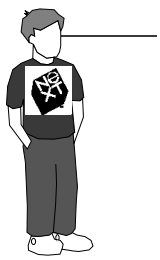


SCaNeWS

Southern California NeXT™ Users Group Newsletter

VOLUME 1, NUMBER 3
MARCH 1991

SCaNeWS ©1991
All Rights Reserved

March has been a big month for NeXT and its users - color stations are shipping! Along with the color stations comes Software Release 2.1, which is required for color and fixes many bugs in 2.0. (See the annoucements from NeXT and users' comments on pages 2-4.) We anxiously await future announcements on the shipping of the NeXTdimension board (in April) and who knows what else - perhaps a port to a RISC chip or another vendor's platform? Rumor has it that NeXT will be going with the HP PA-RISC chip, which rates as high as 72 SPECmarks and 76 MIPS! (See *Tao #7* for more rumors.)

MARCH MADNESS

Mike Mahoney
mahoney@beach.csulb.edu

Inside you'll find several items concerning Lighthouse Design's *Diagram!*, including a review, information on academic discounts, and a lovely diagram of the NeXTstep Application Kit Hierarchy of classes. This month we're also very happy to bring you the seventh installment of Robert Lin's *Tao*. *Tao* is known as the place to look for the latest rumors, bits and pieces of useful but offbeat information, and also a bit of humor. Of course we always include a bunch of stuff off the net which we hope you'll find interesting.

I can't wait for *SoftPC* to ship (any day now) - I'll finally be able to clear off some desk space by getting rid of my PC clone. The beta version of *SoftPC* gets four "cubes" from *NeXTWORLD*, the highest possible for a beta version. Can you imagine showing those DOS diehards two or three copies of *MS-Windows* on the same screen! One major drawback of *SoftPC*, which emulates a IBM PC/AT with 80286 and 80287 chips, is its speed, only about that of a 12 Mhz AT (Norton SI rating of 12.5). However, a more advanced version of *SoftPC* is reportedly under development and it will increase the efficiency of emulation from the current 10% to about 40%. The advanced version will also improve on another major drawback, EGA graphics emulation at best, to VGA emulation. The advanced version will supposedly ship in the fourth quarter of 1991.

(continued on page 17)

CONTENTS

NeXT Ships Color Workstation 2
Comment on NeXTstation Color 2
NeXT Software Release 2.1 3
Comment on Software Release 2.1 . . . 4
***Tao #7* - Robert Lin 5**
***Diagram!* Academic Discounts 8**
The look of *Diagram!* 9
Application Kit Hierarchy diagram 10
OFF THE NET
(more) Frequently Asked Questions 11
***Improv*: An In-Depth Look 15**
Software Review - *Diagram!* 16
SCaN *and SCaNeWS* information 18

NeXT Ships Color Workstation
March 12, 1991

REDWOOD CITY, Calif. - NeXT Computer, Inc. announced today that it has begun shipments of its $7,995 NeXTstation Color computers, on schedule.

NeXTstation Color uses 16 bits per pixel to achieve “true-color” images on its 17-inch color display. NeXTstation Color offers automatic color dithering, so that the computer can display 32-bit-per-pixel images in 16 bits per pixel. With this feature, most users will be unable to distinguish between the 16-bit image displayed on NeXTstation Color and a true 32-bit image.

NeXTstation Color offers customers fast, 'true-color' Display PostScript on a large, megapixel display, for $7,995. This far surpasses the 8-bit, limited color on small screens offered by our competitors for the same price,” said Steven P. Jobs, president and CEO of NeXT. “NeXTstation Color is the computer that will bring 'true-color' Display PostScript to the masses.”

With a suggested retail price of $7,995, NeXTstation Color features 4,096 colors (12 bits) at any one time, plus 16 levels (4 bits) of transparency, displayed on its 1120 x 832 pixel, high-resolution 17-inch MegaPixel Color Display. With NeXTstation Color, NeXT brings much needed workstation-level performance to the emerging computer-based graphic arts market at an affordable price,” said Sanjay Sakujah, president of Digital Prepress International.

NeXTstation Color, as with all NeXT computers, uses Display PostScript to draw on-screen as well as printed images, resulting in a much more powerful graphics platform for applications, especially publishing applications. With Display PostScript, which makes the full capability of PostScript available to all software developers for their display graphics, users of NeXTstation Color and all other NeXT computers gain more powerful and more WYSIWYG applications. In addition, all NeXT computers incorporate JPEG software, which compresses and decompresses still color images. This built-in feature allows users to store more and larger images on their hard disks, and to transmit images over networks without bogging them down.

Like all the other members of NeXT's product family, NeXTstation Color offers an unsurpassed range of capabilities as standard, such as the NeXTstep user interface and application development environment; the ability to run the same application software package, unmodified, on any NeXT workstation; true multitasking with the UNIX operating system; built-in high-performance Ethernet and TCP/IP networking, for sharing large color images over a network; built-in digital signal processing (DSP) capabilities; a 2.88 MB floppy drive and at least 105 MB of hard drive storage; and the unprecedented amount of system and bundled software under NeXT's system software, including NeXT Mail (multimedia electronic mail), integrated fax support and much more.

NeXT's high-end, 32-bit color product, NeXTdimension, will ship in April.

NeXT Computer, Inc., headquartered in Redwood City, Calif., designs, manufactures and markets professional workstations, which combine the power and networking of today's most advanced workstations with the ease of use and productivity applications of today's best personal computers. NeXT's professional workstation systems promise to enhance the way groups of people work together in the 1990s. The company sells its products through its direct sales force and selected retail and VAR channels in North America, Asia and Europe. NeXT is headquartered at 900 Chesapeake Dr., Redwood City, CA, 94063. ♦

NeXTstation Color Comment

(off the net)

mfriedel@basalt.mines.colorado.edu 19 March 91

I received my Colorstation today. It comes with release 2.1 preloaded. I'm positively impressed how fast the thing is with 16 bits color, almost as fast as a regular 040, and a lot faster than a 030 monochrome. We had both a 32MB system and my 12MB next to each other today, and except for Mathematica and drawing files above 2MB in Icon the memory didn't make to much of a difference. Not to say that 32MB doesn't mean an improvement, but as far as moving windows and running FrameMaker or Improv, there wasn't any significant difference. ♦

Software Release 2.1

Alan M. Marcum
NeXT Technical Support

Release Description

Software Release 2.1 is now shipping with all new NeXT hardware and software products. The primary objective of Release 2.1 is to support NeXT's new color platforms, NeXTstation Color and NeXTdimension; however, some Release 2.0 customers may want the software improvements in Release 2.1. This release contains no new features, and most Release 2.0 users of monochrome systems won't need to update to the new release. Some third-party products may require Release 2.1; for example, some fax modems require Release 2.1, although most modems will work perfectly with Release 2.0. If you have any questions regarding the compatibility of a third-party product and the software release you're currently running, please contact the individual vendor.

Aside from color support, Release 2.1 contains the following improvements over Release 2.0:

- Fully supported internationalization of NeXT applications. This affects users who require nationalized versions of software to run in a foreign country's native language.
- Improved reliability of very long (an hour or more) sound or music sequences.
- A more robust serial port driver, especially for high baud rates (9600 baud or greater). This will affect customers who use NeXT computers as dial-in servers or UUCP sites.
- More robust handling of very large font folders (containing thousands of fonts) or Font folders shared over the network. For casual use of Font folders on an individual computer, Release 2.0 is sufficient.
- Printing support to non-NeXT PostScript printers over the serial port.
- Fix to LoginHook (although the standard NeXT login window is not affected). The fixed function only applies to sites that force a customized login sequence to occur when users log in.
- Fix to the tanh (hyperbolic tangent) function. It now produces the correct results in all cases.
- Performance improvement (by more than an order of magnitude) of the floor function. This may be important to developers who frequently use this function.
- Fix to the system constant HUGE. It has been set to the correct value (it was set to -Infinity in 2.0).
- An improved gdb debugger that's able to kill processes more reliably.

Release Philosophy

NeXT usually recommends that users upgrade to each major software release, i.e., from Release 1.n to 2.n to 3.n. We try to schedule these required upgrades relatively infrequently so that upgrading doesn't become a burden. Updates to minor releases (e.g., from 2.0 to 2.1) aren't generally required, except for specific new hardware support or special needs. Minor releases will obviously be more frequent than major releases, but we also try to provide software tools to make the update process simple and painless.

Products Affected

All newly shipping hardware and software products have been revised to reflect the new software release. All computer systems, including monochrome systems, will have Software Release 2.1 preloaded on their hard disks. The major Release 2.1 software products offered are:

- Software Release 2.1 Extended Upgrade (N5507). Upgrades to Release 2.1 Extended with a magneto-optical disk.
- Software Release 2.1 Update Set (N7022). Updates Release 2.0 to Release 2.1 with floppy disks.
- Software Release 2.1 Floppy Disk Installation Set (N5512). Installs Release 2.1 (without Extensions) on a hard disk.

(continued on the next page)

Software Release 2.1

(continued from the previous page)

- Software Release 2.1 Extensions Floppy Disk Installation Set (N5513). Installs Release 2.1 Extensions on a hard disk.
- Software Release 2.0/2.1 Upgrade License (N5516). Permits usage of N5507 to upgrade an additional machine.

Product Announcement N7022

Update Set, Software Release 2.1. $50.00

Product Description

This product updates Software Release 2.0 to Software Release 2.1, and Software Release 2.0 Extended to Software Release 2.1 Extended.

Although the primary objective of Release 2.1 is to support NeXT's new color products, the Update Set is for customers with monochrome systems who want to take advantage of the software improvements in Release 2.1.

The Update Set only contains the differences between the 2.0 and 2.1 releases, and not the entire 2.1 release; thus, only Release 2.0 users are able to utilize the update software. The product consists of 2.88 MB floppy disks and an instruction manual; the update won't be provided on any other media. Please note that this product is being sold at NeXT's cost.

Product Usage

The software tools in the Update Set will automatically replace files that were modified for Release 2.1. Users don't have to backup any personal files on their hard disks as the update software will avoid standard user files.

Licensing fees aren't associated with each copy of the update software. Thus the Update Set grants the buyer a license to copy and install the NeXT Update Set Software on any NeXT computer for which NeXT Software Release 2.0 has previously been licensed.

Ordering Instructions

Ordering one or more copies of N7022 Update Set is just like ordering any other NeXT product. If you have questions about the ordering process, please call 1-800-848-NeXT for assistance.♦

Software Release 2.1 Comment

madler@pooh.caltech.edu (Mark Adler)

16 Mar 91 - California Institute of Technology

Yes, 2.1 is out and supposedly shipping. It is $50 for seven (?) 2.88M floppies. However, you do not have to buy it to be entitled to have it. [see the paragraph above on licensing fees] I would suggest, as was suggested to me by a NeXT employee, that to save money just make one local order for the update and install it on every NeXT with 2.0.

(They *could* have shipped on 13 or 14 1.44M floppies for $10, but I suppose they have to show off their super-cool 2.88M floppy capacity in a product.)

More importantly, I would point out that there is a more serious bug that is fixed in 2.1 than is mentioned in the announcement's bug list: the old Motorola 68882 emulation code for the 68040 that came with the 2.0 operating system can cause the system to die a horrible death while doing floating point calculations. Both Bing Chen and Sam Finn have found serious examples of this, but they do not appear to crash under 2.1, which has new code from Motorola. The bug list *does* mention the relatively minor tanh() bug that is also fixed in the new 68882 emulation code.

NeXT says in the announcement:

>> This release contains no new features, and
>> most Release 2.0 users of mono systems
>> won't need to update to the new release.

In light of the inability of the NeXT computer to compute under 2.0, I strongly disagree. I believe everyone should upgrade to 2.1 if at all possible. [*I definitely agree, upgrade! - ed.*]♦

Tao #7 Feb. 26, 1991

Robert Lin rlin@cs.ubc.edu

Editor's Introduction: *Robert Lin describes Tao as follows: "It's sort of a NeXT tabloid - rumor mongering mill - bar gossip newsletter for the inquiring technical minds." Whatever it is, all the issues contain useful and entertaining comments, so I thought you might like to see one in SCaNeWS. The six previous issues of Tao can be downloaded using ftp from the cs.orst.edu archive site. Robert Lin lives in Vancouver, but will soon be relocating to Santa Monica.*

It's been quite a while since I wrote Tao #6. I've taken some time off to devote myself to my fax project. Originally intended for NeXT, MirageFax was cancelled when NeXT announced fax software in System 2.0. To salvage the disasterous situation, I proceeded to rewrite the whole thing from scratch, to be used on other non-NeXT machines. Now the software runs on Xenix and UNIX 386, as well as a Sun SparcStation.

The R&D being complete, and the software being stable, I finally have some time on my hand to get back into more NeXT Programming and Tao Musing.

As usual, the standard disclaimers: almost everything you read here can be considered untrustworthy bar gossip. Tao is said to be a tabloid for good reasons. We'll run articles about a two headed baby NeXT, son of Steve Jobs clone and alien from Mars.

Welcome to UNIX Hell

While programming UNIX workstations, I've come to fully appreciate just what a hopeless situation X windows under UNIX can be. The Sun SparcStation comes closest to being acceptable. Its high performance, excellent bus/video bandwidth (better than NeXT, which really shows when you scroll large bitmaps). But the software base is just not there to make me productive. Office productivity tools can be counted on one hand. The good ones are incredibly expensive. I suspect 1991 will be called "The Year of Desktop UNIX", as will 1992, and 1993, and 1994. Something like the way it's been "The Year of Networking" since early 1980s.

Trying to make the lab 33Mhz 386 behave like a workstation is just hopeless. The video bandwidth is incredibly restricted, the screen so small and lacking resolution, the AT&T UNIX software so unwieldy, that I've simply given up the fight. Yes, you can start with a basic cheapo $2,000 386, and spend $8,000 in kludges and poorly supported extras to make it behave like a NeXT or a Sun SparcStation. But why bother?

At one time I had 8M of memory, running X windows, and Visix Looking Glass, a popular X desktop program. The disk swapping was incessant. Every window that came up required a good disk head thrashing. I used to complain about how 8M on the NeXT was slow... until today, I never realized how good I had it.

The installation for Interactive AT&T UNIX alone took hours. I've been through the installation process many times, so I made no mistakes. Still, one must be extremely well prepared; at one point, I had to shutdown the installation process and pull apart the machine just to check out the ethernet card IRQ and I/O addresses.

I won't even mention the horrors I've had trying to make an older version of Interactive UNIX run with my Adaptec SCSI controller. Suffice it to say that one boot out of three would hang permanently.

It's really not the OS vendor's fault. They have to work with so many non-standard parts that may be added to a non-standard 386 clone. The same goes for the peripheral card vendors. My PowerPort multi-serial card won't work on one 386 clone, but will on another, whose bus timing was more conventional.

Today the Interactive UNIX crashed with a kernel panic message: "Unrecoverable disk I/O error at sector=053323 on controller=0" or something like that. I don't think I have any more hair left to pull out.

So after all the sweat, hair pulled by ends, tears, and cursing, I've just decided to give it all up for the good of my mental health. The ease of installation and use on the NeXT is something you don't see in the price tag, and you never appreciate until you try to install your very own 386 UNIX system.

(continued on the next page)

Tao #7 - Robert Lin
(continued from the previous page)

Sybase on Release 2.0

As most of you have already noticed, Sybase is not with Release 2.0. However, if you have the old Release 1.0, you can still get Sybase up and running under Release 2.0. This is how you do it:

1. Copy /usr/sybase from your old Release 1.0 OD to your Release 2.0 hard disk
2. Go to /NextLibrary/Packages/ThirdParty and launch Sybase_Db-library.pkg
3. Click on the Expand button and watch the fireworks. When asked to overwrite old files, click Continue.

Okay, that's the first phase. Now you can create your very first Sybase database. The procedure was outlined rather vaguely in an obscure page in the old System 1.0 doc, and I can't even find any thing about Sybase installation in System 2.0 docs. This is what you need to do: bring up Terminal, and type the following commands:

```
# cd /usr/sybase/scripts
# source SetVars
# CreateMaster
```

The process takes about five minutes to complete. You can verify that your system works by using isql, the Sybase command line SQL utility. Type:

```
# /usr/sybase/bin/isql -Usa -P
```

-Usa means User "sa" (Sybase Administrator) and -P means no password. That's how it would be setup in the beginning. Try these two commands:

```
1> use pubs
2> go
1> select * from authors
2> go
```

And you will see a screenful of author names, etc. "pubs" is a sample database that gets generated automatically when you ran CreateMaster. You should purchase or print the on-line Sybase user documentation and play with this database.

When you want to shut down the system, you can use the command /usr/sybase/install/stopserver. To start it up again, type

```
# /usr/sybase/bin/dataserver -d/usr/sybase/database/d_master &
```

Okay, now the really fun stuff. You can setup two NeXTs and have one act as the SQL server. Let's suppose you have two machines, one named alpha and the second named beta. You want to run the Sybase server on alpha, and use beta to access the database. You will want to start by defining the environment variable SYBASE to be /usr/sybase. This tells Sybase where to look for the file $(SYBASE)/interfaces. This is the file that controls network-based database access.

Sybase looks at another environment variable, DSLISTEN, to find out what port the Sybase server is listening to. So before you start your server on "alpha", you should set this variable to something like "setup1". The name is entirely arbitrary. Now modify the /usr/sybase/interfaces file on machine "alpha"; add the following text:

```
setup1
 master tcp next-ether alpha 3696
 query tcp next-ether alpha 3696
 console tcp next-ether alpha 4696
 debug tcp next-ether alpha 5696
 trace tcp next-ether alpha 6696
```

Now go to machine "beta" and add the same text to the end of /usr/sybase/interfaces. Set the environment variable DSQUERY to "setup1".

Here comes the tricky part. Before you start up the server on machine "alpha", you must edit /etc/host on machine "alpha" to have the Internet number for host "alpha":

In my case, I've configured alpha to the Internet number (IP address) of 192.42.172.10, so I type into /etc/host

```
192.42.172.10    alpha
```

There are a whole bunch of other entries in there, and they can all be deleted. This file is in fact never consulted by NeXT OS if NetInfo is running; NetInfo is the network global database that is now used instead of /etc/host. However, Sybase has an antiquated notion of how things should be, so Sybase still consults with /etc/host to find out the IP address of the host name.

Surprisingly, the isql program, and in fact any program compiled with the DB-Library routine, consults NetInfo and not /etc/host for the IP address of host names, unlike the old fashioned server. So on machine "beta", you can need to make sure "beta"'s NetInfo manager is aware of machine "alpha". Go to NetManager, Open a host, and see if alpha is already in the table. if not, create an entry with New, then save with Cmd-S.

(continued on the next page)

Tao #7 - Robert Lin

(continued from the previous page)

If you've followed all this so far, you can now be rewarded with the wonders of having true network based SQL server in action. Run isql -Usa -P from "beta", and you will find all your Sybase requests have been routed over to alpha.

So in summary, here are the steps:
(on machine alpha, using csh)

setenv SYBASE /usr/sybase
setenv DSLISTEN setup1

(now edit /usr/sybase/interfaces to add setup1, then edit /etc/host)

/usr/sybase/bin/dataserver -d/usr/sybase/database/d_master &

(on machine beta, using csh)

setenv SYBASE /usr/sybase
setenv DSQUERY setup1

(now edit /usr/sybase/interfaces to add setup1, then run NetManager and add "alpha")

/usr/sybase/bin/isql -Usa -P

I've found the performance for network based server to be exceptionally good. When I run both my client and server on an 8M NeXT, there was quite a bit of paging activity. But with the load thus distributed, updates and selects were lightning fast.

NeXT RISC Rumors

Just before NeXT's September 1990 announcement, rumor was flying everywhere about a NeXT RISC. With the introduction of 68040, rumors were given to rest, and the whole topic fell out of fashion. But I have on good sources that NeXT is very close to deciding a RISC strategy.

NeXT has evaluated the latest and best RISC architectures out there, and have, according to sources, narrowed the choice down to two. No, not the Sparc, not the Motorla 88000, not even the IBM RS/6000. It's now down to MIPS or HP Precision Architecture (PA) RISC.

In fact, rumor has it that NeXT has gone through extensive negotiations with both DEC, who use MIPS, and HP, on licensing NextStep for their prospective UNIX workstations. One eye witness claims to have seen NextStep running on HP's new killer workstation, the HP-9000 series 700 Snake.

Will we see NextStep on DecStation or the Snake? It's hard to say. NeXT is naturally wary of what happened with IBM's licensing of NextStep, i.e. nothing. IBM did very little to promote NextStep, understandable since IBM wants to deliver an uniform message to its customers: X-windows is the IBM way. DEC and HP, both OSF members like IBM, are obligated and committed to back OSF-1, Motif, and X-windows. Even if NextStep is licensed to either vendor, we may not see very much result.

More interesting is the prospect of NeXT adapting the MIPS R6000 64-bit, 50 MIPS monster RISC chip, or the even more spectacular HP PA-RISC. If the benchmark numbers HP engineers toss around are any indication, such a computer will be about five times faster than the 68040. Even the biggest, slowest NeXT applications will fly with that kind of muscle.

NeXT's New Strategy: Connectivity

The history of NeXT strategy can be divided into roughly four parts: first, in the starting days, it was "academic computing". After that was poorly received by the press, it became "best desktop publishing computer". Money didn't start tumbling in, so the battle cry turned to "awesome spreadsheet machine with Improv". Now that Improv has shipped, and though impressive, is ridiculously missing a scripting language. Knowing that skepticism will quickly follow from the pundits and the press, NeXT is now working on its next marketing strategy, connectivity.

To start with, Mac disk formats will be supported in System 3.0. As well, Steve Jobs has spoken about Novell and Apple EtherTalk connectivity. The plan is to directly convert EtherTalk packets to make Macs think NFS is an AppleShare server, and NeXT thinks AppleShare is NFS. Ditto with Novell: you'll be able to run Novell applications right off of a NeXT with NFS, and NeXT apps can reside on Novell servers.

SLIP or DialUp IP will finally become a part of System 3.0 as supported software. Now that the brain dead serial port of the old motherboard has been fixed, we can finally do network bridging with a dialup line.

Cheap Backup Alternative

Many of the new converts into the NeXT world will have bought the

(continued on the next page)

Tao #7 - Robert Lin

(continued from the previous page)

popular NextStations, which has a floppy drive, but no optical drive. The OD drive has a warm place in my heart as an awesome backup device, but I realize the OD glory days are past. NextStation owners cannot use OD, and Cube owners may be reluctant to shell out $3K for an OD drive, especially if they only know about the DAT alternative. Yes, the DAT is the best way to backup your NeXT, and the cheapest too.

The NeXT works with the Wang DAT right out of the box. I was able to test and verify this for myself. The Wang DAT costs about $1,500 - $2,000 US, and each 1.3 gigabyte cartridge costs a mere $20 US, as opposed to $150 per 256M for an optical platter.

To use the Wang DAT, plug into SCSI, turn on power, then power on your NeXT. Go to Terminal, and type:

tar cvf /dev/nrxt0 /

This backs up your entire hard disk to the DAT. You can also use dump or dd. The device mapped to is /dev/nrxt0 and /dev/rxt0. The difference is /dev/rxt0 will rewind the tape when the device is closed, and /dev/nrxt0 won't.

To manually rewind the tape, use this command:

mt rewind

Read the manual pages on mt and rxt for the nitty gritty details. You will note the Wang DAT is very fast on rewinds. The tape can rewind from end to start in less than a minute. The cartridge is also very "cute"; tiny, light, about half the size of a regular cassette tape.

Software Distribution, NeXT Style

Being a developer, one really appreciates the NeXT for its binary compatibility. Furthermore, all NeXTs have some very good "lowest common denominator" support: PostScript on every box, automatic color/mono support (write your code one way, for color, and it works on all the machines), standard fax support, a minimum 17" of display real estate, etc.

If NeXT should introduce a RISC box, I can see that almost all software companies will start to bundle both the 68040 and the RISC version on the distribution disk. The compiler will also have the ability to generate native code for both 68040 and RISC, so one can do cross development on any machine in the family. NeXT will even take this one step further, by allowing both binaries to be bound into one file. When executed, the operating system will automatically branch to the correct binary. This way, small programs and installation programs can run on both machines. Larger programmers will want to be split into two binaries, and only one of which will be copied to the hard disk during installation. ♦

Diagram!

Academic Discounts

Lighthouse Design is pleased to announce the availability of academic discounts for Diagram!, an innovative presentation graphics tool for NeXT computers. Discounts are available to students and universities through NeXT Connection (1-800-800-NeXT):

$399 list
$25 for students (twenty-five dollars!)
$75 for faculty/university and staff (seventy-five dollars)

To purchase a copy of Diagram!, contact NeXTConnection at the number above. A demo version of Diagram! is available via ftp from nova.cc.purdue.edu. It's in pub/next/demos/Diagram.tar.Z, and it'll blow your socks off.

As we've stated previously, the only difference between the academic and commercial copies is the amount of paper you'll receive: all of Diagram!'s documentation is available on-line, though only the commercial copies ship with paper manuals and full-size boxes. The academic versions are shipped without manuals, and are otherwise identical to the commercial distribution.

Thank you all for your advice and patience. We're looking forward to your reactions. Should you have the inclination, feel free (encouraged, even) to forward this to your friends and to the nets.

Jonathan Schwartz
Lighthouse Design, Ltd.
lighthouse!jis@uunet.uu.net

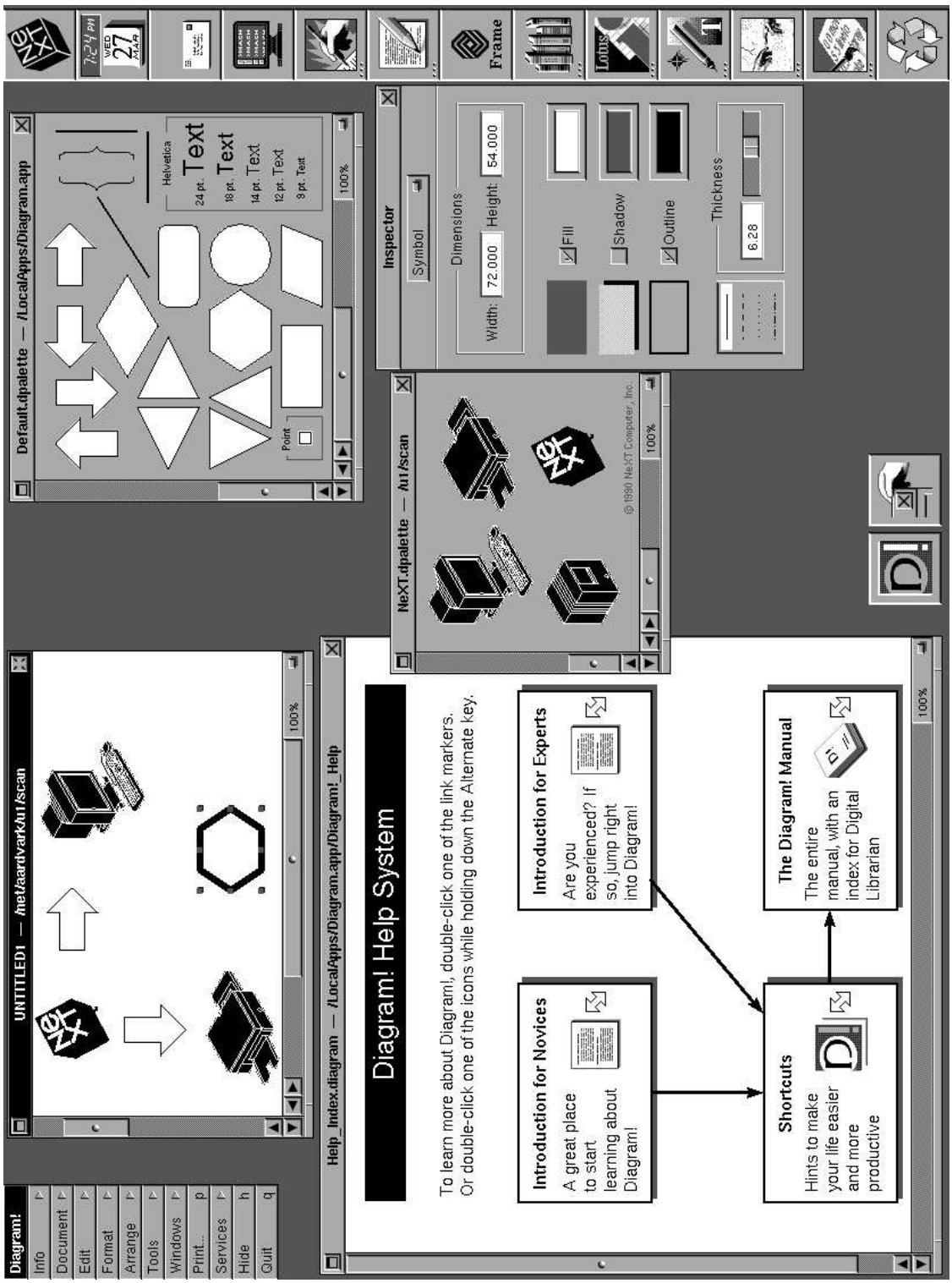
NeXTConnection is available at the following numbers:

Domestic: 1-800-800-NeXT
(1-800-800-6398)
International: +1-603-446-3383

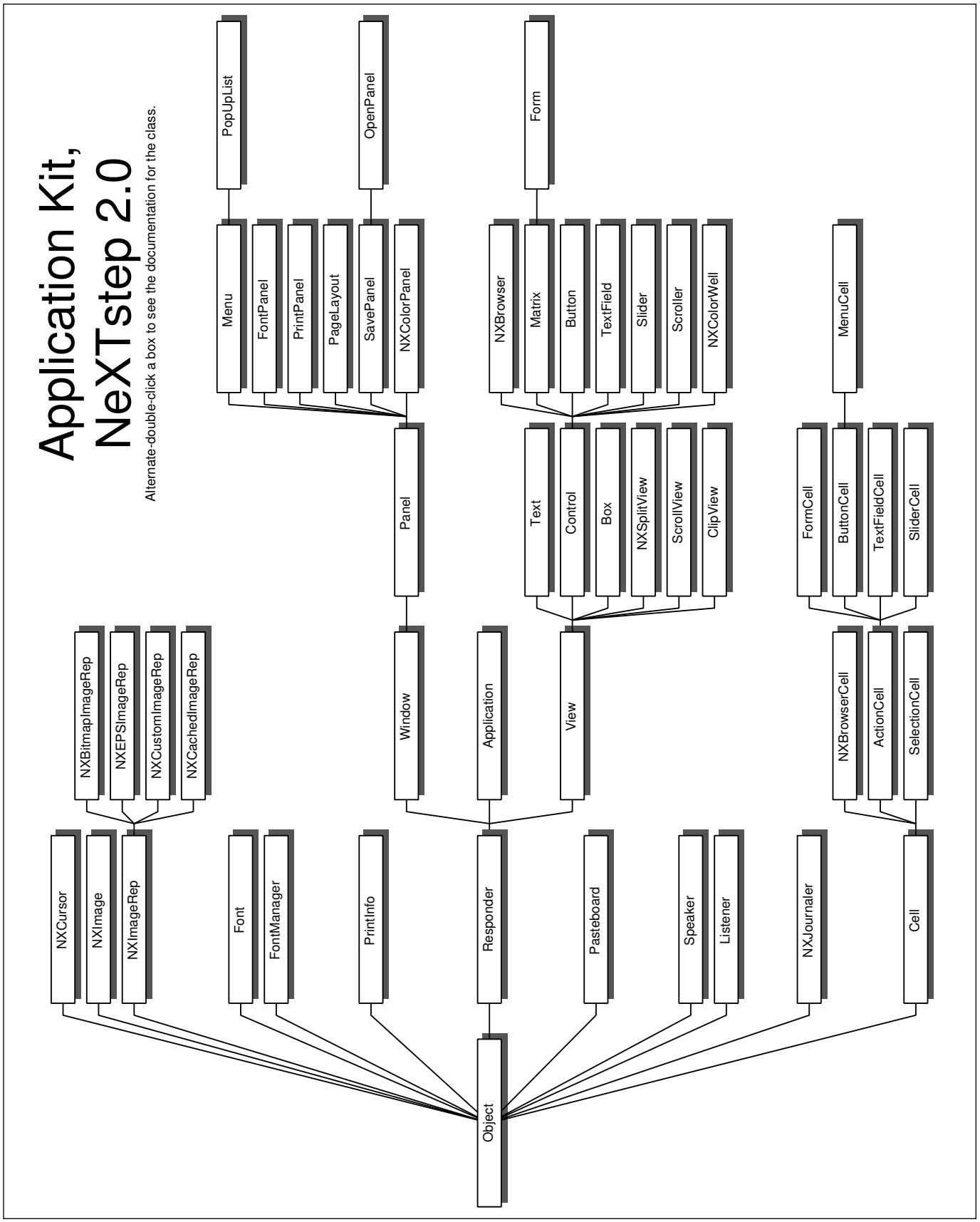
Students will be requested to fax or mail a signed statement attesting to their status as registered, along with a copy of their student ID's, and a printed student ID number with campus address and phone number. Faculty/staff will be required to provide a university purchase order. ♦

The look of *Diagram!*

This is how Diagram! looks on a NeXT Display with an extra palette (NeXT.dpalette, which was downloaded off the net from the nova.cc.purdue.edu site). Note the similarity to Interface Builder with the default palette at the upper right corner and the inspector just below that. The Help system is also displayed along with a primitive diagram which uses some of the objects available from the two palettes. - ed.



This diagram of the Application Kit Hierarchy (i.e. the user interface classes under NeXTstep 2.0) was created in the Diagram! application by Scott Moyer (moyer@hq.af.mil) and can be downloaded from the sonata.cc.purdue.edu archive site. Documentation for a class can be displayed in the Edit NextApp by an Alt-double-click key combination! - ed.



OFF THE NET

The selection criteria for Usenet postings are based solely on their interest. SCaN makes no claim, explicit or implied, as to the accuracy of the information contained in these excerpts. We also assume that people who post on Usenet will enjoy seeing their words in print. Alison Bomar (bomar@beach.csulb.edu) gathered this stuff off the net - ed.

(More) Frequently Asked Questions

Pascal Chesnais
John Garnett
Erik Kay
(FAQ e-mail address below)

(see the first set of these questions with answers in the February SCaNeWS)

The information contained in this post is a compilation of answers to questions posted by participants in the comp.sys.next USENET group. No guarantees are made regarding the correctness of these responses. This will get posted to comp.sys.next about every other week. There is currently no particular order to this list, items get added and removed over time.

Note: We are not affiliated with any of the companies mentioned in this posting. If you have any corrections, additions, questions, or answers to add to this list, please send email to

next-faq@media-lab.media.mit.edu

0. Where can I find additional questions and answers regarding the NeXT computer? (this question is really never asked but really should be :-)

Every NeXT machine owner has access to manuals to a degree. **Network and System Administration** (NSA), for example contains answers to many of the questions asked to comp.sys.next. Some of the important man pages are reproduced in the NSA as appendices.

- **User manuals** are shipped with every NeXT. Additional copies available from NeXT (N6002/N6003/N6014/N6026) $25.

- **NeXT Technical documentation**. (How to program in the NextStep environment). Order from NeXT (N6007B) $95. The "Extended" release contains on-line versions of the "Reference" (but not "Concepts") chapters.

- **man pages**, included with "Extended" release.

- **BSD unix documentation** (MISC, PS1, PS2, SMM, USD). Available from to USENIX site members. A lot of this has been integrated into the NeXT documentation. Some of this is sorely missing.

- **Adobe documentation**. Available machine-readable by e-mail from ps-file-server@adobe.com. Hardcopy available from Adobe Developer Support Line +1 415 961-4111 for a nominal charge. NeXT last shipped these as part of the 1.0a release; hardcopies appeared in 0.9 Technical Documentation.

- Get **NextAnswers** for Digital Librarian from one of the many ftp sites (see below) that have NeXT software. NextAnswers is a series of questions and answers that the NeXT technical support staff has compiled. They tend to clarify issues not covered or poorly covered in the on-line documentation. Anyone can send bugs or suggestions to bug_next@next.com

- Another good source of information is the archives of previously posted notes from the comp.sys.next newsgroup. All articles sent to comp.sys.next are archived on brownvm.brown.edu. Send a note to listserv@brownvm.brown.edu containing the command "INFO?" on a single line (by itself). The list of articles is called NEXT-L.

It can not be overly emphasized that getting the on-line documentation from 2.0 extended will help enormously in researching problems with the aid of digital librarian.

1. Is there a NeXT specific magazine?

Yes. There are also many NeXT specific newsletters, many of which are available via ftp from the NeXT specific ftp sites (look in pub/next/newsletters on cs.orst.edu and pub/next/Newsletters on nova.cc.purdue.edu - purdue seems to carry more newsletters on line than orst.). Some cost money, others don't.

Available from purdue: *SCaNeWS* - Southern Calif. NeXT Users Group Newsletter,

(continued on the next page)

Frequently Asked Questions

(continued from the previous page)

first issue came out January 1991. Edited by Mike Mahoney (mahoney@beach.csulb.edu)

BANG - Bay Area NeXT Users Group, one item on-line on Purdue. Edited by Robert Nielson (nielsen@everest.portal.com).

Tao - an irregular newsletter written by Robert Lin. It usually has a good number of rumours, and is fun to read.

rmNUG - Rocky Mountain NeXT Users Group Newsletter, latest issue February 1991. Edited by David Bowdish (73340.2146@compuserve.com).

NeXTVieW - Vancouver NeXT Users Group

NeXT Users' Journal, latest issue December/January 1990-1. Edited by Erica Liebman (erica@kong.gatech.edu).

Hardcopy:

Baran's Tech Letter Published once a month for $125/year Contact: Nicholas Baran POBox 876, Sandpoint, Idaho, 83864-0876 email: nbaran@well.sf.ca.us

NeXT on Campus NeXT developments in academia. Call NeXT at 1-800-848-NeXT for free subscription info.

NeXTWORLD Published six times a year ($23.95). NeXTWORLD, 501 Second Street, San Francisco, CA 94107 415 978 3182 (phone), 415 978 3196 (fax) NeXTworld email address: ddinucci@nextworld.com

NeXUS Published bi-monthly for $36/year. Contact Alfonso Guerra at {emory|gatech}!nanovx!nexus.

What's NeXT? The Boston Computer Society NeXT User group produces a NeXT newsletter called "What's NeXT?". BCS may be reached at 1 Center Plaza, Boston, MA 02108.

2. What are the names of some of the ftp sites that have NeXT-related files?

There are too many to list them all, so are here are just a few:

NeXT:
cs.orst.edu,
nova.cc.purdue.edu,
sonata.cc.purdue.edu,
umd5.umd.edu, and
eesun1.arl.utexas.edu

MIT GNU:
aeneas.mit.edu
music: princeton.edu

See NextAnswers for more sitenames.

3. If I am not on the Internet, how can I get to the ftp sites via email?

cc.purdue.edu is configured as an email archive server. This means you can upload and download files via email. Send mail to: archive-server@cc.purdue with the subject line help and you will get a complete description of this service.

submissions: Mail should be sent to archive-server@cc.purdue.edu with the subject of 'submission' (no ticks) if a person is submitting material to the archives. They need to include a 1-2 sentence description of the submission, the OS release the product runs on, and if it is source, binary, newsletter, etc.

4. What type of memory may be installed in a NeXT?

Use Mac II-style SIMMS, 100ns or faster. SIMMS must be installed in groups of four. The NeXT can use either 1MB or 4MB SIMMS. Most people are buying 80ns SIMMS in order to be more sure of future compatibility. Also, note that the low-profile vertically mounted 4MB SIMMS are easier to install in the NeXT cube than the horizontally mounted 4MB SIMMS because of the small height clearance above the SIMM slots. It is possible to install the horizontally mounted 4MB SIMMS but you will be required to slide the CPU board and the hard drive in simultaneously. Note that parity (9-bit) RAMS can be used in both the 030 NeXT and the 040 NeXT. Parity and non-parity SIMMS can be mixed in both the 030 and the 040 (however, the boot on 040 boxes will generate a warning). Only the 040 NeXT can use the parity memory to detect parity errors (parity and non-parity may not be mixed if you wish to have parity errors detected). 2.2 (v63) ROM lets you disable parity checking (NVRAM preference). 2.1 (v59) does not.

Color NeXTstations, and the NeXTdimensions will be using a different packaging for memory. They will be in a 72pin housing, are organized 256kx32 or 1Mx32 for non-parity systems, and 256kx36 and 1Mx36 for parity. They must be 80ns or faster. As of 2-28-91, we are aware of only one supplier (other than NeXT) of this type of memory. Until the number of vendors known to offer

(continued on the next page)

Frequently Asked Questions

(continued from the previous page)

this type of memory increases, we will list that one supplier here for the benefit of those on constrained budgets: SouthCoast Electronics (213) 208-3260.

Given how dynamic the prices are in the memory market we can not provide an accurate compilation of suppliers and prices.

5. What disk drives will work with the NeXT?

First get a copy of NextAnswers and review hardware.586

Most scsi disk drives will work with 2.0 without modifying disktab. You should read the Network and Systems Administrator manual provided with all new systems and available on-line on 2.0 extended. There have been problems with the installation of boot blocks and badly formed fstab generated by BuildDisk. A disk connected to the NeXT will need to have a NeXT specific label written to it before it can be properly recognized by the system. If you get an error message "Invalid Label..." this indicates that the drive was successfully seen by the NeXT machine but it does not have the proper label, to install a label use the /usr/etc/disk program on the raw disk device that the system assigned to the device and use the label command to write the label onto the disk. [how the NeXT assigns disk devices is explained in the N&SA manual]

NeXT provides a low level disk formatter with 2.0, most drives are already formatted at the factory. The sdform program does not offer much flexibility.

[If someone is keeping a list of drives that work with the NeXT we would like to know about it. Also there was talk about Mac drives *not* working on the NeXT due to their implementation of the SCSI standard.]

6. What alternative printers (laser or otherwise) may be used with the NeXT? Are there limitations or other considerations of which I should I be aware.

Adding supported postscript printers is rather simple: 1- get a serial cable 2- configure using Print Manager 3- configure printer communication according to manufacturer's recommendations. (9600baud software flow control). [the above was from someone's experience connecting a Laserjet IIP with 2Mbyte memory]

[a more meaningful response is needed here] If you are using 2.0 and you use remote non-next printers, there is a bug that can be simply corrected by doing "dwrite system PrinterResolution 1" for each user trying to access non-next printers on the network.

7. Can I put both an 030 and an 040 system board in a single NeXT cube?

[Note that we have no first hand experience with this problem, we have compiled what we consider to be an accurate report. We acknowledge conflicting reports where appropriate.]

In general Mach may be configured as a multiprocessor operating system; however, the NeXT kernel is only configured to deal with one processor. This configuration can not be changed without access to the kernel sources. [hopefully NeXT will offer a multiprocessor version of the NeXT operating system at some future date]

Some have asked about the possibility of installing the 030 board for use as a printserver or other CPU-intensive task server. In this hypothetical setup, each CPU would run its own copy of the operating system (essentially two different computers sharing the same cube). This might be workable except for the fact that even if the NBIC (NextBus Interface Chip) chip is removed, the CPU board probes the bus for slot ID [**a conflicting report comes from Richard Dib who heard that someone ran a cube with the CPU in another slot].

You could do hardware modification to the 030 board which would isolate it enough to use only the cube as a power supply, however you can not run two monochrome monitor heads off the cube power supply. In this case you would probably want to first boot the 030 with a display head, set the boot prom to boot off ttya, and attach an ascii terminal to that serial port.

8. How can I print only the even or odd pages of a document? I wish print on both sides by feeding the paper through twice.

We must recommend against reusing laser printed paper in your printers. The reason is that the toner which is used is not very robust, in that when heated again (which happens when you print) it

(continued on the next page)

Frequently Asked Questions

(continued from the previous page)

can come off the other side of the paper. This causes a mess to accumulate in your printer, and probably some pretty rude things to happen.

Now to address the even/odd stuff, essentially you need to write a postscript filter which extracts every other page. So you would save your WriteNow document to postscript file, run the filters, and then print the two documents with lpr. There is no packaged filter on the NeXT to do this. Corey Satten <corey@cac.washington.edu> wrote a toolkit to deal with this issue. It is on ftphost.-cac.washington.edu ps-* in the local/bin-next{1.0,2.0} directories.

9. How much disk space is lost due to formatting and file system overhead?

Rex Pruess (rpruess@umax-c.weeg.uiowa.edu) offers the following explanation: Let's assume you bought a disk drive advertised with 400 MB unformatted capacity. Vendors are not consistent with the MB definition. You may have much less space less than you think you have. Which of the following did you buy?

400 * 1000 * 1000 =
400,000,000 bytes
400 * 1024 * 1000 =
409,600,000 bytes
400 * 1024 * 1024 =
419,430,400 bytes

The disk must be formatted. This is often done by the vendor, but occasionally by the user. Formatting maps the disk into sectors. Space is reserved for the disk geometry and bad sectors. Formatting can take 10-20% of the capacity depending on the sector size. Common sector sizes are 512 and 1024. Generally, bigger sectors mean less waste.

Once formatted, the UNIX file system must be created. On the NeXT, this is one of the steps performed by the BuildDisk application. It invokes the mkfs command to make a file system. This reserves space for the UNIX file system (e.g., superblocks, inode tables). This overhead can take another 2-3% of the available disk space.

If you issue the df command, you may be surprised to see another 10% the available disk space has disappeared. The df command shows the total, used, and available disk space. The df units are in kbytes (1024 bytes). The sum of the used and available numbers will generally be about 10% less than the total kbytes. This space is reserved to allow the UNIX file system to be efficient in its storage allocation. If your disk fills up, only the superuser can store files in the remaining 10%.

To complete the picture, here's a snapshot of what may occur (all numbers are in bytes):

Capacity	Lost/Used/Reserved	Reason
419,430,000	19,430,000	hype
400,000,000	60,000,000	formatting
340,000,000	6,800,000	UNIX file sys.
333,200,000	33,320,000	Efficiency & superuser

For more information, refer to the df and mkfs man pages.

10. What can I do to prevent my NeXT printer from running all the time?

The NeXT 400dpi printer powers up every time you boot up when the print daemon is started (/usr/lib/NextPrinter/npd in /etc/rc). Apart from not running the daemon at boot time (commenting it out and having to run it by hand later), you can add the following line to /etc/rc.local

/usr/etc/nppower off

to immediate turn off the printer. Once you queue a print job the printer daemon will automatically power up the NeXT printer for you. The printer daemon will not automatically power off the machine after a print job, you will need to turn off the printer by typing /usr/etc/nppower off.

Editors:

Pascal Chesnais
lacsap@media.mit.edu

John Garnett
garnett@cs.utexas.edu

Erik Kay
erikkay@athena.mit.edu

Copyright 1991 Massachusetts Institute of Technology

This compilation is meant primarily as a service to the comp.sys.next community. Newsletter editors wishing to excerpt from this work for publication should contact us via email for details. [*I did! - ed.*]

Note we do not collect any royalties, charge any fees, or compensate anyone in connection with this endeavor. -- Pascal Chesnais, Research Specialist, Electronic Publishing Group Media Laboratory, E15-351, 20 Ames Street, Cambridge, Ma, 02139 (617) 253-0311 email: lacsap@plethora.media.mit.edu (NeXT)♦

Improv:

An In-Depth Look

Dick Benster, BANG

This look at Improv was taken from the February BANG meeting summary. It was posted on the net by Joe Barello (joeba@mindcraft.com). The summary refers to an Improv demo given by NeXT employee Dave Grady. The text below was written by Dick Benster of La Honda Software. - ed.

Improv leads the Charge into the Brave New World of Spreadsheets

Dave began by contrasting approaching a problem with a traditional spreadsheet (s/s) versus Improv. With the traditional s/s both the formula and data belong to cells - an example would be setting one cell to the sum of a group of other cells. Since you specify the actual geographic relationships of all the cells, it immediately becomes inflexible. If you want to physically relayout your s/s, all your formulas must be redone to reflect the new spatial relationships.

Improv, in contrast, allows relationships to be expressed algebraically with English formulas. While simple in concept, this is a huge improvement. Not only is it more flexible when you wish to revise your s/s, it is also facilitates working with a particular s/s over time. Who knows what

"A3 = A2 - A1"

means four weeks after setup on a traditional s/s. The formulas and cell relationships are not directly evident, and the s/s must be queried before it can be understood by even the person who programmed it. With Improv

profit = sales - cost

is very clear. No steps backward to investigate are required to continue development weeks later.

A very important aspect of Improv is its ability to handle "categories." An example of the use of categories power can be found in simple financial planning, where you could create three categories: plan, actual, and variance. As the names imply, the plan category would be your forecast s/s, the actual would be the true data, and the variance would be the difference. By first setting up a single spreadsheet, and then creating the three categories, the simple formula of

variance = plan - actual

would compute the entire variance category with no other formulas needed (as always you have to enter the data for the plan and actual cells). Older s/s would require tedious cell-by-cell formulas.

Another useful feature of Improv is the explicit way it resolves equation conflicts. Often times, a "row" formula and a "column" formula may intersect - old s/s would simply have the most currently defined formula for that cell take precedence. In Improv, all such conflicts are graphically flagged, and the user explicitly chooses the desired formula. This avoids a very nasty class of errors where you're not computing what you think you expect.

The categories concept was implemented in a way that grants the user great flexibility in viewing the data. For instance, you may wish to change the axis for a category that currently is organized to display in the X-axis. Rather than redoing the whole s/s, you just drag it graphically to the Y-axis and you get a whole new view of your data with no programming! You can have up to 4 categories per axis, for a total of 12 categories maximum.

Another nice ability of Improv is to collapse groups for summary purposes. You may take a detailed break-down of expenses (simply organized as a group), and with no programming, merely request Improv to collapse that group into its summary totals just with a mouse click.

Dave went through many other capabilities of the spreadsheet beyond the scope of this review, including the use of different views, worksheets, and models. Briefly, models can contain multiple worksheets and views. You can link worksheets within a model, but not across models. The whole point of Improv is to allow a capturing of many views of a world with your s/s, giving maximum flexibility as to how you view this data without requiring constant reprogramming.

In the limitations world, Improv does support Lotus 1,2,3 data, but Improv has no macro capability (but note that many things that macros are used for are supported by Improv directly), nor an undo command. A macro capability is anticipated in fall '91.

(continued on the next page, column 3)

Software Review:

Diagram!

Terry Chen
Andresen Typographics

I am a brand new user to the NeXT Computer. I've worked my way up from an Apple II, to an IBM and now am using the Macintosh for most of my computing needs. I currently use the Mac as a graphics design tool, 3D animation, and color pre-press. So far, I am very impressed with the NeXT, and I think it is definitely a platform worth investing in.

Diagram! allows the user to create flow charts and diagrams easily. It takes full advantage of the NeXTstep interface, using an interface similar to the Interface Builder.

Diagram! works like most object-oriented graphics programs. Every item is an object with handles. You simply pick up the object to place and size it wherever you want it on the canvas window. The biggest difference you notice is that there is no toolbox. It uses an object palette like the Interface Builder. There are several palettes that come with the application. You can open them as you need them, or you can create a new palette with the objects you use most often or objects from other applications via cut and paste. An inspector window is available to show and change the attributes of the selected object. The operation is smooth and familiar if you have worked with the NeXT at all.

By clicking on the canvas without selecting an object, it creates a point and anchors a line to it. This makes it very easy to connect or point to an object. It makes all the connections between the objects nice and easy. The alignment options are also flexible. You can align objects by any of the 8 handles when an object is selected.

Another nice feature is linking. You can link a file or sound to an object on the canvas. For example, if you have a complicated flowchart, you can add voice notes to specific items to explain them. Using the sound kit, *Diagram!* allows you to record sounds while you are creating diagrams. A bigger advantage is file linking. Not only you can reference your diagrams, you can also link any document to an object simply by dragging a file over an object. It links much like hypertext. It will reference back and forth. A good example is their help system. It is actually a diagram created by the program. You get to a help window, and you can reference between beginner, expert, quick reference help. It simply links to another diagram for that specific diagram. You can then move on to the next linked help, or back up by clicking on the same link icon that took you there. You can also use that to break down large complex diagrams, or flowcharts. It will clearly show and divide the different sections for organization.

Overall, I feel that the *Diagram!* is very useful and can be productive. It is easy to use, and everything works logically. I recommend a drawing program in addition to it so that you can create the specific shapes that you need. *Diagram!* will be beneficial to anyone who has the need for diagrams.♦

Improv: In-Depth

(continued from the previous page)

In retrospect, it is interesting to ask why Lotus put Improv on the NeXT. According to Dave, a major reason was simply that they COULD! The combination of virtual memory, an OOP language (Objective C), and a quality interface builder (IB) made the NeXT machine the best choice, and possibly the only reasonable choice at the time. Interestingly, Improv had been started on another platform, but the project was running into great difficulties before being moved to NeXT machines.

Please note that Improv started shipping 4-Feb-91 (DB: NeXT says freebee deliveries to recent machine purchasers should show up by end-March).♦

NeXT SCaN Meeting

May 7 - UCLA

contact us for details

SOFTWARE DONATIONS

The following software has been donated to SCaN:

Diagram! **(Lighthouse Design)**
Improv **(Lotus)**
TextArt **(Stone Design)**
TouchType **(RightBrain)**
WordPerfect **(WordPerfect)**

We thank the companies and individuals involved.♦

MARCH MADNESS

(continued from page 1)

Some other news items:

- NeXT, Inc. has changed its name to NeXT Computer, Inc.
- In conjunction with each of Lotus, WordPerfect or Motorola, NeXT has been taking out full two page ads in *PC-Week, UNIX Today* and other pubs.
- There is a new NeXT archive site at Washington University at St. Louis. The address is: wuarchive.wustl.edu (128.252.135.4). Look in the "systems/next" directory.
- According to NeXT User Group head Conrad Geiger, there are now 110 “official” NeXT user groups (really?)
- Steve Jobs got married on March 18 (does this indicate the release of a NeXT Jr.?)

I’ve been beta-testing *Touch*, an experimental application written by Joshua Doenias of NeXT’s Scientific Computation group which is headed by Richard Crandall. *Touch* currently exists to show the connectivity potential of NeXT products and does it very well. With *Touch* you can use the file transfer protocol (ftp) utility via the NeXTstep interface. After setting up Internet names, accounts (including anonymous) and passwords, *Touch* will log you in to a remote site automatically and bring up a File Viewer which displays the file system at that site. You can then drag files from this File Viewer into one of your directories (i.e. download files) or perform other file operations. Non-UNIX users will certainly appreciate the ease with which one can download files from an archive site with this software. However, it should not be assumed that *Touch* will be bundled with future releases.

The April issue of *NeXTWORLD* is about as good as the premiere issue and probably worth the $4.95 price tag - although $4.95 is a bit much. On page 67 an entire paragraph is devoted to SCaN, thanks to Conrad. We hope this recognition generates more users, donations and speakers for SCaN.

The February 28 meeting at CSU Los Angeles was *almost* a washout due to the heaviest rain (and hail) seen in Southern California in years and a very tight schedule for our speaker, Jeanne Heston of Lotus. To our great relief, however, Jeanne walked in about a half an hour into the meeting with a big smile on her face, having driven straight from the airport. A sincere thanks to Roland Carpenter of the CSULA Physics and Astronomy Department for keeping things moving by demonstrating his interesting *Black Hole Orbit Explorer* program on the spur of the moment. You can learn more about this and other apps written by CSULA faculty in the next issue of *NeXT on Campus*.

The February turnout of about 35 people was pretty decent considering the weather - which convinced me further of the dedication of NeXT enthusiasts. The meeting featured Jeanne showing off Lotus *Improv’s* remarkable features such as reformatting all the data in a spreadsheet with a simple drag of a tile or two which represent data categories. Many thanks to Lotus and the Weber Group (who contacted us and set up Jeanne’s demo) and especially Jeanne, who flew in and gave an informative and entertaining demo. See the article on page 15 of this newsletter for an in-depth look at *Improv*.

At the meeting we also distributed free copies of the premiere issue of *NeXTWORLD*, the Feb. issue of *SCaNeWS* and the Dec/January issue of the *NeXT Users’ Journal*.

Rick Jackson of NeXT will bring a NeXTstation Color Computer to the March 28 meeting at CSU Long Beach and demonstrate *Diagram*! and *WordPerfect*. We will also be distributing this newsletter and the Winter 1991 issue of *NeXT on Campus*.

If anyone out there would like to host a future SCaN meeting at their location please let us know. For any meeting we'll send out the announcements, provide the goodies, arrange the speakers and bring copies of newsletters.

Future contributions to *SCaNeWS* include an intro to Objective-C for C programmers and my Interface Builder tutorial from ACM’s CHI’91 conference. It’ll have to wait until the May issue, after the conference. We'll also have several reviews of donated software (see the list on the previous page).

This issue, our third, may not be as pretty as previous ones because SCaN secretary and frame maker extraordinaire Lorraine is too swamped with her time-consuming graduate courses and thesis to have time for the newsletter this month. Please give her some well-deserved credit for all the work she did on the January and February *SCaNeWS* issues and convince her to come back! By the way, we can really use some help with the newsletter in many areas, so contact us if you want to help and become famous.♦

SCaNeWS' Role in the NeXT User Community

Our goals in distributing *SCaNeWS* are modest. We are geared more toward the needs of end-users, students and faculty than those of developers. Developers may find our newsletter interesting but perhaps not as technically oriented as they may like. Among our regular features we plan to include product reviews, tutorials for basic software development as well as for some of the more complex applications, bug reports, updates on how NeXT is faring in the marketplace (with an emphasis on the comings and goings of third-party vendors, ever-crucial to a product's success), and pointers to the most reliable sources of NeXT information.

We refer developers and other sophisticated programmers to the *NeXT Users' Journal*, which can be downloaded from the same archive site as *SCaNeWS* (see the adjacent box "Downloading .."). We read it and love it (thanks, Erica!) and occasionally make copies available at our meetings.

Downloading SCaNeWS (from an Archive)

If you miss(ed) any issues of *SCaNeWS* and have access to Internet, you can obtain them via anonymous file transfer protocol (ftp) as follows (**bold** indicates onscreen prompts, *italics* what you type):
At your local system prompt, type

ftp -n nova.cc.purdue.edu
ftp> *user anonymous <your full address>*
(e.g. mahoney@beach.csulb.edu)
ftp> *binary*
ftp> *cd /pub/next/Newsletters/SCaNeWS*
ftp> *ls -l*
This will give you a listing of all the newsletters currently available. To retrieve an issue:

ftp> *get <filename>*
Repeat the last command for as many issues as you want to retrieve. To return to your local machine:

ftp> *bye*

The file is in compressed form (you can tell by the .Z extension). To uncompress it, type *uncompress <filename>*. Now the newsletter is ready to be loaded into the NextApp *Preview* and printed.

SCaNeWS CONTRIBUTORS

Alison Bomar (reading/compiling the net)
Terry Chen
Robert Lin
Mike Mahoney
Alan M. Marcum

off the net:
Mark Adler
Dick Benster
Pascal Chesnais
John Garnett
Erik Kay

Editor:
Mike Mahoney

If you would like to submit an article to *SCaNeWS*, contact Mike or Lorraine.

Articles are copyrighted by their authors.

SCaNeWS is composed using FrameMaker™

SCaN OFFICERS

PRESIDENT: Michael K. Mahoney
Computer Engineering/Science Dept.
California State University
Long Beach, CA 90840
(213) 985-1550
mahoney@beach.csulb.edu

VICE-PRESIDENT: Bob Desharnais
(213) 343-2056
bob@biol1next.calstatela.edu

SECRETARY: Lorraine Rapp
rapp@beach.csulb.edu

TREASURER: Henry Chiu
chiu@beach.csulb.edu

If you have any comments or questions about SCaN, please contact one of the above officers.