



# Tech Info Library

## Bernoulli Drive: Using as A/UX Volume

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TOPIC -----

I'm using a Bernoulli 90MB dual cartridge drive with A/UX 3.0. I'd like to use the second drive as a UNIX volume. Can you give instructions on how to do this?

DISCUSSION -----

The SCSI driver supports 32 partitions per drive. This means we can put partitions 0-30 on the drive and use 31 to access the whole device. For a SCSI ID with more than 2 disks, the second disk can be addressed with the next set of 32 partitions; this is 32-63, using 63 to access the whole device. The devices for the needed partitions must be created in the /dev/dsk and /dev/rdisk directories. For consistency sake, use the following format for the names - /dev/dsk/cCdDsS where:

- C is the SCSI address of the drive - the whole Bernoulli box.
- D is the disk number - In the case tested, 0 was left and 1 was right.
- S is the slice number - For drive 0 from 0 to 31, for drive 1, 32-63.

The same format applies for the character devices in /dev/rdisk.

### Create Devices

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Devices must be created for the second disk. The SCSI driver major device numbers range from 24 through 30 and correspond to SCSI addresses 0 through 6. For the purpose of example, we'll assume the SCSI address is 5, making the major device number 29 (since 0=24, 5=29). Therefore, based on the above paragraph and the information we know about major device numbers, we will create devices for the second disk as follows, using the mknod command.

- To access first partition:

```
mknod /dev/dsk/c5d1s32 b 29 32 - creates block device file with major device number 29 and minor number (partition start number) 32
```

mknod /dev/rdisk/c5d1s32 c 29 32 - creates character device file with major device number 29 and minor number (partition start number) 32

- To access whole disk:

mknod /dev/dsk/c5d1s63 b 29 63 - creates block device file with major device number 29 and minor number (whole partition number) 63

mknod /dev/rdisk/c5d1s63 c 29 63 - creates character device file with major device number 29 and minor number (whole partition number) 63

\*Note: You could use:

```
mknod /dev/dsk/c5d1s0 29 32
```

and access the device using slice number 0.

#### Format The Bernoulli Cartridge

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Now you need to format the Bernoulli cartridge with an A/UX partition on it with SilverLining, CMS Utilities, or something with similar capabilities.

Make sure that when the software created the partition it created a bzb block (Block Zero Block) for that partition. If it's there, you'll see some information at the end of the entry for that partition that says something like:

```
Made: [0]
Mount: []...etc
```

If this is there, then check that it has a slice specified. If it doesn't, you'll have to modify the bzb for that partition using the dp command. Be sure you define the A/UX partition as Slice 0 when you created the partitions. (This is the only slice number you can access if you use 32.)

Use the dp command:

```
dp /dev/rdisk/c5d1s63
```

and look at the partition map. You can use a 'P' (capital P) in order to print all the partitions in the drive. The A/UX partition you're trying to use should have a slice number associated with it. If it doesn't, you will need to assign one to it using the dp command. Be very careful with dp, since it can trash your whole partition map very easily if you type the wrong command.

#### Create A File System

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Once you have the A/UX partition, you can use the newfs command to create a file system on the cartridge, and then mount it with the mount command.

Be sure to test that the device you're accessing is the correct one. You

can use:

```
dd if=/dev/dsk/c5d1s32 of=/dev/null
```

If disk 0 is accessed, something is wrong; don't execute the newfs command. If the disk 1 flashes, everything is OK. A good precaution is to remove the disk from drive 0 before any testing, and replace it with an empty disk (or a disk with contents you don't care to keep) in drive 0. Copyright 1992, Apple Computer, Inc.

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