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How do I create and use a permanent RAMDISK(HW) on my machine?

Keywords

ram ramdisk mknod mkfs mount disk memory xenix

Release

SCO XENIX System V Operating System Generic
SCO UNIX System V Operating System Generic

Problem

Exactly what steps are needed to create a usable ramdisk?

Solution

There are three steps involved in the creation of a ramdisk:

- (1) Use [mknod\(C\)](#) to create the ramdisk **device**.
- (2) Use [mkfs\(C\)](#) to create a file system on the **device**.
- (3) Use [mount\(C\)](#) to mount the ramdisk for use.

Step 1: [mknod](#) (make node) creates the **device** that the ramdisk will reside on. It has the form:

```
mknod device_name b_or_c major_device_number minor_device_number
```

where `b_or_c` would actually be 'b' or 'c'. The letter 'b' is for blocked **devices** and is the one you will use. The major number will always be 31. The minor number determines the size, number and longevity of the ramdisk. The minor number is the sum of the three attribute columns.

Longevity:

```
permanent = 128    temporary = 0
```

Size:

```
16K = 0           128K = 24          1 Meg = 48          8 Meg = 72
32K = 8           256K = 32          2 Meg = 56          16 Meg = 80
64K = 16          512K = 40          4 Meg = 64          32 Meg = 88
```

```
64M = 96
```

Ram Disk # :

```
0 through 7
```

Note

There are only 8 **devices** available. Two different size **devices** may not share the same number.

For example, to create a 64K permanent ramdisk, the minor number could vary from 144 to 151. If the disk number was 1, the mknod command would have the form:

```
mknod /dev/ram64 b 31 145
```

Step 2: mkfs (make file system) creates a file system on the the ramdisk. In this example mkfs has the form:

```
mkfs device_name size_of_file_in_Bsize_blocks
```

In this example, the command to create a 64K file system would be:

```
mkfs /dev/ram64 128
```

Step 3: mount (mount file system) mounts the selected **device** on the specified mount point. It has the form:

```
mount device_name mount_point
```

In order to mount the example 64K ramdisk on /mnt the command would be:

```
mount /dev/ram64 /mnt
```

Note

A ramdisk depends on contiguous memory and should be allocated on system startup. The error message "can not create" received from the command "mkfs" is generally due to fragmented memory, or the lack usable memory for the **device**. System performance may actually degrade by using a ramdisk because the operating system can generally put the memory to better use elsewhere.

See Also

[Technical Article 104940](#) "I can't create a filesystem on a large ramdisk on SCO UNIX"

Version 4.2." [Technical Article 104952](#) "I can't create a filesystem on a large ramdisk on SCO OpenServer Release 5.0."

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