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Getting Started with IBM Archive Manager for z/VM

VMSES/E Installation, SFS Setup, and Initial Configuration

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Agenda

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



Assumptions

- DIRMAINT is installed for directory management
 - MAINT 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 you created for Backup and Restore Manager for z/VM (BKRSVSFS)
- 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 MAINT 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/altlibrar y.html
 - Strongly suggest installing this on MAINT 19E to simplify access to it
 - If on MAINT 19E, make sure all files have filemode number of 2 (not the default of 1). This is 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 MAINT

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 RR 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 MAINT, issue

DIRMFOR5697J05AAMD1913390AUTOG10USERMRDIRMFOR5697J05AAMD1983390AUTOG2USERMRDIRMFOR5697J05AAMD2A23390AUTOG1USERMRDIRMFOR5697J05AAMD2A63390AUTOG1USERMRDIRMFOR5697J05AAMD2B23390AUTOG5USERMRDIRMFOR5697J05AAMD2C23390AUTOG2USERMRDIRMFOR5697J05AAMD2D23390AUTOG10USERMRDIRMFOR5697J05AAMD4913390AUTOG5USERMRDIRMFOR5697J05AAMD4923390AUTOG5USERMRDIRMFOR5697J05AAMD4913390AUTOG5USERMRDIRMFOR5697J05AAMD4913390AUTOG5USERMRDIRMFOR5697J05AAMD5913390AUTOG5USERMRDIRMFOR5697J05AAMD5913390AUTOG5USERMRDIRMFOR5697J05AAMD5913390AUTOG5USERMRDIRMFOR5697J05AAMD5913390AUTOG5USERMR<

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IXM	<u>ikm</u>	_	_
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Resulting Minidisk Statements in Directory Entry for 5697J05A

MDISK01913390<start>010<vol>MR<readpw><writepw><multpw>MDISK01983390<start>002<vol>MR<readpw><writepw><multpw>MDISK02A23390<start>001<vol>MR<readpw><writepw><multpw>MDISK02A63390<start>001<vol>MR<readpw><writepw><multpw>MDISK02B23390<start>005<vol>MR<readpw><writepw><multpw>MDISK02C23390<start>002<vol>MR<readpw><writepw><multpw>MDISK02D23390<start>010<vol>MR<readpw><writepw><multpw>MDISK04913390<start>005<vol>MR<readpw><writepw><multpw>MDISK04913390<start>005<vol>MR<readpw><writepw><multpw>MDISK04923390<start>005<vol>MR<readpw><writepw><multpw>MDISK04903390<start>005<vol>MR<readpw><writepw><multpw>MDISK05913390<start>005<vol>MR<readpw><writepw><multpw>MDISK05913390<start>005<vol>MR<readpw><writepw><multpw>MDISK05913

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Format All Minidisks

From MAINT, 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

-Authorize service machines to space in SFS

enroll user amvadmin bkrsfs (blocks 1000 storgroup 2 enroll user amvcatlg bkrsfs (blocks 135000 storgroup 2 enroll user amvarkiv bkrsfs (blocks 90Q0 storgroup 2

Make this large enough to hold all files you want to archive to disk or SFS (rather than tape)



Update SFS Server

- From a user ID with administrator authority to the SFS server used by Backup Manager (BKRSVSFS)
 - -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:amvwrk01.workarea
create directory bkrsfs:amvwrk02.workarea
create directory bkrsfs:amvwrk03.workarea

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Prepare for VMSES/E Installation

From MAINT

Mount installation tape at virtual address 181

Or

- Have SERVLINK envelope available on the MAINT 500 disk

acc 500 c

- Unpack the VMARC file
 vmarc unpk <envfilename> vmarc c = = c
 Or
- Unpack the SERVLINK file deterse <envfilename> servline c 5697J05A = c

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 BKUPMGR (plan nomemo

or

vmfins install ppf 5697J05A BKUPMGR (plan nomemo env <envfilename>

Review for errors

vmfview install



Create Directory Entries for All Required Users

- Use directory entry samples in 5697J05A PLANINFO
 - Located on 5697J05A 191 disk
- Follow steps outlined earlier for creating 5697J05A user ID to create directory entries and minidisks for
 - AMVADMIN
 - AMVARKIV
 - AMVCATLG
 - Place holder user ID for catalog ownership in SFS, will not run as a service machine
 - AMVWRK01 AMVWRK04
 - Only need these if you will archive to tape (in addition to or instead of disk)
 - If only archiving to disk, all requests handled by AMVARKIV
- See next page for user specific updates



Create Directory Entries for All Required Users

For AMVADMIN, add

LINK 5697J05A 198 198 MR

For AMVARKIV and AMVWRKnn, add T OPMGRM1 to the end of the CONSOLE statement

- This allows Operations Manager to monitor their consoles

For all user IDs except AMVCATLG, add

LINK MAINT 193 993 RR

 Provides access to ACCESSM0 MODULE, so it can archive files with filemode number 0



Summary: Create Other Archive Mgr User IDs and Minidisks

From MAINT620

- Create directory entries and minidisks for remaining user IDs listed in topic 5.3 of the Program Directory
 - Create <userid> DIRECT
 - DIRM ADD <userid>

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



Format All Minidisks

From MAINT, 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

```
/**/

`ACC 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 maint 500 500 rr
acc 500 c
```

• Load the product code to disk and install vmfins install ppf 5697J05A ARCHMGR (nomemo nolink env <envfilename>

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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

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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) <u>strongly</u> suggested to simplify access to code
- Logon to MAINT link 5697j05a 492 492 rr acc 492 e acc 19e f
 vmfcopy * * e = = f2 (prodid 5697J05A*ARCHMGR olddate replace
 Copy help files from installation disk to system HELP disk (MAINT 19D) link 5697j05a 49d 49d rr acc 49d e acc 19d f
 vmfcopy * helpaamv 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 MAINT 500 disk
- From MAINT

```
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.





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 section for work area in SFS

```
- 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 = '591'
```

• Take out /* and */ before and after section for work area in SFS

```
- 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
```



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
 - Operations Manager servers (OPMGRM1, OPMGRS1 through OPMGRS4) if you plan to have Operations Manager submitting backup 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

Copy AMVUSERS NAMES to a shared disk for user and server access

- E.g. from MAINT, copy 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.)



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

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 TAPCMD POOLACC AMVADMIN AMVPOOL USER AMVARKIV TAPE



Make the Configuration File Available

Copy AMVSYSTM CONFIG to a shared disk

- From MAINT, 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 or files 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 MAINT 19E
 - Rebuild CMS saved system
 - From MAINT

```
acc 193 m
sampnss cms
ipl 190 clear parm savesys cms
<hit ENTER>
```

If you added help files to MAINT 19D disk (during installation and/or service)

- Rebuild CMS HELP logical saved segment (from files on MAINT 19D) vmfbld ppf segbld esasegs segblist helpseg (all



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 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 Y Y N 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

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AMVADMIN <others>

Save and exit

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



Configuration is Complete

Now let's see if it actually works!







Start Archive Manager Service Machine

- Assume SFS server (BKRSVSFS) is already running
- Start required Archive Manager server
 - If Operations Manager is installed
 - From MAINT, 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



Define Default Quota and Issue Archive Request

- Define a system-wide default quota per user to 20 cyls (3600 4Kblocks)
 - From AMVADMIN, issue
 - smsg amvarkiv set quota default 3600

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)