Science & Math Computers

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Last year we had a computer club called '42'. It fell off of the face of the planet this year, as did its newsletter. Since I was supposed to be the organizer of that newsletter, and since the computer systems of this school have been the source of a lot of questions this year, I thought it best to answer some questions and do some explaining. This will provide the most people with the information they want and need, and allow me to get away with not having to worry about circulation.

To the average school student, the computer systems of the school are slow at the fastest and sometimes more trouble than they are worth. To others, the computers are valuable tools that make, and have made, life more of a hassle when they aren't available for use. I'm writing to both of these groups, as well as to beginning, intermediate and advanced computer users, so slog through the more advanced stuff even if you don't understand what's being said.

The different systems of the school:

The most well known system is the VAX, named opus.ncssm.edu. This system is a VAX 8350, an aging system that has seen better days. While definitely not the fastest VMS system around, but it's all we can afford at the present time. New changes have been made just this year that have connected nearly every school computer to this system via Pathworks. This has helped to optimize storage space by allowing all of the computers in Watts, Bryan, Reynolds, and New Dorm to be run from the same files.

This optimization has caused the poor machine to bog down under the load, which anyone who has used the system this year has probably noticed. The speed problem is soon to be at least partially remedied by a new server, a VAX Station 4000. This will remove a lot of the file parsing load from the 8350 and allow the processor to spend more time doing other things, like processing VMS commands and programs (such as FLOP or MiniTAB).

The RT is somewhat less well known. Named odin.ncssm.edu, it's an IBM RT, a computer that the students won in 1988 from a supercomputing contest called SuperQuest. It has been the FTP workhorse of the students in past years, and was also the only computer on campus that could run X-Windows, a multitasking GUI environment. It's operating system(OS) is UNIX, as opposed to MS-DOS. An older and usually harder OS to learn, UNIX is running on most every workstation in the world, and this has helped give NCSSM students of past classes hands-on UNIX experience that can't be learned from books.

The SUNs are the newest additions. These are the big monitors scattered around in odd places on campus named after Tolkien characters like Bilbo, Aragorn, Frodo, etc. As of this year, the school now has several SUN 3 and SUN 4 workstations available for use. They were given on an indefinite loan to the school by Sun's RTP Research lab. They were upgrading to newer machines, so they are allowing us to use them.

Also running UNIX, these machines have inherently multitasking RISC processors at their heart. With one user, and my own benchmarks, they run at a speed comparable to an Intel 80486 50mhz chip (roughly equivalent to a Motorola 68040 40mhz). One of the nice things about these machines is that all of them are connected to the same server. So any file created on, say, Meriadoc can be accessed from any of the other machines. This is especially useful for computer animation, where splitting up the work on different computers is almost a necessity and multiple copies of the data are counterproductive.

Also new as of late January: a partial T1 line has been connected to the school. Before, the school was connected to the outside world via a dedicated line and 9600 baud modem. 9600 baud may be fast for an individual modem, but on a multi-user, multi-machine campus, it really couldn't hack the load. This was especially true when several people were trying to FTP, and others were telneting to places in Austria all at once. Now we share a T1 line with NC Central University, and both branches are connected to the UNC Educational Computing Service.

The T1 line carries roughly 3 megabits of information per second, or about 375,000 baud (366kps). (The highest transfer rate I've gotten was 25k per second, which goes to only 200 kilobits per second. The difference in transfer rate may have been due to the time of day that I was logged on and the other use of the line. Still, even 25k per second is zap fast compared to what any commercial modem can deliver..

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I apologize to anyone who wrote an article for this issue that didn't get published. Due to some extenuating circumstances, we were forced to cut down the amount of material. Also, we underestimated the volume of senior wills that we would receive.