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How to mirror my /u filesystem to a second disk using the Virtual Disk Manager.

Keywords

unix openserver v5 enterprise 5.0.0 virtual disk manager 1.0.0 vdm /u simple mirror configure array

Release

SCO OpenServer Enterprise System Release 5.0.0
SCO OpenServer Desktop System Release 5.0.0
SCO OpenServer Host System Release 5.0.0
SCO Virtual Disk Manager Release 1.1.0

Problem

I have already mirrored my root, boot and swap to my second disk but I do not know how to mirror my /u to my second disk.

Solution

Since you have successfully mirrored root, swap and boot, this article assumes that the parity drive has been added to the system correctly. That is, using `mkdev hd` and `fdisk`, the parity disk has the same size root partition as the root disk and does not contain any divisions or valid timestamps. In other words, when adding a second drive, you should have gone into `fdisk`, partitioned the drive correctly and chose 'q' to quit or 'n' to avoid going into `divvy`. This article also assumes that the Virtual Disk Manager Release Supplement 1.1.0 has been installed. Its main feature is to allow you to boot off the mirrored drive, should your root drive fail. Two 525 meg drives were used for this configuration.

In order for you to utilize your /u in a Virtual Disk array you must first convert it to a type "simple" using the Virtual Disk Manager.

IMPORTANT NOTE: Before you can do that you must back up your data and verify your backups. The following instructions will **NOTE** the proper steps in saving your data if you have put data in your /u filesystem. An incorrect keystroke can and will blow away your data so it is strongly recommended you back it up. When the backups are done make sure the system is in multiuser mode, unmount the filesystem you want to convert to simple, and bring up the Virtual Disk Manager.

Bring up the Virtual Disk Manager by clicking on the System Administration==>Filesystems

==>Virtual Disk Manager.

You will see:

```

+-----+
|      Disk      Piece      Database      Boot      View      Options      |
+-----+
|
| Virtual disks on <system name>
|
|-----+
| vdisk1: 2 piece-mirror 703084 blks, cluster 32
| vdisk2: 2 piece-mirror 98000 blks, cluster 32
| vdisk3: 2 piece-mirror 30000 blks, cluster 32
|-----+
|
+-----+

```

Click on 'Disk' and a list will appear. Click on 'New'. This will bring up the following window:

```

+-----+
| Select the virtual disk type and device name
|
| Virtual type:  +-----+
|                | Raid  5  |
|                +-----+
| Device:       +-----+
|                | vdisk 4 |
|                +-----+
|
| +---Vdisk parameters-----+
|
| Number of data pieces:  +-----+
|                          |  3  |
|                          +-----+
| Size of disk cluster :  +-----+
|                          | 32  |
|                          +-----+
| Include a hot spare   :  +-----+
|                          | y   n |
|                          +-----+
|
+-----+

```

Note: This is the window that comes up by default. You must choose the arrow down key to get more choices. After doing this, choose simple and then click on continue.

Note: vdisk4. Assuming the Release Supplement has been installed, "vdisk4" will show in device if this is the first array configured since mirroring boot, root, and swap.


```

Number of data pieces:  +-----+
                        | 3     |
                        +-----+
Size of disk cluster :  +-----+
                        | 32    |
                        +-----+
Include a hot spare   :  +-----+
                        | y   n  |
                        +-----+
+-----+

```

Click the arrow down key on 'Raid 5' to get more choices and choose 'Mirror'. The device should read "vdisk5". Click on 'Continue'.

```

                                New: Mirror
+---Vdisk parameters-----+
|
| Type: Mirror
|
| Virtual Device: /dev/dsk/vdisk5
|
+-----+

Select a piece to allocate

+-----+
| Piece 1: Not Allocated           highlighted
| Piece 1: Not Allocated
|
+-----+

+-----+
| Allocate piece |
+-----+

+-----+      +-----+      +-----+
| Create        |      | Cancel        |      | Help        |
+-----+      +-----+      +-----+

```

Click on 'Allocate Piece'.

```

                                vdisk5: Mirror   piece 1 of 2
+-----+
|
| Select the device this piece will reside on and then
| enter the offset and length of this piece:
|
| Device          Disk          Partition      Length
|
+-----+

```

```

/dev/dsk/ls1      1          1          1073120
/dev/dsk/vdisk4  simple          240000
/dev/dsk/vdisk1  mirror          703084
/dev/dsk/vdisk2  mirror          98000
/dev/dsk/vdisk3  mirror          30000
-----+-----
offset: 833100          Disk map
                          -----
Length: 24000

OK                      CANCEL          HELP
-----+-----

```

Click on '/dev/dsk/vdisk4' as this is the first piece to allocate. This will populate the offset and length to values shown. Now click on 'OK'. This will bring up the same window you saw previously but with "piece2", not "allocated", highlighted. Click on 'allocate piece' once again.

```

-----+-----
vdisk5: Mirror  piece 2 of 2
-----+-----
Select the device this piece will reside on and then
enter the offset and length of this piece:

Device          Disk          Partition      Length
-----+-----
|/dev/dsk/ls1   1            1              1073120
|-----+-----
offset: 833100          Disk map
                          -----
Length: <shaded out>

OK                      CANCEL          HELP
-----+-----

```

Click 'OK'.

```

-----+-----
New: Mirror
+---Vdisk parameters-----+
|                               |
| Type: Mirror                  | Cluster size: 32
|                               |
+---+-----+

```

```

| Virtual Device: /dev/dsk/vdisk5 |
+-----+
|
| Select a piece to allocate
|
+-----+
| Piece 1: /dev/dsk/vdisk4 offset 0 Length 240000
| Piece 2: /dev/dsk/1s1 offset 833100 Length 240000 parity
+-----+
|
+-----+
| Allocate piece |
+-----+
|
+-----+           +-----+           +-----+
| Create         |           | Cancel         |           | Help         |
+-----+           +-----+           +-----+

```

Click on 'Create'. You will get an information window telling you it has successfully created the virtual disk and that parity needs to be restored before it can be used. Do this now? Choose 'YES'. This will give you a percentage completed screen. Wait for it to complete. You will then get "Successfully restored /dev/dsk/vdisk5". Click 'OK'.

NOTE You will then get a menu to create a filesystem with a warning that one already exists, and by creating one your data will be destroyed. To preserve your data on /u choose 'CANCEL'. In fact you have already created a filesystem on /u upon installation so there is no need to choose anything other than 'CANCEL'.

NOTE If prior to taking steps to mirror /u, mkdev fs was run to mount the /u filesystem, some preliminary steps must be taken before going into the Filesystem Manager so you can access your data. You should run mkdev fs again and remove the filesystem so the entry in /etc/default/filesys is deleted for /u. Also make sure /u is not mounted. If it is unmount it.

You must now bring up the Filesystem Manager so you can mount the filesystem and access the data. You can do this on the Desktop by clicking on System Administration==>Filesystems==>Filesystem Manager, which brings you to the following screen:

```

+-----+
| Mount      Status of filesystems on <machine name>
|
| [ /dev/boot          /stand          read-only
|
| [ /dev/root          /stand          read-write
+-----+

```

Note: There may be other filesystems listed, depending on your system.

Click on 'Mount--->Add Mount Configuration--->Local'.

```

+-----+
| Device File: /dev/dsk/vdisk5 |
| Mount Point: /u              |
| Description optional:       |
|                               |
| +-----+ +-----+       |
| | Filesystem Type  HTFS | | +---Mount Options---+ |
| | Access Mode:    Read-Write | | Check and Repair |
| | Can user mount? | | Advanced Options |
| |                               | | When to mount |
| |                               | | [ ] Now |
| |                               | | [ ] At system startup |
| +-----+ +-----+       |
|                               |
| OK                          CANCEL                          HELP |
+-----+

```

Note: In our example I chose /u as my mount point. So, to access data I would cd to /u. To fsck my filesystem however, I would umount by typing umount /u and type:

```
fsck /dev/dsk/vdisk5
```

After making any necessary modifications click 'OK'.

You will see a message adding mount configuration. A window will come up showing this new filesystem added. You can now cd to /u to access the filesystem.

IMPORTANT NOTICE: It is **ESSENTIAL** that good reliable backups of the filesystem exist. If either the root or parity drive should fail, see the Virtual Disk Manager Release 1.1 Release Notes. Refer to the section entitled "Replacing a Mirrored Root or Parity Disk."

See Also

SCO OpenServer 5.0 System Administration Guide, Chapter 8 and the Virtual Disk Manager Release 1.1 Release Notes.

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