DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
MEMORANDUM

From: Burton Rosenberg
To: Brian Coomes
Re: Computers
Date: October 14, 1994

Tex

There is an older version of tex installed under `/TeX` It's major flaws are that
it does not exist for mips, it cannot automatically invoke Metafont to build
fonts, Latex cannot hyphenate properly, latex pictures cannot do circles and
old tex mounted in a non-standard location. A new version of tex is available
for both sparc and mips, on cs, paris and passaic. One difficulty encountered
moving to the new tex is automatic font generation invokes Metafont, and
Metafont needs the X-libraries to run. Brain damaged, but true.

Some Sun's do not run X. It is sufficient to copy the Xlibs over to an
appropriate place or to NFS the /usr/openwin directory to allow the metafont
to run.

Ethernet

We have two class C networks and part of a class B network. Paris-gw is
192.70.171.0, mthvax-cs is 192.31.89.0, and cs-miami is 129.171.34.0.

Beware, we are not subnetting the class B, our subnet mask is FF:FF:00:00.
By convention our class B numbers have 34 as the third octet. Information
resources uses numbers 129.171.32.0. Paris and mthvax has numbers of this
form, for historical reasons, and Barry Miller likes it this way.

Originally the paris-gw and mthvax-cs networks were both extensively
used. With the aging of mthvax, it's network has become less populated.

The physical wire on which the mthvax-cs network runs has been bridged to the physical wire on which the paris-gw networks runs. Except for two macintoshes, all mthvax-cs have been reassigned IP address on the paris-gw network.

The most populated network is paris-gw. A DEC-Repeater splits this run into five fingers, two of which are called Red and Green. The Red line leaves the repeater, goes to cal, then goes up to the fifth floor where it travels above the library into Rama's office, turns right and runs until Connell's office. Most computers on this side of the fifth floor are on the Red line. This line is periodically marked with bands of red tape.

The Green line leaves the repeater and goes uninterrupted up to the fifth floor. It is periodically marked with bands of green tape. Above the library a transceiver takes an AUI tap out the Michelle, and the wire continues to a 4-way transceiver above store room 509. The four AUI taps feed soho, israel, oakland and nanjing (now valencia). Beware: power for this transceiver comes from oakland. Turn oakland off and all four machines are cut from the net.

The Green wire then goes into Chen's office to feed taipai. Then a transceiver takes an AUI tap out to hibbing. Then the Green wire goes into Zame's office to feed alanza, and it terminates here.

A Blue wire also leaves the DEC Repeater and travels to the fifth floor. While we were running wires we ran an extra. It doesn't do anything useful.

An "unmarked" orange line leaves the DEC Repeater to feed the fourth floor. It is unmarked because I never found orange tape. Fourth floor lines are less mapped than fifth floor lines, but to my understanding, orange goes first to mthvax, where it is merging with the math-cs line, the infamous math-cs/paris-gw jumper, to ibiza, a mac in 406, to Stephen's mac, to the wealth of computers in Brian's office, to Victor, to Irina, Jan then Michel, where it terminates.

A newly expanded yellow-red line leaves the repeater for the other side of the fourth floor, visiting first Cantrell's Atlanta, then (back!) through Cosner's office to terminate at Alan's PC.

Another important line is the Yellow line, which carries miami-cs to cs, the vaxes and the fifth floor. The DEC Bridge connects to the fan-out unit for the miami-cs feed, and the thin net side of the bridge goes, in one direction, past cs to vaxa, vaxb, vaxc to end at vaxe, in the other direction, up to the fifth floor, into Rama's office, down to Burt's office where it turns around,

goes past Rama's office again and continues on around the building parallel to the red line.

Hosts File

Previously, all host names appeared in every machine's /etc/hosts file. This is an administration nightmare. DNS has done away with this, but Sun did not immediately adopt DNS. Many Sun workstations must run ypbind in order to resolve names through DNS. As I understand it, a workstation running ypbind will as the ypserver for the hostname, and the ypserver will then consult a DNS name server, bouncing the DNS answer back to the yp requester.

Many machine's still have hosts files full of names, sometimes outdated, worse incorrect. The hosts file seems to also maintain aliases for hostnames. That paris.cs.miami.edu is a.k.a. paris apparently involves its entry in the hosts file. The documentation is silent on this important matter.

It is not recommended that DNS be used to resolve any name from which you NFS mount.

DNS

We have authority for domain cs.miami.edu. The contact for our parent domain, miami.edu, is Grant Basham at RSMAS. Cs.miami.edu has paris.cs.-miami.edu as the primary server and mthvax.cs.miami.edu as the secondary. Paris is also primary for 34.171.129.in-addr.arpa, 171.70.192.in-addr.arpa and 89.31.192.in-addr.arpa. PTR records in these last three are increasing important for allowing ftp access to other sites.

cs.miami.edu and math.miami.edu are MX records. The math.miami.edu is actually under the authority of Grant Basham, it is a resource in the domain of miami.edu. cs.miami.edu is not only a domain but itself an MX resource. Currently, math is sent to paris and cs is sent to cs.

Most other computers are MX'ed to either paris or cs.

CNAME's exist for ftp, nntp, and so on.

Sendmail

Paris runs an old IDA-sendmail. Most other computers run out-of-the-box sendmails. During Andrew's time, the situation seemed to be that all machines were subservient to paris or mthvax. All mail went in and out through paris and mthvax. This was in part necessitated by Sun's late adoption of DNS name resolute. YP-bind was inconsistent with DNS.

For instance, /usr/lib/sendmail, as shipped, cannot interpret MX records. Run /usr/lib/sendmail.mx instead.

A good example of how newer sendmails run is resolute.cs.miami.edu. In this scheme, mail gets sent out directly from resolute to the destination machine. We would like the return-address to be rewritten to math.miami.edu, but this we hadn't accomplished. If we had done this, then it seems reasonable to remove the MX record for resolute. Casual conversation will occur with mail leaving resolute or paris for the destination, and replies always coming back to the eternally correct address math.miami.edu. However, mail explicitly directed to resolute.cs.miami.edu will go to that machine.

I do not mean that it must go to that machine, but any scheme should allow for people wanting this option.

The sendmail.cf used was Sun-supplied, and a link from /usr/lib/sendmail to /usr/lib/sendmail.mx was made.

The Ultrix boxes use Ultrix sendmail, however the sendmail.cf had to be fixed: the programmer of sendmail.cf had not considered the possibility of a machine name such as cs.cs, that is, a host name equal to a domain name prefix. An extra production in Rule Set 3 had to be added.

Aliases

I have begun to systematically alias first-name.last-name to login-name for all users.