Customization and Use of z/VM Dirmaint

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Velocity Software, Inc
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Agenda

• What is Dirmaint?
• Dirmaint Advantages
• Finishing the Install
• Set Up Configuration Files
• Command Entry
• Common Tasks
What is Dirmaint?

- Pre-installed, priced, optional feature of z/VM
- CMS application that manages the directory
- Provides multiple interfaces
  - Primarily a command interface
  - Full screen – field entry
  - Program driven
    - REXX
    - SMAPI
Dirmaint Advantages

- Installed and Maintained with z/VM
  - RSU service delivered and installed with service stream
- Most commands to maintain the directory mimic regular directory statements
- Completing the install is simple and well documented
- Automated disk allocation eliminates costly mistakes
  - Not using a current diskmap +
  - Allocating a minidisk = potential disaster
Finishing Dirmaint install

• A few steps remaining before full use

• Chapter 4 in “z/VM: Getting Started With Linux on System z”
  • Enable Dirmaint
  • Change service machine passwords
  • Set up configuration files *
  • Import current user directory
  • Put Dirmaint into production
  • Start Dirmaint
Set up Configuration Files

- Three types of primary configuration files
  - CONFIGxx DATADVH
    - Configuration control keyword parameters
  - AUTHFOR CONTROL
    - User command authorization
  - EXTENT CONTROL
    - Minidisk allocation/boundaries
Set up Configuration Files

• **CONFIGxx DATADVH**
  
  • Dirmaint configuration override file(s)
  
  • xx=one or two EBCDIC characters
  
  • Processed in reverse EBCDIC sequence
    - Numbers before letters, 99-0 (zero-blank), Z9-AA
    - Standard CMS filemode search used across minidisks
  
  • CONFIG DATADVH is processed last
    - The default list of all keyword values
    - Should not ever be modified, always use an override
  
  • Contains keyword values controlling the function of Dirmaint
Set up Configuration Files

- **AUTHFOR CONTROL**
  - Contains a list of IDs that can issue Dirmaint commands for other IDs and the privileges available to them
    - EG: USERA can issue commands against the directory of USERB
  - Resides as a file under Dirmaint's control
  - Maintained by AUTHFOR and DROPFOR commands

```
*TARGETI  ORIGUSER  ORIGNODE  CMDL  CMDSETS
ALL       MAINT     *       140A  ADGHMOPS
ALL       MAINT     *       150A  ADGHMOPS
```
Set up Configuration Files

• **AUTHFOR CONTROL**
  - Adding/Removing user authorizations
  - Via command
    - Dirmaint AUTHFOR and DROPFOR
  - Editing the file
    - Get a copy from Dirmaint
    - Use XEDIT to modify the file
    - Send it back to Dirmaint
    - Load the new version of the file into memory
Set up Configuration Files

• **EXTENT CONTROL**
  
  – Controls minidisk allocations
  
  – Divided into a number of sections
    
    • REGIONS
    • GROUPS
    • EXCLUDE
    • AUTOBLOCK
    • DEFAULTS
  
  – Regions and Groups will be discussed in detail
Set up Configuration Files

• EXTENT CONTROL

  – REGIONS

  – Defines an area on a disk device that is used for minidisk allocation

  – Can be one or more parts of a volume

  – Typically a full volume

:REGIONS.

<table>
<thead>
<tr>
<th>RegionId</th>
<th>VolSer</th>
<th>RegStart</th>
<th>RegEnd</th>
<th>Dev-Type</th>
<th>Comments</th>
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<tbody>
<tr>
<td>VM5RES</td>
<td>VM5RES</td>
<td>0</td>
<td>END</td>
<td>3390-03</td>
<td></td>
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<tr>
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<td>END</td>
<td>3390-03</td>
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<tr>
<td>VM5WK1</td>
<td>VM5WK1</td>
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<td>END</td>
<td>3390-03</td>
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<td>VM5WK2</td>
<td>VM5WK2</td>
<td>0</td>
<td>END</td>
<td>3390-03</td>
<td></td>
</tr>
</tbody>
</table>

:END.
Set up Configuration Files

• **EXTENT CONTROL**
  
  – **GROUPS**
  
  – Collection of one or more regions
  
  – Forms a pool of disk space from which to allocate
  
  – Allocations can be first to last or rotating

  :GROUPS.
  
  *GroupName RegionList
  
  VMSYSTM    (ALLOCATE ROTATING)
  VMSYSTM    VM5RES VM5W01 VM5W02
  LNXDSK1    (ALLOCATE ROTATING)
  LNXDSK1    VM5WK1 VM5WK2
  
  :END.
**Set up Configuration Files**

- **EXTENT CONTROL**
  - **EXCLUDE** – Defines which minidisks are excluded from extent checking
  - **AUTOBLOCK** – Specifies device architecture values for each type of DASD
    - Taken from AUTOBLK DATADVH
  - **DEFAULTS** – Device capacity table
    - Taken from DEFAULTS DATADVH
EXTENT CONTROL

:EXCLUDE.
* USERID ADDRESS
MAINT 012*
SYSDUMP1 012*
:END.

:AUTOBLOCK.
* IBM supplied defaults are contained in the
  * The following are customer overrides and sup
  *
  *DASDType BlockSize Blocks/Unit Alloc_Unit Architecture

:AUTOBLOCK.
*DASDType BlockSize Blocks/Unit Alloc_Unit Architecture
3390 512 735 1 CKD
3390 1024 495 1 CKD
3390 2048 315 1 CKD
3390 4096 180 1 CKD

:DEFAULTS.
*DASDType Max-Size
3390-01 1113
3390-02 2226
3390-03 3339
3390-09 10017
3390-084 1084
3390-151 2226
3390-153 4365
3390-455 455
3390-568 1568
3390-32K 32760
3390-64K 65520
3390 1113
Finish Install

- Import USER DIRECT
  - Copy directory from MAINT
- Put into production
- Bring up Dirmaint
  - DVHBEGIN
- Disconnect from Dirmaint
- Logon to MAINT
• **Commands invoked using the DIRM EXEC**

• **First parameters can be a modifier**
  - TOsys | TOnode – route command to another VM network node
  - ASuser – when user with TO, issue command AS this user
  - BYuser – issue command with auth of this user (like LOGONBY)
  - FORuser – command affects named user (most common)
  - ATsys | ATnode – route command to a node in a multi-system cluster
  - If no modifier is used, command is invoked for the current user at *

• **Remainder is a Dirmaint command**
**Dirmaint commands are similar to most directory equivalents**

<table>
<thead>
<tr>
<th>Command</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>*DVHAMENG CHVaddr DLink IOPriori NOTAPE Qry SHUTDOWN</td>
<td></td>
</tr>
<tr>
<td>*DVHUCENG CLAss DMDisk IPL OFFline QUERY SPEcial</td>
<td></td>
</tr>
<tr>
<td>*UDVH CLEANUP DROPBy IUCV ONline REPLACE SPOOL</td>
<td></td>
</tr>
<tr>
<td>? CLONEDisk DROPFor Link OPTION REVIEW STAG</td>
<td></td>
</tr>
<tr>
<td>:ADVH CMDisk DROPScif LOADDEV PAValias RLCode STATus</td>
<td></td>
</tr>
<tr>
<td>:HELP CMS DSECuser LOCK POOL RLData STDevopt</td>
<td></td>
</tr>
<tr>
<td>:ACOUNT COMMAND DUMP LOGmsg POSIXFSRo RLDeXtn STorage</td>
<td></td>
</tr>
<tr>
<td>:ACINGROUP CONsole D8ONECMD LOGONBY POSIXGLIs RMDisk SUBscribe</td>
<td></td>
</tr>
<tr>
<td>:ACNTADD CP ELink MACHINE POSIXGROu SATEllite SUPGLIST</td>
<td></td>
</tr>
<tr>
<td>:ACNTDEL CPU ENable MAIL POSIXINFO SCAN SYSaffin</td>
<td></td>
</tr>
<tr>
<td>Add CRYPTO EXECDrop MAXSPool POSIXIUpg SCReen Term</td>
<td></td>
</tr>
<tr>
<td>AMDisk DASDOPT EXECLoad MAXstorag POSIXIWDi SECuser TESTpw</td>
<td></td>
</tr>
<tr>
<td>APPCPass DATamove EXTNchk MAXstore POSIXOPT SEND TMDisk</td>
<td></td>
</tr>
<tr>
<td>AUTHBy DATEForma FILE MDAUDit PRIORity SETAcnt UNLock</td>
<td></td>
</tr>
<tr>
<td>AUTHFor DEDicate FREExt MDisk PRIOset SETClass USEdext</td>
<td></td>
</tr>
<tr>
<td>AUTHLink DEFAULTs Get MDPW PRIVclass SETCPU USER</td>
<td></td>
</tr>
<tr>
<td>AUTHScif DEFINESTa GETCONSol MINIOPt PURGE SETMach USERMAP</td>
<td></td>
</tr>
<tr>
<td>AUTOlog DIRECT GLOBALOpt MMDisk PW SETOpTn USEROPTn</td>
<td></td>
</tr>
<tr>
<td>BACKUP DIRECTORY GLOCALv NAMESave PW SETPriori WORKUNIT</td>
<td></td>
</tr>
<tr>
<td>BATch DIREEDIT HELP NEEDPASS PWGen SETpw XAUTolog</td>
<td></td>
</tr>
<tr>
<td>CHECK DIRMAP HISTORY NEWS PWMON SETSTAG XCONFig</td>
<td></td>
</tr>
<tr>
<td>CHKsum DISABLE Include NICDEF QLog SHARE XSTORE</td>
<td></td>
</tr>
<tr>
<td>CHngid DISTRIBUT INVEn NOPdata</td>
<td></td>
</tr>
</tbody>
</table>
Dirmaint Command Entry

- All directory entries now managed by Dirmaint
  - Commands must be used to perform directory maintenance
  - Changes are put online immediately
  - Individual directory entries can be modified
    - GET/REPLACE
  - Wildcards can be used to affect matching virtual machines
    - MULTIUSER prefix option, MULTIUSER_VERIFICATION_EXIT
  - Changes can be batched
    - Multiple commands in a file, invoked with one execution
Command verification

dirm for sysadmin get nolock
DVHXMT1181R Enter the current logon password of SYSADMIN at RKS2LV for DVHXMT1181R authentication. It will not be displayed on the DVHXMT1181R terminal. To exit without processing the command, just DVHXMT1181R press ENTER.

DVHXMT1191I Your GET request has been sent for processing.

If the user is not authorized to use Dirmaint

DVHREQ2283E Userid SYSADMIN at RKS2LV is not authorized to issue the GET DVHREQ2283E command for SYSADMIN at *.
Dirmaint Authorization

• Changing authorization

• Dirmaint AUTHFOR command

```
DIRM FOR ALL AUTHFOR SYSADMIN FROM * CMDLEVEL 140A CMDSET ADGHMOPS
DIRM FOR ALL AUTHFOR SYSADMIN FROM * CMDLEVEL 150A CMDSET ADGHMOPS
```

• Or by editing the file
  - Get a copy from Dirmaint
    ```
    DIRM SEND AUTHFOR CONTROL
    ```
  - Use XEDIT to modify the file
  - Send it back to Dirmaint
    ```
    DIRM FILE AUTHFOR CONTROL
    ```
  - Load the new version of the file into memory
    ```
    DIRM RLDCODE
    ```
Dirmaint Command Entry

• Password required for each Dirmaint command entered

```
dirm needpass no
DVHXMT1181R Enter the current logon password of SYSADMIN at RKS2LV for
DVHXMT1181R authentication. It will not be displayed on the
DVHXMT1181R terminal. To exit without processing the command, just
DVHXMT1181R press ENTER.

DVHXMT1191I Your NEEDPASS request has been sent for processing.
Ready; T=0.04/0.05 13:08:57
DVHREQ2288I Your USEROPTN request for SYSADMIN at * has been accepted.
DVHBIU3450I The source for directory entry SYSADMIN has been updated.
DVHBIU3456I Object directory update is not required for this source
DVHBIU3456I update.
DVHREQ2289I Your USEROPTN request for SYSADMIN at * has completed;
DVHREQ2289I with RC = 0.
```

• Dirmaint commands now execute without intervention
Commands typically return data in the RDR

```
odirm for sysmaint
DVHXMTr1191I Your GET request has been sent for processing.
Ready; T=0.03/0.03 13:06:51
DVHREQ2288I Your GET request for SYSMAINT at * has been accepted.
DVHGET3305I Entry SYSMAINT sent, no lock attempt was made.
RDR FILE 0002 SENT FROM DIRMAINT PUN WAS 0354 RECS 0016 CPY 001 A NOHOLD NOKEEP
DVHREQ2289I Your GET request for SYSMAINT at * has completed; with RC = 0.
DVHREQ2289I = 0.
```

Use PEEK

```
0002 PEEK A0 V 80 Trunc=80 Size=12 Line=0 Col=1 Alt=0
File SYSMAINT DIRECT from DIRMAINT at RKS2LV Format is NETDATA.
* * * Top of File * * *
USER SYSMAINT SYSMAINT 32M 32M ABCDEFG
  INCLUDE IBMDFLT
  AUTOLOG AUTOLOG1 OP1 MAINT
ACCOUNT 1 SYSprog
MACH ESA
IPL 190
LINK MAINT 123 123 RR
LINK MAINT 191 192 RR
*
**********************************************************************
*
*DVHOPT LNK0 LOG1 RCM1 SMS0 NPW1 LNGAMENG PWC20110223 CRC*
* * * End of File * * *
```

1= Help    2= Add line  3= Quit    4= Tab    5= Clocate    6= ?/Change
7= Backward  8= Forward  9= Receive  10= Rgtrleft 11= Spltjoin  12= Cursor


**Dirmaint Command Entry**

- **Another way to see a directory entry**
- **PEEK the RDR file**

```
USER SYSMAINT XXXXXXXX 32M 32M ABCDEFG
DVHRXV3355I The following records are included from profile: IBMDFLT
PROFILE IBMDFLT
  SPOOL 000C 2540 READER *
  SPOOL 000D 2540 PUNCH A
  SPOOL 000E 1403 A
  CONSOLE 009 3215 T
  LINK MAINT 0190 0190 RR
  LINK MAINT 019D 019D RR
  LINK MAINT 019E 019E RR
  LINK MAINT 0402 0402 RR
  LINK MAINT 0401 0401 RR
  LINK MAINT 0405 0405 RR
  *
  ****************************
  *DVHOPT LNK0 LOG1 RCM1 SMS0 NPW1 LNGAMENG PWC20110223 CRCe* 
DVHREV3356I The following are your user option settings:
DVHREV3356I Links DISABLED Logging ON RcvMsg ON Smsg OFF NeedPW ON 
DVHREV3356I Lang AMENG
```

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A Few Common Dirmainint Tasks

• Changing Storage
• Adding/Removing a LINK
• Creating a disk map
• Adding a Minidisk
• Adding Logonby entries
• Changing users password
• The STORAGE command can be used to query or change a STORAGE value on the USER statement

```bash
dirm for sysadmin storage ?
DVHXMT1191I Your STORAGE request has been sent for processing.
Ready; T=0.02/0.03 20:06:57
   DVHREQ2288I Your STORAGE request for SYSADMIN at * has been accepted.
   DVHSTO3207I SYSADMIN currently has a maxstorage value of 16M and a
dirm for sysadmin storage 24m
DVHXMT1191I Your STORAGE request has been sent for processing.
Ready; T=0.02/0.03 20:11:07
   DVHREQ2288I Your STORAGE request for SYSADMIN at * has been accepted.
   DVHSTO3213E Your current maximum storage size is 16M, your requested
dirm for sysadmin storage 24m
DVHXMT1191I Your STORAGE request has been sent for processing.
Ready; T=0.02/0.03 20:11:07
   DVHREQ2288I Your STORAGE request for SYSADMIN at * has been accepted.
   DVHSTO3213E Your current maximum storage size is 16M, your requested
   DVHSTO3213E amount was 24M. Your request can not be satisfied.
   DVHREQ2289E Your STORAGE request for SYSADMIN at * has failed; with RC =
   DVHREQ2289E 3213.
```
• Must change the MAXSTORE value before the STORAGE value

dirm for sysadmin maxstor 24m
DVHXMT1191I Your MAXSTORE request has been sent for processing.
Ready; T=0.02/0.03 20:18:01
DVHREQ2288I Your MAXSTORE request for SYSADMIN at * has been accepted.
DVHBIU3450I The source for directory entry SYSADMIN has been updated.
DVHBIU3423I The next ONLINE will take place via Diagnose 84.
DVHBIU3428I Changes made to directory entry SYSADMIN have been placed
dir online.
DVHREQ2289I Your MAXSTORE request for SYSADMIN at * has completed;
DVHREQ2289I with RC = 0.

dirm for sysadmin storage 24m
DVHXMT1191I Your STORAGE request has been sent for processing.
Ready; T=0.02/0.03 20:20:41
DVHREQ2288I Your STORAGE request for SYSADMIN at * has been accepted.
DVHBIU3450I The source for directory entry SYSADMIN has been updated.
DVHBIU3423I The next ONLINE will take place via Diagnose 84.
DVHBIU3428I Changes made to directory entry SYSADMIN have been placed
dir online.
DVHREQ2289I Your STORAGE request for SYSADMIN at * has completed; with
DVHREQ2289I RC = 0.
Changing Storage

- **Check the change with the STORAGE and GET commands**

```
  dirm for sysadmin storage ?
  DVHXMT1191I Your STORAGE request has been sent for processing.
  Ready; T=0.02/0.03 20:27:43
  DVHREQ2288I Your STORAGE request for SYSADMIN at * has been accepted.
  DVHSTO3207I SYSADMIN currently has a maxstorage value of 24M and a
dvhst03207i default storage value of 24M.
  DVHREQ2289I Your STORAGE request for SYSADMIN at * has completed; with
  DVHREQ2289I RC = 0.
```

```
  dirm for sysadmin get nolock

  USER SYSADMIN SYSADMIN 24M 24M G
    ACCOUNT SYSTEMS
    IPL CMS
    MACH ESA
    CONSOLE 0009 3215
    SPOOL 000C 2540 READER *
```
• Specify the LINK command exactly as it is in the directory when adding a LINK

```
dirm for sysadmin link maint 193 193 rr
DVHMT1191I Your LINK command has been added.
Ready; T=0.02/0.03 20:48:58
DVHREQ2288I Your LINK request has been sent for processing.
DVHBIU3450I The source for directory entry SYSADMIN has been updated.
DVHBIU3424I The next ONLINE will take place immediately.
DVHBIU3428I Changes made to directory entry SYSADMIN have been placed online.
DVHREQ2289I Your LINK request for SYSADMIN at * has completed; with RC = 0.
DVHREQ2288I Your LINK request for SYSADMIN at * has been accepted.
```

```
USER SYSADMIN SYSADMIN 24M 24M G
   ACCOUNT SYSTEMS
   IPL CMS
   MACH ESA
   CONSOLE 0009 3215
   SPOOL 000C 2540 READER *
   SPOOL 000D 2540 PUNCH A
   SPOOL 000E 1403 A
   LINK MAINT 0190 0190 RR * CMS SYSTEM DISK
   LINK MAINT 019E 019E RR * PRODUCT CODE DISK
   LINK 5VMRAC40 029E 029E RR
   LINK 5VMRAC40 0505 0505 RR
   LINK 5VMRAC40 0191 0192 RR
   LINK RACFVM 0305 0305 RR
   LINK MAINT 0193 0193 RR
   MDISK 0191 3390 2149 001 VM5RES MR READ WRITE MULTIPLE
```
Add/Remove a LINK

- No change LINK command
- Any change to the LINK requires it to be deleted and re-added
- Specify DELETE for the link mode to remove the link

```
dirm for sysadmin link maint 193 193 delete
DVHXMT1191I Your LINK request has been sent for processing.
Ready; T=0.02/0.03 21:31:34
DVHREQ2288I Your LINK request for SYSADMIN at * has been accepted.
DVHBIU3450I The source for directory entry SYSADMIN has been updated.
DVHBIU3424I The next ONLINE will take place immediately.
DVHBIU3428I Changes made to directory entry SYSADMIN have been placed
DVHBIU3428I online.
DVHREQ2289I Your LINK request for SYSADMIN at * has completed; with RC =
DVHREQ2289I 0.
```
Creating a Disk Map

- Traditionally used as a way to find available space
  - With the DISKMAP EXEC
- Dirmaint provides a set of commands to produce information related to disk usage
  - DIRM DIRMAP
  - DIRM FREEEXT
  - DIRM USEDEXT
### Creating a Disk Map

By itself returns a RDR file that contains a map of each minidisk allocated on each volume on the system.

Additional options:
- link map
- gap file
- eliminate excluded extents
- sorting by device type

<table>
<thead>
<tr>
<th>Device</th>
<th>Start Address</th>
<th>End Address</th>
<th>Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM5WK1</td>
<td>$ALLOC$</td>
<td>0A04</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SFSZVPS 0191</td>
<td>166</td>
<td>205</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0307</td>
<td>206</td>
<td>210</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0302</td>
<td>211</td>
<td>225</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0301</td>
<td>226</td>
<td>235</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0303</td>
<td>236</td>
<td>250</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0304</td>
<td>251</td>
<td>255</td>
<td>5</td>
<td></td>
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<tr>
<td>RSSERV1 0191</td>
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<td>70</td>
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<tr>
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<td>585</td>
<td>644</td>
<td>60</td>
<td></td>
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<tr>
<td>RSSERV1 0301</td>
<td>645</td>
<td>659</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>RSSERV1 0303</td>
<td>660</td>
<td>709</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>RSSERV1 0304</td>
<td>710</td>
<td>1709</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>MAINT 0500</td>
<td>1710</td>
<td>2509</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>ZPRO 0391</td>
<td>2510</td>
<td>2514</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0305</td>
<td>3015</td>
<td>3338</td>
<td>324</td>
<td>Gap</td>
</tr>
<tr>
<td>RSSERV1 0305</td>
<td>3339</td>
<td>3339</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Device</th>
<th>Start Address</th>
<th>End Address</th>
<th>Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM5WK2</td>
<td>$ALLOC$</td>
<td>0A05</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RSSERV1 0306</td>
<td>1</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>SFSZVPS 0306</td>
<td>1001</td>
<td>1500</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>RSSERV1 0306</td>
<td>1501</td>
<td>3338</td>
<td>1838</td>
<td>Gap</td>
</tr>
<tr>
<td>$END$</td>
<td>3339</td>
<td>3339</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Adding a Minidisk

- Can still perform manual allocation with Dirmaint
  - Defeats one of the major benefits
- Automatic allocation will look for open disk space
  - Based on volumes/regions defined in EXTENT CONTROL
  - Proper volume sizing is important
- To add a minidisk with automatic allocation
  ```
dirm for sysadmin amdisk 199 x autog 20 vmsystm mr pw radm wadm madm
DVHXMT1191I Your AMDISK request has been sent for processing.
```
-
  ```
  DVHREQ2288I Your AMDISK request for SYSADMIN at * has been accepted.
  DVHSCU3541I Work unit 27080609 has been built and queued for processing.
  DVHSHN3541I Processing work unit 27080609 as MAINT from RKS2LV,
  DVHSHN3541I notifying MAINT at RKS2LV, request 200 for SYSADMIN sysaffin
  DVHSHN3541I *; to: AMDISK 0199 XXXX AUTOG 20 VMSYSTM MR PWS XXXX XXXX
  DVHSHN3541I XXXX
  DVHBIU3450I The source for directory entry SYSADMIN has been updated.
  DVHDRC3428I Changes made to directory entry SYSADMIN have just been
  DVHDRC3428I placed online.
  DVHSHN3430I AMDISK operation for SYSADMIN address 0199 has finished
  DVHSHN3430I (WUCF 27080609).
  DVHREQ2289I Your AMDISK request for SYSADMIN at * has completed; with RC
  DVHREQ2289I = 0.
  ```
Adding a Minidisk

- **From EXTENT CONTROL**
  
<table>
<thead>
<tr>
<th>VMSYSTM</th>
<th>(ALLOCATE ROTATING)</th>
<th>VMSYSTM</th>
<th>VM5RES VM5W01 VM5W02</th>
</tr>
</thead>
</table>

- **Minidisk confirmed with DIRMAP**

<table>
<thead>
<tr>
<th></th>
<th>$PAGE$ 0A03 *</th>
<th></th>
<th>1113</th>
<th>1114</th>
</tr>
</thead>
<tbody>
<tr>
<td>.PAGE.</td>
<td>0127 *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$ALLOC$ 0A01 *</th>
<th></th>
<th></th>
<th>1 Overlap</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINT</td>
<td>0123 *</td>
<td></td>
<td>3338</td>
<td>3339 Overlap</td>
</tr>
<tr>
<td>SYSDUMP1</td>
<td>0123 *</td>
<td></td>
<td>3338</td>
<td>3339 Overlap</td>
</tr>
<tr>
<td>.DRCT.</td>
<td>0123 *</td>
<td></td>
<td>20</td>
<td>20 Overlap</td>
</tr>
<tr>
<td>$DIRECT$</td>
<td>0A04 *</td>
<td></td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>$SYSCKP$</td>
<td>0A06 *</td>
<td></td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>$SYSWRM$</td>
<td>0A07 *</td>
<td></td>
<td>38</td>
<td>9</td>
</tr>
<tr>
<td>MAINT</td>
<td>0CF1 *</td>
<td></td>
<td>158</td>
<td>120</td>
</tr>
<tr>
<td>MAINT</td>
<td>0CF2 *</td>
<td></td>
<td>278</td>
<td>120</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>049B *</th>
<th></th>
<th>899</th>
<th>1298</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINT</td>
<td>051D *</td>
<td></td>
<td>1299</td>
<td>1324</td>
<td>26</td>
</tr>
<tr>
<td><strong>SYSADMIN</strong></td>
<td>0199 *</td>
<td></td>
<td>1325</td>
<td>1344</td>
<td>20</td>
</tr>
<tr>
<td>MAINT</td>
<td>0990 *</td>
<td></td>
<td>1925</td>
<td>1984</td>
<td>60</td>
</tr>
</tbody>
</table>
## Adding a Minidisk

- **This method has one huge problem** – Parameter overload!
- An easier way is to start the command:
`DIRM FOR SYSADMIN AMDISK`

To add a new minidisk to a user definition, fill in the following:

<table>
<thead>
<tr>
<th>Minidisk Address</th>
<th>Device Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>199</td>
<td>3390</td>
</tr>
</tbody>
</table>

Fill in one of the following rows:

<table>
<thead>
<tr>
<th>Explicit Start</th>
<th>Size</th>
<th>Volser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VBLK \ Blkszie</td>
<td>Blocks</td>
<td>Volser</td>
</tr>
<tr>
<td>AUTOG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GBLK \ Blkszie</td>
<td>Blocks</td>
<td></td>
</tr>
<tr>
<td>AUTOR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RBLK \ Blkszie</td>
<td>Blocks</td>
<td></td>
</tr>
<tr>
<td>T-DISK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBLK \ Blkszie</td>
<td>Blocks</td>
<td></td>
</tr>
<tr>
<td>V-DISK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VDBS \ Blkszie</td>
<td>Blocks</td>
<td></td>
</tr>
<tr>
<td>DEVNO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Optionally fill in:

<table>
<thead>
<tr>
<th>Link Mode</th>
<th>BLKSIZE</th>
<th>LABEL</th>
<th>PWS \ Read</th>
<th>Write</th>
<th>Multi</th>
<th>(passwords)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Macro-read 1 File

---

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1= Help 2= Prefix Operands 3= Quit 5=Submit 12=Cursor

---
Adding a Minidisk

Regardless of the method chosen:

- Directory is updated
- Minidisk can be optionally formatted

```
USER SYSADMIN SYSADMIN 24M 24M G
ACCOUNT SYSTEMS
IPL CMS
MACH ESA
CONSOLE 0009 3215
SPOOL 000C 2540 READER *
SPOOL 000D 2540 PUNCH A
SPOOL 000E 1403 A
LINK MAINT 0190 0190 RR * CMS SYSTEM DISK
LINK MAINT 019E 019E RR * PRODUCT CODE DISK
LINK 5VMRAC40 029E 029E RR
LINK 5VMRAC40 0505 0505 RR
LINK 5VMRAC40 0191 0192 RR
LINK RACFVM 0305 0305 RR
MDISK 0191 3390 2149 001 VM5RES MR READ WRITE MULTIPLE
*
******************************************************************************
*
MDISK 0199 3390 1325 20 VM5RES MR RADM WADM MADM
```
Adding LOGONBY Entries

- LOGONBY is different than other commands
  - Values specified are ADDed or DELETEd from the LOGONBY statement
  - Use '?' to see current LOGONBY setting

```
DIRM FOR SYSADMIN LOGONBY ADD USER1
DIRM FOR SYSADMIN LOGONBY ADD USER2
```

```plaintext
USER SYSADMIN SYSADMIN 24M 24M G
ACCOUNT SYSTEMS
IPL CMS
MACH ESA
LOGONBY USER1 USER2
CONSOLE 0009 3215
SPOOL 000C 2540 READER *
```
Changing User's Password

- **Change another user's logon password**

  dirm pw tcpboss1
  DVHXMT1181R Enter the current logon password of TCPMAINT at RKS2LV for authentication. It will not be displayed on the terminal. To exit without processing the command, just press ENTER.
  DVHXMT1191I Your PW request has been sent for processing.
  Ready; T=0.04/0.04 14:47:15
  DVHREQ2288I Your PW request for TCPMAINT at * has been accepted.
  DVHBIU3450I The source for directory entry TCPMAINT has been updated.
  DVHBIU3423I The next ONLINE will take place via Diagnose 84.
  DVHBIU3428I Changes made to directory entry TCPMAINT have been placed online.
  DVHREQ2289I Your PW request for TCPMAINT at * has completed; with RC = 0.

DVHREQ2289I Your PW request for TCPMAINT at * has completed; with RC = 0.
References

• z/VM V6R1 Directory Maintenance Facility Commands Reference – SC24-6188
• z/VM V6R1 Directory Maintenance Facility Tailoring and Administration Guide – SC24-6190
• z/VM Getting Started With Linux on System z - SC24-6194
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