Chapter 1

Introduction

1.1 About this FAQ

These are the frequently asked questions concerning NeXT, NeXTSTEP or any other NeXT related topics.

This compilation is meant primarily as a service to the (`comp.sys.next` and `de.comp.sys.next`) community.

NeXT Software,Inc. is a privately hold company, heading towards software business. It sells NEXTSTEP its award winning OS and several other software packages (most included with NEXTSTEP): EOF, NEXTSTEP Developer, WebObjects, NetInfo, ...

With the coming 'open' version of NEXTSTEP, which is named OpenStep and will run not only on top of Mach (as NEXTSTEP does) but also on Solaris, Windows NT, Windows 95, HP-UX. The user of NeXT's software is confronted with a wide range of different software and hardware.

To help in the unaware user, this FAQ was founded. But also professional users might find some interesting information, which they didn't knew already.

Note the NEXTSTEP and OpenStep questions often concern related topics like Objective-C, UNIX, administration tasks, etc. for which already separate FAQs do exist. See the `new.answers` newsgroup for additional FAQs, if your problem isn't covered by this FAQ.

1.2 Submissions

As with all FAQs the quality of the information provided here is mostly depending on the Usenet community, which in most cases serves for the information resource. Feel free to e-mail the FAQ author to contribute, or send error reports.

If you contact the author, use the following subject for submissions: `FAQ submission`. To report errors use: `FAQ error`. Additionally you might want to

add the chapter where the submission/error report belongs to.

1.3 Availability

This FAQ is published monthly in the `comp.sys.next.*` newsgroups and in the near future `news.answer`.

It may be downloaded via FTP from `ftp://peanuts.leo.org/pub/comp/platforms/next/Documents,` Special additions for redistributors and homeusers do exist.

This FAQ may be accessed only through Peanuts as well: `http://peanuts.leo.org/`

In the near future we want to implement an e-mail service for those who don't have access to news. You may add yourself to the mailinglist by sending an e-mail with subject: `FAQ mailme`. Note that this service isn't available, yet completely, because there is too little interested. However I keep a list of all the registered people and they will still receive e-mail copies.

1.4 Copyright

This FAQ is copyrighted by Bernhard Scholz. (Internet e-mails: `scholz@informatik.tu-muenchen.de`)

Mentioned trademarks belong to their holder and are not explicitly listened.

We do not collect any royalties, charge any fees, or compensate anyone in connection with this endeavor, but of course we would be happy about each e-mail commenting on the FAQ, about pizzas (lasagne is accepted, too `:-)`), postcards, ...

Anyway we reserve a copyright on the the published information in this FAQ. Any questions concerning other redistribution should be send to the author of the FAQ.

Reprinting of this FAQ, even in parts, is prohibited without permission by the author except for printings for private use.

Newsletter editors wishing to excerpt from this work for publication should consider using local electronic bulletin boards to disseminate this information rather than preparing hardcopies. This allows for readers to access the most recent information, and perhaps save a couple of trees.

1.5 Disclaimer

Of course there is no warranty in any case using the information provided here. We haven't tested the information to be correct.

We are not affiliated with any of the companies mentioned in this FAQ.

1.6 Thanks

Especially we want to thank the Usenet community for contributing to the FAQ and all the people who have written us.

Then I want to thank the people who worked on the FAQ before I did take them over (in order of working): Pascal Chesnais and Erik Kay, Nathan F. Janette, Maximilian Goedel (never released anything but cleaned up some things for me).

Thanks also to Karl Ewald, who contributed his latex2html Perl script which replaced the non working original latex2html version.

Chapter 2

General information

2.1 Information available but not in the written FAQ version

There is additional information available for the following topics: mouse pinouts, monitor cable pinouts, common addresses, mousepointer patch, windowmanager patch.

These inforamations are not included in the written FAQ, because they are considered rarely referenced resources and of not much use for the written FAQ. However you'll get these information when you download the whole FAQ via FTP or HTTP as a package for your computer. Please look at `http://peanuts.leo.org/faq/` for further information.

2.2 Where to get answers?

If you run into a problem, first read the FAQ of course `:-)` Second you might consider asking NeXT directly through the electronic service: `nextanswers@next.com`. Send an e-mail with subject: `ascii help index` to start.

If all fails, post to the newsgroups concerning NeXT related topics: `comp.sys.next.*`, `de.comp.sys.next`.

2.3 How may I contact NeXT, Inc.?

NeXT, Inc. can be reached under the following addresses.

```
USA: NeXT, Inc.
900 Chesapeake Drive
Redwood City, CA 94063
```

```
Voice: 800-848-NeXT (Redwood City #)
Voice: (415)-366-0900

Japan: NeXT marketing div. of Canon - Japan
Phone:  (81)-44-549-5295
Fax:  (81)-44-549-5462

EUROPE: Munich:
Phone:  (49)-89-996-5310

        UK:     Technology House
Meadowbank
Furlong Road
Bourne End
Bucks
SL8 5AJ
Phone: (44)-1628 535222
Fax:    (44)-1628 535200
```

Note: numbers abroad are listed with the country codes first. You will need to dial the international access number of your long distance carrier before proceeding to dialing the country code, area code and phone number.

2.4   FTP servers

The FAQ mentions a lot of software packages which you might find useful. In general there are two big sites serving Europe and the US. These sites keep most of the software available and do mirror themselves to keep up to date (although the structure of the archive differ). If the software isn't on one of these sites, the appr

opriate site is listed in the text.

If you get slow connections you might want to consider contacting a mirror of the both sites. For the Peanuts archive (Europe) the WWW pages `http://peanuts.leo.org` give you links to an updated list of mirrors and other FTP sites.

The addresses are:

`ftp://next-ftp.peak.org/` (formerly the ftp.cs.orst.edu archive) `ftp://peanuts.leo.org/` (Peanuts archive in Europe) `ftp://ftp.evolution.com/` (Peanuts mirror USA) `ftp://ftp.eunet.ch/` (Peanuts mirror Switzerland)

2.5   Software on CD

There are currently two CD (sets) which serve you with NEXTSTEP/OpenStep
software:

`Nebula`. Nebula is published by Walnut Creek and mostly contains actual
recompiled software for all supported hardware platforms. It might be the best
choice for those who don't own a compiler. A big font collection and a developer
section complete the disk. `http://www.cdrom.com/`

`Peanuts Archive Disks`. The Peanuts FTP Archive in Munich distributes
their **complete** NEXTSTEP/OpenStep archive on CD. This currently brings
you 4CDs full with software. Although the software isn't compiled for each
hardware (it is provided 'as uploaded') it is the most complete software and
information resource available on CD. (It includes the NeXTanswers published
by NeXT). `http://peanuts.leo.org/, cdrom@peanuts.leo.org`

`Fatted Calf CD-ROM`. The Fatted Calf CD-ROM is published by Ensuing
Technologies, LasVegas, Nevada. Currently I don't know it's special contents.

`Big Green CD`. Selected software for NEXTSTEP. Also this software is on
any other CD, too. It might be a good startes collection. `http://skylee.com/BGCD.html,`
`ack@skylee.com`

`Font Garden for NEXTSTEP CDROM`. Some more fonts for computers run-
ning NEXTSTEP. These fonts should be capable of the NEXTSTEP encoding
sheme. However we got noticed that only very few are ISO-LATIN_1. So it is
possible of most interested to English speaking countries. `http://www.cdrom.com/`

`Clips for QuickTime`. Quicktime is NeXT's native format for movies, so
some samples might be quite nice. Note: On the latest Peanuts Archive,
you'll get about 200MB of quicktime movies which might be enough, too.
`http://www.cdrom.com/`

2.6   What is the current status of NEXTSTEP/OpenStep?

The third production version 3.3, has been released for Intel Processors (i486
and higher) as well as for NeXT hardware (not manufactured any longer but
still supported), HP workstations and Sun workstations.

OpenStep versions are announced and will be available this year (1996) for
Windows NT, Windows 95, Mach, Solaris and hopefully HP-UX. The status
for DEC machines and their OS (OSF/1, OpenVMS) is unknown. At least it
is uncertain that there will be a port to OSF/1 or even OpenVMS, because
DEC is doing the port alone. At least you can run OpenStep on DEC machines
running Windows NT in the near future. For Sun's Solaris systems OpenStep
will probably be part of the NeoDesktop.

There will be no NEXTSTEP 4.0, because NeXT changed the naming con-
ventions. NEXTSTEP 4.0 (also sometimes referenced as 'Mecca') is now named
'OpenStep for Mach'

2.7 Will there be a public implementation of OpenStep?

Yes, there is a project by GNU. The so named GNUStep is available in pre-alpha state from the archive sites. Be aware that it is not fully functional and currently requires Motif.

In its current state, GNUStep is on it's way to port the FoundationKit completely. This alone makes it worth to give it a try.

2.8 Are there differences between Openstep for Mach and other implementations?

Yes there are. OpenStep for Mach will include all the well known features from NEXTSTEP (Services, Filters, SoundKit, ...) which the other implementations will lack, due to the underlying OS.

To get all the benefits which is offered in NEXTSTEP today, you need to go for OpenStep for Mach.

2.9 What information is available by NeXT

NeXT, Inc. now operates an automatic e-mail response system. Send e-mail to "nextanswers@next.com" with the subject

```
"ascii help index"
```

to start.

If you do have access to the world wide web, you even want to try the following URL: `http://www.next.com/NeXTanswers/`.

2.10 What is the correct spelling?

NeXT did (and probably will) change their naming conventions a lot. E.g. NEXTSTEP is the current correct spelling for their operating system. With the shipping of OpenStep, there will be no more NEXTSTEP, but OpenStep for Mach/Solaris/HP-UX/Windows95/Wind

owsNT.

Incorrect spellings are: NeXTSTEP, NeXTstep, NeXTStep.

A common shortcut used in the newsgroups is: NS for NEXTSTEP.

2.11 How do I start an official NeXT User Group?

To start a user group, just send e-mail to `user_groups@next.com`.

2.12 Are there differences in the NEXTSTEP implementations?

No, there are no differences beside the DSP, which is a hardware feature of NeXT computers. On other hardware platforms you have to buy additional hardware.

2.13 What are the names of the ftp sites that have NeXT-related files?

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

```
NEXTSTEP: cs.orst.edu
ftp.informatik.tu-muenchen.de (peanuts)
nova.cc.purdue.edu
sonata.cc.purdue.edu
umd5.umd.edu
ftp.cs.tu-berlin.de

MIT GNU: aeneas.mit.edu

MIT X: export.lcs.mit.edu

music: princeton.edu
```

2.14 Additional information sources

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 were shipped with every NeXT. Additional copies available from NeXT (N6002/N6003/N6014/N6026) $25.

The following books are available directly from NeXT:

- Operating System Software

- NeXTstep Concepts

- NeXTstep Reference, v. 1

- NeXTstep Reference, v. 2

- Development Tools

- Sound, Music, and Signal Processing: Concepts

- Sound, Music, and Signal Processing: Reference

- Writing Loadable Kernel Servers

- Technical Summaries

- Supplemental Documentation

Unix man pages, which are included in the online docs.

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. The SMM Unix System Manager's Manual is really useful!

```
USENIX Association
2560 Ninth Street, Suite 215
Berkeley, CA  94710
USA +1 510 528 8649
fax +1 510 548 5738
office@usenix.org
```

- PS1 = Programmer's Supplementary Documents, Volume 1

- PS2 = Programmer's Supplementary Documents, Volume 2

- SMM = System Manager's Manual

- USD = User's Supplementary Documents

The SMM and the rest of the berkeley documentation are also available directly and for free via anon ftp e.g. from

`ftp.uu.net /packages/bsd-sources/share/doc.`

To format them properly for viewing and printing on the NeXT use nroff with the package indicated by the file suffix (e.g. to format the documentation file `0.t` use `nroff -mt 0.t`).

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, were omitted in 1.0, and have returned in updated form in *Supplemental Documentation* of the 2.0 Tech Docs (which is not available on-line).

Get NextAnswers for Digital Librarian from NeXT. The current versions are actually on `ftp.next.com` or available via the mailserver at `nextanswers@next.com`.

Get NeXT *Support Bulletin* from the archives. It is meant for support centers.

Another good source of information is the archives of previously posted notes from the `comp.sys.next.*` newsgroups. Note that since the split of `comp.sys.next`, there is a group archive maintained at `peanuts.leo.org:/pub/comp/sys/next/`.

NeXTstep Advantage book is available electronically from the archive servers.

The file name is `NeXTstepAdvantage.tar.Z`; (its compressed size is about 1.3 megabytes; uncompressed, it's about 9.5 megabytes). It is a good introduction to the NeXT programming environment.

2.15   How to get FTP files via e-mail.

Some ftp sites are configured as an e-mail archive server. This means you can upload and download files via e-mail.

```
Send mail to:      archive-server@cc.purdue.edu
-------------      mail-server@cs.tu-berlin.de
```

(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.

2.16   References on Objective C

Objective-C and other useful Object-oriented programming references:

Budd, Timothy, *An Introduction to Object-Oriented Programming* (Addison-Wesley) [It discusses Smalltalk, Object Pascal, C++ **and** Objective-C]

Cox, Brad J., *Object Oriented Programming: An Evolutionary Approach* ISBN 0-201-10393-1. (Addison-Wesley) [Note: 2nd edition - ISBN is 0-201-54834-8 and has coauthor A.J. Novobilski]

Huizenga, Gerrit, *Slides from a short course on Objective-C* available via anonymous ftp from: `sonata.cc.purdue.edu:/pub/next/docs/ObjC.frame.Z, ObjC.ps.Z, or OldObjC.wn.tar.Z`

Meyer, Bertrand, *Object-Oriented Software Construction* (Prentice-Hall).

NeXT Technical Documentation

Pinson and Weiner, *Objective-C: Object-Oriented Programming Techniques* (Addison-Wesley). 350 pages, ISBN 0 201 50828 1, paperback.

User Reference Manual for Objective-C which is available from Stepstone Corporation. (203)426-1875. Note: There are some differences between Stepstone's Objective-C and NeXT's.

2.17 How to contact music interested people.

Since NeXT has become for now the platform of choice for much of the computer music composition and research community, the newsgroup `comp.music` is one good place to find people with information and interest in music on the NeXT.

There is also a mailing list specifically for NeXT music. For posting to the dist list: `nextmusic@horowitz.eecs.umich.edu`

To subscribe, unsubscribe, change addresses, etc.: `nextmusic-request@horowitz.eecs.umich.edu`

2.18 How to announce upcoming events

Please send any announcements of upcoming NeXT-related events to `next-announce@digifix.com`

These events will be posted to `comp.sys.next.announce`. Be sure to send your announcement in plenty of time to have it posted prior to the event. One to two weeks in advance would be a good idea.

Since postings will be carried across many networks, commercial announcements may be edited down to reflect network usage policies.

Look for current guidelines posted weekly in the newsgroup.

2.19 Can I mix different hardware running NEXTSTEP?

Of course! NEXTSTEP is design to plug and play with existing NeXT installations. NeXT has addressed interoperability between NEXTSTEP systems in the following ways:

- NEXTSTEP systems share identical networking capabilities.

- NEXTSTEP systems share the same Distributed Objects.

- NEXTSTEP systems use the same system and network administration services.

- NEXTSTEP systems use the same mass storage format. Yes, you can take a external SCSI drive, removable media (e.g. Bernoulli etc) or floppy disk and use it interchangeably between NeXT Computers running NEXTSTEP.

2.20 Can I exchange software running on different hardware?

With the shipping of NEXTSTEP 3.x binaries are distributed FAT. This means, that a binary might include different versions of the executable for each hardware platform NEXTSTEP is running on. On the archive sites you might easily recognize the supported h

ardware by a key letter: `N = NeXT computers, I=Intel based, H=HP hardware, S=Sun hardware`. A FAT binary is runable by every supported hardware listed in the binary file. NeXT ships tools to examine such a fat binary and to add/strip different hardwa

re modules to/from a binary.

The correct spelling for a fat binary is: MAB binary (multi architecture binary) but most commonly 'fat' is used.

With the shipping of OpenStep this will change. OpenStep applications are only sourcecode compatible and have to be recompiled for each architecture. This implies that you need a compiler for future PD/SW/FW-software, although OpenStep for Mach will still

support FAT binaries and NEXTSTEP 3.x applications will continue to run under OpenStep for Mach.

Chapter 3

What is ...

This chapter tries to give you some overview over NEXTSTEP/OPENSTEP software and related software. For a detailed description you should contact the producer's WWW server. E.g. for more information about OPENSTEP contact `http://www.next.com/`

3.1 NEXTSTEP

NEXTSTEP is a complete development and user environment by NeXT it provides an unique GUI (graphical user interface), which currently gets copied by several other OS provider like Microsoft, combined with the currently most advanced and tested OS, named Mach. NeXT applied several changes to the Mach kernel to add special features which makes NEXTSTEP unique.

NEXTSTEP comes with a lot of development kits (bundles of classes to build on), like: Sound Kit, Indexing Kit, 3D Graphics Kit, Database or EOF Kit and Application Kit.

Bundled with NEXTSTEP are several user applications which enhance the daily use dramatically: NeXTMail (a MIME compatible mail application), Edit (a simple but powerful editor), FaxReader (for reading incoming faxes, you are able to send faxes from every application which supports printing), DigitalWebster (Webster's Ninth New Collegiate Dictionary and Collegiate Thesaurus), Digital Librarian (indexing and full text search utility, usable over groups of files) Preview (a PostScript and TIFF display utility), Terminal (UNIX terminal application for VT100 and TN3270 emulation), TeX (a well known compiler for formatted text), SYBASE and ORACLE adapters (to contact to SYBASE and ORACLE databases within EOF applications).

One special thing about NEXTSTEP is the display system. NeXT uses DPS (Display Post Script), which gives you true WYSIWYG on every NEXTSTEP system. The window server supports PostScript Level II, Interactive Render-

Man and Photorealistic RenderMan (an distributed engine for fast high quality rendering, based on Pixar's RenderMan).

To be used in networks, NEXTSTEP supports NFS, NetInfo, Novell Netware (as client only), Ethernet and Token Ring and different filesystems (Mac, DOS, ISO 9660, High Sierra, Rock Ridge).

For multimedia purposes NeXT uses Lempel-Ziv compression for text, Audio Transform Compression for Sound (comparable to Sony MiniDisc), JPEG for TIFF and Group 4 for Fax. Of course these are only standard modes and NEXTSTEP is extensible to use other methods too.

For system administration (remember that NEXTSTEP is using Mach as an UNIX derivate), NeXT supplies several administration applications which make it easy to configure NEXTSTEP as needed, like: SimpleNetworkStarter, UserManager, PrintManager, NFSManager, HostManager, NetInfo Manager, BuildDisk, Upgrader and the complete documentation and manual pages online.

3.2   Mach

Mach is the the basic OS layer NeXT uses for NEXTSTEP. It is a micro kernel, which means it is extensible at runtime. Micro kernel often stands for a small kernel size, too, but due to the compatibility to BSD 4.3 Mach is currently about 1MB in size.

Features of Mach are: loadable kernel services (extensions during runtime), different scheduling algorithms, an advanced messaging system, an advanced memory allocation mechanism (copy on demand, world wide message broadcasting), true multitasking, multi-threading and BSD compatibility.

3.3   OPENSTEP

OPENSTEP is the latest release of NeXT's NEXTSTEP with the ability to be OS independent (NEXTSTEP depends on Mach).

OPENSTEP is currently available for Mach, Windows NT and Solaris and will get available for other operating systems in the future.

The architecture of OPENSTEP was made public in late 1995 and since then GNU is working on a public port of OPENSTEP to e.g. X11 based UNIX systems.

To express the new standard, 'OPENSTEP/Mach' is now the correct spelling for the formerly named NEXTSTEP product by NeXT, but it is known that NeXT itself is still using the same version numbering scheme for at least the Mach product line, so the first release of OPENSTEP for Mach is equivalent to NEXTSTEP 4.0 and in fact the first OPENSTEP product is named 'OPEN-STEP/Mach 4.0'.

OPENSTEP is supposed to be an industry standard for developing object oriented, system independent, scalable solutions for client/server architectures. It was adopted by Sun, Hewlett Packard and Digital. It provides distributed applications through PDO (Portable Distributed Objects) and D'OLE (Distributed OLE) based on CORBA. The usage of EOF supplies object persistence with traditional relational databases. And finally with WebObjects, objects are accessible through the internet or in your own private network.

OPENSTEP, like NEXTSTEP 3.3 provides several kits for software developers like: Application Kit and Foundation Kit as well as Display PostScript.

Applications written for OPENSTEP are sourcecode compatible to all other architectures running OPENSTEP, although fat binaries are only available under OPENSTEP for Mach (because the binary format is depending on the operating system).

For the NEXTSTEP user OPENSTEP doesn't take away old known features. In addition with OPENSTEP for Mach you get Mach enhancements, an enhanced workspace manager, Perl5, TaylerUUCP, PPP and Samba.

Old applications will continue to run under OPENSTEP for Mach and need to be recompiled to run under Windows NT, Solaris, and other OPENSTEP platforms. Which goes side by side to become true OPENSTEP applications-

The following are some new advantages/disadvantages over the known NEXTSTEP product:

- documented NEXTIME library for developing

- faster message handling

- handling of disks ¿2GB in automatically. Paritioning size is still limited to 2GB.

- no Novell Netware support (supposed to be included with OPENSTEP 4.1)

- Renderman still included

- Indexing Kit available by third party (MiscKit)

- no more POSIX! (Hopefully included again in OPENSTEP 4.1)

3.4   Objective-C

To develop applications NeXT uses Objective-C as its native programming language. Objective-C is a more strict OO language then C++ but covers C as well as C++. Because NeXT uses the GNU C/C++ compiler, you go with the most spreaded and tested C compiler available for most UNIX platforms of today. (Of course you can use Objective-C on every platform on which gcc is available).

Objective-C is different to other languages in the way it executes code. Objective-C uses a runtime library to dynamically access objects at runtime. This allows you to change objects at runtime etc. All this goes with nearly no speed penalty, because hashing mechanisms are used to access the different methods of an object.

There is also ObjC which is an different product, available as a commercial compiler for different operating systems. Don't mix up things by using the expression ObjC instead of Objective-C. For shortcut purposes the NeXT community also uses the term ObjC/Obj-C but of course thinks of Objective-C by NeXT.

Objective-C isn't standardized, yet.

In Objective-C you are able to mix code. E.g. you can use C++ and C in any Objective-C program.

Objective-C is a simple and concise object-oriented extension to ANSI-C. It has a runtime messaging facility and offers dynamic binding. Distributed objects are supported and the code is optimized for native compilations.

It's syntax and programming technique is much like in SmallTalk. Using Objective-C you can even message objects in other applications, also over a network!

3.5   NEXTSTEP/OPENSTEP Developer

NEXTSTEP/OPENSTEP Developer is currently the only way to develop applications under NEXTSTEP because it includes all the necessary include files and libraries.(Of course you can get any GNU C version precompiled, but it won't help you without the include files and linker libraries).

In addition to a precompiled GCC, include files and the linker libraries you will get the famous NeXT developer tools: ProjectBuilder (your commando center for building applications and managing sources), InterfaceBuilder (for designing the application's GUI and making object connections), an graphical addition to GDB (GNU Debugger) integrated in Edit (NEXTSTEP) or Project-Builder (OPENSTEP), MallocDebug (for seeking memory leaks), HeaderViewer (access class information in header files and in documented form in a browser), DBModeler (for building data models, based on Database Kit) (NEXTSTEP only), Yap (an interactive PostScript interpreter and viewer), IconBuilder (a very simple but extensible pixel-based editor for creating icons) and popular UNIX utilities like GNU Emacs, yacc, lex, vi...

3.6   D'OLE

D'OLE is a shortcut for Distributed OLE. OLE is Microsoft's standard for Object Linking and Embedding and is currently not distributable across plat-

forms. With D'OLE you can distribute OLE objects across the network like e.g. in SOM by IBM. But D'OLE is more. It uses NeXT's object model PDO (Portable Distributed Objects) from Unix to Windows platforms and enables OLE objects to communicate with OPENSTEP objects natively, which means without changing the application. OPENSTEP objects behave like OLE objects and vice versa.

D'OLE also supports EOF (Enterprise Objects Framework) which enables a distributed computing environment to access database and provides an infinitely flexible choice of application deployment of application deployment strategies.

D'OLE uses the Foundation Framework, Distributed Object Framework and other core classes. It comes bundled with C/Objective-C compiler and GNU make, although Microsoft Visual C++ is required. Further you get a portable nmserver, Mach emulation and on-line documentation.

3.7 PDO — Portable Distributed Objects

PDO is a shortcut for Portable Distributed Objects. In the near future PDO will become CORBA 2.0 compliant.

It is the industry's first product to provide a heterogeneous client/server framework on objects. With PDO it is possible to deploy objects on non-NEXTSTEP server Machines and therefore deployed anywhere in a network, wherever they are most appropriate for a task.

PDO encapsulates low-level network protocols, making messaging a remote object as straightforward as messaging a local object. You even don't have to learn new programming tools or techniques, because PDO is a subset of NeXT tools and objects. Because PDO makes object location completely transparent to the application, the application communicates with every object the same way regardless wether it is local, in the local network or anywhere in the world.

Because of the free location of objects, objects may get moved to other locations, e.g. to optimize performance, without modification of the application using it.

PDO also runs on non-NEXTSTEP servers. It comes with it's own set of classes, libraries and even an Objective-C++ compiler, etc. Neverless you can build, maintain, etc. from any NEXTSTEP client connected to a PDO server. The tools used for building the final objects however are native to the server's OS.

PDO comes with Foundation Framework, Distributed Objects Framework, DOEventLoop and other core classes. Bundled tools are: Objective-C++ compiler, GDB, libg++, GNU make, Portable BuildServer, Portable nmserver, Mach Emulation, NEXTSTEP's default system, on-line documentation. Currently supported platforms are: HP-UX, SunOS, Solaris, Digital UNIX.

3.8 EOF — Enterprise Objects Framework

EOF is the latest replacement for the DatabaseKit and available as an extra product.

EOF bridges the gap between objects and relational databases. With EOF you can bring the advantage of object oriented design etc. to applications which use relational databases. (Therefore you don't need an object oriented database!)

EOF clarifies many things. It supports a three-tier client/server architecture by separating the user interface, business objects and the database. In fact you can simply exchange the database (by changing the adapter) and still use the same application!

Developing under EOF doesn't limit you to e.g. Objective-C. EOF allows the integration of e.g. 4GL code as well as SQL etc. all combined under the advantage of NeXT's developer tools.

EOF includes client and server software. It consists of the Enterprise Object Modeler, runtime libraries and adapters for SYBASE,ORACLE and Informix (other adapters available from the DBMS producers). It currently runs under HP-UX, SunOS, Solaris, Digital UNIX and always requires PDO. For client use you additionally need NEXTSTEP/OPENSTEP.

3.9 WebObjects

WebObjects helps you building dynamic Web pages. It is targeted to the server side of the Web and there mostly to the intranets, also most people might find it very useful for the Internet, too. It is operating system independent and runs under Windows NT, Solaris, HP-UX, Digital UNIX and NEXTSTEP/OPENSTEP.

WebObjects contains development tools to build components for your application logic, as well as a set of reusable components to manage the rendering of your application. Because WebObjects is Java compatible, you even can integrate Java applets in your application today. It supports the standard http servers which have to support CGI or NSAPI interface. WebObjects supports database access to Informix, Oracle, Sybase and DB/2.

What's unique about WebObjects is the ability to share the logic of your Web application and your data with other internal applications. It means that you are not required to maintain a dedicated database or write specific application code for your Web application.

Currently there are three versions of WebObjects: WebObjects, WebObjects Pro and WebObjects Enterprise. WebObjects itself is freely available to anybody interested in. WebObjects Pro contains PDO and WebObjects Enterprise contains PDO and EOF with a special license to connect to the Internet. But because WebObjects is a brand new product, look at `http://www.next.com/WebOjects/`

for further information.

WebObjects is free for academic usage.

3.10   WWW Browser

First: There is no Java capable browser.

Several NEXTSTEP browsers are available for NEXTSTEP. The currently
most advanced browser is named 'OmniWeb'. OmniWeb is commercial in the
way that you need a license to use it in a network. A single user license is free.
OmniWeb seems to be continuously updated and support is known to be good.
OmniWeb is also supporting a lot of well known Netscape features.

There is also a public domain WWW browser named 'SpiderWoman'. It's
plus is the NEXTSTEP look and feel (e.g. you navigate through the Web like
you navigate your filesystem with WorkspaceManager). Anyway SpiderWoman
is somehow unstable and it seems as if development stopped.

Another commercial browser is NetSurfer. Demos are available on the ftp
sites. This browser is preferred by several people because it integrates ftp access
very well. Anyway you have to pay for it.

Netscape isn't available for NEXTSTEP and is unlikely to be ported.

3.11   Newsreader

There are currently four well known newsreaders for NEXTSTEP.

First there is Alexandra, a public domain newsreader and second there is
NewsGrazer (and unsupported NeXT product). You should test them to get
your personal favorite. The only real difference is the support of NEXTSTEP
3.3J (Japanese) and flatfiles in NewsGrazer, while the interface in Alexandra
seems to be better for many people.

NewsFlash is a commercial product which adds several features. As Radical-
News it supports article threading, automated posting and extraction of multi-
part files. Demos are available on the ftp sites. E-mail inquiries should go to
`support@wolfware.com`. Further info is available at: `http://www.wolfware.com/`

RadicalNews is a commercial newsreader. It supports true article thread-
ing, quoted text highlighting, japanese and Latin-1 support, URL-support, an
interface to Digital Librarian, a sophisticated coloring scheme and much more.
Info is available at: `http://www.radical.com/`.

A note to both commercial versions: the community is very splitted about
which version is to prefer. In general it seems as if there are no really 'killer
features' so it prefers much to personal taste. Demos are available and don't
forget to test the free versions, too!

Chapter 4

Miscellaneous information

4.1 How do I get pictures of people from remote sites to appear in Mail.app and News-Grazer?

You can do this in the following ways.

- **Mail**

  In `/LocalLibrary/Images/People` put a tiff (64x64) in the form of `person@remote.site.domain.ti`
  (all lowercase). In `/LocalLibrary/Images/People/passwd` add an entry
  for the person:

  `person@remote.site.domain:*:-2:-2::/nodir:/noshell`

  (person and sitename need to be all lowercase as well) In the future anytime you get mail from the person their picture should appear.

  You can include an "aliases" file in `/LocalLibrary/Images/People` too.
  This allows you to use the same picture for somebody that might send
  you mail from accounts on many different sites, or for those people whose
  letters use several different routings.

  To do this, you include entries in this local aliases file like so:

  `bkohler@ucrac1.ucr.edu:bkohler.gonzo.ucr.edu`
  `gonzo.ucr.edu!bkohler@uupsi2.uucp:bkohler.gonzo.ucr.edu`

  There should then be a `.tiff` file called `bkohler.gonzo.ucr.edu.tiff`.

  There can be no CAPITAL LETTERS in this file. So even if the address
  in the From: field looks like `gonzo.ucr.edu!bkohler@uupsi2.UUCP`, keep

the letters lowercase in the aliases file. As always, you have to restart `Mail` before these changes take effect.

- **NewsGrazer**

  In **/LocalLibrary/NewsGrazer/People** put a tiff (64x64) in the form of **person.remote.site.domain** (all lowercase). This is a different naming convention from what `Mail` uses.

  There is a large archive of some 4000 or 5000 pictures prepared for this purpose. The name of this archive is `Faces3.tar.Z` and it is about 4.1 MBytes large. Currently it is available from several anonymous ftp sites (e.g. `sonata.cc.purdue.edu` in: `/pub/next/graphics/Images/icons/people`)

  That image archive also contains a script which automatically creates proper alias and passwd files.

4.2 How to manipulate and examine default settings

- A command line utility for examining defaults is available from: `sutro.sfsu.edu:/pub/wmdefaults1`

- A PD App, `DefaultMgr.app`, is available on the NeXT ftp archives.

- A more brute approach (done by DefaultMgr.app):

  Start the application under gdb, and then try the following sequence of commands:

```
break  *0x500976a
commands 1
silent
printf "%s: ", *$a2
output {char *}(4+$a2)
echo \n
cont
end
run
```

[Carl Edman <cedman@capitalist.princeton.edu>] adds:
DefaultMgr.app doesn't any longer work properly under 3.0. It still is able to manipulate defaults but can't any longer "investigate" apps to find out which defaults they use.
[eps@toaster.SFSU.EDU (Eric P. Scott)] adds:
Needs to be revised for 3.x systems. wmdefaults is only for 2.x; it's not needed for 3.0 and later.

4.3 How do I run NextApps remotely?

On the local machine make sure you have public window server access, this is set from the Preferences application. On the foreign NeXT machine run the application from a terminal window with the `-NXHost <local_machine_name>`. Both machines should be running the same version of NeXTstep.

[shayman@Objectario.com (Steve Hayman)]

NeXTSTEP 3.1 and higher includes a demo application called OpenSesame that simplifies this. You can select a program in Workspace and use `> Service > Open Sesame > Open on Another Host` ...to launch a program on a remote machine. This is a way to run old, non-fat-binary software on new NeXTSTEP/Intel machines.

4.4 Why does UUCP hangs on outgoing connections after sending the password, but other communications software do not have a problem with it?

What is happening is that the remote machine is waiting for you to end your login or password by typing a "Return" (aka M̂ or CR or CARRIAGE RETURN). UUCP ends a line by sending a LineFeed (aka Ĵ or LF). Since UUCP doesn't send the CR, the login sequence is never completed, and you will usually get one of two error messages:

```
wanted "password:" (means that username needs to end with a CR)
imsg waiting for SYNC< (means that password needs to end with CR)
```

So how do you get UUCP to send `CR`, instead of `LF`?
End the send string with the sequence

`n`

`c`. For instance this line in `L.sys` will send a `LF` after login, but a `CR` after password.

```
myfeed Any DIR 9600 cub "" ATTD19095551212 9600 \
"" ogin:--ogin: Unext ssword: secret\n\c
```

4.5 How do I access the NeXT's Digital Webster Dictionary from a program?

Get Jiro Nakamura's define program from the archiver servers: `define.tar.Z`. This will allow you to access the database from the command line. This program

breaks under 3.x. For 3.x there are two other programs which might be useful: `Webster.a5` and `websterd`.

4.6   How do I get the arrow keys to work in csh?

This is for people who use a terminal app that does vt100 keyboard emulation - pasc

First, add these lines to your `.cshrc` (preferably between the if and endif):

```
set editmode=emacs
set macrofiles=.macros
```

Then create a file called `.bindings` and put in it:

```
bind-to-key ExecuteNamedMacro '\e['
```

And, next, you need to make a file called ".macros". Using an editor like emacs (which can insert control characters using a $\hat{Q}$ prefix), into this file put:

```
A^@^@^@^A^P
B^@^@^@^A^N
C^@^@^@^A^F
D^@^@^@^A^B
```

where @ means `Control-@` and means `Control-A`, etc. Also, don't put in the leading spaces. This will set up the left and right arrows to move back and forth on the line, and the up and down arrows will cycle through your history.

On Intel machines these sequences are a little different:

```
A^A^@^@^@^P
B^A^@^@^@^N
C^A^@^@^@^F
D^A^@^@^@^B
```

Then source `.cshrc` and the changes should take effect.

4.7   What default affects menu location?

Do the following.

```
dwrite GLOBAL NXMenuX <value>
dwrite GLOBAL NXMenuY <value>
```

4.8 How to get Gourmet to boot up the Mathematica 2.0 kernel?

Login as root, or get root privileges running `su`, and execute the following five commands:

```
mkdirs /NextApps/Mathematica.app/Kernel/NeXT
cd /NextApps/Mathematica.app/Kernel
ln -s uuuuu/Mathematica.app/Kernel/Display Utilities
cd NeXT
ln -s vvvvv/math mathexe
```

where `uuuuu` is the directory where `Mathematica` was placed (typically, `/LocalApps`) and `vvvvv` is the directory where the executable `math` was placed (typically, `/usr/local/bin`)

4.9 Manipulating the Loginwindow

There are some for loginwindow:

`[Jess Anderson writes:]`

Here, I hope, is the quasi-definitive story on dwrites that affect the loginwindow. I'm indebted to several people, notably Art Isbell, Kristian Koehntopp, Dan Danz, Louie Mamakos, John Kheit, Felix Lugo, and Paul Sears, for some of the information presented here.

Remember that dwrites are not supported by NeXT; they may change with any subsequent system release. These I've checked out using 3.0; some or all may work with earlier releases, but I can't vouch for most of them.

All these dwrites must be done as root. You can also run as root and use DefaultMgr to set them (which is a whole lot more convenient if you're intending to fiddle with some of them).

After setting the things you want, restart the WindowServer by logging out of the current session and typing exit ¡cr¿ on the login panel.

OK, here's what we know (or think we do :-):

```
dwrite loginwindow DefaultUser <login-name>
```

Most new machines have `<login_name>` set to me. This dwrite logs in user `<login_name>` automatically. User `<login_name>` must not have a password set, hence **don't** use this in a networked environment!

```
dwrite loginwindow HostName "<host_name>"
dwrite loginwindow HostName localhost
```

These cause your host name to appear on the login panel. You need quote marks only if there's a space in the name. The first form hard-codes the name into root's defaults database. The second form uses whatever name has been set as localhost in NetInfo, which is convenient for networked machines.

The font, size, color, and position of the printed string are not accessible (drat!).

```
dwrite loginwindow ImageFile <path/to/a/suitable.tiff>
```

This uses the tiff image pointed to instead of the standard one (in `/usr/lib/NextStep/loginwindow.app` `<language>.lproj` as appropriate for your main language) as the login panel. Be sure you get the pointer right, though, or you'll have to boot single-user to fix it. In practical terms, the image is constrained in various ways I won't detail here.

```
dwrite loginwindow TimeToDim <integer_number>
```

No relation to the dim time set by Preferences. The units are odd, I think. Felix reported them as 1/34 second. However, when I changed it to 1020, I got 15 seconds to dimming, and 680 gives 10 seconds, that I'm sure of. So I think the units are 1/68 second. Maybe Felix just thought it was too damn long! We all know it **seems** longer when you're not having fun waiting. :-) Whatever, the login screen dims to about half after this length of time.

```
dwrite loginwindow MoveWhenIdle YES
```

This causes the panel to move around approximately in Backspace bouncing-off-the-walls-tiff fashion. The point is to avoid burning the screen phosphors, as a static image would tend to do. The animation is controlled by the next couple dwrites.

```
dwrite loginwindow MovementTimeout <real_number>
```

The units are seconds. The panel starts moving (assuming the preceding is set to YES) after this time. If you set it to be less than the TimeToDim time, the movement starts before the dimming occurs. I did not try zero. I can't stand waiting around for things to happen, so I use 10 seconds for both times. The default appears to be 5 minutes.

```
dwrite loginwindow MovementScale <integer_number>
```

No movement occurs if this is set to 1. But it looks like the units might be approximately pixels for each change of position (the frequency of which is controlled by the next dwrite). If you put a big number here, say 200, the image moves in big jumps, but I don't know if the 200 is divided up somehow between change in x- and y-coordinates. I wouldn't worry about it much, just set it to something you like. Since my image contains readable text, I want it to scroll smoothly around, so I use the apparently minimum value, 2. The default appears to be 10.

```
dwrite loginwindow MovementRate <real_number>
```

The units are seconds. The image jumps by the amount above every this many seconds. The default is 0.0666 seconds. Bigger numbers mean slower motion. Since I don't like things being too jumpy or zooming around, I set this to 0.1 seconds. This makes my image ooze at a pace befitting an elderly person like me.

```
dwrite loginwindow PowerOffDisabled YES
```

This makes it a little harder to turn the machine off; you have to use the monitor or the minimonitor (`<right-command>-`) if it's set, rather than the `<power>` key.

```
dwrite loginwindow LoginHook <path/to/loginhook/executable>
dwrite loginwindow LogoutHook <path/to/logouthook/executable>
```

Pointers to the login and logout hooks, if used. It should be pointed out that some of these things (login/logout hooks, for example) are maybe more logically set where the loginwindow is invoked by the WindowServer, namely `/etc/ttys`.

There are yet others. Here's the full list (thanks, Art):

```
NXGetDefaultValue("loginwindow", "DebugHook") => 0x0
NXGetDefaultValue("loginwindow", "DryRun") => 0x0
NXGetDefaultValue("loginwindow", "WindowServerTimeout") => 0x0
NXRegisterDefaults("loginwindow", 0x16024)
KeyMapPath: 0x12d97
"~/Library/Keyboards:/LocalLibrary/Keyboards:/NextLibrary/Keyboards"
Keymap: 0x12de1 "/NextLibrary/Keyboards/USA"
SwappedKeymap: 0x12e0a "No"
LoginHook: 0x0
LogoutHook: 0x0
HostName: 0x0
ImageFile: 0x0
DefaultUser: 0x12e41 "me"
PowerOffDisabled: 0x0
TimeToDim: 0x12e69 "2040"
MoveWhenIdle: 0x12e0a "No"
MovementTimeout: 0x12e8b "300.0"
MovementRate: 0x12e9e "0.06666"
MovementScale: 0x12eb4 "10"
```

[Christopher J. Kane kane@cs.purdue.edu]
Under NeXTSTEP 3.1, the login window has two buttons labeled "Reboot" and "Power" that allow a user to reboot and power down from the login window.

In a public lab, this feature may be undesirable. The PowerOffDisabled default can be used to disable the buttons, but they are still shown in the window and push in when clicked (a bad user interface decision, IMHO).

The program below patches `loginwindow` to eradicate the restart and power buttons. It makes the `loginwindow`'s LoginButton class instance method `initWithImage:altImage:andSt` a no-op (just return nil). This patch has been applied to the machines in the NeXT lab at Purdue (like `sonata.cc.purdue.edu` for instance), and no adverse effects have been noted.

This program must be run as root, since it writes to the file `/usr/lib/NextStep/loginwindow.app/log:`

An archive with a compiled executable has been submitted to `sonata.cc.purdue.edu`.

```
/*
 * Patches the loginwindow.app to eradicate the restart and power
 * buttons from the login window.
 *
 * Christopher J. Kane (kane@cs.purdue.edu)
 * Released into public domain; August 13, 1993.
 */

#include <libc.h>
#include <errno.h>

void main(int argc, char *argv[])
{
  unsigned char patch[8] = {0x0, 0x0, 0x42, 0x80, 0x4e, 0x5e, 0x4e,
  0x75};
   int file = open("/usr/lib/NextStep/loginwindow.app/loginwindow",
O_WRONLY);
  if (-1==file)
    goto error;
  if (-1==lseek(file, 21170, SEEK_SET))
    goto error;
  if (-1==write(file, patch, 8))
    goto error;
  if (-1==close(file))
    goto error;
  exit(0);
error:
  fprintf(stderr, "%s: %s\n", argv[0], strerror(errno));
  exit(1);
}
```

FAQ-Authors note: We strongly recommend to do a backup of the login-window application, because the patch alters the file directly and will most likely not work on different versions of the OS.

4.10 How does one set UNIX man pages to be viewed in nroff format with DL like the standard manual pages in NS2.x?

Beyond looking in the man pages under ixBuild, etc., what you want to do is put a few files (contents listed below file name) the `.index` directory:

```
.roffArgs:
-man
```

```
displayCommand:
tbl %s | nroff -man
```

```
ixBuildOptions:
-fman -Nwhatis -Ncat[1-8ln] -V
```

Other options that people suggested for ixBuildOptions:

```
-fman -Nwhatis -Ncat[1-8] -V /usr/local/man
-fman -Nwhatis -V /usr/local/man/man*
```

I don't think you need to explicitly name the directory in the first alternative, but you do in the second unless you want the `cat*` directories indexed as well.

Note: Do NOT leave a trailing return after the line in `ixBuildOptions`; DL will barf. (I think someone said that, as shipped, the standard man `.index/ixBuildOptions` had this problem.)

[From: Eric D. Engstrom <eric%basilisk@src.honeywell.com>]

Can anyone tell me what the command line for this might be under NEXTSTEP 3.0?

Short answer: RTM on ixbuild(1) - specifically the parameter "-g".

In addition, I'd like to inform the newsgroup of a simple hack I setup on my own machine to create a unified DL target for all UNIX Manual pages (including system, local, gnu, whatever). This was easier under 2.x because IXBuild (pre IXKit) had more hacks in it...

Basically, you need to setup a directory with sym-links to the various man-page directories; For example:

```
(397)basilisk% pwd
/LocalLibrary/Documentation/ManPages
(398)basilisk% ls -alg
total 728
drwxrwxr-x  2 eric      wheel        1024 Mar 28 18:03 ./
drwxrwxr-x 11 root      wheel        1024 Mar 27 00:41 ../
-rw-r--r--  1 eric      wheel         370 Feb 27 22:01 .README
```

```
-rw-rw-r--  1 eric     wheel          872 Feb 27 17:11 .dir.tiff
-rw-rw-r--  1 eric     wheel           20 Feb 27 17:11 .displayCommand
-rw-rw-r--  1 eric     wheel           47 Feb 27 17:10 .index.iname
-rw-rw-r--  1 eric     wheel            6 Feb 27 17:10 .index.itype
-rw-r--r--  1 eric     wheel       729088 Mar 28 18:44 .index.store
-rw-rw-r--  1 eric     wheel            5 Feb 27 17:11 .roffArgs
lrwxrwxrwx  1 eric     wheel           18 Feb 27 17:53 gnu ->
/usr/local/gnu/man/@
lrwxrwxrwx  1 eric     wheel           14 Feb 27 17:53 local ->
/usr/local/man/@
lrwxrwxrwx  1 eric     wheel            9 Feb 27 17:53 news ->
/news/man/@
lrwxrwxrwx  1 eric     wheel           35 Feb 27 17:53 system ->
/usr/man/@
```

Notice that I also copied all the `.[a-z]*` files from the `/usr/man/` directory as well.

Then, use `ixbuild -gl` to (re)build the index. If your any of the links point to directories on other devices, add "d" to "-gl". "-v" will give you verbose output (like my writing style ;-). RTM under ixbuild(1) for more info.

Unfortunately, once the index is built, I've never successfully gotten DL to update it correctly. Instead I have to do it by hand using `ixbuild -ogldvc` (actually, I setup a cron job to reindex weekly.)

If you have troubles, try removing the .index.store file and rebuilding the entire database. I've had intermittent problems with ixbuild under 3.0.

4.11   Appending a signature and addition headers to your e-mail

There is a bundle for Mail to which, beside other features, allows you to add a `.signature` file to outgoing e-mails: `EnhancedMail.bundle`. This software package is available by the FTP archive sites.

Here are other solutions which might serve you as well:

[Carl Edman <cedman@capitalist.princeton.edu>]

First create a simple text file the following content:

```
#!/bin/sh
{
if test -r ${HOME}/.add-header; then cat ${HOME}/.add-header; fi
cat -
if test -r ${HOME}/.signature; then echo "--"; cat ${HOME}/.signature;
fi
}| /usr/lib/sendmail "$@"
```

A good name for this file would be `sendmail-addheader`. If you want to and can install it for system-wide use put this file in e.g. `/usr/lib`. Otherwise your private `/Unix/bin` directory is also fine. Make certain that this file has execute permission. To set that, use e.g. `chmod 755 /usr/lib/sendmail-addheader`.

Next, open up the preferences panel in `Mail`. Switch to the expert options. Change the Mailer option from `/usr/lib/sendmail` (which it should originally be) to `/usr/lib/sendmail-addheader` (or whatever the name of the file you created is). OK this and you should be set.

From now on your file /.signature file should always be appended to all mail sent out with Mail.app. In addition if you have a file called add-header in your home-directory it should automatically be prepended to your outgoing mail. To implement a reply-to line, you would simply give it the following content:

```
Reply-to: My Real Human Name <name@my.real.address>
```

IMPORTANT: Make certain that you have one and exactly one newline at the end of `/.add-header`. Anything might break outgoing mail. Beware!

BUG: The `/.signature` file is not added properly for NeXT mail containing attachments. The headers will still be added properly. This could be fixed but probably is more of a hassle than it is worth.

[From: jbrow@radical1.radical.com (Jim Brownfield)]

I have added a Terminal Service to terminal to add a signature file whenever I type ¡command¿ "0" (command/zero), and I thought this might be of interest to people who read your FAQ. I have used this technique for over a year with no problems, and it has the advantage of working both with non-NeXT and NeXT Mail.

First, you must create a file with your signature containing the characters "−" on the first line (there has been some discussion as to whether this should be "− " ("−" followed by a blank), but my file only has the "−" as the first line. The rest of the file should contain your normal signature. If you place the file in your home directory, I recommend NOT using the filename ".signature" for this file since it may conflict with other programs (like NewsGrazer). I use the filename ".fullSignature". The file used for the signature should be ascii and not RTF to allow the file to be used for NeXT and non-NeXT mail.

You can create a "Get signature" service by launching Terminal and accessing the "Terminal Services" window through the "Info/Terminal Services..." menu item. Then perform the following:

1. Create a new service by clicking on the "New" button. Change the service name to "Get signature".

2. Add the command "cat ¡full-path-name-to-your-signature-file¿" and "0" (zero) to the "Command and Key Equivalent" entry. The "0" is obviously arbitrary, but I've found that it doesn't conflict with any of the commands I normally use.

3. De-select any items checked within the "Accept" grouping. Select the "As Input" radio button under the "Use Selection" section.

4. Change the "Execution" popup to "Run Service in the Background". Select the "Return Output" and "No Shell" radio buttons.

5. Click the "Save" button.

Now, when you type ¡command¿ "0" (actually, from any application), your signature will be added wherever your cursor is located (be careful not to have text selected as it will replace the selected text with your signature). I have found this to be very convenient for adding my .sig to outgoing mail.

4.12 How can I quickly find a file if I don't know its directory?

The Unix `find` command on the NeXT has the capability of quickly searching a database of all the files. This database is located in `/etc/find.codes` and has to be generated periodically. You can automatically generate this database, say twice a week at 3:15 a.m., by adding this line to your file `/etc/crontab.local` (you might have to create this file).

```
15 03 * * 2,5 root /usr/lib/find/updatedb > /usr/adm/updatedb.err
```

After this has run, you can quickly find any file from a terminal by typing `find <pattern>` where `<pattern>` is a part of the file name you want (it is case-sensitive).

[Carl Edman <cedman@capitalist.princeton.edu>] adds:

Find still works under 3.0, but `<pattern>` now has to match the entire filename (including the path) for a match to be recognized i.e. where under 2.x you would have `find foobar`, under 3.0 you have `find '*foobar*'` (The ' are necessary to prevent the shell from expanding the wildcards itself).

[From: Geert Jan van Oldenborgh <gj@csun.psi.ch>]

I find the following script in `/usr/local/bin` very handy to bring back the behavior that God Intended `find` to have:

```
#!/bin/csh
if ( $#argv == 1 ) then
/usr/bin/find \*$1\*
else
set noglob
/usr/bin/find $argv[1-]
unset noglob
endif
```

4.13   Mail.app suddenly stopped working!

When I double-click the Mail.app icon it loads and seems to start but then just terminates. How can I fix this ?

Usually the problem is caused by Mail.app being terminated with extreme prejudice such as by a power outage or `kill -9`. Under those circumstances Mail.app may leave a lock file in your active mailbox. Due to a bug 3.0 Mail.app doesn't ask for permission to override this lock when started up again but just dies. Open a shell and look in `/Mailboxes/Active.mbox`. If this directory contains a file called `.lock` you have found the culprit. You can safely remove this file.

4.14   Recycler doesn't work anymore?!

For some reason, after moving my home directory, my recycler no longer works?

[From: `eric%basilisk@src.honeywell.com` (Eric D. Engstrom)]

Basically, when you dump a file in the recycler, the workspace manager (attempts) to move it to one of the following locations:

(note: no order implied here, because I'm unsure of the actual order used)

```
- $HOME/.NeXT/.NextTrash
(Should always exist; unsure what happens if it doesn't)

- /tmp/.NextTrash_$USER
Automatically created if non-existent)

- $MNT-POINT/.NextTrash/$USER
(.NextTrash NOT automatically created if non-existent)
```

Also, the workspace requires that the trash directory into which it puts the to-be-deleted file be on the same disk partition that the file originally came from (for speed, I assume).

Also, an example of the permissions for the external disk .NextTrash directory (which is not automatically created) should be :

```
ls -aldg  /private/mnt2/local/.NextTrash
drwxrwxrwt [...] /private/mnt2/local/.NextTrash/
```

Note: `/private/mnt2/local` is the mount point. Do `chmod 1777 .NextTrash` to get the permissions right.

Thus, if you moved your home directory from one partition to another, the one you left may not have a "recycler-repository" to use.

4.15 How to hear sound from CDPlayer.app thought NEXTSTEP system?

To hear sound, the following info is important.

`[Carl Edman <cedman@capitalist.princeton.edu>]`

Hearing the sound directly on the NeXT can be done with the play3401 program from the archives if you have a Toshiba 3401 series drive. Theoretically this can also be done with NEC [78]4-1s and Apple CD 300s, though I know of no NeXT program which supports them. Most other drives (including the NeXT CD-ROM) just don't have the hardware to do it.

There is another player available: CD_evil, which is based on play3401 but offers a GUI.

FAQ-Authors note: On Intel system it's very easy: just connect the CD-Audio out (internal) to your CD-in of the soundcard (internal).

Anyway there are problems with different drives. E.g. we know, that the Toshiba, Sony and Nec drives **currently** use the same instruction set to access audio data. So be aware that there are drives which simply can't be accessed through CDPlayer.

4.16 How do I decompress a file with the extension `.compressed`?

Do this with the following methods.

`[From:  sanguish@digifix.com]`

`.compressed` files have been compressed in the Workspace Manager. Basically, they are just `.tar.Z` files. Even single files are tarred as well as compressed.

There are several methods of decompressing these files.

1. They can be decompressed by selecting them in the Workspace, and Selecting uncompress from the file menu.

2. They can be decompressed by selecting them in the Workspace, and bringing up the Workspace Inspector. (You can double click to get there faster)

3. You can rename them to be .tar.Z and handle them the way you do them.

FAQ-Authors note: use `uncompress` to access the `.Z` files and/or `gunzip` to access `.z`/`.gz` files. Use `tar` to access `.tar` files. You might also you `gnutar` to access both together, e.g. to access a `.tar.gz`

at once. Read the man pages for more information.

4.17 How do I change the Workspace compression app?

Change it with the given method.

[Stephen Peters <SPETERS.93Aug23144549@samsun.us.oracle.com>]

You can change the tools that the Workspace uses to create and read its `.compressed` files by issuing the following commands in a terminal window:

```
dwrite Workspace compress /usr/bin/gzip
dwrite Workspace uncompress /usr/bin/gunzip
dwrite Workspace AlwaysTarForCompress YES
```

[Reuven M. Lerner reuven@the-tech.mit.edu]

This is generally a good thing, except that people might follow your advice and then try to send NeXTmail to someone who is still using `compress/uncompress`. Changing Workspace/uncompress to gunzip isn't a problem, since it uncompresses all sorts of files, but people should be very careful not to change Workspace/compress to gzip unless they will only be dealing with other gzip-equipped users.

4.18 console: `loginwindow: netinfo problem - No such directory.`

The netinfo problem is because the `/keyboard` directory is missing. It's benign... but annoying.

```
niutil -create . /keyboard
```

Fixed in 2.1 and up.

4.19 Root login not possible on client machine

A number of people have complained about the situation where root can log onto the configuration server, but not its clients. Login proceeds normally, then a window with "Workspace error Internal error (signal 10)" pops up. Other users are not affected.

This scenario occurs with NetBooted clients that are not permitted root access to / via the server's `/etc/exports` file, either via an explicit `root=` option or (the most heinous) `anon=0`. For security reasons many sites will NOT want to permit such access.

Note that what you're up against is only a Workspace Manager misfeature; there's no problem logging in as root on the real UNIX console, or logging in as a non-root user and then using "su" to obtain root privileges.

Root access is needed to:

- Log in a root Workspace.

- Perform BuildDisk on a client.

- Run the GuidedTour demo for the first time subsequent invocations will not autologin, but they will run just fine if you log in as NextTour (no password).

It is not required to perform updates on the local NetInfo database, for any normal user operations, nor to run programs requiring root access on the server using `-NXHost`.

4.20 How to boot NEXTSTEP from the second (higher SCSI ID) HD?

Use the following command.

```
bsd(1,0,0) -a
```

which will then ask you for the drive to use as the root disk, or still easier,

```
bsd(1,0,0)sdmach rootdev=sd1
```

In the boot command the name of the bootfile can be replaced by `'-'`. This is very useful as the length of the bootcommand which can be stored in the permanent memory is very limited (on NeXT machines only). So the only way to eg. increase the number of buffers permanently to 128 in the boot command is to use the following boot command: `sd- nbu=128` (`sdmach nbu=128` would have been too long).

4.21 How to make swapfile shrink to the *normal* size?

The swapfile is located in `/private/vm`. The only current way to make it shrink is to reboot the machine.

See the man pages for `swaptab` for more information. Note, that putting a space after the comma in `/etc/swaptab` (`lowat=<number>,hiwat=<number>`) makes swapon ignore the hiwat entry.

There is a short trick which seems to work for several people: type `exit` in the login panel. This will exit the window server and restart it immediatly. If you are lucky, this will reclaim some space.

4.22 Does netinfo work between machines running NEXTSTEP 2.x and 3.x?

Yes.

4.23 Why does the console user "own" the external disk filesystem?

You need an entry in `/etc/fstab` so the disk will be mounted at boot time, rather than being "automounted" when somebody logs in. Automounted disks are owned by whoever logged in, fstab-mounted disks are owned by root. Something like this:

```
/dev/sd0a / 4.3 rw,noquota,noauto 0 1
/dev/sd1a /Disk 4.3 rw,noquota 0 2
```

(assuming the external disk is to be mounted as `/Disk`)

`fstab` should be niloaded into the Netinfo database if it contains any NFS mounts.

4.24 How to limit coredump sizes?

Limit it by the following command.

This will work for apps running from a shell.

```
limit coredumpsize 0
```

If your dock or workspace apps are dumping core, there's also:

```
dwrite Workspace CoreLimit <bytesize>
```

4.25 What is the maximum value of nbuf that I can specify on bootup?

I know the ROM monitor only allows twelve characters, but I use something like this:

```
bsd sdmach nbuf=xxx
```

(NeXT machines only) Enter the hardware monitor. Hit 'p' to adjust the configuration parameters. It will respond: `Boot command:   <something>`? Enter `sd- nbu=xxx`, where xxx is a number less than 256.