Removing/Replacing a Fixed Disk

Special Notices

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About the Procedure

The following is a procedure to remove and replace a fixed disk in AIX 3.1, 3.2 & 4.1 on a RISC System/6000.

Warning: Please do not use this document if the system is a /usr client, diskless client, or dataless client.

Warning: This procedure assumes that the fixed disk does not contain any "system" file systems (/, /usr, /var, /dev/hd5, /dev/hd6, etc.). If you are replacing a disk that contains these file systems, back up your system with "smit startup" (to make an image backup) and then replace the disk and reinstall the machine. This procedure may only work on disks that are still recognized by the system.

If you are on **AIX version 3.1.7 or less,** contact the AIX Support Center to order APAR fix IX20478 before following this procedure.

You should always **back up** your system before you make any changes to the system. That way you can always restore back to your original status if anything should go wrong.

Steps

Warning: Please do not use this document if the system is a /usr client, diskless client, or dataless client.

1. Log in as root.
2. Unmount all single-copy file systems on the disk. ("Directory" is the mount point of the file system.)

   ```
   unmount /Directory
   ```

3. Remove all single-copy file systems on the disk.

```
rmfs /Directory
```

4. For mirroring only, remove physical-partition copies from the disk.

   ```
   rmlvcopy LVname maxcopies# PVname
   ```

   where PVname is the disk that you are replacing.

   Notes:

   a. If a logical volume is striped across several disks, you must back up and then remove **all** copies.

   b. See InfoExplorer for correct syntax and parameters for the rmlvcopy command.

5. If you have any paging space in this drive:

   a. Determine whether the paging space on this drive is the only paging space in the system. The paging space names will be shown in the "Page Space" column of the lsps output.

      ```
      lsps -a
      ```

   b. If the paging space on this drive is NOT the only paging space in the system, skip to step 5d.

   WARNING: Please do not proceed further if the system is a /usr client, diskless client, or dataless client.

   c. If the paging space on this drive is the only paging space in the system, you will need to create another paging space (on a different drive) and also edit a file and run the bosboot command. For complete instructions on how to do this, request the document entitled "HOW TO REDUCE PAGING SPACE IN AIX 3.1, 3.2 & 4.1". After following the "HOW TO REDUCE PAGING SPACE IN AIX 3.1, 3.2 & 4.1" document, skip to step seven.

   d. Turn off paging:

      ```
      chps -a n pagingXX
      ```

   e. Reboot the machine.

   f. Once the machine has rebooted, check that the Active column in the lsps output for pagingXX shows 'no'.

      ```
      lsps -a
      ```

      You should now see that the paging space is not active.

   g. Remove the paging space:

      ```
      rmps pagingXX
      ```

6. If the disk is an SSA disk, determine which pdisk corresponds to the hdisk. Run "diag" and use the following steps:

   a. Choose "Service Aids"

   b. Choose "SSA Service Aids"

c. Choose "Configuration Verification"

d. Choose the hdisk of interest and press enter. The corresponding pdisk will be displayed along with the serial number on the disk drive. Remember the pdisk number, e.g., pdisk10.

e. Exit the diagnostic service aids

7. Quiesce the system before going further. The unmounting of filesystems will prevent any more i/o to the logical volumes that are part of jfs filesystems, however programs that use raw logical volumes, such as database programs, should halt any i/o to raw logical volumes.

8. Remove the disk from the volume group.

```
reducevg VGname PVname
```

If you received any errors from reducevg, fix the problem causing the messages. Then rerun the reducevg command. If you need assistance correcting the problem causing the error, contact one of the following:

- local branch office
- your point of sale
- call 1-800-CALL-AIX (to register for fee-based services)

All of the above avenues for assistance may be billable.

a. If the disk is an SSA disk, to physically remove it use the following procedure:

1) Choose "Service Aids"

2) Choose "SSA Service Aids"

3) Choose "Set Service Mode" This ensures that transactions in the loop will not be lost when the disk is removed.

4) Choose the pdisk determined from step d. The yellow check light on the drive will turn on.

5) Remove the SSA disk - you do not need to power off any devices. If you are replacing more than one SSA disk, do not physically remove more than one disk at a time; otherwise other disks in the loop may become inaccessible.

6) Exit the diagnostic service aids.

b. Delete the disk from the system configuration.

```
rmdev -dl PVname
```

If you have an SSA disk, delete the pdisk from the system configuration.

```
rmdev -dl pdisk#
```

c. Run the following command, making sure the PVname that you removed is not listed.

```
lspv
```

d. If you have SCSI disks, Shutdown the machine.

e. The IBM CE should remove and replace the SCSI disk drive.

f. If you replaced a SCSI disk, power the machine back up, if you replaced a SSA disk, run "cfgmgr".

g. Run lspv again, making sure the PVname you added is listed.

   Note: If you have holes in your list of hdisks, e.g., hdisk0, hdisk1, hdisk3, hdisk5 (the holes being hdisk2 and hdisk4), AIX will name the replaced disk with the first available name, in this case, hdisk2. This is also true for your pdisks.

   If the PVname is still not listed, the problem may be hardware. Run diagnostics.

h. If the PVname is listed, continue with the following steps.

i. Add the disk to the volume group.

```
extendvg VGname PVname
```

j. Remake logical volumes and file systems.

   Note: Use smit if you are not familiar with the syntax of the following commands.

```
mklv -OPTIONS VGname #PPs PVname(s)
crfs -v jfs -d LVname -m /Directory
```

k. For mirroring only, extend multiple-copy logical volumes onto the disk.

```
mklvcopy LVname maxcopies# PVname
```

   Note: See InfoExplorer for correct syntax and parameters of the mklvcopy command.

l. For mirroring only, resynchronize copied physical partitions (PPs).

```
syncvg -p PVname
```

We recommend that you back up your system when you get it running properly. Then, if you have to reinstall sometime in the future, you can restore the system to its current configurations.

Reader's Comments

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