# How to Alter/Restore a Missing .fs.size File

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## About this Document

This .fs.size file is used by the mksysb (system backup) command to create logical volumes and filesystems when restoring from a backup

This fax describes how to alter or restore a missing .fs.size file when restoring a mksysb tape. This document applies to AIX 3.2 and 4.1. You must know the names of the filesystems and logical volumes and the sizes if you are creating a .fs.size file from scratch.

## Recovery of the .FS.Size File for AIX 3.2

The general sequence is:

1. Boot from some bootable media (usually the mksysb tape).
2. Use the echo command to create a corrected .fs.size file on the ram disk.
3. Create a temporary restbyname or pax command that will get the .fs.size file from the ram disk instead of the tape drive.
4. Restore the mksysb tape normally.

### Recovery

1. Boot the machine to maintenance mode using the mksysb tape or other boot media. If not booted from the mksysb tape, place it in the tape drive now.
2. Enter the limited function maint shell. **DO NOT** do getrootfs. (choice #4 on the menu)

   In 4.1, you will need to select 'start maintenance mode' from the welcome menu, then from the maintenance menu select 'advanced maintenance mode' and from there enter the limited function maintenance shell.

**Note**: Be careful to not use any control sequences like control C or control D while in the limited shell. If this occurs, subshell could be broken and you will not be able to return to the menu.

3. Use the echo command to create the .fs.size file like the sample shown below, in the /mnt directory.

   The .fs.size file consists of one line with "imageinstall" followed by 1 line for each filesystem to be created. the format is:

   ```
   volume group name (rootvg)
   PP size (in Mbytes) for the logical partition (usually 4 on
   smaller disks)
   the logical volume name (like hd4)
   the number of logical partitions for that lv
   the total space used (PP size times # of logical partitions)
   filesystem type (jfs)
   ```

   Sample:

   ```
   cd /mnt
   echo 'imageinstall
   rootvg 4 hd4 / 4 16 jfs
   rootvg 4 hd1 /home 35 140 jfs
   rootvg 4 hd3 /tmp 5 20 jfs
   rootvg 4 lv03 /tools 2 8 jfs
   rootvg 4 lv04 /top20 1 4 jfs
   rootvg 4 lv02 /u/pmp 1 4 jfs
   rootvg 4 hd2 /usr 56 224 jfs
   rootvg 4 lv00 /usr/vice/cache 4 16 jfs
   rootvg 4 hd9var /var 4 16 jfs
   rootvg 4 lv05 /work 90 360 jfs' >/mnt/.fs.size
   ```

4. Use: cat /mnt/.fs.size, to examine the file and compare it to to the sample file.

| Depending upon the level of AIX 3.2 that you BOOT from you will replace
| EITHER /usr/sbin/restbyname OR /bin/pax. AIX 3.2.3e and before used the
| pax command to recover the .fs.size file and 3.2.5 and above, use the
| restbyname command. Depending upon your level of AIX 3.2.4, the mksysb
| command may be using EITHER the pax or the restbyname command. You
| will have to determine via several trys which command is used in your
| version. Try steps 8, 9 & 10 first. If the problem remains, try it again with
| steps 5, 6 & 7, or boot with a level of AIX where the command used is
| known.

| Prior to 3.2.4:

| 5. cd /bin

| 6. cp pax pax.good

| 7. echo '/bin/cp /mnt/.fs.size /.fs.size
|    /bin/cp /bin/pax.good /bin/pax' >/bin/pax

| Go to step 11.

| 3.2.5 or later release:

| 8. cd /usr/sbin

9. cp restbyname restbyname.good

10. echo '/bin/cp /mnt/.fs.size /.fs.size /bin/cp /usr/sbin/restbyname.good /usr/sbin/restbyname' >restbyname

    **Note**: The command listed above should be typed as shown above with a new line between the first and second lines.

11. To exit the maint shell:

    ```
    exit
    ```

    **Note**: If you do not return to the shell, reboot and repeat the steps above. Take caution and do not use any control characters.

12. Select restore from the mksysb

## Recovery for .fs.size.file for AIX 4.1

These steps describe installing from mksysb and altering the image.data file. If the system that the backup was created on is still viable:

1. Backup a copy of the image.data file on the system and make the required changes to the backup copy.

2. Place the altered image.data file in a directory.

3. Create a second file in the directory and name it 'signature'.

   This file should contain a single one line entry with the word 'data' starting in line one, column one.

4. Backup the two files to diskette with the following command:

   ```
   find . -print | backup -ivf /dev/fd0
   ```

   Run this command from the directory containing the two files.

5. Verify that the files are on the diskette with the following:

   ```
   restore -Tvf /dev/fd0
   ```

   This should show only the two files on the diskette in relative backup format; ./image.data and ./signature.

6. Boot the system to be installed with the diskette in the diskette drive and the mksysb tape in the tape drive.

   The install process will read and use the image.data file on the diskette instead of the one on the backup media.

   If the system that the backup was created on is no longer viable, you can copy the image.date file on the backup tape with the following commands:

```
   tctl -f /dev/rmt0 rewind
   restore -s4 -xvf /dev/rmt0.1 ./image.data
   restore -s4 -xvf /dev/rmt0.1 ./image.data
```

**Note**: You can build this diskette from either 3.2 or 4.1. The backup command at 3.2 is compatible with 4.1.

The following stanza is an example IF you need to modify /usr filesystem. You will need to modify the lv_data and the fs_data that corresponds to the filesystem you need to change.

```
lv_data:
   VOLUME_GROUP= rootvg
   LV_SOURCE_DISK_LIST= hdisk1 hdisk0
   LV_IDENTIFIER= 00015772dc0c2dbd.5
   LOGICAL_VOLUME= hd2
   VG_STAT= active/complete
   TYPE= jfs
   MAX_LPS= 512
   COPIES= 1
   LPs= 78
   STALE_PPs= 0
   INTER_POLICY= minimum
   INTRA_POLICY= center
   MOUNT_POINT= /usr
   MIRROR_WRITE_CONSISTENCY= on
   LV_SEPARATE_PV= yes
   PERMISSION= read/write
   LV_STATE= opened/syncd
   WRITE_VERIFY= off
   PP_SIZE= 4
   SCHED_POLICY= parallel
"**" PP= 78
   BB_POLICY= relocatable
   RELOCATABLE= yes
   UPPER_BOUND= 32
   LABEL= /usr
   MAPFILE=
   LV_MIN_LPS= 76
fs_data:
   FS_NAME= /usr
"**" FS_SIZE= 638976 (this is in 512-blocks) NOTE: 8192 512-blocks =4M
   FS_MIN_SIZE= 619080
   FS_LV= /dev/hd2
   FS_FS= 4096
   FS_NBPI= 4096
   FS_COMPRESS= no
```

Note: Fields marked with "**" are where you will increase/decrease. Note also that the PP_SIZE field is 4M in this example. For example, if you increase the LPs and PP fields by 10 the /usr will increase by 40m and you would need to increase the FS_SIZE field to 81920.

7. Alter the image.data file and follow the step from "boot the system" above.

## Reader's Comments

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