameter

```
LANG='E'                                Default=' '
```

Specifies the language in which the VIRTEL administration panels are displayed. The following values are possible: **‘ ‘** - French language. **‘E’** - English language.

Note: The apostrophes are required.

6.2.56 LICENCE parameter

```
LICENCE=' '                              Default=' '
```

Is the number of the licence attributed to the client as it is specified in the installation key at the time of the installation. This code is unique for each client and functions in relation to the following parameters: ADDR1, ADDR2, COMPANY, EXPIRE and CODE.

6.2.57 LOCK parameter

```
LOCK=n                                   Default=32767
```

n - Inactivity delay in minutes, after which a VIRTEL will lock a terminal and request the user to resubmit his password. When the LOCK is triggered, a VIR0510W message appears on the console.

6.2.58 LOG parameter

```
LOG=CONSOLE | SYSOUT | (SYSOUT,class)| LOGGER | FILE                 □
↪Default=CONSOLE
```

CONSOLE
WTOs are written to the SYSTEM console.

SYSOUT or (SYSOUT,class)
WTOs are written to the sysout dataset with the option of specifiying a class. The default class is A. Do not specify * as class. This is not supported.

LOGGER
WTOs are written to Sysplex logger.

FILE
Messages will be written to the DDNAMEs LOGFILEx|y (Virtel 4.62)

6.2.59 LPKALIVE parameter

```
    LPKALIVE=nn          LONG POLL KEEP ALIVE VALUE in Seconds.
LPKALIVE=0           0 means inactive

    It is possible for some intermediary equipment or firewalls to try to□
↪close the Virtel Long Poll session, because is appears as a stalled request.
↪ This causes or appears as a hung session.

    Example: -
    LPKALIVE=30             A 304 response to the LongPoll session will be□
↪sent by Virtel 30 seconds after receiving a LP=0 request.

    This parameter should only be included in the TCT if recommended by□
↪Syspertec.
```

6.2.60 MARK parameter

```
MARK=xx                                  Default=1E(EndField)
```

xx - Code of the key enabling selection of fields in a Multi-Session copy / paste operation. The default key is 'end of field' : Shift PA2.

6.2.61 MAXAPPL parameter

```
MAXAPPL=n                                Default=64
```

n - The maximum number of applications or transactions that may appear in the VIRTEL Multi-Session screen. The maximum value allowed is 64.

6.2.62 MEMORY parameter

```
MEMORY=(BELOW/ABOVE[,DEBUG]) Default=BELOW
MEMORY=NATIVE/TEST
```

Indicates the type of memory management used by VIRTEL:

BELOW - Memory managed by VIRTEL, with memory obtained below the 16 megabyte line.

ABOVE - Memory is managed by VIRTEL, with memory obtained above the 16 megabyte line.

NATIVE - Memory managed by z/OS or z/VSE

TEST - NATIVE plus ability to track memory usage.

DEBUG - Turn on debug option. Only set on when instructed to by Virtel Support due to performance implications.

Note: MEMORY=ABOVE is recommended under z/OS. MEMORY=(ABOVE,DEBUG) consumes more resources and is intended for debugging of memory corruption errors. NATIVE may produce a smaller real storage footprint for some HTML applications with very large numbers of terminals defined. TEST allows monitoring of memory usage by module via sub-application F4. TEST also produces a report of allocated memory via the output of the SNAP command.

6.2.63 MQ1 parameter

```
MQ1=(mqmname,'prefix',[pgmname])         Default=no MQ connection
```

This parameter defines the characteristics of the connection to the message-queue manager (MQSeries) used by all lines which specify type MQ1.

mqmname - The name of the message-queue manager (for example, CSQ1).

prefix - A prefix which VIRTEL will add to all queue names. The prefix must be specified in quotes.

pgmname - The name of the VIRTEL MQ interface program used for this connection. The following values can be specified: VIR0Q09 Interface program for MQSeries. This is the default.

6.2.64 MQ2 parameter

```
MQ2=(mqmname,'prefix',[pgmname])          Default=no 2nd MQ connection
```

This parameter defines the characteristics of the connection to the message-queue manager (MQSeries) used by all lines which specify type MQ2. The subparameters are the same as those of the MQ1 parameter.

6.2.65 MQ3 parameter

```
MQ3=(mqmname,'prefix',[pgmname])          Default=no 3rd MQ connection
```

This parameter defines the characteristics of the connection to the message-queue manager (MQSeries) used by all lines which specify type MQ3. The subparameters are the same as those of the MQ1 parameter.

6.2.66 MQ4 parameter

```
MQ4=(mqmname,'prefix',[pgmname]) Default=no 4th MQ connection
```

This parameter defines the characteristics of the connection to the message-queue manager (MQSeries) used by all lines which specify type MQ4. The subparameters are the same as those of the MQ1 parameter.

6.2.67 MULTI parameter

```
MULTI=YES/NO Default=YES
```

YES - Support for VIRTEL Multi-Session environment. **NO** - No Multi-Session.

6.2.68 NBCVC parameter

```
NBCVC=n Default=8
```

n = The number of logical channels that are available for processing by VIRTEL.

6.2.69 NBDYNAM parameter

```
NBDYNAM=(t1,t2) Default=(20,0)
```

t1 - The number of 3270 terminals that may connect via a "dynamic terminal definition entry" (welcome mode). **t2** - The number of non-3270 terminals that may connect via a "dynamic terminal definition".

6.2.70 NBTERM parameter

```
NBTERM=nbterm Default=500
```

nbterm - Number of terminals envisaged running in VIRTEL. This parameter allows the user to estimate the maximum number events that may be waiting for service at any one time.

6.2.71 NUMTASK parameter

```
NUMTASK=nn Default=4
```

nn - The number of primary tasks waiting events on the primary VIRTEL ACB.

6.2.72 OTMAPRM parameter

```
OTMAPRM=(exitname,userid,group,password,applname) Default=(*SAMPLE*)
```

This parameter defines the data which is passed to OTMA/IMSConnect in the header of a RESUME TPIPE request. All of the subparameters are optional. Missing subparameters are indicated by a comma.

exitname - The identifier of the OTMA exit routine. Typical values are *SAMPLE* or *SAMPL1*. If omitted, the default value is *SAMPLE*. **userid, group, password, applname** - Security parameters which VIRTEL will place in the userid, group, password, and application name fields in the RESUME TPIPE header.

6.2.73 OSCORE parameter

```
OSCORE=n Default=384
```

n - The number of kilobytes reserved for memory allocation by the operating system (e.g. for loading sub application modules). The default value of this parameter is calculated when this macro is assembled and is indicated by an MNOTE being issued. This value may optionally be reduced but a problem may then arise if all functions of the sub applications are used.

6.2.74 PACKET parameter

```
PACKET=n Default=128
```

n - The size of the packets used for transfer over the packet switched network.

6.2.75 PASSTCK parameter

```
PASSTCK=YES Default=none
```

This parameter activates PassTicket support in VIRTEL. The following values are possible:

YES - VIRTEL may generate PassTickets for VIRTEL transactions which specify 1 or 2 in the PassTicket field If the PASSTCK parameter is omitted, VIRTEL will not generate PassTickets.

6.2.76 PREZ900 parameter

```
PREZ900=YES/NO Default=NO
```

Allows VIRTEL to run on a pre-zSeries processor. Possible values are:

YES - Specifies that the processor is a 9672, MP2000, MP3000, IS/390, or P/390. VIRTEL will not use instructions which are only available on z900 or later processors.

NO - Specifies that VIRTEL may use all instructions available on z900 or later processors.

Note: VIRTEL does not support 9672-G1, ES/9000, or any earlier processor.

6.2.77 PRFSECU parameter

```
PRFSECU='xxxxxxxx' Default=
```

xxxxxxxx - Indicates the maximum 8 character prefix associated with the resources defined in the security management system if using RACF, TOP SECRET or ACF2.

6.2.78 PWPROT parameter

```
PWPROT=YES/NO Default=NO
```

YES - Supports protected field (DARK field) for 80 column terminal with PAD=INTEG coded. This parameter must also be specified in NPSI.

NO - No support for the protected field (DARK field) for 80 column terminal if PAD=INTEG.

6.2.79 RACAPPL parameter

```
RACAPPL=NONE/APPLID/GRNAME/'name' Default=NONE
```

The RACAPPL parameter specifies the VIRTEL application name as it is known to RACF. When RACAPPL is present in the VIRTCT, VIRTEL will add an APPL= parameter to all RACROUTE VERIFY calls. RACF uses this application name for two purposes: (1) to validate that the user is authorized to access the VIRTEL application (if the RACF APPL class is active) and (2) to validate the user's passticket using the PTKTDATA class (if the user signs on to VIRTEL using a passticket instead of a password). The possible values are:

NONE (or omitted) - VIRTEL will not use the APPL= parameter on RACROUTE VERIFY calls. In this case RACF will use the default application name (MVSxxxx where xxxx is the 4-character SMF identifier of the z/OS system)

APPLID - VIRTEL will use the VTAM APPLID of the VIRTEL started task (specified in the APPLID parameter of the VIRTCT) as the value of the APPL= parameter for RACF.

GRNAME - VIRTEL will use the VTAM generic resource name of the VIRTEL started task (specified in the GRNAME parameter of the VIRTCT) as the value of the APPL= parameter for RACF. This setting may be useful in a sysplex environment. It allows all VIRTEL STCs in the sysplex to present the same application name to RACF.

'name' - VIRTEL will use the specified name as the value of the APPL= parameter for RACF. The name must be specified in single quotes.

6.2.80 RAPPL parameter

```
RAPPL=rappl Default=USERA
```

rappl - Name of the security management resource class which contains the applications resources for the Multi-Session function and for external servers. The entities in this resource class are external servers and VTAM applications. If resource $$ALLSRV is used, then all the servers defined in VIRTEL are authorised.

6.2.81 REALM parameter

```
REALM=TRANSACT/APPLID/GRNAME Default=TRANSACT
```

This parameter specifies the name presented by VIRTEL to the browser in the HTTP basic security signon dialog. The possible values are:

TRANSACT - the external name of the VIRTEL transaction which is requesting security. This causes the browser to issue the signon prompt for each transaction the first time the transaction is requested in a browser session.

APPLID - the VTAM APPLID of the VIRTEL started task. With this setting VIRTEL presents the same realm name for all transactions, and thus the user sees only one signon prompt per browser session.

GRNAME - the VTAM generic resource name of the VIRTEL started task. This setting may be useful in a sysplex environment. It allows all VIRTEL STCs in the sysplex to present the same realm name to the browser.

6.2.82 REPET parameter

```
REPET=xx Default=F2 (PF2)
```

xx - The 3270 AID function key which will be transmitted to the application when a user presses the [REPETITION] key. This parameter allows the definition of a general value by default which may be modified in the sub-server node definition. A value of 00 indicates that the [REPETITION] key will not be transmitted.

6.2.83 RESO parameter

```
RESO=YES/NO Default=YES
```

YES - VIRTEL's VTAM network management sub-application will be activated.

NO - The network management sub-application will not be used.

6.2.84 RETOUR parameter

```
RETOUR=xx Default=00
```

xx = The 3270 AID function key which will be transmitted to the application when the user presses the [RETURN] key. By default the [RETURN] key is not transmitted to the application but serves to set the cursor to the beginning of the preceding field. This parameter allows for the definition of a general value by default that may be modified in the definition of the sub-server nodes.

6.2.85 RNODE parameter

```
RNODE=rnode Default=USERB
```

rnode - The name of the security management resource class which contains the tree structure nodes, VIRTEL subapplication names, internal names of transactions associated with entry points, and directory names for file transfer.

6.2.86 RTERM parameter

```
RTERM=class
```

class = The security resource class for terminals. This options forces RACF to validate the name of the LU specified on the ForceLUNAME parameter. For further details on setting an LU name with the ForcedLUNAME parameter. See the Virtel Connectivity Guide: ForcedLUNAME.

For example:-

```
RTERM=Facility
```

6.2.87 SECUR parameter

```
SECUR=NO/VIRTEL/RACF/TOPS/ACF2/RACROUTE/MIXEDCASE/PASSPHRASE/,PASSPHRASELEN
↪Default=NO
```

For the z/OS environment, the following options can be specified:

NO - No security software is used to control access.

VIRTEL - VIRTEL's internal security management feature is used.

(RACROUTE,RACF) - IBM's security management product is used (via SAF).

(RACROUTE,TOPS) - The TOP SECRET security management product is used (via SAF).

(RACROUTE,ACF2) - The ACF2 security management system is used (via SAF).

Note: Passphrase support can be activated by coding PASSPHRASE as an option in the SECUR keyword. For example: **SECUR=(RACROUTE,[RACF|TOPS|ACF2],PASSPHRASE)** You can also specify the minimum passphrase length using the Passphrase Length option. Default is 14 characters long. The following sets the Passphrase length to 10 : **SECURE=(RACROUTE,RACF,PASSPHRASE,10)**

Passwords and Passphrases cannot be intermixed. You cannot go from a password, length 8 or less, to a passphrase. Passphrases will always be mixed characters (Upper and Lower case) and will never be "UPPERCASED".

For the z/VSE environment, the following options can be specified:

NO - No security software is used to control access.

VIRTEL - VIRTEL's internal security management feature is used.

RACROUTE - (for z/VSE Version 3 or later) VIRTEL uses the z/VSE Basic Security Manager (via SAF), or the External Security Manager if specified in the z/VSE IPL parameters.

The following options are retained for compatibility with previous versions:

RACF - RACF without SAF.

TOPS - TOP SECRET without SAF.

ACF2 - ACF2 with ACFDIAG (Only for VM). For MVS, this is treated as (RACROUTE,ACF2).

RACROUTE - Multi product interface security (via SAF).

If MEMORY=ABOVE, RACF without SAF and TOPS without SAF are not supported.

Note: When SECUR=VIRTEL is specified Virtel will still validate access to the profile using the TCT security parameters RACAPPL and RNODE. PRFSECU is not used in building the security resource name.

MIXEDCASE support prevents a password being automatically "UPPERCASED" prior to signon. This TCT option applies to Top Secret only. For example:-

```
SECUR=(RACROUTE,TOPS,MIXEDCASE),      *Setting Mixedcase with TOPS*

or

SECUR=(RACROUTE,TOPS,MIXEDCASE,PASSPHRASE), *Setting mixedcase and passphrase
↪support for TOPS*
```

6.2.88 SILENCE parameter

```
SILENCE=YES/NO Default=NO
```

YES - Inhibits the sending of asynchronous terminal connection and disconnection messages to the log (VIR0026W, VIR0028W, VIR0051I, VIR0052I, VIR0505I, VIR0507I, VIR1551I, VIRHT51I, VIRNA51I, VIRPF28I, VIRPF51I, VIRPF52I, VIRPF99I, VIRQ912W, VIRQ922W, VIRT912W, VIRT922W). Also, messages VIR0002W and VIR0914E will be suppressed on a REQSESS request.

NO - Enables the sending of asynchronous terminal connection and disconnection messages to the log.

The VIRTEL command SILENCE can be used to dynamically modify this parameter.

6.2.89 SNAPMSG parameter

```
SNAPMSG=(message,search,action)
```

The SNAPMSG parameter allows a SNAP or DUMP to be taken whenever a particular message number is issued by VIRTEL. The command has an additional search field which can be used to identify a message with a particular character string, for example a specific return code. This feature is also avalable by using the SNAPMSG command from the console. (see "SNAPMSG command" in the VIRTEL Audit and Performance Reference manual.

Message
: Any message that can be issued by Virtel.

Search
: Any seache criteria issued within the message. The search file is restricted to a maximu of 10 characters. Anything beyond will be ignored. Default search is none.

Action
: Possible values are S for SNAP or A for ABEND. Virtel will abend with a U0999 abend code, reason code 15 if the ABEND action is used. Default action is SNAP.

6.2.90 SNAPW parameter

```
SNAPW=80/132 Default=132
```

Indicates the default presentation format for SNAP and other dumps (80 or 132 columns). This parameter can be dynamically modified by the VIRTEL SNAPW command.

6.2.91 SOMMR parameter

```
SOMMR=xx Default=00
```

xx - The 3270 AID function key which will be transmitted to the application when the user presses the [SUMMARY] key.

By default, the [SUMMARY] key is not transmitted to the application but serves to return the user to the tree structure. This parameter allows for the definition of a default which may be modified in the sub-server node definition. Where the value specified is a '01', use of the [SUMMARY] key sets the cursor on the first field to be entered in the current screen.

6.2.92 STATDSN parameter

```
STATDSN=(dsn1,dsn2,...) Default=none
```

dsn1,... - Dataset names of the files to be used for recording statistics if the parameter STATS=MULTI is specified. From 2 to 10 datasets can be specified. The datasets must be cataloged.

6.2.93 STATS parameter

```
STATS=YES/NO/(MULTI,CONTINUE/TERMINATE) | SMF | (SMF,nnn) Default=YES
```

YES - Statistics recording is active. Statistics will be written to a single file defined in the VIRSTAT DD or DLBL statement in the VIRTEL started task JCL. VIRTEL must be stopped periodically to allow the statistics to be copied to a history file. The VIRSTAT file is overwritten each time VIRTEL is started.

NO - Statistics will not be recorded.

MULTI - Statistics recording is active. Statistics are written to one of the datasets defined in the STATDSN parameter of the VIRTCT. VIRTEL rotates the datasets by switching automatically to the next dataset when the current dataset becomes full. A batch job can then be used to copy the statistics to an archive file without stopping VIRTEL. Message VIR0603I can be used by an automated operator to trigger the submission of the batch job. After copying the statistics, the batch job must empty the dataset by writing an EOF marker at the beginning, which allows VIRTEL to reuse the dataset (see member STATCOPY in the VIRTEL SAMPLIB). The VIRTEL STAT command allows the console operator to display the status of the VIRSTATx datasets, or to force VIRTEL to switch to the next statistics dataset.

If all of the statistics datasets are full, there are two options:

STATS=(MULTI,TERMINATE) - VIRTEL terminates, to avoid the possibility of losing any further statistics.

STATS=(MULTI,CONTINUE) - (default) VIRTEL continues, without recording any further statistics. To restart statistics recording, run a STATCOPY batch job to empty at least one VIRSTATx dataset, then issue the STAT,I command.

The STATS=MULTI option is only available in the z/OS environment.

SMF. Statistics recording is active and are written into SMF. The VIRTEL STAT command allows the console operator to display the status of the VIRSTATx datasets, or to force VIRTEL to switch to the next statistics dataset. The SMF record format is the same as the current STATS record but prefixed by the standard SMF header. The options are:

STATS=SMF - The default SMF record number is 223.

STATS=(SMF,nnn) - The SMF record number used will be nnn. The specified number must be between 128 and 255. The STATS=SMF/(SMF,nnn) option is only available in the MVS environment.

6.2.94 STRNO parameter

```
STRNO=n Default=8
```

n - Number of concurrent accesses to VSAM files.

6.2.95 SUITE parameter

```
SUITE=xx Default=00
```

xx - The 3270 AID function key which will be transmitted to the application when the user presses the [SUITE] function key. By default the [SUITE] function key is not transmitted to the application but serves to set the cursor to the following field. This parameter allows the definition of a general value by default that may be modified in the definition of the sub server node.

6.2.96 SWAP parameter

```
SWAP=Pnn Default=P24
```

Pnn - Identifies the 3270 function key that causes VIRTEL to return to the multi-session menu (for SNA terminals, the ATTN key also performs this function). This parameter may take the following parameter values P1 to P24, PA1, PA2, or CLR.

6.2.97 SYSPLUS parameter

```
SYSPLUS=YES/NO Default=NO
```

YES - VIRTEL will retrieve certain system symbols from z/OS. Whenever the '+' character appears in the APPLID parameter or in a terminal relay name, VIRTEL will replace the '+' by the value of the SYSCLONE symbol. **NO** - System symbols will not be retrieved, the '+' character will not be substituted in LU names, and the xxx-SYMBOL functionality of the NAME-OF tag and the COPY$ SYSTEM-TO-VARIABLE instruction is not active (see VIRTEL Web Access Guide).

6.2.98 TCP1 parameter

```
TCP1=tcpname Default=no TCP/IP connection
TCP1=([tcpname],,[DNS],[maxsock],[pgmname],[adsname])
```

This parameter defines the characteristics of the connection to the TCP/IP stack used by all lines which specify type TCP1.

tcpname - The name of the TCP/IP stack. This name should match the TCPIPJOBNAME parameter in the TCPIP.TCPIP.DATA file of the TCP/IP stack, or the name of the TCP/IP started task itself if TCPIPJOBNAME is not specified. The value ANY indicates that a connection can be established which any TCP/IP stack. This parameter is ignored by the TCP/IP for z/VSE stack.

DNS - Start the DNS subtask VIRDNS1. This subtask supports the use of an asynchronous GETNAME-INFO function from within a scenario. See COPY$ NAME-OF-TERMINAL in the Virtel Users Guide for further information.

maxsock - In z/OS, this is the maximum number of sockets for each type TCP1 line defined in VIRTEL. If this subparameter is not specified, TCP/IP determines the number (50 by default). The maximum value allowed by VIRTEL is 65535. However, for customers using older versions of z/OS (z/OS V1R4 or earlier), the TCP/IP stack enforces an upper limit of 2000 on this subparameter. Also, the value of the MAXFILEPROC parameter in PARMLIB member BPXPRMxx must exceed the maxsock value. In z/VSE, this is the total maximum number of sockets for all VIRTEL lines of type TCP1. The TCP/IP for z/VSE stack currently ignores the value specified here, and uses a fixed value of 8001 instead.

pgmname - The name of the VIRTEL TCP/IP interface program used for this connection. The following values can be specified:

VIR0T09 - Interface program using ASYNC=EXIT mode. This is the default for z/OS systems.

VIR0T10 - Interface program using ASYNC=ECB mode. This is the default for z/VSE systems.

adsname - The name which VIRTEL uses to identify itself to TCP/IP. The value * indicates that VIRTEL uses its VTAM APPLID as the address space identifier. The default value is blank, which means that TCP/IP will assign the name of the VIRTEL started task as the address space identifier. This parameter is ignored by the TCP/IP for z/VSE stack.

6.2.99 TCP2 parameter

```
TCP2=tcpname Default=no 2nd TCP/IP connection
TCP2=([tcpname],,[DNS],[maxsock],[pgmname],[adsname])
```

This parameter defines the characteristics of the connection to the TCP/IP stack used by all lines which specify type TCP2. The subparameters are the same as those of TCP1.

6.2.100 TIMEOUT parameter

```
TIMEOUT=n Default=5
```

n - Indicates in minutes the time-out after which a terminal connected to an external server will be force disconnected if no line activity is seen. A value of 0 means that the terminal will not be disconnected even if no activity is detected. The value specified here applies only when the “User time out” field in the external server definition is set to zero (see “Parameters of the external server” in the VIRTEL Connectivity Reference manual).

6.2.101 TIMERQS parameter

```
TIMERQS=(n1,n2,n3,n4) Default=(5,10,5,0)
```

This parameter indicates the timeout values (in seconds) used by VIRTEL when attempting to establish an outbound connection using the Application-to-Application API (FA29 structured field). If this parameter is specified, then all four sub-parameters must be coded. The sub-parameters are:

n1 - Timeout for VTAM connections.

n2 - Timeout for X25 connections.

n3 - Timeout for TCP/IP connections.

n4 - Reserved for future use.

6.2.102 TITRE1 parameter

```
TITRE1='ccccc' Default='SYSPERTEC'
```

ccccc - The first line of the Multi-Session menu screen.

6.2.103 TITRE2 parameter

```
TITRE2='ccccc' Default=' '
```

ccccc - The second line of the Multi-Session menu screen.

6.2.104 TRACALL parameter

```
TRACALL=(p1,p2,...) Default=none
```

p1,p2,... - Additional categories of trace data to be included in the VIRTEL internal trace. One or more of the following values may be coded in any order:

HTTP - Additional trace data for HTTP server

VSAM - Additional trace data for VSAM I/O requests

XM - Additional trace data for Cross-Memory communication

6.2.105 TRACBIG parameter

```
TRACBIG=n Default=40
```

n - The number of entries reserved for the VIRTEL internal trace. The value indicated corresponds to n times 256 entries.

6.2.106 TRACEB parameter

```
TRACEB=nn Default=200
```

nn - The number of 1K buffers reserved for buffer data associated with entries in the VIRTEL internal trace. From VIRTEL 4.20 onwards, trace data is allocated above the 16MB line if possible.

6.2.107 TRACEOJ parameter

```
TRACEOJ=STANDARD/YES/NO Default=NO
```

STANDARD - An automatic SNAP of the VIRTEL internal trace table will be produced at the start of VIRTEL termination.

YES - An automatic SNAP of the VIRTEL internal trace table will be produced at the end of VIRTEL termination.

NO - No SNAP at VIRTEL termination.

6.2.108 TRACEON parameter

```
TRACEON= ON | OFF | (Y|N,Y|N,Y|N)

Default = ON    Equivalent VIT = YYN    Tracing ON

OFF             Equivalent VIT = NNN    Tracing OFF (Not recommended)

TRACEON=(n,n,n)          n = Y|N         Set Tracing options

TRACEON=(N,N,N)                  Tracing OFF
TRACEON=(Y,N,N)                  Minimal tracing, no data elements
TRACEON=(Y,Y,N)                  Full tracing with data, no archive [Default]
TRACEON=(Y,Y,Y)                  Full tracing with data and archive

Command Option:
The VIT tracing categories can be set through the F VIRTEL,TRACE command

F VIRTEL,TRACE,VIT=nnn                  nnn correspond to the three Y|N
 ↪indicators.

Example:

F VIRTEL,TRACE,VIT=YYY                  Turn on full VIT tracing plus
 ↪external buffer archive.

Ability to offload external trace buffers to a dataset.
With the external VIT trace facility comes the ability to offload the trace
 ↪buffers to a dataset. This offload capability can be triggered when the
 ↪maximum number of external trace buffers have been reached, as identified
 ↪in message VIR0208I, or through an operator command:
```

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```
F VIRTEL,TRACE,VIT=OFFLOAD.

Note: IF VIT is not equal to YYY then you will receive the message "VIR0068E
 ↪INVALID COMMAND". Offloading the VIT only applies to the external VIT data
 ↪store.

Setting up for trace "OFFLOAD".
The trace buffers are offloaded to a GDG dataset which means historical trace
 ↪data can be kept. To set up the GDG see the below. This job can also be
 ↪found in the SAMPLIB dataset as member DEFTRGDG.

//*
//* DEFINE THE TRACE GDG DATASET
//*
//DELETE   EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
 DELETE VIRTEL.TRACE.GDG GDG
 DELETE VIRTEL.TRACE.GDG.DSCB NVSAM
 SET MAXCC=0
//ALLOC1   EXEC PGM=IEFBR14
//FILE     DD DSN=VIRTEL.TRACE.GDG.DSCB,
//            UNIT=3390,DISP=(NEW,CATLG),
//            SPACE=(TRK,(0,0)),VOL=SER=VVVVVV,
//            DCB=BLKSIZE=13300
//*
//ALLOC2   EXEC PGM=IDCAMS
//SYSPRINT  DD SYSOUT=*
//SYSIN     DD *
 DEF GDG(NAME(VIRTEL.TRACE.GDG) LIMIT(5) SCRATCH NOEMPTY)
/*
```

6.2.109 TRACTIM parameter

```
TRACTIM=CPU/LOCAL/TOD Default=LOCAL
```

VIRTEL uses the TOD clock to timestamp each entry in its internal trace table. This parameter specifies whether or not the SNAP command should adjust the timestamps to match the local time used in the system message log. Possible values are:

CPU - The last column in the SNAP trace, instead of the local time or TOD time in 1/10000 of a second, contains the total used CPU time for the current TCB in 1/10000 of a second.

Note: CPU option only works on z/OS and on a machine having support for the ECTG (Extract CPU Time) instruction (i.e. Z9-109 and above).

LOCAL - The SNAP command adjusts the timestamps in the internal trace table so that they display as local time. This is the recommended setting.

TOD - Timestamps are not adjusted for local time.

6.2.110 TRAN parameter

```
TRAN=EVEN/ODD/NO Default=Even
```

This parameter should be coded in the same way as for the X25MCH macro in NPSI.

6.2.111 UFILE1 to UFILE20 parameters

```
UFILEx=(ddname,acbcard,rkp,keylen,mode) Default=' '
```

These parameters define the VSAM files used by VIRTEL for HTML directories. Each parameter has the form UFILEx = (ddname, acbcard, rkp, keylen, mode) where:

- ddname is the DD name of the file as specified in the VIRTEL start procedure.
- acbcard is the name of the ACB macro defining the access characteristics of the transfer file. This ACB macro must appear later in the VIRTCT (see "Additional parameters for VSAM files", page 78).
- rkp represents the relative position of the key in hexadecimal. This value must match the value specified in the DEFINE CLUSTER.
- keylen represents the length of the key in hexadecimal. This value must match the value specified in the DEFINE CLUSTER.
- mode represents one of the following values (in hexadecimal):

  00 - read-only mode **01** - read/write mode **05** - read-only mode or read/write mode, depending on the value of the "VSAMTYP parameter". Seen the VIRTCT.

The UFILEx parameters must be defined in sequence with no intervening gaps in the suffix number x.

6.2.112 UPARMS parameter

The keyword enables the centralized saving of user settings on the host. Based upon a userid key, user settings can be maintained in a mainframe repository identified bu the name specified in the UPARMS parameter. For example UPARMS=(USERPARM). Here, the value USERPARM would be a Virtel transaction that identfied the repository. A sub-directory definition of the same name is also required to aasociate the repositry with a physical VSAM file. See the sample definitions below. The ARBOLOAD JCL can be used to load sample definitions into the ARBO through the USERPARM=YES option.

```
UPARMS=(name)
```

name must be a value name supported by a directory and transaction definition.

Sample ARBO definitions to support the USERPARM feature:-

```
SUBDIR   ID=USERPARM,              /* Specified in UPARMS TCT keyword  */
 DESC='USERPARM directory',
 DDNAME=USERTRSF,              /* Note. Could point to HTMLTRSF */
 KEY=UPRMS,
 NAMELEN=0064,
 AUTHUP=X,
 AUTHDOWN=X,
 AUTHDEL=X
```

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```
TRANSACT ID=XXX-00P,                    /* Required for each EP - W2H, CLI  */
 DESC='User Parameters directory',
 NAME=USERPARM,                        /* Specified in UPARMS TCT keyword  */
 APPL=USERPARM,                        /* Specified in UPARMS TCT keyword  */
 TYPE=4,
 TERMINAL=DELOC
```

6.2.113 VIRSECU parameter

```
VIRSECU=YES/NO Default=NO
```

YES - The VIRTEL internal security sub-application is available. To use VIRTEL security, specify VIRSECU=YES with SECUR=VIRTEL. The combination VIRSECU=YES with SECUR=NO allows online definition of Virtel security without reference to any security subsystem. For example RACF.

NO - VIRTEL internal security is not available.

6.2.114 VIRSV1 parameter

```
VIRSV1=(vsvname) Default=none
```

This parameter defines the characteristics of the interface to the VIRSV service request manager for service programs called from a scenario via the VIRSV$ instruction.

vsvname - Name of the service request manager. Must be VIRSV.

6.2.115 VSAMTYP parameter

```
VSAMTYP=[READONLY|NORMAL|WRITER] Default=NORMAL
```

READONLY - This parameter, if specified in the VIRTCT, allows the VIRTEL started task to be run in read-only mode for VSAM files,to be used in production mode, especially in a sysplex environment. Except for the VIRSWAP work file, all other VSAM files used by VIRTEL can be opened in read-only mode.

WRITER - This parameter, if specified in the VIRTCT, allows updates in a Virplex without necessitating the stop of other, read-only, Virtel instances.

NORMAL - By default VIRTEL opens files in read/write mode to allow the possibility of updating certain VSAM files, such as the VIRARBO file for example.

VSAMTYP=READONLY takes effect only if the appropriate values have been specified in the MACRF parameter of the ACB (see *"Additional parameters for VSAM files",*): and in the MODE subparameter of the UFILEx parameter of the VIRTCT (see *"UFILE1 to UFILE20",*).

Note: VSAMTYP=WRITER should be used to suppport the Virplex writer instance of Virtel. See the Virplex section in the Virtel Connectivity Guide.

6.2.116 VTKEYS parameter

```
VTKEYS=xxxxxxxx Default=0
```

xxxxxxxx - The name of a table added to the end of the VIRTCT allowing for redefinition of the function keys for VT100. Please refer to the member VTSAMPLE in SAMPLIB.

6.2.117 VTOVER parameter

```
VTOVER=xxxxxxxx Default=none
```

xxxxxxxx - The name of a table added to the end of the VIRTCT allowing for dynamic override of certain parameters in the VIRTCT. Please refer to the section “Dynamic VIRTCT overrides”, page 81 for further details.

```
VWAVERS='xxxxxxxxxxxx'
```

Max of 12 characters. This text will replace the ‘VIRTEL &VERS’ message in the HTTP 40x messages. It acts as security feature to hide the identity of Virtel as the issuing program. For example: -

```
VWAVERS='Apache V99'
```

6.2.118 WARNING parameter

```
WARNING=nn,
```

Where nn is the number of days prior to issuing a licence warning message. If not specified, no warning is given. Virtel may shutdown on the next restart if the licence key has expired.

6.2.119 XM1 parameter

```
XM1=xmname Default=no XM connection
XM1=(xmname,,,,[pgmname])
```

This parameter defines the characteristics of the connection to the cross-memory manager (VIRXM) used by all lines which specify type XM1.

Note: Cross-memory is supported only on z/OS systems (OS/390 or z/OS). The VIRXM product from Syspertec must also be installed.

---

xmname - The name of the cross-memory manager started task (VIRXM).

pgmname - The name of the VIRTEL XM interface program used for this connection. The following values can be specified:

VIR0X09 - Interface program for z/OS systems. This is the default.

6.2.120 XM2 parameter

```
XM2=xmname Default=no 2nd XM connection
XM2=([xmname],,,,[pgmname])
```

This parameter defines the characteristics of the connection to the cross-memory manager (VIRXM) used by all lines which specify type XM2. The subparameters are the same as those of the XM1 parameter.

6.2.121 ZAPH parameter

```
ZAPH=xxxxxxxx Default=none
```

xxxxxxxx - The name of a table added to the end of the VIRTCT allowing for one or more patches to be applied at startup. Please refer to the section “Applying patches via the VIRTCT”, page 82 for further details.

6.3 Additional Parameters For VSAM Files

VIRTEL uses VSAM files for storing HTML pages and for VIRTEL/PC file transfer. These VSAM files must be defined in the VIRTCT by means of a parameter UFILEx and an ACBHx macro for each file. The ACB macros must be coded in the VIRTCT before the END card. The formats of these macros are as follows:

```
ACBHx ACB AM=VSAM,DDNAME=dddddddd,MACRF=(P1,P2,…....,Pn),STRNO=3
```

- The label ACBHx must match the acbname subparameter as specified in the UFILEx parameter of the VIRTCT.
- dddddddd represents the ddname of the file as it is known in the VIRTEL start up procedure.
- pn represents the authorisations granted to the transfer file. The permitted values are: SEQ,DIR,OUT,LSR (for read/write mode) or SEQ,DIR,IN,LSR (for read-only mode).
- The value OUT should be omitted from MACRF if you want the mode (read-only or read/write) to be determined by the value of the VSAMTYP parameter in the VIRTCT (see “VSAMTYP parameter”, page 76).

6.4 Additional Parameters For Batch Files

VIRTEL uses sequential files for batch input and output when the BATCHx parameter is defined in the VIRTCT, and a batch line is present in the configuration. These sequential files must be defined in the VIRTCT by means of a pair of DCB/DCBE macros for each file. The DCB/DCBE macros must be coded in the VIRTCT before the END card. The formats of these macros are as follows:

```
label  DCB DDNAME=ddname,DCBE=labelx,DSORG=PS,                          *
          LRECL=lrecl,RECFM=recfm,MACRF=(macrf)
labelx DCBE EODAD=0,RMODE31=BUFF
```

where:

label - corresponds to the DCB label specified in the BATCHx parameter

ddname - corresponds to the DD name specified in the BATCHx parameter.

For input files:

- lrecl is 80, recfm is FB, macrf is GL.

For output files:

- lrecl is 133, recfm is FBA, macrf is PM.

EODAD=0 - should be specified for input files.

The example below shows how to code DCB/DCBE macros when the BATCH1 parameter is specified as:

```
      BATCH1=(SYSIN1,DCBI1,SYSOUT1,DCBO1)

DCBI1   DCB DDNAME=SYSIN1, SYSIN DD                          *
                  DCBE=DCBI1X,                                *
                  LRECL=80,                                   *
                  DSORG=PS,                                   *
                  RECFM=FB,                                   *
                  MACRF=(GL)
      DCBI1X  DCBE EODAD=0,RMODE31=BUFF
      DCBO1   DCB DDNAME=SYSOUT1, SYSPRINT DD                 *
                  DCBE=DCBO1X,                                *
                  LRECL=133,                                  *
                  DSORG=PS,                                   *
                  RECFM=FBA,                                  *
                  MACRF=(PM)
      DCBO1X DCBE RMODE31=BUFF
```

6.4.1 How To Share VSAM Files Between Multiple Instances Of VIRTEL

Some VSAM files are shareable between multiple instances of Virtel with the condition that a file can be opened in "write" mode by only one instance. File sharing can be implemented by modifying the corresponding UFILEx entry in the TCT and/or by using the VSAMTYP definition. Some files are not shareable, for example the statistics and swap files. These must be opened in read/write mode for each instance of Virtel.

For more detailed informations on this subject, see *"UFILE1 to UFILE20",* and also *"Additional parameters for VSAM files",*.

6.5 Example Of The VIRTCT

An example of the VIRTCT is supplied in member VIRTCT01 in the VIRTEL SAMPLIB for z/OS, and in the installation job VIRTCT for z/VSE:

```
PRINT GEN
VIRTERM TYPE=INITIAL,APPLID=VIRTEL, *
        COMPR3=AUTO, *
        LANG=' ', LANGUAGE FOR USER MESSAGES *
        COUNTRY=FR, EBCDIC-ASCII TRANSLATION *
        DEFUTF8=IBM1147, DEFAULT OUTPUT ENCODING UTF-8 *
        CHARSET=, UTF-8: ADDITIONAL CHARSETS *
        GMT=SYSTZ, *
        CRYPT1=(CRYPT3270,NONE,NONE,NO-ENCRYPTION,HEX), *
        TCP1=(TCPIP,,,250), <------ *
        HTVSAM=VIRHTML, <------ *
        BUFSIZE=20000, *
        ACCUEIL=YES, *
        DEFENTR=PC, *
        FCAPT=VIRCAPT, *
        RETOUR=00, *
        SUITE=00, *
        SOMMR=00, *
        CORRECT=00, *
        EXIT1=, *
        EXIT2=, *
        EXIT3=, *
        EXIT5=, *
        EXIT4=, *
        EXIT6=, *
        EXIT7=, *
        STATS=YES, OU (MULTI,CONTINUE/TERMINATE) *
        STATDSN=(VIRTEL.STATA,VIRTEL.STATB), SI STATS=MULTI *
        FCMP3=VIRCMP3, *
        APPSTAT=YES, *
        DONTSWA=YES, *
        NBDYNAM=250, *
        TRACEB=200,TRACEON=YES,TRACBIG=40, *
        MULTI=YES,RESO=YES,ARBO=YES, *
        VIRSECU=YES,SECUR=NO, VIRTEL, (RACROUTE,RACF) *
        RAPPL=VIRTSERV,RNODE=VIRTNODE, *
        LOCK=20000, *
        TIMEOUT=5, *
        FASTC=NO, *
        UFILE1=(SAMPTRSF,ACBH1,0,10,01), *
        UFILE2=(HTMLTRSF,ACBH2,0,10,01), *
        UFILE3=(PLUGTRSF,ACBH3,0,10,01), *
        GATE=GENERAL, *
        NBCVC=32, *
        VTKEYS=VTTABLE, VT100 : KEY REDEFINITION *
        MEMORY=ABOVE, *
        COMPANY='VOTRE COMPAGNIE ', VOIR LA CLE *
        ADDR1='VOTRE ADRESSE 1 ', COMMUNIQUEE *
```

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```
        ADDR2='VOTRE ADRESSE 2 ', PAR SYSPERTEC *
        LICENCE='TYPE DE LICENCE ', *
        EXPIRE=(2999,12,31), *
        CODE='XXXXXXXX', *
        TITRE1='S Y S P E R T E C C O M M U N I C A T I O N ', *
        TITRE2='============== 4.2 ======================= '
* ============================================================
VTTABLE KTRANH , SAMPLE VT KEYS TRANSLATION
        KTRAN KEY=D6D7,IS=F1,RETCODE=1 PF1
        KTRAN KEY=D6D8,IS=F2,RETCODE=1 PF2
        KTRAN KEY=D6D9,IS=F3,RETCODE=1 PF3
        KTRAN KEY=D6E2,IS=F4,RETCODE=1 PF4
        KTRAN KEY=D6E3,IS=F5,RETCODE=1 PF5
        KTRAN KEY=D6E4,IS=F6,RETCODE=1 PF6
        KTRAN KEY=D6E5,IS=F7,RETCODE=1 PF7
        KTRAN KEY=D6E6,IS=F8,RETCODE=1 PF8
        KTRAN KEY=D6E7,IS=F9,RETCODE=1 PF9
        KTRAN KEY=D6E8,IS=7A,RETCODE=1 PF10
        KTRAN KEY=D6E9,IS=7B,RETCODE=1 PF11
        KTRAN KEY=D64A,IS=7C,RETCODE=1 PF12
        KTRAN KEY=D6A7,IS=6D,RETCODE=1 CLEAR
        KTRAN KEY=4AC8,IS=6D,RETCODE=1 CLEAR
*
        KTRAN KEY=4AD2,IS=00,RETCODE=2 ERASEOF
        KTRAN KEY=4AC1,IS=00,RETCODE=3 CURU
        KTRAN KEY=4AC2,IS=00,RETCODE=4 CURD
        KTRAN KEY=4AC3,IS=00,RETCODE=5 CURR
        KTRAN KEY=4AC4,IS=00,RETCODE=6 CURL
* ============================================================
ACBH1 ACB AM=VSAM,DDNAME=SAMPTRSF,MACRF=(SEQ,DIR,OUT,LSR), *
        STRNO=3
ACBH2 ACB AM=VSAM,DDNAME=HTMLTRSF,MACRF=(SEQ,DIR,OUT,LSR), *
        STRNO=3
ACBH3 ACB AM=VSAM,DDNAME=PLUGTRSF,MACRF=(SEQ,DIR,OUT,LSR), *
        STRNO=3
        END
```

Example VIRTCT

6.6 Assembling The VIRTCT

The VIRTCT must be assembled before starting VIRTEL for the first time. The VIRTEL macro library must be available to the assembler. In the z/OS environment, the VIRTCT must be link-edited with the NORENT and NOREUS options. The RENT and REUS options must NOT be specified in the z/OS environment. In the z/VSE environment, PRD1.MACLIB must be specified. The resulting phase or load module must be placed in a STEPLIB or SEARCH PHASE library available to the VIRTEL started task.

6.6.1 z/OS example

A sample job for assembling the VIRTCT is supplied in member ASMTCT of the VIRTEL SAMPLIB:

```
//VIRTASM JOB 1,ASMTCT,MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
//*-------------------------------------------------------------*
//* GENERATION VIRTCT ET EXIT DE VIRTEL *
//*-------------------------------------------------------------*
//ASMTCT PROC OUTC=*,WORK=SYSDA,
// QUAL=yourqual.VIRTvrr,
// MEMBER=VIRTCT01
//*-------------------------------------------------------------*
//* ASSEMBLAGE *
//*-------------------------------------------------------------*
//ASM EXEC PGM=ASMA90,REGION=2048K,
// PARM='NOOBJECT,DECK,XREF(SHORT),NORENT,LIST'
//SYSPRINT DD SYSOUT=&OUTC
//SYSLIB DD DSN=&QUAL..MACLIB,DISP=SHR
// DD DSN=SYS1.MACLIB,DISP=SHR
// DD DSN=SYS1.MODGEN,DISP=SHR
//SYSUT1 DD UNIT=&WORK,SPACE=(1700,(400,400))
//SYSUT2 DD UNIT=&WORK,SPACE=(1700,(400,400))
//SYSUT3 DD UNIT=&WORK,SPACE=(1700,(400,400))
//SYSPUNCH DD DSN=&&LOADSET,UNIT=&WORK,DISP=(,PASS),
// SPACE=(400,(100,100))
//SYSIN DD DSN=&QUAL..CNTL(&MEMBER),DISP=SHR
//*-------------------------------------------------------------*
//* LINKEDIT *
//*-------------------------------------------------------------*
//LKED EXEC PGM=HEWL,REGION=2048K,COND=(7,LT,ASM),
// PARM='LIST,LET,XREF,NORENT'
//SYSPRINT DD SYSOUT=&OUTC
//SYSLIB DD DSN=&QUAL..LOADLIB,DISP=SHR
//SYSUT1 DD UNIT=&WORK,DCB=BLKSIZE=1024,SPACE=(1024,(200,20))
//SYSLIN DD DSN=&&LOADSET,DISP=(OLD,DELETE)
//SYSLMOD DD DSN=&QUAL..LOADLIB(&MEMBER),DISP=SHR
// PEND
//VIRTASM EXEC ASMTCT
```

VIRTCT assembly in z/OS

6.6.2 z/VSE example

A sample job for assembling the VIRTCT is supplied on the installation tape:

```
* $$ JOB JNM=VIRTCT,CLASS=0,DISP=D
* $$ LST DISP=D,CLASS=Q
// JOB VIRTCT
// DLBL VIRTvrr,'VSE.VIRTvrr.LIBRARY',,VSAM,CAT=VSESPUC
// LIBDEF PHASE,CATALOG=VIRTvrr.SUBLIB
// LIBDEF SOURCE,SEARCH=(VIRTvrr.SUBLIB,PRD1.MACLIB)
// OPTION CATAL,NODECK,ALIGN
        PHASE VIRTCT01,*
```

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```
// EXEC ASSEMBLY,SIZE=512K
* $$ SLI ICCF=(VIRTCT01),LIB=0037
/*
// EXEC LNKEDT,SIZE=512K
/*
/&
* $$ EOJ
```

VIRTCT assembly in z/VSE

6.6.3 Dynamic VIRTCT Overrides

Data may be passed to the VIRTEL procedure via the start command which allows the value of certain parameters in the VIRTCT (APPLID, MQ1, MQ2) to be modified. For example the VIRTEL started task procedure should contain the TCT, APPLID, and VTOVER parameters which are substituted into the PARM as shown below:

```
//VIRTEL EXEC PGM=VIR0000,
// TIME=1440,REGION=8192K,
// PARM=(&TCT,&APPLID,&VTOVER)
```

When starting VIRTEL, you may specify values for the TCT, APPLID, and VTOVER on the start command as shown in the example below:

```
S VIRTEL,TCT=01,APPLID=AA4AVIRX,VTOVER='12345'
```

After loading VIRTCT01, VIRTEL will then:

- replace the APPLID variable by the value AA4AVIRX
- use the value of the VTOVER variable to replace the specified substitution characters % in certain VIRTCT parameters by characters extracted from the VTOVER value. This functionality requires that the VIRTCT should contain:
  - a new parameter VTOVER=VTDYNAM
  - a new table VTDYNAM consisting of macros VTOVERH and VTOVER
  - the presence of one or more % characters in certain VIRTCT parameters which will be substituted by the corresponding characters from the VTOVER parameter specified on the start command.

For example, if the fourth character of the MQ1 and MQ2 Queue Manager name and the second three characters of the MQ2 Queue Name are variable, the parameters may be defined in the VIRTCT as shown below:

```
MQ1=(CSQ%),          -> wild char in MQ1 parm *
MQ2=(CSQ%,'A%%%'),   -> wild char in MQ2 parm *
VTOVER=VTDYNAM,      -> new VIRTCT parm *
```

At the end of the VIRTCT, define the VTDYNAM table with the rules for substituting data from the VTOVER parameter. For each parameter, specify the substitution character(s) to look for (TARGET), and the position relative to zero of the characters to be extracted from the VTOVER parameter (FROM), as shown in the example below:

```
VTDYNAM VTOVERH                     -> new table after the VIRTCT
MQ1     VTOVER PARM=MQ1,            modify MQ1(1)                  *
        TARGET='%',                 find % char                    *
        FROM=0,                     replace % with VTOVER(0)       *
        ERRORC=12 Virtel            RC if replace failed
MQ21    VTOVER PARM=(MQ2,1),TARGET='%',FROM=1
MQ22    VTOVER PARM=(MQ2,2),TARGET='%%%',FROM=2
```

With these definitions and VTOVER=’12345’, the MQ1 and MQ2 parameters of the VIRTCT will have the values shown below:

```
MQ1=CSQ1,
MQ2=(CSQ2,'A345'),
```

If an error occurs during substitution, VIRTEL will issue message VIR0025E indicating the error code specified in the ERRORC parameter of the VTOVER macro.

6.7 Applying Patches Via The VIRTCT

The "ZAPH parameter" of the VIRTCT allows one or more patches to be applied to the VIRTEL kernel after the resident modules have been loaded into memory at startup. This parameter is intended to be used only under the advice of Syspertec technical support personnel.

For example, if the VIRTCT contains the parameter:

```
ZAPH=MYPTFS, *
```

then it refers to the table MYPTFS coded after the VIRTERM macro, for example:

```
MYPTFS   ZAPH
USER4621 ZAPD VIR00TAB,+246D,EC,1B,' USERMOD TO TRANSLATE TABLE '
PTF4628  ZAPD VIR0011D,+092A,C98C,C984,' TEMP FIX FOR SEND$ '
```

The format of each ZAPD instruction is as follows:

```
label ZAPD progname,+offset,verify,replace,'desc'
```

label - PTF identifier for message VIR0066I

progname - program name

offset - offset into program

verify - verify value (hexadecimal digits)

replace - replacement value (hexadecimal digits)

desc - (optional) description for message VIR0066I

CHAPTER

SEVEN

VIRCONF UTILITY

7.1 Introduction

The VIRCONF utility program allows a batch job to manage the VIRARBO file, which is the main configuration file for VIRTEL. VIRCONF allows you to:

- Upload a new VIRARBO file using SYSIN cards.
- Unload an existing VIRARBO file.
- Add, replace, or suppress one or more definitions within an existing VIRARBO file
- Create new définitions as SYSIN cards using an existing VIRARBO file
- Scan a SYSIN cards file for checking the right syntax

7.2 JCL

Below are some JCL examples to define and upload a new VIRARBO file:-

z/VSE

```
* $$ JOB JNM=VIRCONF,CLASS=0,DISP=D
* $$ LST DISP=D,CLASS=V,DEST=(,SPTUSER)
// JOB VIRCONF DEFINE AND LOAD VIRARBO
// DLBL IJSYSUC,'VSESP.USER.CATALOG',,VSAM
// EXEC IDCAMS,SIZE=AUTO
        DEFINE CLUSTER(NAME(VIRTEL.TESTARBO.KSDS) -
              RECORDS(500 100) SHAREOPTIONS (2 3) -
              RECSZ (600 4089) KEYS (9 0) -
              VOLUMES (DOSRES) TO (99366))-
        DATA (NAME(VIRTEL.TESTARBO.KSDS.DATA)) -
        INDEX (NAME(VIRTEL.TESTARBO.KSDS.INDEX)) -
              CATALOG(VSESP.USER.CATALOG)
IF LASTCC NE 0 THEN CANCEL JOB
/*
// LIBDEF *,SEARCH=(VIRTvrr.SUBLIB)
// DLBL VIRARBO,'VIRTEL.TESTARBO.KSDS',,VSAM,CAT=VSESPUC
// EXEC VIRCONF,PARM='LOAD'
        (insert sysin control statements here)
/*
```

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```
/&
* $$ EOJ
```

VIRCONF JCL in z/VSE to define and upload a new VIRARBO file

z/OS

```
//VIRCONF JOB CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//* THIS JOB DEFINES AND LOADS A NEW ARBO FILE
//DEFARBO EXEC PGM=IDCAMS,REGION=2M
//SYSPRINT DD SYSOUT=*
        DEFINE CLUSTER(NAME(VIRTEL.TEST.ARBO) -
            KEYS(9 0) RECSZ(100 4089) FSPC(10 10) -
            VOL(SPT001) REC(250,50) SHR(2) SPEED) -
        DATA (NAME(VIRTEL.TEST.ARBO.DATA) CISZ(4096)) -
        INDEX (NAME(VIRTEL.TEST.ARBO.INDEX))
//RELOAD EXEC PGM=VIRCONF,COND=(0,NE,DEFARBO),PARM=LOAD
//STEPLIB DD DSN=yourqual.VIRTvrr.LOADLIB,DISP=SHR
//SYSPRINT DD SYSOUT=*
//VIRARBO DD DSN=VIRTEL.TEST.ARBO,DISP=SHR
//SYSIN DD DSN=&SYSUID..VIRCONF.SYSIN,DISP=SHR
```

VIRCONF JCL in z/OS to define and upload a new VIRARBO file

When VIRCONF is executed with PARM=LOAD, control cards are read from SYSIPT (z/VSE) or SYSIN (z/OS) and are loaded into the VIRARBO file.

7.2.1 Updating a VIRARBO file

Below are some JCL examples to add, replace, or delete one or more definitions from an existing VIRARBO file:-

z/VSE

```
* $$ JOB JNM=VIRCONF,CLASS=0,DISP=D
* $$ LST DISP=D,CLASS=V,DEST=(,SPTUSER)
// JOB VIRCONF UPDATE VIRARBO
// LIBDEF *,SEARCH=(VIRTvrr.SUBLIB)
// DLBL VIRARBO,'VIRTEL4.VIRARBO.KSDS',,VSAM,CAT=VSESPUC
// EXEC VIRCONF,PARM='LOAD'
        LINE  ID=A-XOT,
              NAME=XOT-IP30,
              PARTNER=192.168.0.80:1998,
              LOCADDR=192.168.229.30:1998,
              DESC='Connections via Cisco router',
              TERMINAL=XOTF,INOUT=3,TYPE=TCP1,PROTOCOL=XOT,
              WINSZ=3,PKTSZ=128,RETRY=10,TIMEOUT=10,ACTION=0
        RULE ID=AX200CFT,LINE=A-XOT,STATUS=ACTIVE,
              DESC="XOT->AntiPCNE->CFT (CUD0=X'C0')",
              ENTRY=APCFT,CUD0=(BEGIN,C0)
        DELETE TYPE=RULE,ID=AX100CFT
/*
```

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```
/&
* $$ EOJ
```

VIRCONF JCL in z/VSE to update a VIRARBO file

z/OS

```
//VIRCONF JOB CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//* THIS JOB UPDATES AN ARBO FILE
//UPDARBO EXEC PGM=VIRCONF,PARM=LOAD
//STEPLIB DD DSN=yourqual.VIRTvrr.LOADLIB,DISP=SHR
//SYSPRINT DD SYSOUT=*
//VIRARBO DD DSN=VIRTEL.TEST.ARBO,DISP=SHR
//SYSIN DD *
        DELETE TYPE=RULE,ID=R0000300       Delete rule
        DELETE TYPE=LINE,ID=X-HTTP         Delete line
        DELETE TYPE=TRANSACT,ID=INITV-00   Delete transaction
        DELETE TYPE=ENTRY,ID=INITVTAM      Delete Entry Point
        DELETE TYPE=SUBDIR,ID=EXC-DIR      Delete sub directory
        DELETE TYPE=USER,ID=SAMPUSER       Delete User
        USER ID=BLOGGS,NAME='JOE BLOGGS',DEPT=VIRTEL,PASSWORD=JOE,
            PROFILE=(APPLICS,PC,REPERT,SECURITE,
            SERVEUR,SERVEXT,WEBMASTR)
/*
```

VIRCONF JCL in z/OS to update a VIRARBO file

Submitting VIRCONF with PARM=LOAD for an existing VIRARBO file allows definitions to be added, replaced, or deleted, while keeping existing definitions in the VIRARBO file. Using PARM='LOAD,NOREPL' parameter allows only new definitions to be added, while keeping existing definitions. In this case, VIRCONF will ignore any statement with the same name as existing definitions, returning a zero return code, except if another error was encountered.

7.2.2 Unloading a VIRARBO file

Below are some JCL examples to obtain existing VIRARBO definitions in the form of control cards:-

```
* $$ JOB JNM=VIRCONF,CLASS=0,DISP=D
* $$ LST DISP=D,CLASS=V,DEST=(,SPTUSER)
* $$ PUN DISP=D,CLASS=W,DEST=(,SPTUSER)
// JOB VIRCONF UNLOAD VIRARBO TO SYSPCH
// LIBDEF *,SEARCH=VIRTvrr.SUBLIB
// DLBL VIRARBO,'VIRTEL.TESTARBO.KSDS',,VSAM,CAT=VSESPUC
// EXEC VIRCONF,PARM='UNLOAD'
/&
* $$ EOJ
```

VIRCONF JCL in z/VSE to unload a VIRARBO file

```
//VIRCONF JOB CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//* THIS JOB UNLOADS AN ARBO FILE TO SYSPUNCH
//UNLOAD EXEC PGM=VIRCONF,PARM=UNLOAD
//STEPLIB DD DSN=yourqual.VIRTvrr.LOADLIB,DISP=SHR
```

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```
//SYSPRINT DD SYSOUT=*
//VIRARBO DD DSN=VIRTEL.TEST.ARBO,DISP=SHR,AMP=('RMODE31=NONE')
//SYSPUNCH DD DSN=&SYSUID..VIRCONF.SYSIN,DISP=(,CATLG),UNIT=SYSDA,
//  SPACE=(TRK,(5,1)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=6080)
```

VIRCONF JCL in z/OS to unload a VIRARBO file

When VIRCONF is run with the PARM=UNLOAD parameter, the existing VIRARBO definitions are converted into control cards and are written to SYSPCH (z/VSE) or SYSPUNCH (z/OS). The created cards issued by VIRCONF may be edited and then reused with another VIRCONF job with the PARM=LOAD parameter.

7.2.3 Verify control card syntax

Below are some JCL examples to verify the control card syntax:-

```
* $$ JOB JNM=VIRCONF,CLASS=0,DISP=D
* $$ LST DISP=D,CLASS=V,DEST=(,SPTUSER)
// JOB VIRCONF SYNTAX CHECK
// LIBDEF *,SEARCH=(VIRTvrr.SUBLIB)
// EXEC VIRCONF,PARM='SCAN'
        (insert sysin control statements here)
/*
/&
* $$ EOJ
```

VIRCONF JCL in z/VSE for syntax verification

```
//VIRCONF JOB CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//* VIRCONF SYNTAX CHECK
//CONFCHK EXEC PGM=VIRCONF,PARM=SCAN
//STEPLIB DD DSN=yourqual.VIRTvrr.LOADLIB,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
        (insert sysin control statements here)
/*
```

VIRCONF JCL in z/OS for syntax verification

Submitting the VIRCONF program with PARM=SCAN allows you to scan the SYSIPT (z/VSE) or SYSIN (z/OS) cards for potential syntax errors. There is no access to the VIRCONF file.

7.2.4 Multi-language support

When uploading the VIRARBO file, VIRCONF may select one among several versions of a control card, based on the LANG=xx parameter defined in the JCL. In this way, the same SYSIN file may be used to generate several different language versions of the VIRARBO file. For example:

```
* $$ JOB JNM=VIRCONF,CLASS=0,DISP=D
// JOB VIRCONF LOAD VIRARBO
// LIBDEF *,SEARCH=(VIRTvrr.SUBLIB)
// DLBL VIRARBO,'VIRTEL.TESTARBO.KSDS',,VSAM,CAT=VSESPUC
```

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```
// EXEC VIRCONF,PARM='LOAD,LANG=FR'
        TRANSACT ID=PC-0003, -
        (FR) NAME='Entrée', -
        (FR) DESC="Gestion des points d'entrée", -
        (EN) NAME='Entry', -
        (EN) DESC='Entry point management', -
        APPL=VIR0044, -
        TYPE=2, -
        STARTUP=1
/*
/&
* $$ EOJ
```

VIRCONF JCL in z/VSE for multi-language upload

```
//VIRCONF JOB CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//* LOAD AN ARBO FILE USING MULTILINGUAL SOURCE
//VIRCONF EXEC PGM=VIRCONF,PARM='LOAD,LANG=EN'
//STEPLIB DD DSN=yourqual.VIRTvrr.LOADLIB,DISP=SHR
//SYSPRINT DD SYSOUT=*
//VIRARBO DD DSN=VIRTEL.TEST.ARBO,DISP=SHR
//SYSIN DD *
        TRANSACT ID=PC-0003, -
        (FR) NAME='Entrée', -
        (FR) DESC="Gestion des points d'entrée", -
        (EN) NAME='Entry', -
        (EN) DESC='Entry point management', -
        APPL=VIR0044, -
        TYPE=2, -
        STARTUP=1
/*
```

VIRCONF JCL in z/OS for multi-language upload

7.3 VIRCONF Control Cards

7.3.1 VIRCONF control card syntax

The control card syntax for VIRCONF is similar to the syntax for JCL.

- Each instruction begins on a new card
- One instruction consists of an "operation code", followed by a blank space, followed by one or more parameters, followed by an optional comment
- The parameters use the keyword=value form and parameters are separated with a comma
- The parameters are ended by a blank character; anything after this first blank is treated as a comment.
- A card beginning with a "*" is treated as a comment
- A completely blank card is treated as a comment
- A card beginning with two characters between parenthesis, for instance (EN), will be processed only if these two characters match the value of the LANG= parameter specified in the JCL PARM
- Instructions must be coded between columns 1 to 71. Column 72, if non-blank, means that the instruction continues on the next card
- If a parameter is terminated by a comma followed by a blank, the instruction continues at the first non-blank character of next card. A non-blank in column 72 is optional in this case
- A character string between apostrophes or quotes which goes over column 71 may be continued on the next card, by putting a non-blank character in column 72 and by continuing the string starting on column 16 of the next card
- Each instruction must have at least one "ID=" parameter which is used as a key to identify the described entity
- The values of parameters may in general contain letters (A-Z in upper case), digits (0-9), and special characters(.+&$*-/%_?:@). Some parameters also allow values which contain other special characters, letters in lower case, and blank characters, and in this case the value must be coded as a character string enclosed in either quotes or apostrophe.

You can generate some examples by submitting a job using the PARM=UNLOAD parameter (see "Unloading a VIRARBO file", page 86) for a specific VIRARBO file, for instance the one delivered as VIRARBO base in the standard installation process.

7.3.2 APPLIC

This operation adds or replaces an APPLIC entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Applications Management" on page 123

Parameter	Item	Remarks
ID=	Name	
DESC=	Description	Quotes allowed
LOGON=	Logon	Quotes allowed
STATUS=	Status	Quotes allowed

7.3.3 DELETE

This operation deletes an entity of the specified type from the VIRARBO file.

Parameter	Item	Remarks
TYPE=	Entity type	LINE, RULE, TERMINAL etc.
ID=	Entity name	Quotes allowed

7.3.4 DEPT

This operation adds or replaces a DEPT entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Create a department” or “Profile associated to a department”.

Parameter	Item	Remarks
ID=	Department	
DESC=	Description	Quotes allowed
OWNER=	Responsible	
PROFILE=	Profiles list	If more than one, separated by commas and within parenthesis e.g. PROFILE=(X,Y,Z)

7.3.5 ENTRY

This operation adds or replaces an ENTRY entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Parameters of the Entry Point”.

Parameter	Item	Remarks
ID=	Name	
DESC=	Description	Quotes allowed
TRANSACT=	Transaction	
ARBO=	Arborescence	
ENDPAGE=	Last Page	
TRANSP=	Transparency	
TIMEOUT=	Responsible	Numeric
EMUL=	Emulation	
SCENDIR=	Directory for Scenarios	
SIGNON=	Signon Program	
MENU=	Menu Program	
IDENT=	Identification or scenario or program	
COMPR3=	Type 3 compression	
IDREQ=	Mandatory Identification	
SWAP=	3270 Swap key	
EXTCOLOR=	Extended colors	

7.3.6 INDEX

This operation adds or replaces an INDEX entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Updating the keywords”.

Parameter	Item	Remarks
ID=	Keyword	Quotes allowed
TARGET=	Target Node - Choice	[1] ; Quotes allowed First 6 characters: Target Node. Characters 7-8: Choice

Note: [1] the target node name has less than 6 characters, it must be padded with blanks and enclosed in quotes.

7.3.7 LINE

This operation adds or replaces a LINE entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Parameters of the line”.

Parameter	Item	Remarks
ID=	Internal name	
NAME=	External name	
PARTNER=	Remote ident	
LOCADDR=	Local ident	
DESC=	Description	Quotes allowed
TERMINAL=	Prefix	
ENTRY=	Entry Point	
TYPE=	Line Type	
INOUT=	Possible Calls	
COND=	Startup prerequisite	Quotes allowed
PROTOCOL=	Protocol program	
SECURITY=	Security program	
TIMEOUT=	Time out	Numeric
ACTION=	Action if time out	Numeric
WINSZ=	Window	Numeric
PKTSZ=	Packet	Numeric
PAD=	Pad	Numeric
TRAN=	Tran	
RETRY=	Retries	Numeric
DELAY=	Delay	Numeric
UNIQUEP=	Unique Partner [1]	Y or N
SHAREDA=	Shared address time out	Y or N

Note: [1] This parameter is available only in VIRCONF

7.3.8 NODE

This operation adds or replaces a NODE entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Defining a native node".

Parameter	Item	Remarks
ID=	Name of node	Quotes allowed
PAGE=	Generic of associated Pages	Quotes allowed
GUIDE=	Generic of associated guides	Quotes allowed
CHILD=	Generic of children	Quotes allowed

7.3.9 PC

This operation adds or replaces a PC entity in the VIRARBO file. The parameters correspond to the various items described under the heading "PC management".

Parameter	Item	Remarks
ID=	PC Name	
DESC=	Description	Quotes allowed
DISABLE=	Block	X=Blocked connections
SUBDIR=	Assoc. Directory	
PASSCODE=	Password	Quotes allowed

7.3.10 PROFILE

This operation adds or replaces a PROFILE entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Defining a profile".

Parameter	Item	Remarks
ID=	Profile Name	
DESC=	Description	Quotes allowed
DEPT=	Department	Quotes allowed
RESOURCE=	List of resources	If more than one, sparated by a commas and within parenthesis e.g. RESOURCE=(X,Y,Z)

7.3.11 RESOURCE

This operation adds or replaces a RESOURCE entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Defining a resource".

Parameter	Item	Remarks
ID=	Resource Name	Supports +
DESC=	Description	Quotes allowed
DEPT=	Department	

Note: If the ID parameter contains a + and SYSPLUS=YES is specified in the TCT the + will be replaced by either the z/OS &SYSCLONE system symbolic or the CLONE parameter as specified in the Virtel JCL parm. For example ID=R+VT001 becomes ID=REHVT001. Not applicable to z/VSE.

7.3.12 RULE

This operation adds or replaces a RULE entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Parameters of the rule".

Parameter	Item	Remarks
ID=	Rule name	
RULESET=	Ruleset name	
STATUS=	Status	
DESC=	Description	
ENTRY=	Entry point	Quotes allowed
PARAM=	Parameter	
TRACE=	Trace	
IPADDR=	IP Subnet	
NET-MASK=	MASK	
HTTPHOST=	Host	[1] ; Quotes allowed
EMAIL=	eMail	[1] ; Quotes allowed
CALLER=	Calling DTE	[1] ; Numeric IP address or string =HTFORWD
CALLED=	Called	[1] ; Numeric
CUD0=	CUD0 (Hexadecimal)	[1] ; Hexadecimal
USER-DATA=	User data	[1] ; Quotes allowed
DAYS=	Days	[1] ; Seven 'X' char. or blank, defining the days from Sunday to Saturday.
TIME=	Start time	[1] ; Twelve nemeric chars. with the pattern:- HHMMSSHHMMSS

Note: [1] The conditions are coded in the form keyword=(condition,value) where condition is one of the following:

IGNORE - Ignore

EQUAL - Is

NOTEQ - Is not

BEGIN - Starts with

NOTBEGIN - Does not

END - Ends with

NOTEND - Does not

Note: [2] For compatibility with earlier versions, VIRCONF also accepts the parameter LINE= as a

synonym of RULESET=

7.3.13 SERVER

This operation adds or replaces a SERVER entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Parameters of external server".

Parameter	Item	Remarks
ID=	Name	
DESC=	Description	Quotes allowed
DIALNO=	Number	Numeric or '='
USERDATA=	Data	Quotes allowed
LINE=	Line number	
LINE2=	Backup line	
CALLER=	Caller	Numeric or '=' or '*'
EMUL=	Emulation	
CHARSET=	Character Set	
TIMEOUT=	Server time out	Numeric
DELAY=	Inactivity delay	Numeric
ACTION=	Cut off warning	Numeric
LEVEL=	Price level	
SECRET=	Secret	
FACILITY=	Facilities	Hexadecimal or '='
CUD0=	CUD0 (Hex)	Hexadecimal
TIOA=	TIOA at startup	Quotes allowed

7.3.14 SSERV

This operation adds or replaces an SSERV entity in the VIRARBO file. The parameters correspond to the various items described under the heading "Defining a sub-server node".

Parameter	Item	Remarks
ID=	SubServer node name	Quotes allowed
SERVER=	SubServer name	
TRANSACT=	Transaction name	[1]; Quotes allowed
CONTROL=	Control program	
TIOA=	TIOA	[1]; Quotes allowed
TRANSLAT=	Transaltion type	
RESTRICT=	Node with reserved access	[2]; Quotes allowed
PFRETOUR=	Return key	[3]; Quotes allowed
PFGUIDE=	Guide key	[3]; Quotes allowed
PFSOMMR=	Summary key	[3]; Quotes allowed
PFSUITE=	Next key	[3]; Quotes allowed
PFREPET=	Repeat key	[3]; Quotes allowed
PFANNUL=	Cancel key	[3]; Quotes allowed
PFCORREC=	Correct key	[3]; Quotes allowed

Note: [1] Specify either TRANSACT or TIOA, but not both

[2] *=Yes

[3] The key name must be coded according to the table below:

Key table:

Key Name	Code	Key Name	Code	Key Name	Code
Enter	“’”	PF12	‘@’	PF24	‘<’
PF1	1	PF13	A	PA1	‘%’
PF2	2	PF14	B	PA2	‘>’
PF3	3	PF15	C	PA3	‘,’
PF4	4	PF16	D	Clear	‘_’
PF5	5	PF17	E		
PF6	6	PF18	F		
PF7	7	PF19	G		
PF8	8	PF20	H		
PF9	9	PF21	I		
PF10	“:”	PF22	‘ç’		
PF11	“#”	PF23	‘-’		

7.3.15 SUBDIR

This operation adds or replaces a SUBDIR entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Parameter of directory”.

Parameter	Item	Remarks
ID=	Name	
DESC=	Description	Quotes allowed
FSTYPE=	Type	
DDNAME=	DD name	
KEY=	Keyword	
NAMELEN=	Size of Names	
CASELEN=	Case	
AUTHUP=	Copy Up	X=Copy into directory is allowed
AUTHDOWN=	Copy Down	X=Copy into directory is allowed
AUTHDEL=	Delete	X=File deletion is allowed

7.3.16 TERMINAL

This operation adds or replaces a TERMINAL entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Parameter of the terminal”.

Parameter	Item	Remarks
ID=	Terminal	
RELAY=	Relay	Quotes allowed
POOL=	Pool Name	
DESC=	Description	Quotes allowed
ENTRY=	Entry Point	
RELAY2=	2nd Relay	Quotes allowed
TYPE=	Type	
COMPRESS=	Compression	
INOUT=	Possible Calls	Numeric
STATS=	Write Stats to	
REPEAT=	Repeat	Numeric

7.3.17 TRANSACT

This operation adds or replaces a TRANSACT entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Parameter of the transaction”.

Parameter	Item	Remarks
ID=	Internal name	
NAME=	External name	Quotes allowed
DESC=	Description	Quotes allowed
APPL=	Application	Quotes allowed
ALIAS=	Alias	
PASSTCKT=	Passticket	Numeric
RACFNAME=	Passticket Name	
TYPE=	Application Type	Numeric
TERMINAL=	Psuedo-terminals	
LOGMODE=	Logmode	
STARTUP=	How started prerequisite	Numeric
SECURITY=	Security	Numeric
TRANSL=	Translation or H4W Commands	
LOGMSG=	Logon message or check URL prefix	Quotes allowed
TIOASTA=	TIOA at logon	Quotes allowed
TIOAEND=	TIOA at logoff	Quotes allowed
EXITSA=	Initial Scenario	
EXITEND=	Final Scenario	
EXITMSGI=	Input scenario	
EXITMSGO=	Output scenario	

7.3.18 UPDATE

This operation updates one or more parameters of an entity in the VIRARBO file.

Parameter	Item	Remarks
TYPE=	Entity type	LINE, RULE, TERMINAL, etc.
ID=	Entity name	Quotes allowed
Param=	According to Entity type	See the precedding description of entity.

7.3.19 USER

This operation adds or replaces a USER entity in the VIRARBO file. The parameters correspond to the various items described under the heading “Managing users”.

Parameter	Item	Remarks
ID=	User name	
NAME=	Description	Quotes allowed
DEPT=	Department	
PASSWORD=	Password (Clear)	[1]
PASSCODE=	Password (Encrypted)	[1]; Quotes allowed
ADMIN=	Administrator	1=Yes, 0=No
ASSIST=	Assist(O-N)	1=Yes, 0=No
PROFILE=	Profiles assigned	List of profiles assigned

Note: [1] Indicate either PASSWORD (readable password), or PASSCODE (encrypted password). PASSWORD allows you to specify the password explicitly; if present, it must be coded after the ID parameter. PASSCODE is generated by the UNLOAD function; this allows to unload and reload the USER records without exposing the password in readable format.

[2] The PARM=’UNLOAD,PLAINTXT’ function unloads the password in readable format (PASSWORD instead of PASSCODE). To use this function, the user that submits this VIRCONF job must be RACF authorized (or by another securiyy tool) with READ access for the VIRTEL.PASSWORD.DECRYPT resource in the FACILITY class.

CHAPTER

EIGHT

SECURITY

Perform the following steps to activate RACF security for VIRTEL in the z/OS environment.

8.1 Modify the VIRTCT

In the VIRTCTxx member of the VIRTEL CNTL library,

- VIRTCTUS = English language.
- VIRTCTFR = French language.

replace the default parameters:

```
SECUR=NO,RAPPL=VIRTSERV,RNODE=VIRTNODE
```

with the following parameters:

```
SECUR=(RACROUTE,RACF),
RAPPL=FACILITY,RNODE=FACILITY,PRFSECU=VIRTEL,
```

This tells VIRTEL that its security definitions are stored in the FACILITY class, and the resource names are prefixed by "VIRTEL.". You can choose your own prefix for each VIRTEL. Multiple VIRTEL started tasks can share the same resource name prefix if their security definitions are identical. You can also choose the class name, but it must already be defined in RACF with the correct attributes. It is recommended to use the FACILITY class which is standard in RACF.

Having updated the VIRTCTxx source member, reassemble and relink the VIRTCT into VIRTEL LOADLIB using the sample JCL in member ASMTCT of the VIRTEL CNTL library. Be sure to specify the correct member name MEMBER=VIRTCTxx in the job. Stop and start VIRTEL to pick up the new VIRTCT.

8.2 Add RACF definitions

The following RACF definitions are the minimum you need to get started. They simply authorize the VIRTEL administrator (you) to do everything. In this job, replace your userid by the administrator's RACF userid or group name. This JCL can be found in member RACFDEF in the VIRTEL SAMPLIB.

```
//VIRTRACF JOB 1,RACFDEF,MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
//*-------------------------------------------------------*
//* RACF : AUTHORIZATIONS FOR VIRTEL *
//* Replace 'youruserid' by your VIRTEL administrator id *
    //*-----------------------------------------------------*
    //STEP1 EXEC PGM=IKJEFT1A,DYNAMNBR=20
    //SYSTSPRT DD SYSOUT=*
    //SYSTSIN DD *
    /*-----------------------------------------------------*/
    /* BY DEFAULT DISALLOW EVERYTHING TO GENERAL USERS */
    /* BUT ALLOW EVERYTHING TO youruserid */
    /*-----------------------------------------------------*/
            RDEF FACILITY VIRTEL.* UACC(NONE)
            PE VIRTEL.* CL(FACILITY) RESET ACC(READ) ID(youruserid)
    /*-----------------------------------------------------*/
    /* ALLOW EVERYONE TO USE THE 3270 LOGOFF TRANSACTION */
    /*-----------------------------------------------------*/
            RDEF FACILITY VIRTEL.PC-0020 UACC(READ) /* LOGOFF */
    /*-----------------------------------------------------*/
    /* REFRESH THE RACF PROFILES */
    /*-----------------------------------------------------*/
            SETR REFRESH RACLIST(FACILITY)
    //
```

RACFDEF : JCL to add RACF definitions

Later you can refine the definitions so that other VIRTEL users can use VIRTEL transactions (such as secured VIRTEL Web Access transactions). The following example allows DEMOGRP to use transaction CLI-10:

```
//VIRTRACF JOB 1,RACFDEF,MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
    //*-----------------------------------------------------*
    //* RACF : AUTHORIZATIONS FOR VIRTEL *
    //*-----------------------------------------------------*
    //STEP1 EXEC PGM=IKJEFT1A,DYNAMNBR=20
    //SYSTSPRT DD SYSOUT=*
    //SYSTSIN DD *
    /*-----------------------------------------------------*/
    /* ALLOW DEMOGRP TO USE THE CLI-10 (CICS) TRANSACTION    */
    /* AND THE APPLIST TRANSACTION CLI-90                    */
    /*-----------------------------------------------------*/
            RDEF FACILITY VIRTEL.CLI-10 UACC(NONE) /* CICS */
            PE VIRTEL.CLI-10 CL(FACILITY) ACC(READ) ID(DEMOGRP)
            RDEF FACILITY VIRTEL.CLI-90 UACC(NONE) /* APPLIST */
            PE VIRTEL.CLI-90 CL(FACILITY) ACC(READ) ID(DEMOGRP)
    /*-----------------------------------------------------*/
    /* REFRESH THE RACF PROFILES */
```

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```
/*-------------------------------------------------------------*/
        SETR REFRESH RACLIST(FACILITY)
//
```

RACFDEF : JCL to update RACF definitions

8.3 Virtel Administrators

Virtel Administrators have access to all the features of Virtel and are rsponsible for the administration of the product. For example this includes defining transactions and maintaining macros in the DDI central repository. Virtel uses the security subsystem to protect transactions. The following job shows an example of setting up the security profiles for Administrators in group SPGPTECH. This will enable them to control DDI and macro administration:-

```
//*-------------------------------------------------------*
//* RACF : AUTHORIZATIONS FOR VIRTEL DDI *
//*-------------------------------------------------------*
//STEP1 EXEC PGM=IKJEFT01,DYNAMNBR=20
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
/*-------------------------------------------------------*/
/* Setup for DDI */
/*-------------------------------------------------------*/
  RDEF FACILITY VIRTEL.W2H-03G UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.W2H-03U UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.W2H-03A UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.CLI-03G UACC(NONE) /* CLI */
  RDEF FACILITY VIRTEL.CLI-03U UACC(NONE) /* CLI */
  RDEF FACILITY VIRTEL.CLI-03A UACC(NONE) /* CLI */
  RDEF FACILITY VIRTEL.W2H-07 UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.W2H-66 UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.W2H-80U UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.W2H-80G UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.W2H-80A UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.USR-DIR UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.GRP-DIR UACC(NONE) /* W2H */
  RDEF FACILITY VIRTEL.GLB-DIR UACC(NONE) /* W2H */
  PE VIRTEL.W2H-03G CL(FACILITY) RESET
  PE VIRTEL.W2H-03U CL(FACILITY) RESET
  PE VIRTEL.W2H-03A CL(FACILITY) RESET
  PE VIRTEL.CLI-03G CL(FACILITY) RESET
  PE VIRTEL.CLI-03U CL(FACILITY) RESET
  PE VIRTEL.CLI-03A CL(FACILITY) RESET
  PE VIRTEL.W2H-07 CL(FACILITY) RESET
  PE VIRTEL.W2H-66 CL(FACILITY) RESET
  PE VIRTEL.W2H-80U CL(FACILITY) RESET
  PE VIRTEL.W2H-80G CL(FACILITY) RESET
  PE VIRTEL.W2H-80A CL(FACILITY) RESET
  PE VIRTEL.USR-DIR CL(FACILITY) RESET
  PE VIRTEL.GRP-DIR CL(FACILITY) RESET
  PE VIRTEL.GLB-DIR CL(FACILITY) RESET
  PE VIRTEL.W2H-07 CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.W2H-66 CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.W2H-03G CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.W2H-03U CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.W2H-03A CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.CLI-03G CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.CLI-03U CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.CLI-03A CL(FACILITY) ACC(READ) ID(SPGPTECH)
```

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```
  PE VIRTEL.W2H-80U CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.W2H-80G CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.W2H-80A CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.USR-DIR CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.GRP-DIR CL(FACILITY) ACC(READ) ID(SPGPTECH)
  PE VIRTEL.GLB-DIR CL(FACILITY) ACC(READ) ID(SPGPTECH)
  /*-------------------------------------------------------*/
  /* REFRESH THE RACF PROFILES */
  /*-------------------------------------------------------*/
  SETR REFRESH RACLIST(FACILITY)
/*
//
```

An administrator would have READ access to all profiles whereas a user may only have access to the some of the profiles.

Note: If you are implementing the Virtel USERPARM feature you should also add the following profiles:

```
RDEF FACILITY VIRTEL.USERPARM UACC(READ) /* Allow all users access to
↪USERPARM */
```

For more information about protecting VIRTEL Web Access resources, refer to the Security section of the the VIRTEL User Guide.

8.4 How to activate ACF2 Security

Perform the following steps to activate ACF2 security for VIRTEL in the z/OS environment.

8.4.1 Modify the VIRTCT

In the VIRTCTxx member of the VIRTEL CNTL library, replace the default parameters:

```
SECUR=NO,RAPPL=VIRTSERV,RNODE=VIRTNODE
```

with the following parameters:

```
SECUR=(RACROUTE,ACF2),
RAPPL=VIRTAPPL,RNODE=VIRTNODE,
```

This tells VIRTEL that the security definitions for calls to external servers are stored in the VIRTAPPL resource class, and that the security definitions for access to VIRTEL transactions, directories, and nodes are stored in the VIRTNODE resource class. You can choose your own resource class names for each VIRTEL. Multiple VIRTEL started tasks can share the same resource class names if their security definitions are identical.

Having updated the VIRTCTxx source member, reassemble and relink the VIRTCT into VIRTEL LOADLIB using the sample JCL in member ASMTCT of the VIRTEL CNTL library. Stop and start VIRTEL to pick up the new VIRTCT.

8.4.2 Determine the ACF2 resource type

ACF2 maps each 8-character SAF resource class name to a 3-character ACF2 resource type. By default, the resource type is the first three characters of the resource class name, so classes VIRTAPPL and VIRTNODE both map to resource type VIR. You can use the ACF2 CLASMAP record to translate the resource classes to different resource types if required.

8.4.3 Add ACF2 definitions

A example job to add VIRTEL definitions for ACF2 can be found in member ACF2DEF in the VIRTEL SAMPLIB. The commands in this job are explained in the following paragraphs.

Create OMVS segment for VIRTEL

```
SET PROFILE(VIRTSTC) DIV(OMVS)
INSERT VIRTSTC UID(nn) HOME('/') PROGRAM('/bin/sh')
```

ACF2DEF : ACF2 commands to create OMVS segment for VIRTEL

This command allows VIRTEL to access the TCP/IP stack.

Add permissions for VIRTEL administrators

```
$KEY(********) TYPE(VIR) UID(******** admin-group-name) SERVICE(READ)
```

ACF2DEF : ACF2 command to grant administrator permissions

This command permits users in group admin-group-name to access all VIRTEL transactions and administrator functions.

Add permissions for VIRTEL general users

```
$KEY(W2H-10) TYPE(VIR) UID(******** user-group-name) SERVICE(READ)
$KEY(CLI-****) TYPE(VIR) UID(******** user-group-name) SERVICE(READ)
```

ACF2DEF : ACF2 commands to grant general user permissions

These commands permit users in group user-group-name to access specific VIRTEL transactions.:

```
Resource W2H-10 permits specific access to the CICS Web Access transaction on
 ↪port 41001.
Resource CLI-** is a generic resource which permits access to customer-
 ↪defined transactions (internal name CLI-nn) on port 41002 and to the
 ↪directory CLI-DIR.
```

Allow everyone to use the 3270 LOGOFF transactions

```
$KEY(PC-0020) TYPE(VIR) UID(******** ********) SERVICE(READ)
```

ACF2DEF : ACF2 command to permit access to 3270 Logoff transaction

This command permits all users to use the 3270 Logoff transaction, whose internal name is PC-0020.

Add permissions for VIRTEL administrators

```
$KEY TYPE UID(** user-group-name) SERVICE
```

The VIRTEL stc Owner will need READ Access to Resource EZB.STACKACCESS.sysname.tcpname

```
$KEY (EZB) TYPE(xxxx) STACKACCESS.- UID(******* user-group-name)
```

The ACF2 Administration can verify EZB access definitions with the following commands : -

```
SET RES <enter>
L like(EZB.-)
```

8.5 How To Activate Top Secret (TSS) Security Perform

Perform the following steps to activate TSS security for VIRTEL in the z/OS environment.

8.5.1 Modify the TCT

In the VIRTCTxx member of the VIRTEL CNTL library, replace the default parameters:

```
SECUR=NO,RAPPL=VIRTSERV,RNODE=VIRTNODE
```

with the following parameters:

```
SECUR=(RACROUTE,TOPS),
RAPPL=VIRTAPPL,RNODE=VIRTNODE,
```

This tells VIRTEL that the security definitions for calls to external servers are stored in the VIRTAPPL resource class, and that the security definitions for access to VIRTEL transactions, directories, and nodes are stored in the VIRTNODE resource class. You can choose your own resource class names for each VIRTEL. Multiple VIRTEL started tasks can share the same resource class names if their security definitions are identical.

Having updated the VIRTCTxx source member, reassemble and relink the VIRTCT into VIRTEL LOADLIB using the sample JCL in member ASMTCT of the VIRTEL CNTL library. Stop and start VIRTEL to pick up the new VIRTCT.

8.5.2 Add TSS definitions

A example job to add VIRTEL definitions for TSS can be found in member TOPSDEF in the VIRTEL SAMPLIB. The commands in this job are explained in the following paragraphs.

8.3.2.1 Add TSS definitions

```
TSS MODIFY (FACILITY(USERnn=NAME=VIRTFAC))
TSS MODIFY (FACILITY(VIRTFAC=PGM=VIR))
TSS MODIFY (FACILITY(VIRTFAC=ACTIVE))
TSS MODIFY (FACILITY(VIRTFAC=ASUBM))
TSS MODIFY (FACILITY(VIRTFAC=AUTHINIT))
TSS MODIFY (FACILITY(VIRTFAC=DEFACID(*NONE*)))
TSS MODIFY (FACILITY(VIRTFAC=LUMSG))
TSS MODIFY (FACILITY(VIRTFAC=MODE=FAIL))
TSS MODIFY (FACILITY(VIRTFAC=MULTIUSER))
TSS MODIFY (FACILITY(VIRTFAC=NOABEND))
TSS MODIFY (FACILITY(VIRTFAC=NOAUDIT))
TSS MODIFY (FACILITY(VIRTFAC=NOPROMPT))
TSS MODIFY (FACILITY(VIRTFAC=NORES))
TSS MODIFY (FACILITY(VIRTFAC=NOTSOC))
TSS MODIFY (FACILITY(VIRTFAC=NOXDEF))
TSS MODIFY (FACILITY(VIRTFAC=RNDPW))
TSS MODIFY (FACILITY(VIRTFAC=SHRPRF))
TSS MODIFY (FACILITY(VIRTFAC=SIGN(M)))
TSS MODIFY (FACILITY(VIRTFAC=STMSG))
TSS MODIFY (FACILITY(VIRTFAC=WARNPW))
```

TOPSDEF : TSS commands to create VIRTEL facility

VIRTFAC is the VIRTEL facility name. You may choose your own name, but you must replace VIRTFAC in all of the following commands by the name you chose. Replace USERnn by the name of an unused user facility (for example, USER34).

Create VIRTEL division and department

```
TSS CREATE(VIRTDIV) NAME('VIRTEL DIVISION') TYPE(DIVISION)
TSS CREATE(VIRTDEP) NAME('VIRTEL DEPT') TYPE(DEPARTMENT) +
        DIVISION(VIRTDIV)
```

TOPSDEF : TSS commands to create VIRTEL division and department

A division and department are created to contain the VIRTEL resources. You can choose your own names, or you can use an existing division and department. If you choose to use different names then the following commands must be modified accordingly.

Create ACID for the VIRTEL started task

```
TSS CREATE(VIRTSTC) NAME('VIRTEL STC') TYPE(USER) +
        FAC(BATCH,STC) PASSWORD(NOPW,0) DEPARTMENT(VIRTDEP) +
        MASTFAC(VIRTFAC) NODSNCHK NOVOLCHK
```

TOPSDEF : TSS commands to create ACID for VIRTEL started task

An ACID named VIRTSTC is defined in the BATCH and STC facilities to allow VIRTEL to execute in both batch and started task modes. It has no password and it belongs to department VIRTDEP.

The definition in the BATCH facility is not compulsory and is only required if VIRTEL might be executed as a batch job.

Assign VIRTEL procedure name to the ACID

```
TSS ADDTO(STC) PROCNAME(VIRTEL) ACID(VIRTSTC)
```

TOPSDEF : TSS commands to associate ACID with VIRTEL started task

This command associates the VIRTEL started task with the VIRTSTC ACID. VIRTEL is the name of the started task procedure in the system or user PROCLIB.

Create OMVS segment for VIRTEL

```
TSS ADDTO(VIRTSTC) UID(nn) DFLTGRP(OMVSGRP) GROUP(OMVSGRP) +
        OMVSPGM('/bin/sh') HOME('/')
```

TOPSDEF : TSS commands to create OMVS segment for VIRTEL

This command allows VIRTEL to access the TCP/IP stack. The name of the group (OMVSGRP in this example) should be adapted according to your naming conventions.

Define VIRTEL resource classes in the RDT

```
TSS ADDTO(RDT) RESCLASS(VIRTAPPL)
TSS ADDTO(RDT) RESCLASS(VIRTNODE)
```

TOPSDEF : TSS commands to define VIRTEL resource classes

VIRTEL uses two resource classes for security management.

> The first class, whose name must match the RAPPL parameter of the VIRTCT, contains the names of VTAM applications used by VIRTEL Multi-Session, and the names of external servers used by VIRTEL Outgoing Calls (Videotex).

The second class, whose name must match the RNODE parameter of the VIRTCT, contains node names for VIRTEL Incoming Calls, the names of sub-applications and directories for VIRTEL administration, and the internal names of transactions associated with entry points for VIRTEL Web Access.

Attach resources to VIRTEL department

```
TSS ADDTO(VIRTDEP) VIRTAPPL(AE) Annuaire électronique
TSS ADDTO(VIRTDEP) VIRTAPPL(SNCF) Serveur SNCF
TSS ADDTO(VIRTDEP) VIRTAPPL($$ALLSRV) Authorize all servers
TSS ADDTO(VIRTDEP) VIRTNODE($$ARBO$$) Arborescence (admin.)
TSS ADDTO(VIRTDEP) VIRTNODE($$UTIL$$) Users
TSS ADDTO(VIRTDEP) VIRTNODE($$APPL$$) Applications
TSS ADDTO(VIRTDEP) VIRTNODE($$CMP3$$) Compression
TSS ADDTO(VIRTDEP) VIRTNODE($$GLOG$$) Entry points
TSS ADDTO(VIRTDEP) VIRTNODE($$LINE$$) Lines
TSS ADDTO(VIRTDEP) VIRTNODE($$PCPC$$) Intelligent terminals
TSS ADDTO(VIRTDEP) VIRTNODE($$RESO$$) Network management
TSS ADDTO(VIRTDEP) VIRTNODE($$SECU$$) Virtel security
TSS ADDTO(VIRTDEP) VIRTNODE($$SERV$$) External servers
TSS ADDTO(VIRTDEP) VIRTNODE($$TERM$$) Terminals
TSS ADDTO(VIRTDEP) VIRTNODE(PC) Administration transactions
TSS ADDTO(VIRTDEP) VIRTNODE(PC-0020) Logoff transaction
TSS ADDTO(VIRTDEP) VIRTNODE(SERVEUR) Transaction SERVEUR
TSS ADDTO(VIRTDEP) VIRTNODE(W2H) Web Access transactions
TSS ADDTO(VIRTDEP) VIRTNODE(W2H-10) Web Access CICS transaction
TSS ADDTO(VIRTDEP) VIRTNODE(CLI) Client transactions
```

TOPSDEF : TSS commands to define VIRTEL resources

AE and SNCF are examples of external servers defined for VIRTEL Outgoing Calls (Videotex). VIRTEL permits access to an external server if the user is authorized to the corresponding resource name. Users who are authorized to the resource named $$ALLSRV may access all servers.

The resources named $$xxxx$$ are used to grant access to the various VIRTEL administrator functions. Refer to the VIRTEL Connectivity Reference manual for more details.

The resource named PC is a generic resource which permits access to the VIRTEL administrator 3270 interface transactions, whose internal name is PC-nnnn. The resource PC-0020 permits specific access to the 3270 Logoff transaction.

Resource W2H is a generic resource which permits access to VIRTEL Web Access transactions (internal name W2H-nn) and to the directory W2H-DIR. The resource W2H-10 permits specific access to the CICS Web Access transaction.

Resource CLI is a generic resource which permits access to customer-defined transactions (internal name CLI-nn) and to the directory CLI-DIR.

Set Facility to resident

Set the facility to resident using the following command.

```
TSS MODIFY FAC(VIRTFAC=RES)
```

Create administrator profile

```
TSS CREATE(VIRTADP) NAME('VIRTEL ADMINISTRATOR') +
        TYPE(PROFILE) DEPARTMENT(VIRTDEP)
TSS ADDTO(VIRTADP) FACILITY(VIRTFAC)
TSS PERMIT(VIRTADP) VIRTAPPL(AE)
TSS PERMIT(VIRTADP) VIRTAPPL(SNCF)
TSS PERMIT(VIRTADP) VIRTAPPL($$ALLSRV)
TSS PERMIT(VIRTADP) VIRTNODE($$ARBO$$)
TSS PERMIT(VIRTADP) VIRTNODE($$UTIL$$)
TSS PERMIT(VIRTADP) VIRTNODE($$APPL$$)
TSS PERMIT(VIRTADP) VIRTNODE($$CMP3$$)
TSS PERMIT(VIRTADP) VIRTNODE($$GLOG$$)
TSS PERMIT(VIRTADP) VIRTNODE($$LINE$$)
TSS PERMIT(VIRTADP) VIRTNODE($$PCPC$$)
TSS PERMIT(VIRTADP) VIRTNODE($$RESO$$)
TSS PERMIT(VIRTADP) VIRTNODE($$SECU$$)
TSS PERMIT(VIRTADP) VIRTNODE($$SERV$$)
TSS PERMIT(VIRTADP) VIRTNODE($$TERM$$)
TSS PERMIT(VIRTADP) VIRTNODE(PC(G))
TSS PERMIT(VIRTADP) VIRTNODE(SERVEUR)
TSS PERMIT(VIRTADP) VIRTNODE(W2H(G))
TSS PERMIT(VIRTADP) VIRTNODE(CLI(G))
```

TOPSDEF : TSS commands to create VIRTEL administrator profile

The VIRTEL administrator profile is named VIRTADP. You may choose a different name if required. In this example the administrator is granted access to all of the VIRTEL administration functions as well as to transactions PC-nnnn, W2H- nn and CLI-nn, and to directories W2H-DIR and CLI-DIR.

Note: If you are implementing the Virtel USERPARM feature you should also add the following profiles:

```
TSS ADDTO(VIRTDEP)  VIRTNODE(USERPARM)
TSS PERMIT(VIRTADP) VIRTNODE(USERPARM)
TSS PERMIT(VIRTUSP) VIRTNODE(USERPARM)    <- all Virtel users should have
↪this rule.
```

Create user profile

```
TSS CREATE(VIRTUSP) NAME('VIRTEL USER') +
        TYPE(PROFILE) DEPARTMENT(VIRTDEP)
TSS ADDTO(VIRTUSP) FACILITY(VIRTFAC)
TSS PERMIT(VIRTUSP) VIRTAPPL(AE)
TSS PERMIT(VIRTUSP) VIRTAPPL(SNCF)
TSS PERMIT(VIRTUSP) VIRTNODE(W2H-10)
```

TOPSDEF : TSS commands to create VIRTEL user profile

The VIRTEL general user profile is named VIRTUSP. You may choose a different name if required. In this example the general user is granted access to external servers AE and SNCF, as well as to transaction W2H-10.

Allow everyone to use the 3270 LOGOFF transaction

```
TSS PERMIT(ALL) VIRTNODE(PC-0020)
```

TOPSDEF : TSS command to permit access to 3270 Logoff transaction

This command permits all users to use the 3270 Logoff transaction, whose internal name is PC-0020.

Define VIRTEL general users

```
TSS ADDTO(userid1) PROFILE(VIRTUSP)
TSS ADDTO(userid2) PROFILE(VIRTUSP)
```

TOPSDEF : TSS command to add general users

These commands define userid1 and userid2 as VIRTEL general users by adding the VIRTEL user profile to their ACID.

8.3.2.12. Define VIRTEL administrators

```
TSS ADDTO(admin1) PROFILE(VIRTADP)
TSS ADDTO(admin2) PROFILE(VIRTADP)
```

TOPSDEF : TSS command to add administrators

These commands define admin1 and admin2 as VIRTEL administrators by adding the VIRTEL administrator profile to their ACID.

Authorize the VIRTEL LOADLIB

The VIRTEL load library should normally be APF-authorized. If this is not the case, NOAUTH should be specified in the VIRTFAC facility.

AutoCommands at initialisation

When starting up VIRTEL an attempt will be made to open the STARTUP member of the PDS VIRCNTL. This member will Virtel commands which can be executed file at initialization.

Example of STARTUP member: -

```
* ADD SILENCE MESSAGES *
SILENCE=VIR0018I
SILENCE=VIR0012I
* SWITCH SILENCE *
SILENCE
* SET TRACE *
TRACE,L=C-HTTP,ON
* LIST SILENCE MESSAGES *
SILENCE=LIST
* DISPLAY TCT     *
TCT
* DISPLAY STAT STATUS'
STAT,D
* DISPLAY LOG STATUS
LOG,D
* DISPLAY SNAPMSG TABLE
SNAPMSG,LIST
```

CHAPTER

NINE

APPENDIX

9.1 Appendix A. Virtel Modules

9.1.1 Virtel Modules

The functionality of VIRTEL is divided into components known as "modules". The following is a list of the VIRTEL modules:

Kernel modules

```
VIR0000 System initialisation
VIR0001 VSAM access routines
VIR0002 Console command processing
VIR0004 SNAP trace/dump formatter
VIR0005 Terminal and line management, also X25 call packet management
VIR0006 Statistics I/O subtask
VIR0007 Abend recovery routine
VIR00080 Security functions for no security
VIR00081 Security functions for Virtel security
VIR00082 Security functions for TOP-SECRET without RACROUTE
VIR00083 Security functions for RACF without RACROUTE
VIR00084 Security functions for TOP-SECRET with RACROUTE
VIR00085 Security functions for ACF2 with ACFDIAG (for VM)
VIR00086 Security functions for ACF2 or RACF with RACROUTE
VIR0009 VTAM interface module
```

Communication modules

```
VIR0C12         Web-to-Host Interface CGI
VIR0U12         Web-to-Host utility functions
VIR0V12         Web-to-Host utility functions
VIR0X12         X25 by structured field
VIR0011A        3270 multisession processing
VIR0011B        3270 Compr2 Minitel 40 colonnes
VIR0011C        3270 Compr2 Minitel 80 colonnes
VIR0011D        Web-to-Host 3270 scenario processing
VIR0012         Minitel 3270 emulation
VIR0013         3270 receive processing
VIR0014         Minitel Support
VIR0014A        LU1 Term Support
VIR0015         Multi-session 3270 + File Transfer
```

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```
VIR0016         Terminal 24x80 Support
VIR0018         VT100 Support
VIR0019         Inverse 3270 emulation
VIR0034         CEPT1 Protocol Support
VIR0035         VIRTEL/PC
VIR0039         Interface LECAM
```

Transaction modules

```
VIR0020         Multi-session signon (pre-transaction version)
VIR0020A        Multi-session signon
VIR0020B        Multi-session signon with userid+password in logon data
VIR0020C        Multi-session signon with userid in logon data
VIR0020H        Basic authentication for HTTP
VIR0020L        Multi-session signon (Minitel 40 columns)
VIR0020M        Multi-session signon (Minitel 40 columns)
VIR0020P        Multi-session signon (Minitel 40 columns)
VIR0021         Multi-session menu
VIR0022         Virtel administration: main menu
VIR0023         Virtel administration: terminals
VIR0025S        List of external servers in structured field
VIR0025T        Call named external server
VIR0027         Virtel administration: CVC status display
VIR0029         3174 emulation (LLC3 client)
VIR0031         Virtel administration: external servers
VIR0041B        Page upload by SMTP
VIR0041C        Page upload by HTTP
VIR0042         Virtel administration: directories
VIR0043         Virtel administration: directory contents
VIR0044         Virtel administration: entry points
VIR0045         Virtel administration: transactions
VIR0046         Virtel administration: lines
VIR0047         Virtel administration: rules
VIR0048         Virtel administration: line summary display
VIR0049         Virtel administration: line summary expanded display
```

Utility function modules

```
VIR0017         Utility functions
VIR0B17         Utility functions
VIR0C17         Utility functions
```

Line interface modules

```
VIR0062         APPC LU6.2 interface module
VIR0I09         VTAM interface module (bis)
VIR0T09         TCP/IP interface module (HPNS EXIT mode)
VIR0T10         TCP/IP interface module (HPNS ECB mode)
```

Terminal interface modules

```
VIR0I19         Interface Pseudo (AntiPCNE/AntiGATE/AntiFASTC)
VIR0T19         Interface Pseudo (TCP/IP)
```

Protocol modules

```
VIRHTTP         HTTP protocol module
VIRSMTP         SMTP protocol module
VIRXOT          XOT protocol module
VIRXTP          XTP protocol module
VIR0PASS        VIRPASS protocol module
VIR00IE         AntiPCNE protocol module
VIR00IF         AntiFASTC protocol module
VIR00IG         AntiGATE protocol module
VIR0715         APPC1 protocol module
VIR0815         APPC2 protocol module
VIR0S15         Structured fields protocol module
```

The VIRTEL product contains support for the base kernel and all modules. The functionality of each module is activated either by setting specific parameters in the VIRTCT or by the activation of appropriate configuration definitions in the VIRARBO file.

Please refer to your license agreement for the particular terms and conditions under which you are authorised to use the various VIRTEL modules.

9.2 Appendix B. VSE ICCF Editor commands

PFKs

```
F6                      Find
F7                      Scroll back
F8                      Scroll forward
F9                      Top of file
F10                     Scroll left
F11                     Scroll right
F12                     End of file
```

Locate commands

```
L string        Find next
LU string       Find previous
```

Global Change

```
C/oldstring/newstring/* G       Global change
```

Cursor positioning

```
N n                     Scroll forward n lines
U n                     Scroll back n lines
```

Command Recall

Prefix a command with & to make it stay in the entry area.

Line commands

```
An                      Insert n blank lines
Dn                      Delete n lines
Cn                      Copy n lines to scratchpad
Mn                      Move n lines to scratchpad
I                       Insert scratchpad after this line
"n                      Duplicate this line n times
```

9.3 Trademarks

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