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A/UX Mounting Many HFS Volumes (11/93)

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TOPIC -----

What is the limitation of HFS volumes (partitions) that can be mounted under A/UX?

DISCUSSION -----

The limit on the number of HFS partitions per disk is 16. The problem you are seeing is due to the fact that only 6 devices have been created in the /dev/dsk directory for HFS partitions to be mounted.

The solution to the problem is to create these devices. The devices that need to be created should not contain the SCSI BUS ID number. The reason for this limitation is the fact that the AWS 95 will not accept duplicate SCSI ID numbers for HFS volumes even if they are on separate SCSI Buses. What this means is that if you have more than one drive with the same SCSI ID located on different buses and each drive has one or more HFS volumes, only the HFS volume(s) on the drive connected to the lower SCSI bus will be mounted.

Based on this, the devices that need to be created, do not need to specify the bus number. They only need to specify the SCSI ID and the partition.

For example purposes I will use SCSI ID 3, but this applies to SCSI ID's 0-6. The partition used for the first HFS volume on the drive is 30, therefore the device used is:

```
/dev/dsk/c3d0s30
```

Any other HFS volume gets assigned a partition in descending order. This means the second partition on the drive will be slice 29 and the device used will be:

```
/dev/dsk/c3d0s29
```

A/UX comes preconfigured with 6 devices that can be used for HFS volumes and they are for slice 30, 29, 28, 27, 26 and 25. If more than 6 are

needed, new devices must be created. All this procedure must be performed while logged in as "root".

If a drive contains seven HFS partitions, a device needs to be created for the seventh partition to mount. If we follow the same order described above, the needed device will be for slice 24. The device for slice 24 is:

```
/dev/dsk/c3d0s24
```

The device is formed by two parts, a block device and a character device. Both parts need to be created for the device to work properly. Before creating the device, we need to obtain the major device number for it. This can be done using either of the following the commands:

```
% ls -l /dev/dsk/c3d0s29 /dev/rdisk/c3d0s29
brw----- 1 root    root    27, 29 Mar 23 1993 /dev/dsk/c3d0s29
crw----- 1 root    root    27, 29 Mar 23 1993 /dev/rdisk/c3d0s29

% file /dev/dsk/c3d0s29 /dev/rdisk/c3d0s29
/dev/dsk/c3d0s29:      block special (27/29)
/dev/rdisk/c3d0s29:   character special (27/29)
```

Note that the "ls -l" command also provides us with ownership and access privileges for the files.

Based on this information, the major device number is 27, the minor device number is 29, owner root, group root and access is 600 for both devices. The minor device is the same as the slice we need to create. To create the device needed, we will use the command mknod in the following format:

```
mknod name b/c major minor
```

Based on this, the entries for slice 24 on disk SCSI ID 3 look like:

```
% mknod /dev/dsk/c3d0s24 b 27 24
% mknod /dev/rdisk/c3d0s24 c 27 24
```

After the devices are created, we need to set the access privileges

```
% chown root /dev/dsk/c3d0s24 /dev/rdisk/c3d0s24
% chgrp root /dev/dsk/c3d0s24 /dev/rdisk/c3d0s24
% chmod 600 /dev/dsk/c3d0s24 /dev/rdisk/c3d0s24
```

After this is done, logout and log back in. The seventh HFS partition will now appear on the desktop.

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