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Getting Started with IBM Archive Manager for z/VM

VMSES/E Installation, SFS Setup, and Initial Configuration on z/VM V6.2

Tracy Dean, IBM tld1@us.ibm.com
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Agenda

- Assumptions
- Preparing to install
- Installing using VMSES/E
- Configuring
- Verifying installation and configuration



Assumptions

- Installing on z/VM V6.2
 - Standalone system, no SSI cluster
 - See separate presentation for z/VM V5.4 or V6.1
- DIRMAINT is installed for directory management
 - MAINT620 is authorized to issue AMDISK commands.
 - AUTOG is available for group USER for minidisk definitions
- Shared File System is available use the same SFS server as you created for Backup and Restore Manager for z/VM (BKRSVSFS)
 - You may need to add more space
- Installation ID is 5697J05A
 - No PPF overrides
- 3390 DASD
- REXX Library (5695-014) is installed and available
 - Alternatively use free download of REXX Alternate Library at: http://www.ibm.com/software/awdtools/rexx/rexxzseries/altlibrary.html
 - Strongly suggest installing this on MAINT620 19E to simplify access to it
- Installing on minidisk (not SFS)
- Operations Manager is running on user ID OPMGRM1
- If you plan to archive to tape
 - Tape Manager is installed and running, or
 - Tapes are mounted manually via messages to the OPERATOR console
- This is not the only way to perform the install
 - Not all options are discussed
 - See product documentation for full details



Don't Forget

- If you are also installing Operations Manager, install it first
- If you are also installing Backup and Restore Manager, install it first
- REXX must already be installed and available
 - REXX Library (5695-014), or
 - REXX Alternate Library, free download at: http://www.ibm.com/software/awdtools/rexx/rexxzseries/altlibrary.html
 - Strongly suggest installing this on MAINT620 19E to simplify access to it
 - If on MAINT620 19E, make sure all files have filemode number of 2 (not the default of 1)
 - Required for loading into the CMS saved segment



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Preparing to Install

Create installation ID
Update SFS server (created for Backup Manager)
Prepare system for VMSES/E installation

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Define the Installation ID: 5697J05A

From MAINT620

Create a file called 5697J05A DIRECT

```
USER 5697J05A password 64M 256M BG

* 5697-J05 - SES install & admin for Archive Mgr V1.1
MACHINE ESA
IPL CMS
OPTION LNKNOPAS
CONSOLE 01F 3215
SPOOL 00C 2540 READER A
SPOOL 00D 2540 PUNCH A
SPOOL 00E 1403 A
LINK MAINT 190 190 RR
LINK MAINT 19D 19D R
LINK MAINT 19E 19E RR
LINK MAINT 51D 51D MR
LINK MAINT 555 5E5 RR
```

Issue the command

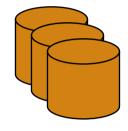
DIRM ADD 5697J05A

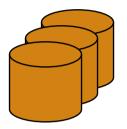


Define the Installation ID: 5697J05A

Add required minidisks

From MAINT620, issue





```
DIRM FOR 5697J05A AMD 191 3390 AUTOG 10 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 198 3390 AUTOG 2 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 2A2 3390 AUTOG 1 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 2A6 3390 AUTOG 1 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 2B2 3390 AUTOG 1 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 2C2 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 2C2 3390 AUTOG 2 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 2D2 3390 AUTOG 10 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 491 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 492 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 49D 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw> DIRM FOR 5697J05A AMD 591 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw> <multpw> DIRM FOR 5697J05A AMD 592 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw> <mul
```



Resulting Minidisk Statements in Directory Entry for 5697J05A

```
MDISK 0191 3390 <start> 010 <vol> MR <readpw> <writepw> <multpw> MDISK 0198 3390 <start> 002 <vol> MR <readpw> <writepw> <multpw> MDISK 02A2 3390 <start> 001 <vol> MR <readpw> <writepw> <multpw> MDISK 02A6 3390 <start> 001 <vol> MR <readpw> <writepw> <multpw> MDISK 02B2 3390 <start> 005 <vol> MR <readpw> <writepw> <multpw> <multpw> MDISK 02C2 3390 <start> 005 <vol> MR <readpw> <writepw> <multpw> <multpw> MDISK 02C2 3390 <start> 002 <vol> MR <readpw> <writepw> <multpw> <multpw> MDISK 0491 3390 <start> 010 <vol> MR <readpw> <writepw> <multpw> <mult
```



Format All Minidisks

From MAINT620, issue

```
link 5697J05A 191 333 MR format 333 z release z (det
```

Repeat for each 5697J05A disk



Update SFS Server

- From a user ID with administrator authority to the SFS server used by Backup Manager (BKRSVSFS)
 - Grant Archive Manager administrator admin authority

```
enroll administrator amvadmin bkrsfs: (type enroll administrator 5697J05A bkrsfs: (type enroll administrator amvarkiv bkrsfs: (type enroll administrator amvwrk01 bkrsfs: (type enroll administrator amvwrk02 bkrsfs: (type enroll administrator amvwrk03 bkrsfs: (type enroll administrator amvwrk04 bkrsfs: (type
```



Update SFS Server

- From a user ID with administrator authority to the SFS server used by Backup Manager (BKRSVSFS)
 - Authorize service machines to space in SFS

```
enroll user amvadmin bkrsfs (blocks 4000 storgroup 2 enroll user amvarkiv bkrsfs (blocks 50000 storgroup 2 enroll user amvwrk01 bkrsfs (blocks 20000 storgroup 2 enroll user amvwrk02 bkrsfs (blocks 20000 storgroup 2 enroll user amvwrk03 bkrsfs (blocks 20000 storgroup 2 enroll user amvwrk04 bkrsfs (blocks 20000 storgroup 2
```

Create required SFS directory entries

```
create directory bkrsfs:amvadmin.workarea create directory bkrsfs:amvarkiv.workarea create directory bkrsfs:amvarkiv.stagingarea create directory bkrsfs:amvarkiv.userarea create directory bkrsfs:amvarkiv.adminarea create directory bkrsfs:amvwrk01.workarea create directory bkrsfs:amvwrk02.workarea create directory bkrsfs:amvwrk03.workarea create directory bkrsfs:amvwrk04.workarea
```



Prepare for VMSES/E Installation

From MAINT620

- Mount installation tape at virtual address 181
 Or
- Have SERVLINK envelope available on the MAINT620 500 disk

```
acc 500 c
```

Unpack the VMARC file

vmarc unpk <envfilename> vmarc c = = c Or

Unpack the SERVLINK file

deterse <envfilename> servlink f 5697J06B = f

Access VMSES/E disks

```
access 5e5 b access 51d d
```

Load product control files

```
vmfins install info (nomemo
or
vmfins install info (nomemo env <envfilename>
```

Obtain planning info

```
vmfins install ppf 5697J05A ARCHMGR (plan nomemo
or
vmfins install ppf 5697J05A ARCHMGR (plan nomemo env <envfilename>
```

Review for errors

vmfview install



Create Directory Entries for All Required Users

Use directory entry samples specifically for z/VM V6.2 provided here:

http://www.ibm.com/support/docview.wss?rs=0&context=SSMR6L&q1=SSI&uid=swg21616182

- Note that list of basic steps to create directory entries and add minidisks is on next 2 pages
- From MAINT620, follow steps outlined earlier for creating 5697J05A user ID to create directory entries for

AMVADMIN BKRWRK02

AMVARKIV BKRWRK03

BKRWRK01 BKRWRK04

 Add minidisks based on data in table in topic 5.3 of the Program Directory



Create Directory Entry for Single Configuration User

Create directory entry for AMVADMIN

- From MAINT620
 - Create file: AMVADMIN DIRECT
 - Based on sample, but remove the MDISK statement
 - Create directory entry

DIRM ADD AMVADMIN

DIRM FOR AMVADMIN AMD 191 3390 AUTOG 5 USER MR PW <readpw> <writepw> <multpw>



Create Directory Entries for Multiconfiguration Users

Create directory entries for AMVARKIV, AMVWRKnn

- From MAINT620, define the multiconfiguration user ID:
 - Create the file: <userid> DIRECT
 - Based on sample, but remove the BUILD ON, SUBCONFIG and MDISK statements
 - Create directory entry

DIRM ADD <userid>

- From MAINT620, define the subconfig entry:
 - Create file: <userid-1> DIRECT
 - Add only the SUBCONFIG statement from the sample <userid> DIRECT file
 - Note that the length of "userid-1" can only be 8 chars, so you will have to shorten the user ID name to make room for "-1".
 - > E.g. use AMVARK-1 instead of AMVARKIV-1

DIRM ADD <userid-1> BUILD ON <nodeid> IN <userid>

For example:

DIRM ADD AMVARK-1 BUILD ON SYSTEM1 IN AMVARKIV

Repeat for each user ID: AMVARKIV, AMVWRKnn



Add Minidisks to Multiconfiguration Users

Add a minidisk

From MAINT620

DIRM FOR <userid-1> AMD <vaddr> 3390 AUTOG <size> USER MR PW <readpw> <writepw> <multpw>

- Note that <userid-1> is the name of the subconfig entry (such as AMVARK-1), not the actual userid name (AMVARKIV)
- Repeat for each AMVARKIV and AMVWRKnn minidisk defined in the table in topic 5.3 of the Program Directory
 - No need to create AMVCATLG user ID and minidisks



Format All Minidisks

From MAINT620, issue

```
link AMVADMIN 191 333 MR format 333 z release z (det
```

Repeat for AMVARKIV and AMVWRKnn minidisks



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Installing using VMSES/E

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Initial VMSES/E Install

From 5697J05A

Create and run a PROFILE EXEC

```
xedit profile exec a
```

Add the following lines

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

Save and run

```
file profile
```

- Installing from tape
 - Mount product tape at virtual address 181
 - Load the product code to disk and install

```
vmfins install ppf 5697J05A ARCHMGR (nomemo nolink
```

- Installing from an envelope
 - Access the product code

```
link maint620 500 500 rr acc 500 c
```

Load the product code to disk and install

```
vmfins install ppf 5697J05A ARCHMGR (nomemo nolink env <envfilename>
```



Initial VMSES/E Install (continued)

Review for errors

vmfview install

Update Build Status Table

vmfins build ppf 5697J05A ARCHMGR (serviced nolink

Review for errors

vmfview install



Initial VMSES/E Install (continued)

Copy code from installation/test disk to production disk

```
acc 491 e
acc 591 f
vmfcopy * * e = = f (prodid 5697J05A%ARCHMGR olddate replace
acc 492 e
acc 592 f
vmfcopy * * e = = f (prodid 5697J05A%ARCHMGR olddate replace
```



Initial VMSES/E Install (continued)

 Copy user code from installation disk to Y disk (MAINT 19E) – strongly suggested to simplify access to code

Logon to MAINT620

```
link 5697j05a 492 492 rr
acc 492 e
link maint620 19e 19e mr
acc 19e f
```

Must copy to "f2", not just "f", so that data will be loaded in CMS saved system. Same for helps below.

```
vmfcopy * * e = f2 (prodid 5697J05A%ARCHMGR olddate replace
```

 Copy help files from installation disk to system HELP disk (MAINT 19D)

```
link 5697j05a 49d 949d rr
acc 949d e
link maint620 19d 19d mr
acc 19d f
vmfcopy * helpaamv e = = f2 (prodid 5697J05A%ARCHMGR olddate replace
vmfcopy aamv helpmenu e = = f2 (prodid 5697J05A%ARCHMGR olddate replace
```



Where Code is Installed for Configuration and Testing

Disk on 5697J05A	Description
2C2	Sample files
491, 591	Service machine executables for -AMVARKIV, AMVWRKnn
492, 592, MAINT 19E	End user and administrator executables
198	Configuration files
49D, MAINT 19D	Help files



VMSES/E Installation is Complete

- All code is installed from tape or envelope
- Standard install commands used by most z/VM products
- This was the easy part



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Install All Available Service

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Install All Available PTFs (COR Service)

- Order/obtain all PTFs available for Archive Manager V1.1
- Place them on MAINT620 500 disk
- From MAINT620

ACC 500 C

If each PTF is in tersed format (from IBMLINK), issue:

DETERSE <fn> <ft> C <fn> SERVLINK C

If each PTF is in VMARC format, issue:

VMARC UNPK <fn> <ft> C <fn> SERVLINK C

- Follow instructions in Chapter 7 of the Program Directory to install each PTF
 - In 7.2, suggest following steps in Appendix B for installation of all initial service, in case of errors
 - SERVICE EXEC can be used in future when installing just 1 PTF
 - <u>Do not</u> reload CMS saved system or help segments. We'll do this later.



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Configuring



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Verify System Access Privileges for Archive Servers

User ID	Privileges Required and Recommended
AMVARKIV	 OPTION LNKNOPAS (or equivalent, such as RACF OPERATIONS) Privilege Class G Privilege Class B (for CP MSGNOH)
AMVARKIV	 OPTION LNKNOPAS (or equivalent, such as RACF OPERATIONS) Privilege Class G Privilege Class A (for CP FORCE) Privilege Class B (CP MSGNOH) Privilege Class D (CP PURGE)
AMVWKRnn	 OPTION LNKNOPAS (or equivalent, such as RACF OPERATIONS) Privilege Class G Privilege Class B (CP MSGNOH)



Create PROFILE EXECs for New User IDs

PROFILE EXEC for AMVADMIN

From 5697J05A

```
link amvadmin 191 291 mr
acc 291 z
xedit profile exec z
```

Add the following to the PROFILE EXEC

```
/**/
'CP SET PF11 RETRIEVE FORWARD'
'CP SET PF12 RETRIEVE'
'ACC 198 B'
```

Save and exit

```
file rel z (det
```



Create PROFILE EXECs for New User IDs

PROFILE EXEC for AMVARKIV

From 5697J05A

```
link amvarkiv 191 292 mr
acc 292 z
acc 2c2 e
copy arkprof sampexec e profile exec z
xedit profile exec z
```

- Take out /* and */ before and after section for MINIDISK-based installations
 - This activates these statements: Config_Files = '198'

```
    SVM_RunTime = '591'
    Take out /* and */ before and after the statement for work area in SFS (line 69)
```

```
- Change
Work_Area = 'VMSYS:'USERID()'.WORKAREA'
to
Work Area = 'BKRSFS:'USERID()'.WORKAREA'
```

Delete the following line (we put it in the directory entry instead)

```
'CP LINK MAINT 193 993 RR' file rel z (det
```



Create PROFILE EXECs for New User IDs

PROFILE EXEC for each AMVWRKnn

From 5697J05A

```
link amvwrk01 191 292 mr
acc 292 z
acc 2c2 e
copy wrkprof sampexec e profile exec z
xedit profile exec z
```

- Take out /* and */ before and after section for MINIDISK-based installations.
 - This activates these statements: Config Files = '198' SVM RunTime
- Take out /* and */ before and after the statement for work area in SFS (line 65)
 - Change Work Area = 'VMSYS: 'USERID()'.WORKAREA' Work Area = 'BKRSFS:'USERID()'.WORKAREA'

= '591'

Delete the following line (we put it in the directory entry instead)

```
'CP LINK MAINT 193 993 RR'
file
rel z (det
```



Define Special Users to Archive Manager

From 5697J05A

```
access 198 z
access 2c2 e
copy amvusers namesamp e = names z
xedit amvusers names z
```

– Authorize additional users as Administrators:

- Others as required by your site
 - MAINT, MAINT620
 - Operations Manager servers (OPMGRM1, OPMGRS1 through OPMGRS4) if you plan to have Operations Manager submitting archive jobs as part of automation
- If you are archiving to tape
 - Add workers AMVWRK02 AMVWRK03 AMVWRK04
- If you are not archiving to tape
 - Remove AMVWRK01. Make sure you don't delete the tags, just delete the AMVWRK01 text
- File to save changes and exit



Update the Configuration File: AMVSYSTM CONFIG ...

From 5697J05A

```
access 198 z
access 2c2 e
copy amvsystm confsamp e = config z
xedit amvsystm config z
```



... Update the Configuration File: AMVSYSTM CONFIG

Choose local options for

```
Local_SVM_Contact = System Administrator - sysadmin@some.corp.com
```

- Contact name displayed on service machines
- Not used for automated e-mails or messages

```
Archive Minidisk Via = DEFMDISK
```

Change this value to LINK

```
CatalogPool = AMVPOOL
```

Change this value to BKRSFS

```
CatalogSpace = AMVARKIV
```

- Change this value to AMVARKIV
- If you are not using Tape Manager to manage tapes and tape mounts
 - File and exit



... Update the Configuration File: AMVSYSTM CONFIG

If you are using Tape Manager to manage tapes and tape mounts:

```
Tape_Handled_Via_EUM = No
```

- Change this value to Yes
- File and exit
- From a user ID authorized as a Tape Manager administrator
 - Create a Tape Manager tape pool for Archive Manager
 TAPCMD POOLDEF AMVADMIN AMVPOOL MEDIA media RETNMAX days FREEPOOL SYS
 - Where media matches a media type from the Define_Media statement in the Tape Manager configuration file
 - Where days indicates the maximum number of days in the retention period
 - Give AMVARKIV access to the tape pool



Make the Configuration File Available

Copy AMVSYSTM CONFIG and AMVUSERS NAMES to a shared disk

- From MAINT620, copy from 5697J05A 198 to MAINT 19E (Y disk) or
- From 5697J05A, copy to 5697J05A 592
- Note: If you copy to MAINT 19E, copy as filemode number 2.
 <u>Do not</u> reload the CMS saved system. (We'll be putting other things on MAINT 19E so we'll reload CMS saved system later.)



Reload CMS Saved System if Needed

- If you added code to MAINT 19E disk (during installation, service, and/or configuration)
 - Verify the filemode number is 2 for each file
 - Already done for any Archive Manager code copied during installation and service
 - Need to verify this for any configuration files you put on 19E
 - Rebuild CMS saved system
 - From MAINT620 put2prod savecms
 - If you added help files to MAINT 19D disk (during installation and/or service)
 - Rebuild CMS HELP logical saved segment (from files on 19D)
 - From MAINT620
 put2prod segments helpseg



Update the Configuration File: AMVSRVR CONFIG ...

From 5697J05A

```
access 198 z
access 2c2 e
copy amvsrvr confsamp e = config z
copy allusers grouplst e = = z
copy allusers roster e = = z
xedit amvsrvr config z
```



... Update the Configuration File: AMVSRVR CONFIG

- Choose local options for
 - * Staging Area = VMSYS:AMVARKIV.STAGINGAREA
 - Uncomment this line by removing the *
 - Change VMSYS: to BKRSFS:
 - * BETA
 - * GAMMA
 - Replace the above lines with a line called ADMINS (a group of administrators we'll define later)

Define_Class TAPE1 TAPE SIMPLEX 1 365 365 SCRATCH ALLUSERS SCRATCH Y Y Y Y Y N N

- Define the default storage class that archives files to tape and is available for all users
 - Change the following
 - > Change the name of this storage class from TAPE1 to DEFAULT
 - Change Y Y Y Y N N to Y Y N N Y N N



... Update the Configuration File: AMVSRVR CONFIG

Define Class DEFAULT EDF SIMPLEX 1 365 365 E00 ALLUSERS - Y Y Y N N N

- Define a storage class that archives files to disk and is only available to administrators
 - Change the following
 - Change the name from DEFAULT to ADMDISK
 - Change E00 to BKRSFS:AMVARKIV.ADMINAREA
 - Change ALLUSERS to ADMINS
 - Change Y Y Y Y N N N to Y Y N N Y N N
- Define a storage class that archives files to disk and is available to all users
 - Duplicate the new ADMDISK entry
 - Change the name from ADMDISK to USERDISK
 - Change BKRSFS:AMVARKIV.ADMINAREA to BKRSFS:AMVARKIV.USERAREA
 - Change ADMINS to ALLUSERS
 - Change Y Y N N Y N N to N Y N N N N N



... Update the Configuration File: AMVSRVR CONFIG

Delete the following entries

- Define_Class CUSTOM
- Define_Class TAPE2
- Define_Class SFSSIMPL
- Define_Class SFSDUPL
- Save and exit



Create Groups and Rosters

From 5697J05A, create the ADMINS group

```
access 198 z
xedit admins grouplst z
```

- Add the following record to the file (each record points to a roster file)
 ADMINS
- Save and exit
- Create the ADMINS roster

```
xedit admins roster z
```

Add the following records to the file

MAINT
MAINT620
AMVADMIN
<others>

Any additional users that you want to be able to archive files to the ADMDISK storage class

Save and exit



Configuration is Complete

Now let's see if it actually works!





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Verifying





Start Archive Manager Service Machine

- Assume SFS server (BKRSVSFS) is already running
- Start required Archive Manager server
 - If Operations Manager is installed
 - From MAINT620, issue cp xautolog amvarkiv
 - Verify server is up and running
 - From any authorized user in Operations Manager gomcmd opmgrm1 viewcon user(amvarkiv)
 - If Operations Manager is not installed
 - Logon to AMVARKIV and watch the console for successful startup or errors
 - Correct errors and restart AMVARKIV until it starts successfully
 - Repeat for each AMVWRKnn user ID
 - Start these to verify startup works. In daily operations, AMVARKIV will start workers as needed



Issue Archive Requests

- Issue an archive request using the ADMDISK storage class
 - From AMVADMIN, issue archive profile exec a (class admdisk
- Issue an archive request using the USERDISK storage class
 - From any user ID, issue archive profile exec a (class userdisk
- Issue an archive request using the DEFAULT storage class
 - Make sure Tape Manager for z/VM is up and running
 - From any user ID, issue archive profile exec a



Archive Manager is Up and Running



- Major task is SFS setup
 - Especially if you aren't familiar with SFS
 - Easier if you already have an SFS server for Backup and Restore Manager
- VMSES/E install is straightforward
- Configuration is quick for initial testing
 - Use the defaults for most things
 - Give all options some thought before production use
- Use your in-house procedures to move it to production



References and More Information

Archive Manager for z/VM Web site

- http://www.ibm.com/software/stormgmt/zvm/archive
 - Publications
 - Pre-requisites
 - Announcements
 - Support
- e-mail: Tracy Dean, tld1@us.ibm.com
- Publications
 - CMS File Pool Planning, Administration, and Operation (SC24-6074)
 - Directory Maintenance Facility Commands Reference (SC24-6133)
 - Archive Manager for z/VM Program Directory (GI10-8661)
 - Archive Manager for z/VM Administration Guide (SC18-9345)
 - Archive Manager for z/VM User Guide (SC18-9348)