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IBM Tape Manager for z/VM with TS7700

Installation and Configuration



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1. About this information

This document reflects the author's understanding of IBM Tape Manager for z/VM and IBM DFSMSRMS for z/VM program products as they relate to the TS7700 virtual tape environment. This document is presented **As-Is** and IBM does not assume responsibility for the statements expressed herein. It reflects the opinions of the author, based on their experiences. If you have questions about the contents of this document, please contact the author Tracy Dean at tld1@us.ibm.com. You can reach the additional authors for this document at aupamanyu@rocketsoftware.com, skumar5@rocketsoftware.com, knayak@rocketsoftware.com.

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3. Introduction

This document describes the installation method and the step-by-step procedures to:

- Install and activate the Removeable Media Services (RMS) component of DFSMS/VM.
- Configure a real or virtual tape library in the IBM TS7700 family for use with IBM Tape Manager for z/VM (Tape Manager).
- Install and configure Tape Manager on minidisk in an SSI environment.

If you are using Tape Manager with non-IBM hardware, the steps for RMS and the TS7700 are not required.

You must complete each step of the installation. Do not skip any step unless directed to do so.

Several screenshots of the VTS GUI are included in this document. These screenshots are based on the author's system. You may have an earlier or later version of the software and thus your GUI may look different. However, the functionality should be the same.

Throughout these instructions, the use of IBM-supplied default minidisk addresses and user IDs is assumed. If you use different user IDs or minidisk addresses, adapt these instructions as needed for your environment.

The sample console output presented throughout these instructions was produced on a z/VM version 7.2 system. Your messages may differ from those depicted here.

4. Checklist

To note the values that you will need throughout the installation process, review, and use this checklist.

Note: The information in the Description column of the table is explained in detail in the subsequent sections of the document. You can determine the values when you get to that instruction. Be sure to document your selection in this table for reference during other sections of the installation process.

Product	Description	Value	Yes / No
DFSMS/RMS	Order the latest service for RMS (it is not in the z/VM RSU.) You specifically need at least PTF UM35306 so RMSMASTR can tolerate MACHINE ESA in its directory.	NA	
TS7700	There was a TS7700 problem that causes Backup and Restore Manager to fail when writing to new tapes when tapes are managed in this way. If you are using Backup and Restore Manager, please apply the TS7700 firmware fix for PMH 23899,122,000 before implementing these changes on your system. This fix is included in firmware level 8.42.2.12 and later.	NA	
TS7700	Composite library sequence number (5 characters)		
TS7700	Range of volume serials to use for z/VM		
TS7700	Range of virtual device addresses to use for z/VM		
TS7700	Available scratch category to use for z/VM volumes. IBM suggests something in the range x'0080' through x'0089'.		
TS7700	Available private (used) category to use for z/VM volumes. You can choose the default x'FFFF'.		

Tape Manager	<p>One of the following:</p> <ul style="list-style-type: none"> – IBM Library for REXX on zSeries® R4 (5695-014) – IBM Alternate Library for REXX on zSeries (free download.) <p>For more information, visit Hints and tips for installing a REXX Library for use by Tape Manager for z/VM and Backup and Restore Manager for z/VM.</p>	N/A	
Tape Manager	<p>INSTPROD tool is installed and accessible. It is available on the z/VM download website: https://www.vm.ibm.com/download/packages/</p>	N/A	
Tape Manager	<p>Media name to use for Tape Manager (1 to 6 alphanumeric characters of your choice.)</p>		
Tape Manager	<p>Library name to use for Tape Manager (1 to 6 alphanumeric characters of your choice.)</p>		
Tape Manager	<p>Device pool name (1 to 8 alphanumeric characters of your choice.)</p>		

5. Install and configure DFSMS/RMS

5.1 Plan your installation for DFSMS/VM

Use the *VMFINS* command to plan the installation.

When you receive the product electronically, you need to decompress the envelope files to the MAINTvrm 500 minidisk. The decompression is currently done by using the DETERSE MODULE (shipped with VMSES/E). For more information on retrieving and decompressing products received as envelope files, visit <http://www.vm.ibm.com/install/vmlpinst.html>. Perform the following steps to decompress the envelope and obtain planning information:

1. Upload the electronic envelope files to the MAINTvrm 500 disk as BINARY FIXED 1024.
2. Log on to MAINTvrm ID.
3. Establish read access to the VMSES/E code.
vmlink maintvrm 5e5 <* b rr>
4. Establish write access to the Software Inventory disk.
vmlink maintvrm 51D <51d d m>
5. Access the MAINTvrm 500 disk.
vmlink maintvrm 500 <500 c rr>
6. Unpack the product envelope files:
deterse inputfn inputft inputfm envfilename servlink c (replace
The output SERVLINK should have a logical record length of 4005.
7. Load the DFSMS/VM product control files to the 51D minidisk.
vmfins install info (nomemo env envfilename
where, *envfilename* is the file name of the product envelope file.
The file type must be SERVLINK.
8. Obtain resource planning information for DFSMS/VM. The product will not be loaded by the VMFINS command at this time. The PLAN option indicates that VMFINS will perform requisite checking, plan system resources, and provide an opportunity to override the defaults in the product parameter file.
vmfins install ppf vsm221b rmsonly (plan nomemo envfilename
where, *envfilename* is the file name of the product envelope file.
The file type must be SERVLINK. The following is a sample:


```

vmfins install ppf vsm221b rmsonly (plan nomemo env dfsmsvm1
VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2601R Do you want to create an override for :PPF VSM221B RMSONLY
          :PRODID VSM221B%DFSMSVM?
          Enter 0 (No), 1 (Yes) or 2 (Exit)
0
VMFINS2603I Processing product :PPF VSM221B RMSONLY :PRODID VSM221B%DFSMSVM
VMFINS1909I VSM221B PLANINFO created on your A-disk
VMFREQ2805I Product :PPF VSM221B RMSONLY :PRODID VSM221B%DFSMSVM has passed
          requisite checking
VMFINT2603I Planning for the installation of product :PPF VSM221B RMSONLY
          :PRODID VSM221B%DFSMSVM
VMFRMT2760I VMFRMT processing started
VMFRMT2760I VMFRMT processing completed successfully
VMFINS2760I VMFINS processing completed successfully
Ready; T=0.16/0.17 10:52:32

```

9. Review the install message log (\$VMFINS \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate z/VM: System Messages and Codes, or use on-line HELP.

vmfview install

10. Optional: Log off from MAINTvrm User ID.

5.2 Allocate resources for installing DFSMS/VM on minidisk

1. Log on to MAINTvrm user ID.
2. Obtain the directory entries for the DFSMS and RMSMASTR user IDs.
3. For DFSMS, obtain the directory entry from the VSM221B PLANINFO file on MAINTvrm A-disk or use the sample provided in Step 13. Use the sample directory entry as a model for your directory entry. This user ID should be defined as a single-configuration user which uses the USER directory statement. This is how the directory entry is defined in the sample.
4. For RMSMASTR, use the sample directory entry in Step 13 below. Do not use the directory entry for RMSMASTR from VSM221B PLANINFO.
5. Additional directory entries specified in VSM221B PLANINFO are not needed for RMS and can be ignored.
6. Change the passwords for DFSMS and RMSMASTR from RACFPW to a valid password, in accordance with your security guidelines.
7. Ensure the DFSMS directory entry includes the following link statements to the VMSES/E disks:

```
link maintvrm 5e5 5e5 rr
link maintvrm 51d 51d mr
```

8. If you are using a security manager, ensure that the DFSMS user ID is properly authorized to link to the MAINTvrm 5E5 and MAINTvrm 51D disks.
9. Apply security settings for both users DFSMS and RMSMASTR. The following sample commands apply to customers who use RACF.

```
rac permit maintvrm.5e5 class(vmmdisk) id(DFSMS) ac(read)
rac permit maintvrm.51d class(vmmdisk) id(DFSMS) ac(alter)
rac permit maint.19d class(vmmdisk) id(DFSMS) ac(read)
rac setr refresh generic(vmmdisk)
```

10. Ensure the DFSMS user ID has privilege class E, used for building the DFSMSSEG shared segment.
11. Ensure the DFSMS user ID has the NAMESAVE DFSMSSEG statement in its directory entry, necessary for building the DFSMSSEG shared segment.
12. Add the MDISK or AMDISK statements to the directory entries for DFSMS and RMSMASTR. If appropriate, also place passwords on the MDISK statements. The example directory entries below use MDISK.

If you are using VM/Directory Maintenance (DirMaint), change the statements to AMDISK accordingly, for example:

```
amdisk 191 3390 autog 40 group1 mr
```

Sample of DFSMS DIRECT and RMSMASTR DIRECT files:

DFSMS DIRECT

```
USER DFSMS RACFPW 64M 64M EG
* DFSMS/VM FL221 - Install User
ACCOUNT 5741-A05 DFSMS221
IPL CMS
MACHINE ESA
NAMESAVE DFSMSSEG
OPTION LNKNOPAS
CONSOLE 0009 3215 T
SPOOL 000C 2540 READER *
SPOOL 000D 2540 PUNCH A
SPOOL 000E 1403 A
*
```

```
* LINK ISPVM 0192 0192 RR
LINK MAINT 0190 0190 RR
LINK MAINT 019E 019E RR
LINK MAINT 019D 019D MR
LINK MAINT 051D 051D MR
LINK MAINT 05E5 05E5 RR
MDISK 0191 3390 <scyl> 030 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01C4 3390 <scyl> 002 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01C2 3390 <scyl> 002 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01D6 3390 <scyl> 040 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01A6 3390 <scyl> 008 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01A4 3390 <scyl> 008 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01A2 3390 <scyl> 008 <volser> MR RDFSMS WDFSMS MDFSMS
MDISK 01B1 3390 <scyl> 069 <volser> MR ALL WDFSMS MDFSMS
MDISK 01B5 3390 <scyl> 069 <volser> MR ALL WDFSMS MDFSMS
```

RMSMASTR DIRECT

```
IDENTITY RMSMASTR RACFPW 32M 32M BG
BUILD ON Member1 USING SUBCONFIG RMSMST-1
* BUILD ON Member2 USING SUBCONFIG RMSMST-2
* BUILD ON Member3 USING SUBCONFIG RMSMST-3
* BUILD ON Member4 USING SUBCONFIG RMSMST-4
* DFSMS/VM FL221 - Removable Media Services SVM
ACCOUNT DFSMS
IPL CMS
IUCV ALLOW
IUCV *IDENT RESANY GLOBAL REVOKE
MACHINE ESA
OPTION ACCT MAXCONN 400 QUICKDSP
SHARE RELATIVE 1300
STDEVOPT LIBRARY CTL
CONSOLE 0009 3215 T OPMGRM1
SPOOL 000C 2540 READER *
SPOOL 000D 2540 PUNCH A
```

```

SPOOL 000E 1403 A
*
LINK DFSMS 01B5 0192 RR
LINK MAINT 0190 0190 RR
LINK MAINT 019E 019E RR
* This SUBCONFIG is the same for a non-SSI system and the
* first member of an SSI cluster
SUBCONFIG RMSMST-1
MDISK 0191 3390 <scyl> 005 <volser> MR DFSMSR DFSMSW DFSMSM
* SUBCONFIG RMSMST-2
* MDISK 0191 3390 <scyl> 005 <volser> MR DFSMSR DFSMSW DFSMSM
* SUBCONFIG RMSMST-3
* MDISK 0191 3390 <scyl> 005 <volser> MR DFSMSR DFSMSW DFSMSM
* SUBCONFIG RMSMST-4
* MDISK 0191 3390 <scyl> 005 <volser> MR DFSMSR DFSMSW DFSMSM

```

Note: The CONSOLE statement in the RMSMASTR directory entry is updated to route to IBM Operations Manager for z/VM: OPMGRM1. This assumes that Operations Manager is already installed.

13. Add the directory entries for users DFSMS and RMSMASTR to your system's user directory. Place the new directory on-line using VM/Directory Maintenance (DirMaint) or an equivalent CP directory maintenance method. Below is a sample of placing the new directory online using DirMaint.

```

dirm add dfsms
dirm add rmsmastr

```

14. Check for any errors or warning messages.
 15. Inspect DASD layout, check for OVERLAP errors.

```

dirm free <volser>dirm used <volser>
dirm dirmap

```

16. Log off from MAINTvrm User ID

5.3 Install DFSMS/VM

1. Log on to the installation user ID DFSMS.
2. Format DFSMS minidisks

Note:

Do not format the 51D minidisk. (Defined on DFSMS as LINK MAINT 51D 51D MR).

```

format 191 A

```

yes
sms191

3. Repeat formatting each MDISK defined in DFSMS DIRECT
4. Create a PROFILE EXEC on DFSMS 191.

xedit profile exec a

5. Add the following lines to the PROFILE EXEC.

```
/* */
'ACCESS 5E5 B'
'ACCESS 51D D'
'CP SET PF11 RETRIEVE FORWARD'
'CP SET PF12 RETRIEVE BACKWARD'
```

6. Save your change and exit.

file

7. Run the profile to access MAINT's minidisks.

profile

If the Software Inventory disk (51D) was accessed R/O (read only) then establish write access to the Software Inventory disk.

8. Access the product envelope SERVLINK file is available on the MAINT 500 disk.

vmLink maintvrm 500 <* c rr>

9. Install DFSMS/VM from a product envelope.

vmfins install ppf VSM221B RMSONLY (nomemo nolink env envfilename

where, *envfilename* is the file name of the product envelope file. The file type must be SERVLINK. Use RMSONLY for installing the RMS component only.

10. Review the install message log (\$VMFINS \$MSGLOG).

If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate z/VM: System Messages and Codes, or use on-line HELP.

vmfview install

5.4 Update build status table for DFSMS/VM

1. Update the VM SYSBLDS software inventory file for DFSMS/VM. Use RMSONLY for installing the RMS component only.

vmfins build ppf VSM221B RMSONLY (serviced nolink

2. Review the install message log (\$VMFINS \$MSGLOG). If necessary, correct any problems before going on. For information about handling specific error messages, see the appropriate z/VM: System Messages and Codes or use on-line HELP.

vmfview install

3. Add DFSMS/VM into the VM SYSSUF inventory table.

vmfsuftb

4. Add DFSMS/VM into the VM SYSPINV inventory file.

```
vmfupdat syspinv PROD VSM221B membername1 membername2 membername3 membername4
```

where

membername1, *membername2*, and so on, are names of each SSI member system.

5. Log off from DFSMS user ID.

5.5 DFSMS Post installation (DFSMS/VM Tailoring)

RMSMASTR is the only DFSMS service virtual machine we need to configure.

- 1 Determine the composite library sequence number of your IBM tape library. If you do not know this information, contact your storage administrator. Add it to the checklist at the beginning of this document.
- 2 Establish a logon/logoff process. Log on into MAINTvrm user ID.
DFSMS/VM uses the RMSMASTR virtual machine to accomplish its work and this service machine must be logged on for DFSMS/VM to do its job. This is usually done by placing the XAUTOLOG command in the PROFILE EXEC of the AUTOLOG1 virtual machine or its equivalent (for example, AUTOLOG2 if RACF is installed). This will cause RMSMASTR to start automatically at the next system IPL. If you have Operations Manager for z/VM installed, place it sometime after the XAUTOLOG for OPMGRM1. This will allow Operations Manager to capture the RMSMASTR startup console.

```
vmlink autolog2 191 (w file1
```

- 3 Xedit PROFILE EXEC.
- 4 Add the following line for RMSMASTR
"PIPE CP XAUTOLOG RMSMASTR"

```

PROFILE EXEC      Z1 V 130 Trunc=130 Size=274 Line=0 Col=1 Alt=4

00000 * * * Top of File * * *
00001 /*****
00002 /*  AUTOLOG2 PROFILE EXEC
00003 /*****
00004 Address Command
00005 'CP SPOOL CONSOLE TO MAINT720 CLASS T TERM START'
00006 rrc = 0
00007 "PIPE CP XAUTOLOG OPMGRM1"
00008 "PIPE CP XAUTOLOG VMSERVS"
00009 "PIPE CP XAUTOLOG VMSERVU"
00010 "PIPE CP XAUTOLOG VMSERVR"
00011 "PIPE CP XAUTOLOG VMSERVP"
00012 "PIPE CP XAUTOLOG DTCVSW1"
00013 "PIPE CP XAUTOLOG DTCVSW2"
00014 "PIPE CP XAUTOLOG DTCVSW3"
00015 "PIPE CP XAUTOLOG DTCVSW4"
00016 "PIPE CP XAUTOLOG TCPIP"
00017 "PIPE CP XAUTOLOG RMSMASTR"
00018 "PIPE CP SLEEP 10 SEC" /* IBM-supplied default was 30 sec */
00019 "PIPE CP XAUTOLOG GCS" /* Auto-starts RSCS as well. */
00020
00021 /* Rocket lab customization: Make virtual 3270's 1200-120F */
00022 /* available from first-level z/VM via DIAL command. */
00023 'CP SET RDEVICE 1200-120F TYPE 3270'

====>

```

- 5 Save and exit.

file

- 6 Log off from MAINTvrm user ID.

- 7 Review SFS requirements for DFSMS/VM and update SFS servers.

DFSMS/VM needs proper authority to access certain SFS file pools. Some SFS parameters need to be modified by an SFS administrator to allow for DFSMS/VM connections and operations.

- 8 Update the VMSYS file pool.

a. Log on to the MAINTvrm user ID if you are not already logged on to it.

b. Grant VMSYS file pool administrator authority to DFSMS and RMSMASTR by modifying the DMSPARMS file on the VMSYS file pool server's 191 disk. To modify the DMSPARMS file, update VMSERVS to link its 191 disk read only, make the modifications to the DMSPARMS file, and update VMSERVS to link its 191 disk read/write.

```
set secuser vmservs *send cp vmservs link * 191 191 rr
```

- ```

vmlink vmservs 191 (w filel
xedit VMSERVS DMSPARMS file

```
- c. Add the following two lines:
 

```

ADMIN DFSMSADMIN RMSMASTR

```
  - d. Save and exit.
 

```

file

```
  - e. Terminate the VMSYS: file pool.
 

```

force VMSERVS

```
  - f. Restart the VMSYS: file pool. **xautolog VMSERVS**
  - g. Confirm that the changes are applied.
 

```

query enroll admin for dfsms vmsys:
query enroll admin for rmsmastr vmsys

```
  - h. Because DFSMS/VM requires space on the VMSYS file pool, enroll DFSMS as a user of VMSYS by issuing the following command:
 

```

enroll user dfsms vmsys: (blocks 500

```
- 9 Create the VMSYS:DFSMS.CONTROL directory on which the DFSMS/VM control file (DGTVCTRL DATA) resides. To create this directory, issue the following command:
 

```

create dir vmsys:dfsms.control

```
  - 10 Update the **VMSYSU file pool** for DFSMS/VM. Repeat step 8 above (Update the VMSYS file pool) for the **VMSYSU file pool** managed by the **VMSERVU** user ID.
 

If you name the file pool something other than VMSYSU or specify a user other than DFSMS, you must also update the entry in the control file (DGTVCTRL DATA in VMSYS:DFSMS.CONTROL) during customization.
  - 11 Create the work directory.
 

```

create dir vmsysu:dfsms.work

```
  - 12 Log off from MAINTvrm User ID.

## 5.6 Copy and update sample DFSMS/VM files

1. Log into DFSMS user ID.
2. Access VMSYS:DFSMS.CONTROL.
 

```

access vmsys:dfsms.control u (forcerw

```
3. Access the DFSMS/VM samples.
 

```

vmlink dfsms 1c2 <* t rr>

```
4. Copy the sample files to VMSYS:DFSMS.CONTROL directory, renaming them to DGTVCTRL DATA, DGTVAUTH DATA, and RMCONFIG DATA, respectively.
 

```

copyfile dgtrvcntl sampdata t = data u (olddate

```



```
copyfile dgtvauth sampdata t = data u (olddate
copyfile rmconfig sampcnfg t = data u (olddate
```

- Update the DGTVAUTH DATA file to authorize the following users. Be sure to replace TxLM1 with either TCLM1 for a catalog node or TRLM1 for a request node. This is only required if not using an external security manager.

DFSMS

RMSMASTR

MAINT

MAINT7x0

OPERATOR

\*

\* Default SVM names for EUM (IBM Tape Manager for z/VM) 1.3.0:

\*

TxLM1

- Modify the RM\_AUTO\_LIBRARY statement in the DFSMS/VM control file (DGTVCNTL DATA) to include your preliminary customization information. Specify the library name (one-to 32-character name of your choice), the five-character library sequence number obtained in Step 6, and the user ID to receive information related to RMSMASTR processing events.
- Change the value of RM\_LOG\_TO\_CONSOLE from 3 to 4. See the following example.

```
00144 *=====
00145 *
00146 * PART 5 - PARAMETERS PERTAINING TO THE RMS MASTER VIRTUAL MACHINE
00147 *
00148 * To perform Removable Media Services, the parameters specified
00149 * in section 1 must be specified. In addition to that, the
00150 * following parameters are required:
00151 *
00152 * DFSMSRM_MASTER_VM
00153 * RM_AUTO_LIBRARY
00154 *=====
00155
00156 DFSMSRM_MASTER_VM RMSMASTR * Userid of RMS master
00157
00158 RM_ACCOUNTING N * Accounting function on
00159
00160
00161 RM_AUTO_LIBRARY IBMVTL1 11332 OPERATOR * Removable Media Libraries
00162
00163
00164 RM_DEFAULT_SCRATCH_POOL SCRATCH0 * scratch category for
00165
00166
00167 *RM_FOREIGN_SERVER_VM RMFRSRV * Name of foreign server host
00168
00169 RM_LOG_TO_CONSOLE 4 * Log to console (3=Warning)
00170
00171
00171 * valid values 0-4 where
00171 * 4 is informational
```

- Update the RMCONFIG DATA file to include the virtual device addresses.  
See the following example:

```

RMCONFIG DATA U1 F 80 Trunc=80 Size=83 Line=69 Col=1 Alt=0

00069 * =====
00070 * =====
00071 *
00072 * Original file: RMCONFIG SAMPCNFG from DFSMS "samples" minidisk
00073 * Customized for use on RS54 - z/VM 7.1 - dpm 05 Dec 2018
00074 *
00075 * 10 Jun 2019 - dpm - Updated with recommended config for ZVM6KT##
00076 * training systems.
00077 * --> Based on RS54; 3495 ATL 3590 devices commented out
00078 *
00079 4B0 - 4BF * IBMVTL1 (TS7760 devices on RS54)
00080 580 - 581 * IBMATL1 (3590 ATL devices for RS54)
00081
00082 *180 * Sample entry for a single device
00083 *181 - 18F * Sample entry for a range of devices
00084 * * * End of File * * *

```

- Log off the DFSMS user ID.  
**#cp disc**

## 5.7 Create the PROFILE EXEC for RMSMASTR

- Log on into MAINTvrn user ID.
- If needed, provide permission to RMSMASTR.191. For example:  
**rac rdefine vmmdisk rmsmastr.191 owner(dfsms) uacc(none)**  
**rac permit rmsmastr.191 class(vmmdisk)id(rmsmastr) rc(alter)**  
**rac setr refresh generic(vmmdisk)**
- Format RMSMASTR 191 minidisk.  
**link rmsmastr 191 1191 mr**  
**format 1191 z**  
**yes**  
**rms191**

4. Link and access the samples disk.

```
vmlink dfsms 1c2 <* t rr>
```

5. Copy the RMSPROF EXEC from the samples disk to the RMSMASTR 191 disk.

```
copyfile rmsprof exec t profile = z (olddate
```

6. Xedit the PROFILE EXEC for RMSMASTR and comment out the LINK and ACCESS statements for the C runtime library.

```
00031 'SET SMSG ON'
00032
00033
00034
00035 /*****
00036 /* ACCESS the product disk. This disk is linked at logon. */
00037 /*****
00038 'ACCESS 192 D' /*@VA62683*/
00039
00040 /*****
00041 /* LINK and ACCESS disk CONTAINING the C RUN time library. */
00042 /*****
00043 /*'CP LINK MAINT 320 320 RR' */
00044 /*'ACC 320 C' */
00045 /*****
00046 /* Start DFSMS */
00047 /*****
00048 Say ''
00049 'MSG * DFSMS is starting'
00050 Say ''
00051
00052 'EXEC RMSSERV' /* Invoke DFSMS */
00053 sms_rc = rc /* Save the return code */
00054
```

7. Save and exit the file.

```
file
```

8. Release and detach the RMSMASTR 191 minidisk.

```
rel z (det
```

## 5.8 Update the RMSSERV EXEC

1. Login into MAINTvrm user ID.
2. RMSSERV EXEC is located on the DFSMS 1B5 minidisk.  
*vmlink dfsms 1b5 (w file1*
3. Xedit RMSSERV EXEC. Comment out the GLOBAL LOADLIB SCEERUN statement. See the example below.

```

RMSSERV EXEC K2 F 80 Trunc=80 size=615 Line=156 col=1 Alt=0
00156 SAY '***'
00157 END
00158
00159 IF (rc=0 | rc=1) THEN
00160 DO
00161 SAY ' /* Blank line for readability */'
00162 racf_being_used = true
00163 END
00164
00165
00166 /******
00167 /* Now, NUCXLOAD FSMDFSMS and display the addresses on the console */
00168 /* @01c*/
00169 /******
00170 /* DELETED THE NUCXDROP AND NUCXLOAD OF DMSSVM5 2@01D*/
00171 'SET CMSTYPE HT' /* Turn off messages */
00172 'NUCXDROP FSMDFSMS' /* Drop FSMDFSMS */
00173 'SET CMSTYPE RT' /* Turn on messages */
00174 'NUCXLOAD FSMDFSMS' /* Load FSMDFSMS */
00175 'NUCXMAP' /* Show where it is at */
00176 SAY ' /* Blank line for readability */'
00177
00178 /*'GLOBAL LOADLIB SCEERUN'*/
00179 /******

```

4. Save and exit the file.  
*file*
5. Logoff from MAINTvrm user ID.

## 5.9 Start RMSMASTR machine

RMSMASTR virtual machine can be started in two ways:

1. If IBM Operations Manager for z/VM is already installed:
  - a. Log into MAINTvrm user ID.
  - b. Issue **XAUTOLOG RMSMASTR** and view its console (**VIEWCON RMSMASTR**) to see if RMSMASTR is up and running.
2. If IBM Operations Manager for z/VM is not installed:
  - a. Log into RMSMASTR user ID.
  - b. Check to see if RMSMASTR is up and running.
3. In both cases, you will see RMSMASTR attaching and detaching each of the available devices you have specified in RMCONFIG DATA. This is part of normal startup operations.

```

08/24/22 06:10:14 08 PIPOMOD 02D0DD70 00000000 02D0DD70 0008F990 31 SYSTEM SERVICE IMMCM
08/24/22 06:10:14 08 DMSWRS 015Fc430 00000000 015Fc430 00003D38 31 SYSTEM
08/24/22 06:10:14 08 FSMBBV3053I All DFSMS local APPC/VM resources initialized
08/24/22 06:10:14 08 FSMRMBLC==> Diag 254 is available
08/24/22 06:10:14 08 TAPE 04B6 ATTACHED TO RMSMASTR 04B6
08/24/22 06:10:14 08 TAPE 04B6 DETACHED BY RMSMASTR
08/24/22 06:10:14 08 TAPE 04B7 ATTACHED TO RMSMASTR 04B7
08/24/22 06:10:14 08 TAPE 04B7 DETACHED BY RMSMASTR
08/24/22 06:10:14 08 FSMSMS3203I RMSMASTR is running

```

4. Disconnect from the RMSMASTR user ID. Do not issue logoff.  
**#cp disc**
5. This completes the installation and configuration of the RMS component of DFSMS/VM.

## 6. Configure TS7700

### 6.1 Assumptions

- Virtual tape devices are varied online to all z/VM LPARs that will use them. At least one device is always available.
- Most customers share a tape library with z/OS but use a separate range of virtual device addresses for z/VM. If you do not have enough virtual tape devices to dedicate a range to z/VM then you must dynamically share a range of devices with z/OS. Contact the author if you have questions about dynamically sharing devices with z/OS.
- You have access to the TS7700 GUI to see virtual volumes, fast ready categories, etc.

### 6.2 Create categories in the TS7700

#### 6.2.1 Decide upon a Scratch Category Code

You must use a unique scratch category code for your z/VM tapes. It cannot be the same as any category codes used by z/OS.

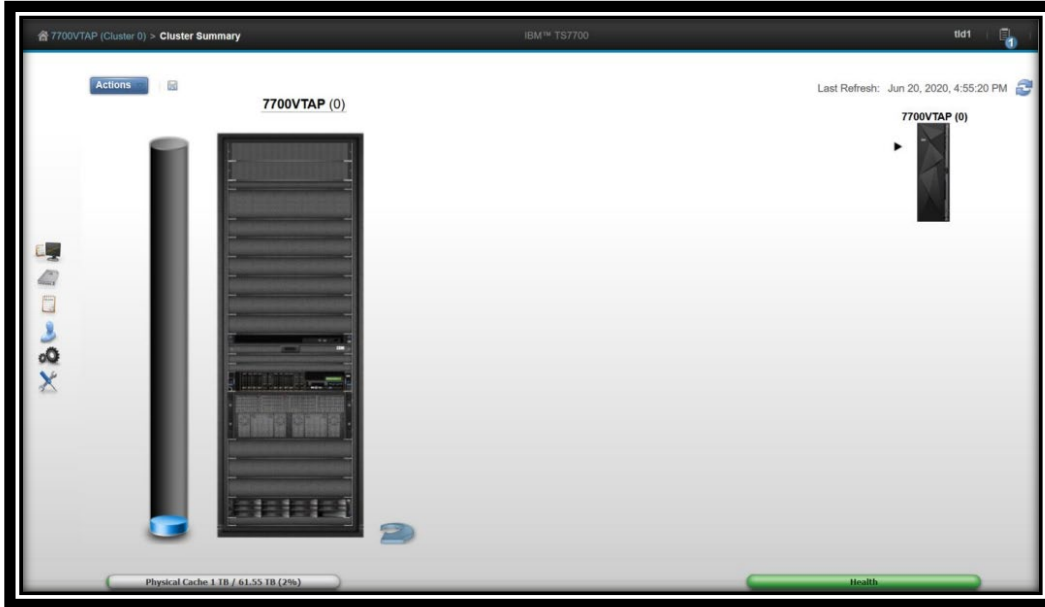
To determine the category codes used by your z/OS systems (hosts) that are connected to the VTS, issue the command `DS QLIB, CATS` on z/OS. This will display the category codes that are defined in the `DEVSUPxx PARMLIB` member. Alternatively, you can view what is already defined in the TS7700 GUI.

DFSMSrms on z/VM (hereafter referred to as RMS) supports any hex value between `x'0001'` and `x'FFFF'` for a category code. Consider using something in the range `x'0080'` through `x'0089'` for your z/VM scratch category code, since RMS will translate `SCRATCH0` through `SCRATCH9` to these hex codes.

Add your scratch category code to the checklist at the beginning of this document. In this documentation, we decided to use `x'0082'` (aka `SCRATCH2`) for our z/VM fast ready/scratch category.

**Note:** Do not use category codes `x'0000'` or `x'FFxx'`, where `xx` equals 0–9 or A-F. `0000` represents a null value, and `FFxx` is reserved for use by the hardware.

## 6.2.2 Start VTS GUI

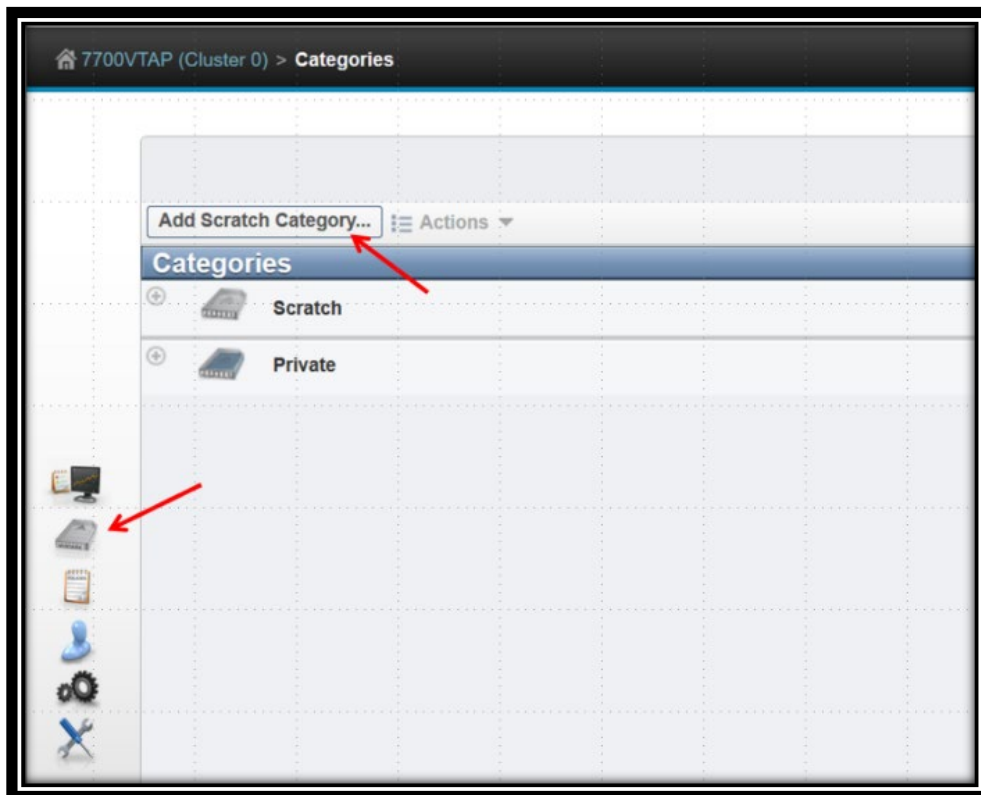


From your web browser, start the VTS GUI and log in. Above is a screenshot.

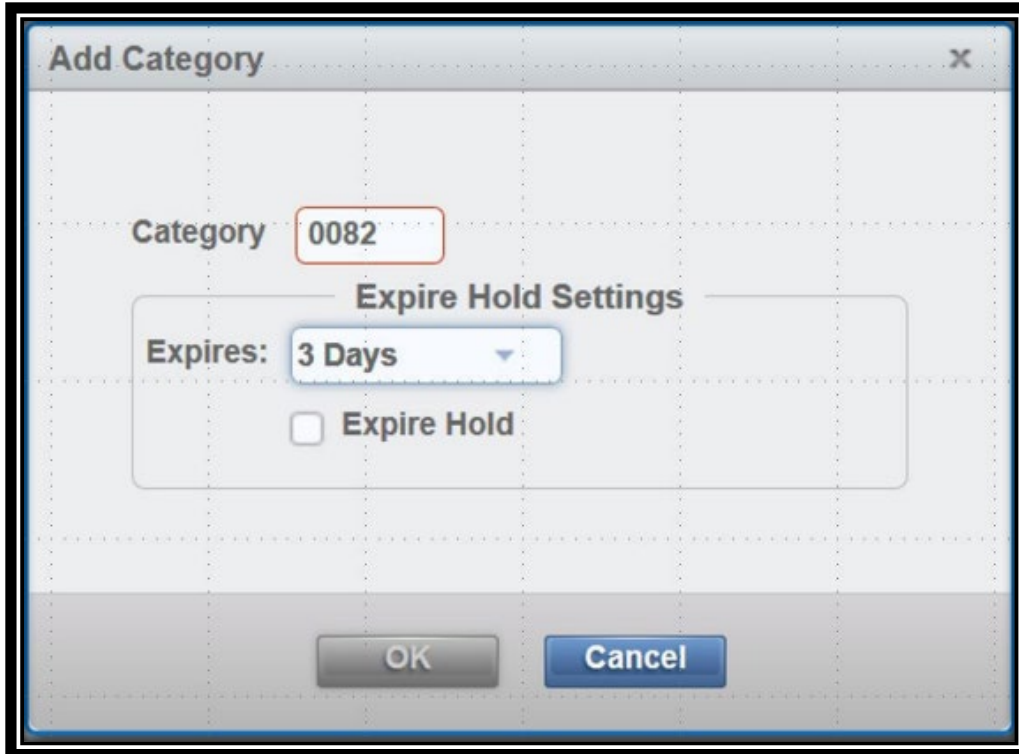
## 6.2.3 Define a scratch category

In the VTS, define a fast ready (scratch) category. Recall that we decided to use 0082.

1. Under the Virtual icon, select Categories then Add Scratch Category.



2. Specify **0082** for **Category**.



3. Specify a value for **Expires**. We have selected **3 days**.

The expire time is the number of hours or days after a virtual volume is returned to the Fast Ready category (scratch) before its data content is automatically delete-expired. The volume becomes a candidate for delete-expire once all the following conditions are met:

- The amount of time since the volume entered the Fast Ready category is equal to or greater than the expire time (3 days in our case.)
- The amount of time since the volume's record data was created or last modified is greater than 12 hours.
- At least 12 hours have passed since the volume was migrated out of or recalled back into disk cache.
- The **Expires** value specified in the library should match the **ExpHold** value that you specify for these tapes in Tape Manager. The value for **ExpHold** will be defined in Tape Manager later in this white paper.

4. Do not select the **Expire Hold** option. By not selecting it, the virtual volume can be mounted or have its category and attributes changed within the expired time duration.

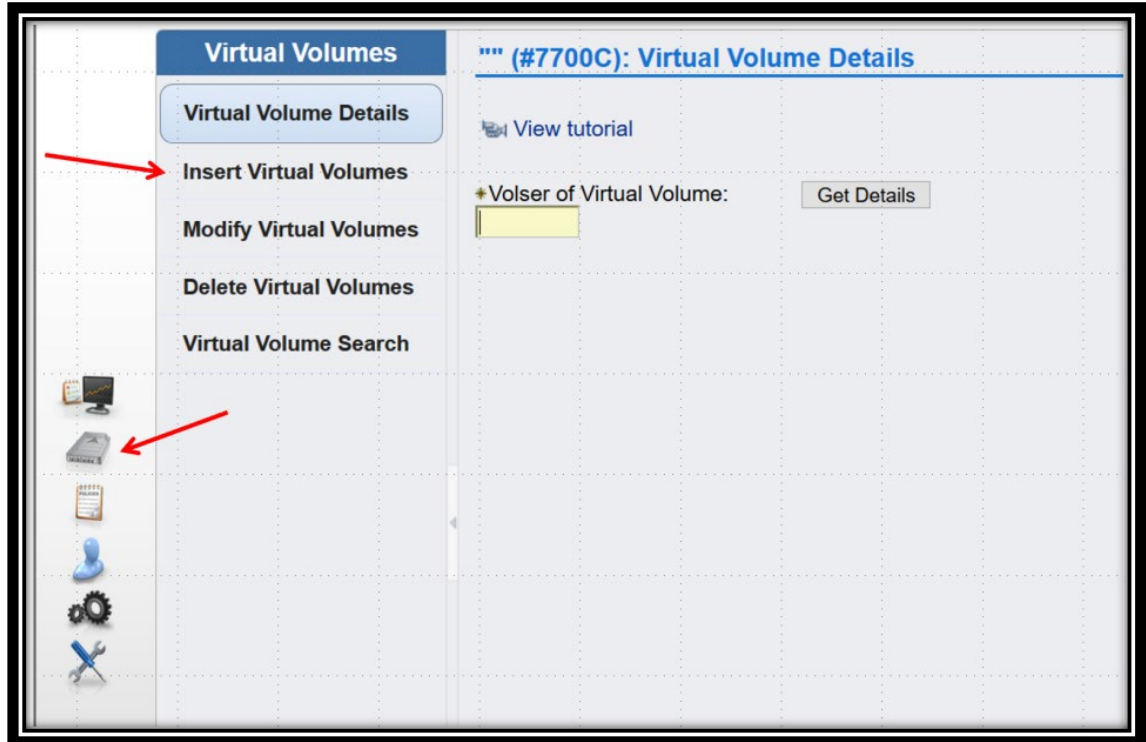
5. Click **OK**.



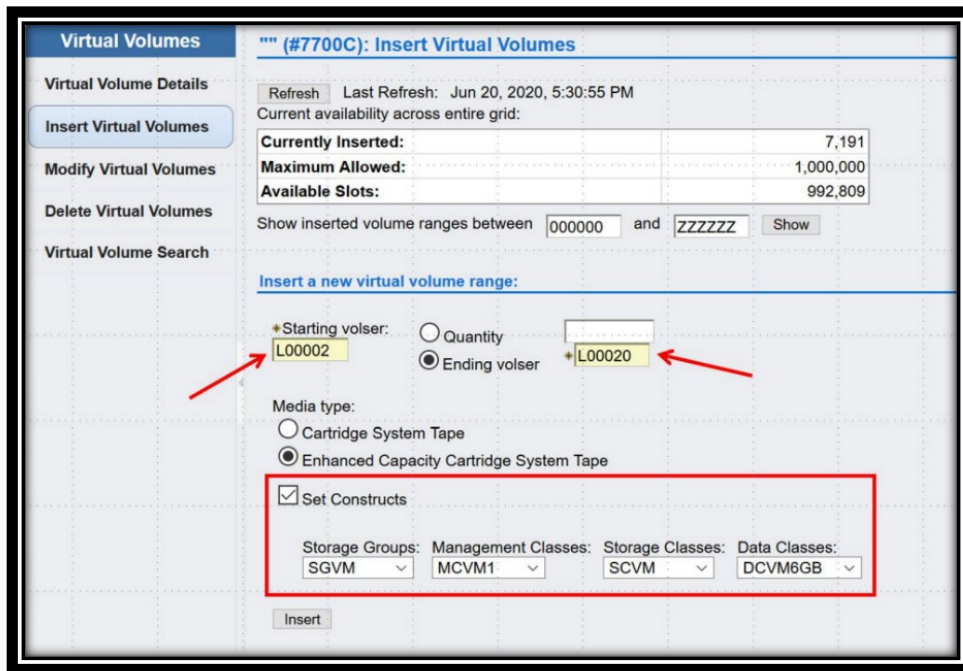
### 6.3 Create virtual volumes in VTS/TS7700

If you do not already have a range of virtual volumes to be used by z/VM, create new ones in the VTS, specifying a range you have confirmed you can use.

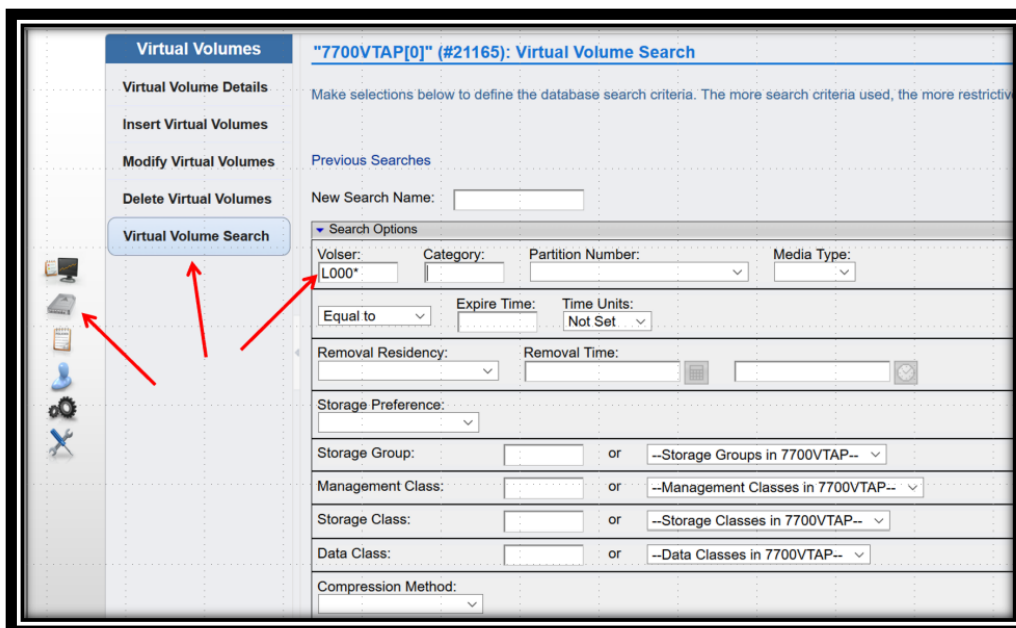
1. Under the Virtual icon, select Virtual Volumes, then Insert Virtual Volumes.



2. Specify the starting volser and either an ending volser or the quantity of volsers in the range. The author specified L00002 through L00020.
3. Choose the default constructs for storage group, management class, storage class and data class, or those requested by your storage administrator. Remember, these will apply to the volsers regardless of category code. For most z/VM installations, only the management class construct is interesting, since it determines copy policy for volume redundancy. Again, review with your storage administrator.



- Click **Insert**.
- Depending on how many volsers you inserted, this may take a few minutes. Follow the instructions on the screen to check the status of your insert request.
- You can confirm the virtual volumes are inserted using the **Virtual Volume Search** function in the GUI under **Virtual, Virtual Volumes**. You can use an asterisk (\*) for a wildcard in your search. For example, in the search options, we specified Volser L000\*.
- Verify tapes can be mounted using RMS:



- a. Log on to MAINTvrm
- b. Access the DFSMS code.  
***vmLink dfsms 1b5***
- c. Issuing the following command to mount a test volume:  
***dfsmsrm mount vol volser***  
where volser is one of the z/VM volumes you have inserted.
- d. Logoff from MAINTvrm user ID.

## 7. Install and configure Tape Manager

Follow these steps to install Tape Manager for the first time in an SSI cluster on a catalog node.

### 7.1 Initialize *INSTPROD* for installation

When the *INSTPROD* exec is used, all the installation steps are done from the *MAINTvrm* user ID.

1. Log into the *MAINTvrm* user ID.
2. Run the following command.

```
instprod initialize
```

If this is the first time *INSTPROD* is run, the product selection list is shown.

3. Select the product and system environment for installation.

```
which product do you want to work with for installation?
1. 5697-J10 IBM Operations Manager for z/VM
2. 5697-J08 IBM Tape Manager for z/VM
3. 5697-J06 IBM Backup and Restore Manager for z/VM
4. 5698-A36 IBM Tivoli OMEGAMON XE on z/VM and Linux
5. 5655-T13 IBM Security zSecure Manager for RACF z/VM

Enter your selection (1 to 5, 0 to exit):
2

select the system environment for this installation:
1. Dedicated catalog
2. Shared catalog; catalog node
3. Shared catalog; request node

Enter your selection (1 to 3, 0 to exit):
```

After a selection is made, the planning screen is shown. If *INSTPROD* has been run previously, the product selection list is skipped, and the values are shown for the current product selection. If you need to select a different product to install, see **INSTPROD SELECT**.

```

5697-J08 Tape Manager for z/VM Installation

Please enter or update the fields highlighted below

Product: 5697J08C
Component: TAPEMGR
Envelope file name on MAINT710 500:
EUM130 SERVLINK

Use DirMaint?: YES
DirMaint allocation: AUTOR
Enter: AUTOG - allocation by group name
AUTOR - allocation by region name
AUTOV - allocation by volume id

Configure Logon-By?: NO
Logon-By user ID:

The allocation name is a volume label, group, or region name that has been
defined to DirMaint. Use the correct name corresponding to the allocation
unit selected above. See the program directory for space requirements.

Common allocation name: VMT71U02
Member 1 allocation name: VMT71U02
Member 2 allocation name: VMT71U02

```

Response:

```

Installation selections and values saved.
Next step:
- Run INSTPROD PLAN
Ready; T=0.01/0.01 05:56:35

```

4. You can press PF1 at any time to view a help panel. Pressing the Enter key partially validates the fields.
5. Pressing PF3 saves the values but does not validate them. When all the fields are correct, press PF5 to validate and save the values.
6. Here is a description of each input field on this screen. Not all fields may be present, depending on the configuration of your system.

**Envelope file name on MAINTvrm 500:**

This is the CMS file name of the file with the product installation envelope. It must have a file type of SERVLINK and must be placed on the MAINTvrm 500 disk. This field cannot be blank.

**Use DirMaint?:**

Specify whether DirMaint is being used to add new directory entries to the system. If DirMaint is enabled on the system, the default value is YES. If it is disabled, the default is NO. You may change this setting to override the default value. If this setting is changed, press the Enter key to update the panel so that the correct fields are present for the selected directory management option.

**DirMaint allocation:**

This field is only displayed if the **Use DirMaint?** field is **YES**. It selects the type of automatic DASD allocation DirMaint will use. The allowed values are:

- **AUTOG** - Automatic allocation by group name.
  - The group name must be defined in the EXTENT CONTROL file.
  - A group can refer to multiple volumes.
- **AUTOR** - Automatic allocation by region name.
  - The region name must be defined in the EXTENT CONTROL file.
  - A region refers to a single volume or a portion of a single volume.
- **AUTOV** - Automatic allocation by volume id.
  - The volume must be defined in the EXTENT CONTROL file.

**Note:** Automatic allocation is always used by INSTPROD with DirMaint. To manually allocate minidisks, you must edit the files created by INSTPROD before adding the new entries to the system.

**Configure Logon-By:**

If this field is **YES**, new directory entries are configured with the special keyword **LBYONLY** in the password field and a **LOGONBY** directory record is added to each entry. If this field is **NO**, no change is made to the password field of any sample directory entries. Then edit the new directory files to change the password before adding the user IDs to the system. Or, if you are using a security manager, use it to set the password or surrogate user authority after the user IDs are added. If the default Logon-by user ID IBMVM1 exists on the system, the default for this field is **YES**. Otherwise, the default is **NO**.

**Logon-By user ID:**

If **Configure Logon-By** field is **YES**, this is the user ID added to the directory entry on the **LOGONBY** record. The default user ID for this field is IBMVM1. If the **Configure Logon-By** field is **YES**, this field must be a valid user ID. If the **Configure Logon-By** field is **NO**, this field is ignored. Change this field to a valid user ID that you will use to log on to the new IDs. If multiple user IDs should be listed on the **LOGONBY** records, manually edit the directory entries to add the additional user IDs before adding them to the user directory.

**Starting Cylinder:**

If DirMaint is not used to allocate minidisks, you must enter the cylinder number of the beginning of a sufficient amount of free space on the specified volume. If your system has fixed block disks, this field refers to the starting block number of the free space. INSTPROD will allocate minidisks starting at the specified cylinder or block until all minidisks are

allocated. Before the updated source directory is put online, you must check that the new allocations do not overlap with any existing minidisks and are contained within the real volume. Use the **DISKMAP** or **DIRMAP** commands to perform this check. If the same volume label name is specified in multiple allocation name fields, the first starting cylinder field of that name applies to all the allocations that have the same name.

**Common allocation name:**

This is the volume label, region name, or group name that will be used to allocate minidisks for the installation user ID and any common configuration minidisks used by the product. In an SSI cluster, these minidisks should be on a common volume that is shared by all systems in the cluster. If DirMaint is not used on the system, this field always refers to a volume label. If DirMaint is used, the meaning of the value in this field depends on the DirMaint allocation field value. Volume labels can be from 1 to 6 characters long. Region and group names can be up to 8 characters long.

**151 cylinders** are required for minidisks in this section.

**System allocation name:**

This is the volume label, region name, or group name that will be used to allocate minidisks for the production user IDs of the product. If DirMaint is not used on the system, this field always refers to a volume label. If DirMaint is used, the meaning of the value in this field depends on the DirMaint allocation field value. Volume labels can be from 1 to 6 characters long. Region and group names can be up to 8 characters long. The same allocation name can be used in multiple allocation fields.

**97 cylinders** is required for minidisks in this section.

**Member n allocation name:**

This the volume label, region name, or group name that will be used to allocate minidisks for the production user IDs of the product on the specified SSI member. The value n refers to the SSI slot number of the member. In an SSI cluster, these minidisks may be on private system volumes that are not shared with any other systems in the cluster. If DirMaint is not used on the system, this field always refers to a volume label. If DirMaint is used, the meaning of the value in this field depends on the DirMaint allocation field value. Volume labels can be from 1 to 6 characters long. Region and group names can be up to 8 characters long.

**97 cylinders** are required for each SSI member.

4. Once you have filled in this screen, press: **PF5**.

## 7.2 Plan your installation for Tape Manager

Run the following command:

```
instprod plan
```

The planning function loads the product planning file from the envelope and loads the product PPF file.

Here is an example of the output you see when running the PLAN function.

```
Ready: T=0.01/0.01 05:58:25
INSTPROD PLAN
DMSVML2060I MAINT 5E5 linked RR as 0120 file mode B
DMSVML2060I MAINT 51D linked M as 051D file mode D
DMSVML2060I MAINT710 500 linked RR as 0121 file mode C

Executing: EXEC VMFINS INSTALL INFO (ADD NOMEMO ENV EUM130

VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS1909I VMFINS PRODLIST created on your A-disk
VMFINS2760I VMFINS processing completed successfully

Executing: EXEC VMFINS INSTALL PPF 5697J08C TAPEMGR (ADD PLAN NOMEMO OVERRIDE NO ENV EUM130

VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2603I Processing product :PPF 5697J08C TAPEMGR :PRODID 5697J08C%TAPEMGR
VMFREQ2805I Product :PPF 5697J08C TAPEMGR :PRODID 5697J08C%TAPEMGR has passed requisite checking
VMFINT2603I Planning for the installation of product :PPF 5697J08C TAPEMGR :PRODID 5697J08C%TAPEMGR
VMFRMT2760I VMFRMT processing started
VMFRMT2760I VMFRMT processing completed successfully
VMFINS2760I VMFINS processing completed successfully

Planning information read from envelope.
Next step:
- Run INSTPROD BUILDINSTALL
Ready: T=0.19/0.21 05:58:30
```

## 7.3 Allocate resources for installing the Tape Manager code

1. Build installation directory by running the following command:

```
instprod buildinstall
```

This function reads the PLANINFO file to find the installation user ID definition and creates the source directory entry.

- a. If DirMaint is selected, the \$DIRMADD EXEC is created. This is an EXEC that has the DirMaint command that must be run to create the directory entry.
- b. If DirMaint was not selected, the directory entry is available in a file. Appending this file to your current source directory adds the new entry to your system.

2. Here is an example of the 5697J08C DIRECT

```
USER 5697J08C XXXXX 12M 24M BG
ACCOUNT 5697-J08 EUM
MACHINE ESA
IPL CMS
CONSOLE 009 3215
SPOOL 00C 2540 READER A
SPOOL 00D 2540 PUNCH A
```



```

SPOOL 00E 1403 A
LINK MAINT 190 190 RR
LINK MAINT 19E 19E RR
LINK MAINT 19D 19D RR
LINK MAINT 51D 51D MR
LINK MAINT 5E5 5E5 RR
AMDISK 2B2 3390 AUTOR 10 VMT71U02 MR
AMDISK 2C2 3390 AUTOR 2 VMT71U02 MR
AMDISK 2C4 3390 AUTOR 2 VMT71U02 MR
AMDISK 2D2 3390 AUTOR 60 VMT71U02 MR
AMDISK 2A6 3390 AUTOR 2 VMT71U02 MR
AMDISK 2A2 3390 AUTOR 2 VMT71U02 MR
AMDISK 300 3390 AUTOR 10 VMT71U02 MR
AMDISK 310 3390 AUTOR 3 VMT71U02 MR
AMDISK 191 3390 AUTOR 60 VMT71U02 MR

```

3. Add the installation directory to your system.

This is a manual step. The INSTPROD EXEC has created 5697J08C DIRECT file. Examine the file and make any modifications that may be needed. Check that the entry has a password that is valid for your system and security rules, or that the LOGONBY record is correct. Also make sure that minidisk allocations are correct.

- a. If DirMaint is not used on your system, make sure the new minidisks do not overlap any other minidisks on your system. If you use minidisk passwords on the minidisk statements, add passwords if they are needed.
- b. If DirMaint is used, the syntax of the minidisk statements looks like this:  
**AMDISK vaddr 3390 AUTOx cyls allocname MR PWS readpass writepass multipass**
- c. If DirMaint is not used, the syntax of the minidisk statements looks like this:  
**MDISK vaddr 3390 start cyls label MR readpass writepass multipass**
- d. If DirMaint is used, the \$DIRMADD EXEC was created. Run this exec to execute the DirMaint commands to add the new user ID. If any directory entry fails to add to the directory, correct the entry and attempt to add it again. If your system is part of an SSI cluster, DirMaint will automatically update the directory on all members of your cluster.
- e. If DirMaint is not used on the system, find the new directory entry in a file named 5697J08C DIRECT A. After this file has been reviewed, append to it your current USER DIRECT file to add the entry to the system. Be sure to verify the disk allocations with DISKMAP or DIRMAP and then run DIRECTXA to put the new entry online. If your system is part of an SSI cluster, then you must log on to each member and run

DIRECTXA to update the directory on that member.

```

INSTPROD FORMATINSTALL
These disks will be formatted:
5697J08C 2B2
5697J08C 2C2
5697J08C 2C4
5697J08C 2D2
5697J08C 2A6
5697J08C 2A2
5697J08C 300
5697J08C 310
5697J08C 191
Are you sure? (Y/N)
Y
Formatting 5697J08C 2B2 with label J082B2
Formatting 5697J08C 2C2 with label J082C2
Formatting 5697J08C 2C4 with label J082C4
Formatting 5697J08C 2D2 with label J082D2
Formatting 5697J08C 2A6 with label J082A6
Formatting 5697J08C 2A2 with label J082A2
Formatting 5697J08C 300 with label J08300
Formatting 5697J08C 310 with label J08310
Formatting 5697J08C 191 with label J08191

Install disks are formatted.
Next step:
- Run INSTPROD INSTALL
Ready; T=0.01/0.02 06:06:27

```

- If your system has an External Security Manager (ESM), ensure that the new user ID and new minidisks are defined to the security manager. If DirMaint is used, the correct definitions may be done automatically by the DirMaint service machine. If DirMaint is not used or the ESM exits are not enabled, then you must manually define the new user ID and new minidisks to your security manager. For example,

```

exec rac adduser 5697J08C dfltgrp(sys1) uacc(none) nopassword
exec rac permit 5697J08C.* class(vmmdisk) reset id(5697J08C)
ac(alter)
exec rac permit 5697J08C.* class(vmmdisk) id(sysprog) ac(alter)
exec rac setr refresh generic(vmmdisk)

```

- Format the installation disks.

Run the following command:

```
instprod formatinstall
```

The exec lists all disks it will format and asks for confirmation before proceeding.

Here is an example of using this function:

**Note:** The exec will not format a disk that is defined by a link to a different user ID.

## 7.4 Install the Tape Manager code

Run the following command:

```
instprod install
```

The install function installs the product onto the minidisks owned by the installation user ID, applies any service files included in the product envelope, builds any parts required, updates the system-level service update facility table (VM SYSSUF), and updates the System-Level Product Inventory table with the system names of where the product is now installed. If an error occurs during this function, the exec stops so that the error can be corrected.

Here is an example of running the INSTALL function.

```

INSTPROD INSTALL
DMSVML2060I MAINT 5E5 linked RR as 0120 file mode B
DMSVML2060I MAINT 51D linked M as 051D file mode D
DMSVML2060I MAINT710 500 linked RR as 0121 file mode C

Executing: EXEC VMFINS INSTALL PPF 5697J08C TAPEMGR (NOMEMO OVERRIDE NO ENV EUM130

VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFINS2760I VMFINS processing started
VMFINS2603I Processing product :PPF 5697J08C TAPEMGR :PRODID 5697J08C%TAPEMGR
VMFREQ2805I Product :PPF 5697J08C TAPEMGR :PRODID 5697J08C%TAPEMGR has passed requisite checking
VMFINT2603I Installing product :PPF 5697J08C TAPEMGR :PRODID 5697J08C%TAPEMGR
VMFSET2760I VMFSETUP processing started for 5697J08C TAPEMGR
VMFSET2204I Linking 5697J08C 2B2 as 2B2 with link mode MR
VMFSET2204I Linking 5697J08C 2C2 as 2C2 with link mode MR
VMFSET2204I Linking 5697J08C 2C4 as 2C4 with link mode MR
VMFSET2204I Linking 5697J08C 2D2 as 2D2 with link mode MR
VMFSET2204I Linking 5697J08C 2A6 as 2A6 with link mode MR
VMFSET2204I Linking 5697J08C 300 as 300 with link mode MR
VMFSET2204I Linking 5697J08C 310 as 310 with link mode MR
VMFSET2204I Linking 5697J08C 2A2 as 2A2 with link mode MR
VMFUTL2205I Minidisk|Directory Assignments:
 String Mode Stat Vdev Label (OwnerID odev : cyl/%Used)
 -or-
 SFS Directory Name
VMFUTL2205I LOCALMOD E R/W 2C4 J082C4 (5697J08C 02C4 : 2/02)
VMFUTL2205I LOCALSAM F R/W 2c2 J082c2 (5697J08C 02C2 : 2/02)
VMFUTL2205I APPLY G R/W 2A6 J082A6 (5697J08C 02A6 : 2/02)
VMFUTL2205I H R/W 2A2 J082A2 (5697J08C 02A2 : 2/02)
VMFUTL2205I DELTA I R/W 2D2 J082D2 (5697J08C 02D2 : 60/00)
VMFUTL2205I BUILD0 J R/W 300 J08300 (5697J08C 0300 : 10/00)
VMFUTL2205I BUILD2 K R/W 310 J08310 (5697J08C 0310 : 3/01)
VMFUTL2205I BASE1 L R/W 2B2 J082B2 (5697J08C 02B2 : 10/00)
VMFUTL2205I ----- A R/W 191 MNT191 (MAINT710 0191 : 175/50)
VMFUTL2205I ----- B R/O 120 MNT5E5 (MAINT710 05E5 : 18/40)
VMFUTL2205I ----- C R/O 121 MNT500 (MAINT710 0500 : 1200/74)
VMFUTL2205I ----- D R/W 51D MNT51D (MAINT710 051D : 26/25)
VMFUTL2205I ----- S R/O 190 MNT190 (MAINT 0190 : 207/51)
VMFUTL2205I ----- Y/S R/O 19E MNT19E (MAINT 019E : 500/41)

```

```

VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFSUT2760I VMFSUFTB processing started
VMFSUT2760I VMFSUFTB processing completed successfully

Executing: EXEC VMFUPDAT SYSPINV PROD 5697J08C RS71MEM1 RS71MEM2

VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFUTL2204I Linking PMAINT 41D with link mode M

Product 5697J08C is installed.
Next steps: (IMPORTANT!)

- Apply any service files to the product.
 See the Program Directory for servicing instructions.
 Service MUST be applied before the next step is performed!
- Run INSTPROD BUILDPRODUCTION
Ready; T=4.51/4.75 06:09:57

```

## 7.5 Install service for Tape Manager

This step is required and is a manual step. The INSTPROD EXEC has completed installing the product. You should have ordered and received one or more separate service files for the product with your order. You should always check for more recent service and service recommendations that are listed in the PSP bucket for the product.

<https://www.ibm.com/support/pages/upgrade-tapezvm130-subset-tape130>

The preferred method for installing service to z/VM products is to use the automated SERVICE command.

1. Log on to the Tape Manager service user ID: MAINTvrm
2. As a precaution, create a backup copy of the current Tape Manager disks or SFS directories. Save this copy of Tape Manager until you have completed installing the service and you are confident that the service runs correctly.
3. If the Software Inventory disk (51D) was accessed R/O (read only) then establish write access to the Software Inventory disk.
 

**Note:** If the MAINT 51D minidisk was accessed R/O, you will need to have the user that has it accessed R/W link it R/O. You then can issue the following command to obtain R/W access to it.

```
vmlink maint 51d <51d d m>
```
4. Provide the service user ID access to the service envelope.
 

```
acc 500 c
```
5. Receive, Apply and Build the service.
 

```
service 5697J08C%tapemgr envfilename
```

Where, *envfilename* is the file name of the COR (PTF) service envelope (SERVLINK) file.  
Repeat this step as needed for each service envelope.

6. Check the service message log (\$VMFSRV \$MSGLOG) for warning and error messages. Take appropriate action based on any warning messages received. Correct all errors reported and restart by issuing the SERVICE command as displayed in message VMFSRV2310W.

***vmfview service***

## 7.6 Allocate resources for configuring and running Tape Manager

### 1. Build production directories.

Run the following command:

***instprod buildproduction***

This function performs the following actions:

- Sample directory files installed on the product samples disk are read to discover the user IDs to create and minidisks to allocate.
- A source directory entry is created for each sample directory file supplied by the product. Minidisk definitions are included in these entries
- If the minidisk statements in the sample directory entries contain suggested minidisk passwords, those passwords are included in the minidisk statements. INSTPROD also issues a message listing all user IDs that have minidisk statements with passwords.
- If DirMaint is selected, the \$DIRMADD EXEC is created. This is an exec that has all the DirMaint commands that must be run to create all the directory entries.
- If DirMaint was not selected, all the directory entries are combined into a single file. Appending this file to your current source directory adds all of them to your system.

**Note:** If the sample files contain example minidisk passwords and your system is not using an external security manager (ESM), then these example passwords are copied to the minidisk statements in the new directories. If you would prefer that the example passwords are discarded, add the (NOMDISKPW option to the command. For example:

***instprod buildproduction (nomdiskpw***

### 2. Add production directories to your system.

This is a manual step. The INSTPROD EXEC has created a file or files with new directory entries to use the product in production on this system or in your SSI cluster.

- a. Examine the file or files to make any modifications that may be needed for your system.
- b. Check that each entry has a password that is valid for your security rules, or that the LOGONBY record is correct. You may also need to make changes to accounting information or make updates for monitoring.
- c. Examine the minidisk definitions.

If you use minidisk passwords on the minidisk statements, change any password supplied in the directory sample files or add passwords if they are needed. The correct syntax for an Add Minidisk statement depends on whether DirMaint is used:

- If DirMaint is used:  
`AMDISK vaddr 3390 AUTOx cyls allocname MR PWS readpass writepass multipass`

- If DirMaint is not used:

***MDISK vaddr 3390 start cyls label MR readpass writepass multipass***

**Note:** If your system has an External Security Manager (ESM) or if you added the option (NOMDISKPW to the BUILDPRODUCTION step, the only minidisk password that you may see in the directory entries is a read password of ALL. Any other minidisk passwords are dropped. The Program Directory or product documentation may have suggestions for the permissions that are needed for linking minidisks.

- d. If DirMaint is used: The \$DIRMADD EXEC was created. Run this exec to execute the DirMaint commands to add the new user IDs. If your system is part of an SSI cluster, DirMaint will automatically update the directory on all members of your cluster.
- e. If DirMaint is not used on the system, all the new directory entries are combined into a single file, named *productname* DIRECT A.
- f. Review this file and appended to it your current USER DIRECT file to add the entries to the system. Be sure to verify the disk allocations with DISKMAP or DIRMAP.
- g. Run DIRECTXA to put the new entries online. If your system is part of an SSI cluster, then you must log on to each member and run DIRECTXA to update the directory on that member.
- h. If your system has an External Security Manager (ESM), ensure that the new user IDs and new minidisks are defined to the security manager. If DirMaint is not used or the ESM exits are not enabled, then you must manually define the new user ID and new minidisks to your security manager. The Program Directory may also list additional security manager permissions required for one or more of the new user IDs. For example,

***exec rac adduser TxTMM dfltgrp(sys1) uacc(none) nopassword  
exec rac permit TxTMM.\* class(vmmdisk) reset id(TxTMM) ac(alter)***

```
exec rac permit TxTMM.* class(vmmdisk) id(sysprog) ac(alter)
exec rac setr refresh generic(vmmdisk)
```

### 3. Format the production and service machine disks.

If you are installing Tape Manager for the first time, format all minidisks for the service virtual machine user IDs. Run the following command.

```
instprod formatproduction
```

This function formats the production and service machine disks. The exec lists all disks it will format and asks for confirmation before proceeding.

```
INSTPROD FORMATPRODUCTION
These disks will be formatted:
TCDMM 191
TCLM1 191
TCTMM 191
TCTMM 198
TCTMM 400
TCTMM 410
TCTMM 200
TCTMM 210
TCTMM 1200
TCTMM 1210
Are you sure? (Y/N)
Y
DASD 0120 LINKED R/W; R/O BY MAINT710
Formatting TCDMM 191 with label TCD191
Formatting TCLM1 191 with label TCL191
Formatting TCTMM 191 with label TCT191
Formatting TCTMM 198 with label TCT198
Formatting TCTMM 400 with label TCT400
Formatting TCTMM 410 with label TCT410
Formatting TCTMM 200 with label TCT200
Formatting TCTMM 210 with label TCT210
Formatting TCTMM 1200 with label TC1200
Formatting TCTMM 1210 with label TC1210

Production disks are formatted.
Next step:
- Run INSTPROD PUT2PROD
Ready; T=0.01/0.01 10:19:15
```

**Note:** INSTPROD will not format a disk that is defined by a link to a different user ID.

## 7.7 Place Tape Manager into production

1. Copy Tape Manager files into production.

Run the following command.

```
instprod put2prod
```

This function copies the product files to the production locations.

If production files are to be placed on the system Y disk or HELP disk, the exec will prompt to ask if those disks can be modified. If the system Y disk is updated, a message is shown to remind you that the CMS saved system should be updated. The files targeted for the system Y disk or HELP disk can be directed to a different target by responding Change (or just C) to the prompt.

2. Copy the sample files to the production disk.

Run the following command.

```
instprod copysamples
```

This function copies sample configuration files and execs to the production locations. These sample files are typically described in the product documentation, not the program directory. This function will not overwrite an existing file, so existing customizations will not be overwritten.

If the instructions indicate you should run PUT2PROD SAVECMS, you can ignore them. You will run this command later after you've completed additional configuration steps. Here is an example of performing this function:

```
INSTPROD PUT2PROD
DMSVML2060I 5697J08C 300 linked as 0120 file mode Z
DMSVML2060I TCTMM 400 linked M as 0121 file mode X
Copied all files from 5697J08C 300 to TCTMM 400
DMSVML2060I 5697J08C 310 linked as 0120 file mode Z
DMSVML2060I TCTMM 410 linked M as 0121 file mode X
Copied all files from 5697J08C 310 to TCTMM 410
Do you want to copy files to MAINT 19E?
 Enter Yes, No, or Change (change target)
Yes
DMSVML2060I MAINT 19E linked M as 0121 file mode X
Copied "* MODULE" from 5697J08C 310 to MAINT 19E
Copied "TAPCMD DEFAULTS" from 5697J08C 310 to MAINT 19E
Do you want to copy help files to MAINT 19D?
 Enter Yes, No, or Change (change target)
Yes
DMSVML2060I MAINT 19D linked M as 0121 file mode X
Copied "* HELPAEUM" from 5697J08C 310 to MAINT 19D
Copied "AEUM HELPMENU" from 5697J08C 310 to MAINT 19D

Please enter PUT2PROD SAVECMS to update the CMS saved system.
Product 5697J08C is copied to production.
Next optional step:
- Run INSTPROD COPYSAMPLES
Ready; T=0.23/0.25 10:22:27
```



```

INSTPROD COPYSAMPLES
DMSVML2060I 5697J08C 2C2 linked as 0120 file mode Z
DMSVML2060I TCDMM 191 linked M as 0121 file mode X
Copied "PROFDMM SAMPEXEC" from 5697J08C 2C2 to TCDMM 191 as "PROFILE EXEC"
DMSVML2060I TCTMM 191 linked M as 0121 file mode X
Copied "PROFTMM SAMPEXEC" from 5697J08C 2C2 to TCTMM 191 as "PROFILE EXEC"
DMSVML2060I TCLM1 191 linked M as 0121 file mode X
Copied "PROFLMM SAMPEXEC" from 5697J08C 2C2 to TCLM1 191 as "PROFILE EXEC"
DMSVML2060I TCTMM 0198 linked M as 0121 file mode X
Copied "CATNODE CONFSAMP" from 5697J08C 2C2 to TCTMM 0198 as "SYS CONFIG"
Product 5697J08C samples have been copied.
Next steps:
- Customize the configuration files.
- Start the service machine.
Since this is an SSI cluster, you need to create the production environment
on every member of the cluster.
Be sure to run these steps on every member:
- Run INSTPROD FORMATPRODUCTION
- Run INSTPROD PUT2PROD
- Run INSTPROD COPYSAMPLES
Ready; T=0.03/0.04 10:22:58

```

3. Log off MAINT`vr`m.

## 7.8 Post-installation instructions

### 7.8.1 Provide required security permissions for Tape Manager service machines

Following are the sample commands to provide RACF permissions:

```

rac rdefine vmmdisk txtmm.400 owner(txtmm) uacc(none)
rac permit txtmm.400 class(vmmdisk) reset id(txtmm) ac(alter)
rac permit txtmm.400 class(vmmdisk) id(txdtmm) ac(read)
rac permit txtmm.400 class(vmmdisk) id(txlm1) ac(read)
rac permit dfsms.1b5 class(vmmdisk) id(txlm1) ac(read)
rac setr refresh generic(vmmdisk)

```

### 7.8.2 Customize TAPCMD DEFAULTS

The TAPCMD DEFAULTS file contains site-specific information that the TAPCMD module requires for communication with the TxTMM user ID (tape management machine), such as the name of the TMM and the defaults for synchronous or asynchronous processing.

A sample TAPCMD DEFAULTS file is provided on the TxTMM 410 disk. It must be customized for your installation, which is described below.

1. Log on to MAINTvrm user ID.
2. Access TAPCMD DEFAULTS on TxTMM 410 disk.  
vmlink TxTMM 410 <\* z m>  
xedit tapcmd defaults z
3. Correct the value for TMMID, such as TCTMM, or TRTMM.
4. Add WAIT/NOWAIT setting for the Tape Manager commands to be handled synchronously or asynchronously:
  - a. NOWAIT will process the Tape Manager commands issued through TAPCMD asynchronously.
  - b. WAIT nnn will process the Tape Manager commands issued through TAPCMD synchronously with a maximum wait time of nnn seconds.Sample TAPCMD DEFAULTS

```
* * * Top of File * * *
* Sample DEFAULTS file for the TAPCMD command.
*
* Most important: provide the name of the tape manager userid.
*
TMMID TCTMM
*
* Next, how long by default do we wait for synchronous requests?
* Value is in seconds.
*
WAIT 300
* * * End of File * * *
```

5. Copy TAPCMD DEFAULTS to the TxTMM 198 disk:  
vmlink TxTMM 198 <\* e m>  
vmfcopy tapcmd defaults z = e (prodid 5697J08C%tapemgr olddate replace  
rel e (det
6. Copy the updated TAPCMD DEFAULTS file from the TxTMM ID 198 disk to the MAINT 19E disk and rebuild the CMS saved system  
*vmlink MAINTvrm 19e <\* f m>*  
*vmfcopy tapcmd defaults z = f (prodid 5697J08C%tapemgr*  
*olddate replace*  
*rel f (det*  
put2prod savecms

7. Log off and log on to MAINT`vr`m.

### 7.8.3 Tailor the Device Management Machine

The Device Management Machine (DMM) controls the physical tape devices. The machine verifies tape labels before a device is given to a mount requestor and again when the device is returned.

The default user IDs for the DMM and TMM depend on your configuration. For a shared catalog environment, the default user IDs are:

- TCDMM and TCTMM for the catalog node in a shared catalog environment
- TRDMM and TRTMM for the request node in a shared catalog environment

For a dedicated catalog environment, the default user IDs are TMDMM and TMTMM.

1. Update the PROFILE EXEC for TxDMM to reflect the correct user ID for TxTMM.  

```
vmlink TxDMM 191 <* z m>

xedit profile exec z
```
2. Modify the value for TMMID in the PROFILE EXEC of TxDMM, and then release the mdisk.  

```
rel z (det
```

### 7.8.4 Tailor the Library Management Machine

The Library Management Machine (LMM) provides an interface to the DFSMS/VM Removable Media Services (RMS) component of DFSMS/VM for IBM automated tape libraries.

An LMM virtual machine must be defined for Tape Manager's ATL services. The default user ID for the LMM depends on your configuration. For a dedicated catalog environment the default user ID is TMLM1 and no changes are required.

For a shared catalog environment, the default user ID is:

- TCLM1 for the catalog node in a shared catalog environment.
- TRLM1 for the request node in a shared catalog environment.

For a shared catalog environment, perform the following steps.

1. Xedit the PROFILE EXEC of TxLM1 and update DfltTMM and DfltDMM  

```
vmlink TxLM1 191 <* z m>

xedit profile exec z
```
2. For the catalog node in a shared catalog environment, update the PROFILE EXEC for TCLM1 to contain the following:

```
Dfl tTMM = 'TCTMM'
```

```
Dfl tDMM = 'TCDMM'
```

3. For the request node in a shared catalog environment, update the PROFILE EXEC for TRLM1 to contain the following:

```
Dfl tTMM = 'TRTMM'
```

```
Dfl tDMM = 'TRDMM'
```

4. After modifying PROFILE EXEC, release the minidisk  
*rel z (det*

### 7.8.5 Service machine considerations for TxLM1 for IBM libraries

The TxLM1 ID requires the following:

- CP privilege classes G and B. These should already be defined in the default directory entry for TxLM1.
- DFSMS/VM RMS authority to perform mounts using the FSMRMMNT CSL routine. For more information, see [Install and configure DFSMS/RMS](#).
- Access to the RMS Callable Services Library (CSL). Refer to the RMSACC EXEC discussion below.

### 7.8.6 Customizing the TxLM1 ID for an IBM library

1. Log on to the MAINTvrm user ID.

2. Link and access the 5697J08C sample disk (2C2)

```
vmlink 5697J08C 2c2 <* e rr>
```

```
vmlink TxLM1 191 <* z m>
```

3. Copy the RMSACC SAMPEXEC file from the sample disk to the RMSACC EXEC file on the TxLM1 A-disk. If necessary, modify the RMSACC EXEC to provide the required access to the DFSMS/VM CSL routines.

```
copy rmsacc sampexec e rmsacc exec z (olddate
```

```
rel z (det
```

## 7.9 Enablement of Tape Manager

Enable the product to confirm your license entitlement by performing the enablement steps as described in the Memo to Users for Tape Manager for z/VM. The Tape Manager service machines will not start successfully until you perform this step. Instead, they will display error message EUMTAP0971E. This memo is delivered to you in one of the following ways:

- If you selected electronic delivery for Tape Manager, see document number LCD8-2870 in the list of downloadable materials for Tape Manager on Shopz.
- If you selected physical media, see the DVD with document number LCD8-2860.

## 7.10 Post-installation configuration

Follow the steps below for post-installation configuration. For more information, refer to chapters 3, 4, and 5 of the [Tape Manager Installation and Administration Guide](#).

### 7.10.1 Creating the Tape Manager configuration file

The Tape Manager configuration file can be managed from any user ID authorized to update the configuration disk (the TxTMM 198, by default). Four sample configuration files are included on the 2C2 disk of the 5697J08C installation user ID. INSTPROD has automatically copied the correct sample configuration file to the TxTMM 198 disk.

For shared catalog environment use the following sample files:

#### **CATNODE CONFSAMP**

Use this file if you plan to share the Tape Manager tape catalog with another instance of Tape Manager (shared catalog) and the instance you are configuring will own the tape catalog; that is, the instance will be a Catalog Node.

#### **REQNODE CONFSAMP**

Use this file if you plan to share the Tape Manager tape catalog with another instance of Tape Manager (shared catalog) and the instance you are configuring will not own the catalog, that is, the instance will be a Request Node.

To create an initial configuration file, perform the following steps for the TCTMM ID and each TRTMM ID.

1. Log on to MAINTvrm
2. Link and access the minidisk that contains the configuration file.  
`vmlink TxTMM 198 <198 f m>`
3. Modify the startup configuration file:  
`xedit sys config f`

### 7.10.2 Configure a shared catalog environment

Each Tape Manager instance has a set of Tape Manager service machines defined and each instance that shares a catalog is referred to as a node. Every node has a node name that is unique among the instances that share the catalog.

In a shared catalog environment, only one of the nodes, known as the Catalog Node, owns the catalog. The other instances are known as Request Nodes.

You must create a SYS CONFIG file on each catalog node and request node.

The following example shows sample configuration statements for a shared catalog implementation. The example assumes the catalog node and the request node are members of the same SSI cluster and are designed to facilitate the movement of the catalog node from the default system to either of the systems on which a request node is defined. With this configuration, during planned or unplanned outages, you can stop the Tape Manager service machines for the Catalog Node on the default system and bring up the Tape Manager service machines for the Catalog Node on a different member of the cluster.

In an SSI environment, all the service machines for the Catalog Node should be defined as single configuration IDs (i.e., USER IDs) and all the service machines for the Request Nodes should be defined as multiple configuration IDs (i.e., IDENTITY IDs).

In this example, assume that the Catalog Node service machine name is the recommended TCTMM and the Request Node service machine name is the recommended TRTMM.

### **Node definitions in SYS CONFIG on the Catalog Node**

To facilitate the movement of the Catalog Node from the default system (SYS10) to either of the systems running the request nodes, some accommodations have been made.

- By omitting the TCPIP\_Machine parameter from the local node definition, the catalog node will use the default TCPIP machine name on the system where it is started.
- By specifying the Host\_Addr parameter as 0.0.0.0, the catalog node will use the default IP address on the system where it is started.
- The Host\_Name parameter has been omitted since it would override the Host\_Addr parameter if it was resolved, thereby preventing communications on the systems where the Request Nodes are defined.
- The omission of the TCPIP\_machine parameter and the use of 0.0.0.0 to designate a default IP address both require PTF UI29840.
- For the remote Request Nodes, the Host\_Addr values are specified and will be used if for some reason the host name does not resolve on the catalog node.

```
Define_Local_Node,
Node_Name TMCAT,
Node_Type CATALOG,
```

```
Initial_Status START,
Challenge_Password abc123,
Host_Addr 0.0.0.0,
Host_Port 31000,
Retry_Minutes 1,
Retry_Limit 10
```

```
Define_Remote_Node,
Node_Name TMREQ20,
Node_Type REQUEST,
Initial_Status START,
Challenge_Password 123abc,
Host_Name SYS20,
Host_Addr 192.160.20.20,
Host_Port 32000,
DevManager TRDMM,
Retry_Minutes 1,
Retry_Limit 10
```

```
Define_Remote_Node,
Node_Name TMREQ30,
Node_Type REQUEST,
Initial_Status START,
Challenge_Password 123abc,
Host_Name SYS30,
Host_Addr 192.168.20.30,
Host_Port 33000,
Device_Manager TRDMM,
Retry_Minutes 1,
Retry_Limit 10
```

### Node definitions in SYS CONFIG on Request Nodes

This section includes examples of how to configure Tape Manager on request nodes. The use of the **Host\_Altaddrs** parameter below allows connections from the Catalog Node to originate from either system SYS20 or SYS30, in addition to the default system SYS10.

In the example below for TMREQ20, the connections from a catalog node will be allowed from any of the following:

- SYS10 or SYS30 resolved name addresses,
- The default IP address for SYS20 where TMREQ20 runs,
- The hard-coded address for system SYS10 where TMCAT runs
- The hard-coded address for system SYS30 where TMREQ30 runs.

```
Define_Local_Node,
Node_Name TMREQ20,
Node_Type REQUEST,
Initial_Status START,
Challenge_Password 123abc,
```

```
Tcpip_Machine TCPIP,
Host_Name SYS20,
Host_Addr 0.0.0.0,
Host_Port 32000,
Retry_Minutes 1,
Retry_Limit 10

Define_Remote_Node,
Node_Name TMCAT,
Node_Type CATALOG,
Initial_Status START,
Challenge_Password abc123,
Host_Name SYS10,
Host_Addr 192.168.20.10,
Host_Altaddrs,
SYS20 SYS30,
0.0.0.0 192.168.20.30,
Host_Port 31000,
Retry_Minutes 1,
Retry_Limit 10
```

In the example below for TMREQ30, the alternate connections will be allowed from any of the following:

- The SYS10 or SYS20 resolved name addresses,
- The default IP address for SYS30 where TMREQ30 runs,
- The hard-coded address for system SYS10 where TMCAT runs,
- The hard-coded address for system SYS20 where TMREQ20 runs.

```
Define_Local_Node,
Node_Name TMREQ30,
Node_Type REQUEST,
Initial_Status START,
Challenge_Password 123ABC,
Tcpip_Machine TCPIP,
Host_Name SYS30,
Host_Addr 0.0.0.0,
Host_Port 33000,
Retry_Minutes 1,
Retry_Limit 10
Define_Remote_Node,
Node_Name TMCAT,
Node_Type CATALOG,
Initial_Status START,
Challenge_Password abc123,
Host_Name SYS10,
Host_Addr 192.168.20.10,
Host_Altaddrs,
```



```
SYS20 SYS30,
192.168.20.20 0.0.0.0,
Host_Port 31000,
Retry_Minutes 1,
Retry_Limit 10
```

### Specifying a Device Manager Machine (DMM)

The **Define\_Remote\_Node** statements in the catalog node configuration file also identify the names of the device manager service machines for each node. This name must match the value specified for the Dmm statement in the configuration file of each remote node.

For example, the configuration file for SYS20 must contain this configuration statement:

```
Dmm TRDMM
```

Likewise, the configuration file for SYS30 must specify the following:

```
Dmm TRDMM
```

### Specifying a Library Manager Machine (LMM)

In this example, both request nodes will be sharing an automated tape library (ATL) with the catalog node. Assume that the following Library statement is in the configuration file on the catalog node:

```
Library NWAATL1, /* Library name */
ONLINE, /* Initial Tape Manager status */
TCLM1 AT TMCAT, /* LMM machine for catalog node SYS10 */
TRLM1 AT TMREQ20, /* LMM machine for request node SYS20 */
TRLM1 AT TMREQ30 /* LMM machine for request node SYS30 */
```

The configuration file on node SYS20 contains a corresponding Library\_Servers statement:

```
Library_Servers TRLM1
```

A similar statement is in the configuration file on the SYS30 node:

```
Library_Servers TRLM1
```

For more guidelines to modify the configuration, refer to the steps described in [Configuring Tape Manager](#) of the *Tape Manager for z/VM Installation and Administration Guide*.

### 7.10.3 Validating the installation

To verify the installation and configuration of Tape Manager, see the steps described in [Installation Verification Steps](#) of the *Tape Manager for z/VM Installation and Administration Guide*.

## 8 Configuring other members of an SSI cluster

Once Tape Manager is running as a catalog node on one member of an SSI cluster, perform the following steps to configure the Tape Manager request nodes on other members of the SSI cluster:

1. Repeat topic DFSMS Post installation (DFSMS/VM Tailoring).
2. Repeat topic 5.6 Copy and update sample DFSMS/VM files.
3. Repeat topic 5.7 Create the PROFILE EXEC for RMSMASTR.
4. Repeat topic 5.8 Update the RMSSERV EXEC.
5. Repeat topic 5.9 Start RMSMASTR machine.
6. Run INSTPROD SELECT again.
7. Select Tape Manager, and then select a request node.
8. Repeat topic 7.6 Allocate resources for configuring and running Tape Manager
9. Repeat topic 7.7 Place Tape Manager into production
10. Repeat topic 7.8 Post-installation instructions
11. Repeat topic 7.9 Enablement of Tape Manager
12. Repeat topic 7.10 Post-installation configuration

## 9 References

IBM Tape Manager for z/VM Program Directory

<https://www.ibm.com/downloads/cas/J6WBQJYO>

Configuring with a TS7700 virtual tape server white paper

<https://www.ibm.com/downloads/cas/OWK6BKAN>

IBM Tape Manager for z/VM Installation and Administration Guide

<https://www.ibm.com/downloads/cas/0MY57R3L>

Program Directory for DFSMS/VM® function level 221 a feature of z/VM®

<https://www.vm.ibm.com/related/dfsms/dfsms630.pdf>



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