VIRTEL Installation Free Starter Edition

User's Guide

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VIRTEL FSE installation procedure under MVS

The procedure for installing VIRTEL Free Starter Edition is as follows :

1. Run the job $ALOCDSU to create the TRANSFER.XMIT file.
2. Upload the virtel453fse.xmit file to the TRANSFER.XMIT file IN BINARY MODE.
3. Edit the job $RESTFSE specifying the high-level qualifiers and SMS or volume serial information for the VIRTEL datasets.
4. Run the job $RESTFSE to create the VIRTEL datasets :
   - yourqual.VIRT453.LOADLIB
   - yourqual.VIRT453.MACLIB
   - yourqual.VIRT453.SAMPLIB
   - yourqual.VIRT453.SERVLIB
   - yourqual.VIRT453.SCRNAPIMACLIB.
   - yourqual.VIRT453.CNTL
   - yourqual.VIRT453.SAMPTRSF.
   - yourqual.VIRT453.ARBO
   - yourqual.VIRT453.HTML
   - yourqual.VIRT453.HTML.TRSF.
   - yourqual.VIRT453.SWAP
5. Use the SETPROG APF command to add the VIRTEL LOADLIB to your system APF authorized program library list :

   ```
   SETPROG APF,ADD,DSN=yourqual.VIRT453.LOADLIB,VOL=volser
   ```

   (prefix the command with / if using SDSF)
6. Edit member ARBOLOAD in the VIRTEL CNTL library :
   - change LANG=EN to LANG=FR if French language is desired
   - set LOAD= the name of your VIRTEL LOADLIB
   - set SAMP= the name of your VIRTEL SAMPLIB
   - set ARBO= the name of your VIRTEL ARBO file
   - set VTAMLST= the name of a your VIRTEL CNTL library. The job will create a sample VTAMLST member in this library.

- CHANGE ALL 'DBDCCICS' 'xxxxxx' where xxxxxx is the APPLID of your CICS system
- if you plan to run Virtel Screen Redesigner, set VSR=YES

Submit the job ARBOLOAD. This creates your VIRTEL CONFIGURATION (the ARBO file) and a sample VTAMLST member VIRTAPPL.

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 delete and reinitialize the ARBO file by running the ARBOBASE job from the VIRTEL SAMPLIB, followed by a rerun of the ARBOLOAD job.

7. Copy the VIRTAPPL member (created by the ARBOLOAD job in step 6) from the CNTL library into your installation's VTAMLST dataset. Now activate the VTAMLST member using this command :

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

(prefix the command with / if using SDSF)

8. Edit the procedure VIRTELS in your VIRTEL CNTL library so that the high-level qualifiers match the names you used when you loaded the files in step 4. If French language is desired, change TCT=US to TCT=FR in the procedure. Finally copy the procedure to your system PROCLIB, renaming it as VIRTEL.
9. 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 4. 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.
10. Start VIRTEL.
11. You can now logon to VIRTEL from a 3270 terminal using the command LOGON APPLID(VIRTEL) and you can display the VIRTEL Web Access menu in your web browser using the following URL :

```
http://nnn.nnn.nnn.nnn:41001
```

where nnn.nnn.nnn.nnn is the IP address of your z/OS system indicated by message VIRHT02I LINE HTTP-W2H (W-HTTP) HAS URL ... issued during VIRTEL startup

12. 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 appropriate section below.
13. Refer to the VIRTEL Screen Redesigner HOWTO manual for step-by-step instructions on how to start modernising your mainframe applications.

- Ask to support@syspertec.com to receive any help or somme more information if nedded.

How to activate RACF security

Perform the following steps to activate RACF security for VIRTEL in the MVS environment.

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.

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 youruserid 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

Refine 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 W2H-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 W2H-10 (CICS) TRANSACTION    */
  /*-------------------------------------------------------*/
  RDEF FACILITY VIRTEL.W2H-10 UACC(NONE) /* CICS */
  PE VIRTEL.W2H-10 CL(FACILITY) ACC(READ) ID(DEMOGRP)
  /*-------------------------------------------------------*/
  /* REFRESH THE RACF PROFILES                             */
  /*-------------------------------------------------------*/
  SETR REFRESH RACLIST(FACILITY)
//
```

RACFDEF : JCL to update RACF definitions

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

How to activate ACF2 security

Perform the following steps to activate ACF2 security for VIRTEL in the MVS environment.

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,
               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 Minitel 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.

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.

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(0) 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 transaction

```
$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.

How to activate Top Secret (TSS) security

Perform the following steps to activate TSS security for VIRTEL in the MVS environment.

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,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 Minitel 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.

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.

Create VIRTEL facility

```
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(0) 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 (Minitel), 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.

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.

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.

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.