
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
MEMORANDUM

From: Burt Rosenberg
To: Ali Waqar
Re: Cs.cs.miami.edu
Date: May 6, 1993
Cc: Math/CS Staff and Faculty

This memo documents the switch settings and administration decisions made during the installation of the Decstation 5000/240, called cs.cs.miami.edu.

Location

The Decstation was set up in 406A and its monitor and keyboard brought out into 406 through a small hole in the wall. Securing the body of the Decstation from tampering was thought to be important.

SCSI Addresses and Partitions

The Decstation 5000/240 installation includes two extender boxes and a CDROM. The extender boxes have DIP switches located beneath plastic snap-off panels on the rear wall. The three hard disks have their SCSI address set by these DIP switches. The address of the tape drive is set by jumpers inside the extender box. The CDROM has an easy to use switch on the back.

Device	Description	SCSI	Where Is
rz0	RZ25 Hard Disk	0	First Enclosure
rz1	RZ25 Hard Disk	1	First Enclosure
rz2	RZ25 Hard Disk	2	Second Enclosure
rz4	RDD42 CDROM	4	Own Enclosure
tz5	TZK10 Tape Drive	5	Second Enclosure

For the rz0 we have taken the default partition; for the rz1 we have lightly modified the default; the rz2 is used unpartitioned:

Partition	Start	End	Megabytes	Mounted
rz0a	0	32767	15.343 formatted	/
rz0b	32768	163839	65.536 raw	swap
rz0c	0	832526	416.263 raw	reserved
rz0d-f	—	—		unused
rz0g	163840	832526	313.918 formatted	/usr
rz0h	—	—		unused
rz1a	0	32767		unused
rz1b	32768	163839		unused
rz1c	0	832526	416.263 raw	reserved
rz1d-f	—	—		unused
rz1g	163840	832526	313.918 formatted	/usr/local
rz1h	0	163839	76.735 formatted	/var
rz2a	0	32767		reserved
rz2b	32768	163839		unused
rz2c	0	832526	390.670 formatted	/mfs
rz2d-h	—	—		unused

Better performance might be achieved through a second swap space on rz1. This was not attempted due to my inexperience with Unix system administration. The /var partition is unnecessarily large. This was done to retain as much as possible of the default partition and to allow for a repartitioning of rz1h if future needs demand.

Installed software

All software subsets were installed for Ultrix 4.3 from CDROM distribution including OSF/Motif. The software was provided by our membership for this machine in the CSL/ESLG program. We currently run under a 2-user restricted license. An unrestricted license will be available after paperwork is filed with Julie Potter in IR.

The multiuser license was installed on May 4, 1993.

We have a bug in OSF/Motif. Craig Kolthof ordered a necessary patch from Dec. Until the patch arrives, the fix is for a super-user to login in from another terminal and kill Xws. Init will restart Xws.

The patch was installed on April 29, 1993.

Cs.cs.miami.edu is 129.171.34.16

The name of the machine was selected to be cs, in domain cs.miami.edu, thus the full name is *cs.cs.miami.edu*. This was done so that this Decstation would be *the* cs machine, the target of all mail addressed, for example, as burt@cs.miami.edu.

Cs.cs could have been connected to one of three physical networks. We chose to connect it to 129.171.*.*, the University of Miami network via the new Dec Bridge and Dec Repeater. A full discussion of this decision would include issues concerning the future arrangement of our networks.

We have authority over IP addresses 129.171.34.*, notwithstanding that Paris and Mthvax have IP addresses beginning 129.171.32.*, and so, after much psychoanalysis and necromancy, 129.171.34.16 was chosen.

Configured software

As of today, netsetup, nfssetup, bindsetup, svcsetup and lprsetup have been run: that is, we are running NFS, BIND and remote printing. I have left ypsetup to someone with familiarity with this software subset.

An important issue is our IP broadcast standard (not to be confused with Ethernet broadcast!). The world standard is to broadcast all 1's, (129.171.255.255), and cs.cs has been setup accordingly. However some of our machines are broadcasting all 0's, (129.171.0.0). So far, we have felt no ill effects. It appears that editing the ifconfig line of /etc/rc.local and rebooting is all that is needed to reconfigure your standard.

NIS and NFS

I have little knowledge of NIS but have made transfer to NIS for /etc/passwd easier by instituting a /u directory of soft links to home directories. In this way, a /etc/passwd entry is valid even on a foreign machine with a different file system tree as long as that machine follows the /u convention. In this way *either* users wishing to have a single home directory on all machines or users wishing a different home directory on certain or each machine can be accommodated. Home directories can also be moved more easily. The Ultrix

scamp command can be modified to add-user in this variant fashion. See the script `/usr/etc/scampdir/u_adduser`.

I am most confused about the usefulness of NIS for `/etc/hosts` given that BIND will look up host IP's for the client machine off of an authorized name server.

Due to the wide variety of home directory conventions, the machine `cs.cs` is a new server in an already complicated network structure. For simplicity, this file naming system has been adopted. It will be explained concretely with reference to `cs.cs.miami.edu`.

The machine `cs.cs.miami.edu` is hardware exporting two file servers: *alpha* and *beta*. Anyone whose home directory is on the alpha server will find their home directory on any Unix machine at `/mfs/alpha/user-name`. The *mfs* stands for "Miami File System", it is a pun on *afs*, the Andrew File System of Carnegie Mellon University. A user with home directory on the beta server will have their home directory at `/mfs/beta/user-name`. Our machines (might) also be exporting `/usr/local`, the standard place for stuff like `Tex` and `gcc`.

The machine `passaic.cs.miami.edu` might eventually export the *gamma* file server. Anyone whose home directory is on the gamma server will find their home directory on any Unix machine at `/mfs/gamma/user-name`. It will not make a difference which machine offers the server to the network or which machine the user logs into.

At present, all file systems are NFS mounted, as opposed to automounted. We prefer automounting and will soon remount all file systems as automount. Packages such as `tex`, if offered to the network from two machines, both at the standard location `/mfs/tex`, can use the automount feature for software redundancy. If one of the machines crashes, automount will automatically replace it with the other. As important as redundancy, this will ease migration to new `tex` versions and upgrades.