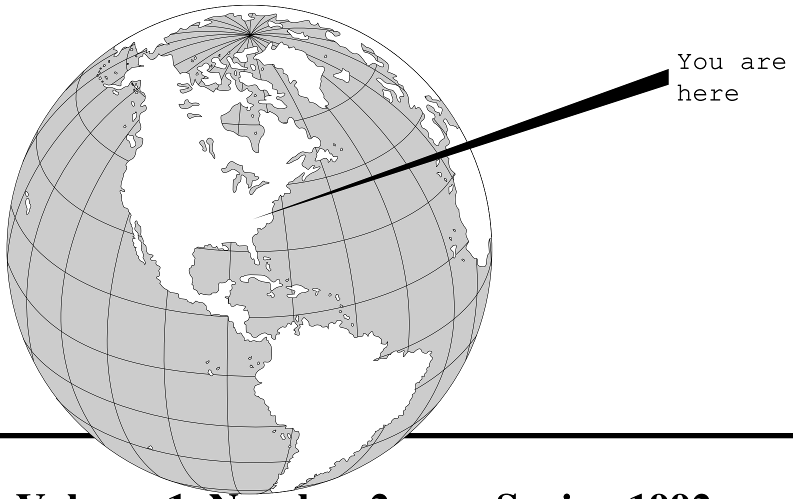

VaTNug News

Volume 1, Number 2 Spring 1992

The Virginia Tech NeXT User's Group

/.NeXT/.NextTrash
(Editors' Notes)

With the first NeXTWorld Expo, many products went from rumor to reality: NeXTstation turbo systems, the NeXT CD-ROM drive, NeXTstep 3.0, the NeXT/Canon color printer, and NeXTstep 486 were all announced in late January. But then there are always more net.rumors to fill the void left behind by the announcements: multi-processor RISC NeXT systems based on the Motorola 88110, MIPS,HP PA, or just about any other processor you can think of, portable color NeXT laptops, and NeXTstep for various other platforms. While NeXT's ever-changing product line continues to address the concerns of its customers, its chances of becoming a major player in the workstation market look better. Despite it being perhaps the worst year yet of our country's recession, NeXT saw a 400% growth in sales, accounting for over 15% of workstation sales in 1991. A recent report says NeXT shipped as many workstations as IBM did in 1991! (*Unixworld,* June 1992)

Still NeXT has problems: Lotus announces the upcoming Improv 2.0 for Microsoft Windows but has made no announcement about a release of 2.0 for the NeXT; and the release of NeXTstep version 3.0 seems to get pushed back a little more each week. All the while current NeXT owners are purchasing CD-ROM drives in anticipation of the new software. Sometimes I feel for the

(see Editor *on page 2)*

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VaTNug received a mention in the Summer 1992 issue of *NeXTWorld* magazine! Check it out in the "Field Reports" column, p. 16.

Blacksburg Electronic Village -- Is ISDN in Our Future?
by Timothy Buck
with Brian McConnell

Recently there have been discussions, debates, and outright arguments over the future of telecommunications at Virginia Tech and in the surrounding area. This is an informational article to explain just what the project is all about, and what services it will offer to Blacksburg residents.

Blacksburg Electronic Village (from here on referred to as BEV) is a joint project between Virginia Tech, C&P Telephone/Bell Atlantic, and the Town of Blacksburg to provide, as an experiment, high-speed telecommunications access to as many residents of Blacksburg as possible.

Keep in mind that at this point, BEV is only in the feasibility study stage. The premise is that Blacksburg, because it is a small, compact community, will make an ideal test bed -- a "laboratory"

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BEV *(continued from page 1)*

of sorts -- for larger, more profitable cities (provided, of course, the experiment is successful). The user community for BEV is viewed as five distinct groups:

- K-12 students and teachers
- Business/professional users
- Virginia Tech students, staff, & faculty
- Civic leaders & participants (town government)
- Individuals

The experiment (assuming it's a "go" after the feasibility study is completed) will consist of making telecommunications services available to as many Blacksburg residents as possible, with free or low-cost access for a trial period of as long as 5 years. Optimistically, the project will begin rollout in 1993.

The focus of BEV is on communication between people, not on the technology that is used to accomplish this communication. This focus on users as opposed to technology frees the people involved with the project to explore many more possibilities, rather than deciding at the outset to work towards "fiber to every home" or some other far-reaching, expensive goal. The idea is to provide the access necessary for participants to communicate. BEV staff envisions accomplishing this level of universal access through a tiered service structure. There are four levels of service in their plan:

Tier A - Narrowband ("basic") data service to nearly all residences, schools and businesses. This will probably be ISDN class service. (56 - 64 Kbps)

Tier B - Switched video services. This is not two-way television, but rather an asymmetrical channel where a large portion of bandwidth flows from the cable TV headend to viewers, but viewers have narrowband access to the headend. Can be used for a wider range of programming sources, on-demand video, etc.

Tier C - Broadband (high-speed) data service (10 Mbps or greater). The likely candidate technology for this service is Ethernet.

Tier D - "Very high-speed" data service >= 100 Mbps data rates via FDDI (fiber optic) or other technologies, aimed at medical or industrial uses demanding very high bandwidth.

Currently the BEV staff is putting together proposals dealing with Software, User Interface, and Hardware issues, as well as those of Costs, Installation, and Support. If you have any ideas or suggestions, or if you just want more information, feel free to contact the BEV staff:

Joe Wiencko (wiencko@vtvm1)
Robert Morris (of Bell Atlantic)

Editor *(continued from page 1)*

original cube owners, other times I just think they must have been crazy. Perhaps that's what NeXTbrick owners will say in 1995 about original NeXTstation owners? Let's hope so.

VaTNug pushed hard for the VPI Computer Science Department to select the NeXTstation as the PC requirement for incoming freshmen in 1992, but saw the contract go instead to Digital Equipment Corporation for their Personal DECStation 5000. The NeXT system (with its Motorola 68040 processor) performed just as well as the DECStation (with a MIPS R3000 RISC processor) in the PC Selection Committee's tests, but in the end price and upgradability were the factors that beat NeXT's bid. Still, there are a large number of NeXT systems on campus, especially at the Computing Center, and a NeXT has gotten its foot in the door at Carol M. Newman Library as well (see related article below).

University Libraries Purchases NeXT for Electronic Journal Publishing

by James Powell

Newman Library will soon have its very first Unix workstation: a NeXTstation Turbo. University Libraries recently became involved with electronic publishing when the Scholarly Communications Project, headed by Lon Savage, moved its operations to the library. The library will now be providing support for the electronic publication of the *Community Services Catalyst*, the *Journal of Technology Education*, and the *Journal of the International Academy of Hospitality Research*, among others. These journals are currently supplied as ASCII text files which are distributed over BITNET and Internet using ListServ lists. The NeXT system will be used to create partial and full PostScript and SGML versions of journal issues and will provide anonymous FTP access to the files over the Internet. The 33 Mhz NeXTstation Turbo will have 24Mb RAM, a 250Mb+ hard drive, and will be running WordPerfect for the NeXT, Adobe Illustrator, Lotus Improv, Simon Says and Concurrence.

The NeXT system will also be used in demonstrations to library faculty of NeXT-specific graphical interfaces to WAIS, Gopher, FTP and Archie , multi-media document authoring, as well as general demonstrations on the many advantages that NeXTstations offer

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Getting SLIP Up and Running on NeXT Computers

by Anders Bertelrud (anders@nidaros.async.vt.edu)

SLIP, or "Serial Line Interface Protocol," is a software package that lets you connect your NeXT to the Internet through a modem instead of through the Ethernet port. All you need to use SLIP is a software package and an account on a SLIP server. The software package, a file called `SLIP19920207.tar` (this is the most recent version), is available from the FTP archives, or from your local NeXT user group. You can apply for a SLIP account on the VTTELNET SLIP server at Virginia Tech by filling out an application form in McBryde 114 or any other Computing Center outpost. On the application, you need to specify the alphanumeric hostname for your machine (one word -- the domain name will be "async.vt.edu"),and the Computing Center sends you your IP address and password.

Once you have the software package and the IP address, installation is quite simple and straightforward. First install the low-level software as root, by issuing the following command from the directory containing the `SLIP19920207.tar` file:

```
tar xf SLIP19920207.tar
```

This will create a file called `SLIP19920207.pkg`. As root, double-click on this file to launch the Installer application, and once in Installer, click the **Install** button. After installation is complete, quit the Installer by clicking **Quit** in the main menu.

Now that the SLIP software is installed, you must configure it. First you have to tell the computer something about the network it will be connected to. To do this, launch NetManager, located in the */NextAdmin* directory. If you are not logged in as root, you may have to enter the root password. In NetManager, choose the **Local...** menu item, and set the following options in the panel that appears:

Network Type	Non-NetInfo Network
Hostname	<the hostname you chose>
NetInfo and Configuration Server	Not selected
NIS Domain Name	None
Address	<address assigned by Computing Center>
Router	<get from Computing Center>
Time Standard	Automatic
Netmask	<get from Computing Center>
Broadcast Address	<get from Computing Center>

The Router, Netmask, and Broadcast Address are 128.173.16.2, 255.255.252.0, and 173.128.19.255, respectively, for Virginia Tech's VTTELNET SLIP server. For other SLIP servers, call the Computing Center, or whomever is responsible for the SLIP server you're using.

Once you have entered the appropriate values, click the **OK** button. You will be asked to restart the machine. Click **Restart**.

(see SLIP *on page 4)*

Simon Says "Read This Review!"

by Timothy Buck

Have you ever wished your computer would do exactly what you tell it to (ala *Star Trek: The Next Generation*)? Now you can with *Simon Says*, an amazing new software package from HSD Microcomputer, Inc.

With *Simon Says* you can create system-wide, voice-activated macros. It runs in the background, continually listening for your commands. One of the most spectacular things about *Simon Says* is its ability to add macros to applications like Lotus' *Improv* which have no built-in macro support. *Simon Says* macros, which you activate simply by speaking a word or phrase, can include Keystrokes, Mouse Actions (motions & clicks), Sounds, Mail Addressing, Text Pasting, and Unix Commands.

Simon Says makes your Application Dock essentially limitless--restricted only by the number of applications installed on your system. No longer do you have to constantly shuffle applications around on your dock to make room for the ones you need at the moment -- just speak the name of the application you want and Simon will automatically launch it (or switch to it) for you.

For more information on *Simon Says*, contact:
HSD Microcomputer, Inc.
1350 Pear Ave., Suite C
Mountain View, CA 94043
Email: info@hsd.com
Phone: (800) 828-5522

Of course you must first train Simon, a simple but tedious process that requires you to clearly speak each command phrase three times. Then

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SLIP *(continued from page 3)*

Now it's time to edit the SLIP software configuration files. Copy the files *config.slip*, *diald.conf*, *hooks.tcl*, *rc.slip*, *slipsrv.access*, and *syslog.conf* from the */usr/dialupip/config/SAMPLES* directory to the */usr/dialupip/config* directory.

Open the file *config.slip* in the */usr/dialupip/config* directory. Modify the following lines:

```
SLIP0LOCAL=229.230.11.211
SLIP0REMOTE=229.230.11.111
SLIP0NETMASK=255.255.255.0
```

to read:

SLIP0LOCAL=<the IP address of your SLIP account>
SLIP0REMOTE=<IP address of SLIP server (get from Computing Center)>
SLIP0NETMASK=<same as for Netmask above>

For the VTTELNET SLIP server, the IP address is 128.173.16.1; for other SLIP servers, you will have to ask the appropriate administrator for the IP address.

Save and close the *config.slip* file, then open the *diald.conf* file. Edit the line that starts with "slip0:" so that it matches your computer's setup. Then create a new script, or modify an existing one, that uses your modem (or CBX port) to log into the VTTELNET SLIP server. The file *Manual.wn* in */usr/dialupip/man/docs* contains detailed information about the script language used (sample scripts for CBX login are available from Anders or me on request).

Now that you have set up the login script files the way you want them, you are almost done. You just have to tell your host how to resolve hostnames for other machines on the Internet. This is done using a file called *resolv.conf* in the */etc* directory. If you're using the VTTELNET SLIP server, the *resolv.conf* file should contain the following information:

```
domain async.vt.edu
nameserver 128.173.4.113
nameserver 128.173.4.247
nameserver 128.143.2.7
```

For other SLIP servers, the domain (async.vt.edu) and the IP addresses of the three name servers will be different. If you're not using VTTELNET, call the system administrator in charge of your SLIP server to obtain the correct domain and name server IP addresses.

Congratulations! You're finished configuring the SLIP software. Now it's time to test it. Type (in a shell window)

```
cd /usr/dialupip
slipup
```

and check for errors in the */usr/dialupip/log/trans* and */usr/dialupip/log/syslog* files. Most errors should be self-explanatory; see the file *Manual.wn* in */usr/dialupip/man/docs* if you have any problems.

When you are convinced that the SLIP software works, you just have to tell your NeXT to start the SLIP daemon every time you start the machine. You do this by adding the following line (all on one line) to your */etc/rc.local* file:

```
sh /usr/dialupip/rc.slip >/dev/console
  2>&1
```

Now reboot the machine. If all goes well, the SLIP daemon will start without problems (verify this in the two log files), and then you can start using all of UNIX's networking commands (such as mail, telnet, ftp, etc) as if your machine was actually a host physically connected to the Internet. If all does not go well, go back and try to bring up SLIP manually and check for errors again.

Good look, and happy netting!

Simon *(continued from page 3)*

Simon will listen for your voice commands and do whatever you've trained it to do -- launch an application, copy & paste text, send e-mail to a friend or business contact, play a sound file, or execute a Unix shell command.

Whenever you add an application to your system, you need only to add that application to Simon's list of trained commands. You can add just the command to launch the application or you can train Simon to recognize that application's complete menu hierarchy. If Simon is confused by a new phrase (for example, "Click" and "Quit" can sound a lot alike) you can retrain only the commands that Simon has trouble understanding.

Simon Says can be a valuable tool to increase your productivity with its powerful macros -- plus it's fun to play with. And *Simon Says* is yet another example of a capability promised on other platforms within 2 or 3 years that is available <u>now</u> on NeXT computers!

Library *(continued from page 2)*

over 80x86 PC's running DOS/ Windows.

The NeXT will also be used in conjunction with an HSD Scan-X Color scanner and OCR Servant to put back issues of these journals online in electronic form. If all goes well, a second NeXTstation will be purchased to serve as a scanning station/FAX server so that electronic journal articles could be faxed to requestors without e-mail addresses.