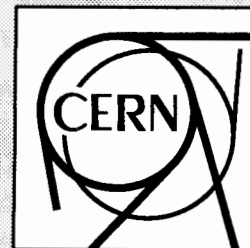


CERN COMPUTER NEWSLETTER

CREMEL
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RES-S/IT-US



CERN - IT Division
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Merry Christmas! Happy 1998!

Information for Authors and Readers

The CNL Web home page is at URL: <http://consult.cern.ch/cnls/>

Past experience shows that it is a good policy to have four CNL editions per year (one around Easter, one before and one after the summer, and the last one just before Xmas), unless the number of contributions makes it necessary to have a supplementary issue, or to cancel one. Accordingly,

the deadline for contributions to the next issue of the CNL is:

Issue number	Deadline
230	Monday 2nd March 1998.

Contributions to the CNL in HTML will be preferred, although plain text is also acceptable. Articles, news items and letters intended for publication in the next issue should be *sent directly to the editor* (Cnl.Editor@cern.ch) with no particular subject line required.

The opinions expressed in this newsletter are those of the contributors and are not necessarily those of the CERN Management. The Editors reserve the right to edit or omit articles, or hold-over copy due to lack of space.

This CNL issue is available on WWW at the URL <http://consult.cern.ch/cnl/229>

This document was produced from the HTML master and translated into $\text{\LaTeX}$ with the `gf` program. It was then somewhat edited by hand and typeset using the `cerncnl` class. Please note that this printable version may differ a little from the original HTML source file. In any case the Web version (HTML) must be taken as the reference. A (compressed) PostScript file, containing the complete printable version of this CNL can be obtained by anonymous ftp to `asisftp.cern.ch` as follows (commands to be typed by the user are underlined):

```
ftp asisftp.cern.ch
Name (asisftp:username): anonymous
331 Guest login ok, send your complete e-mail address as password.
Password: yourusername@yournode.domain.country
ftp> cd cnl/229
ftp> binary
ftp> get cnl229.ps.gz (or get cnl229.ps)
ftp> quit
```

Please note that, if you do not have the `gnu gunzip` utility on your system you can get the uncompressed PostScript version by typing the command `get cnl229.ps`, without the `gz` suffix. In order to save Internet bandwidth, you are, however, strongly urged to try and install the `gunzip` utility since gzipped files are about three times smaller than their unzipped equivalents.

If you want to subscribe to the `cern-cn1-announcement` mailing list, in order to receive a mail whenever a new issue of the CERN Computer NewsLetter is available on the Web, you can fill in the form at URL:

<http://consult.cern.ch/cnls/cnl-announcement.html>

or directly send a mail (with your exact e-mail address) to the editor (Cnl.Editor@cern.ch).

If you want to receive a copy of the paper version of the CNL (at CERN or at your home institute), fill in the form at URL:

<http://consult.cern.ch/cnls/register.html>

or send an e-mail (with your exact postal address) to Cnl.Registration@cern.ch

N.B. You can cancel your subscription in both cases by filling in the appropriate form accessible from our Web page at URL:

<http://consult.cern.ch/cnls/>

Responsible editor: Nicole Cremel

Technical co-editor: Michel Goossens

IF YOU NEED HELP (Contacts at CERN)

Please use generic electronic mail addresses whenever possible. These mailboxes will be read even when the usual specialist is absent. It is helpful to use relevant keywords in the subject field of your message. Contact specialists directly only for very urgent cases or for very general consultations.

Service	Name	Address	Telephone	E-mail Address
USER SUPPORT				
User Consultancy Office (UCO)		513/R-052	74952	User.Support@cern.ch
Opening hours: Monday 10:00-12:30 and 14:00-17:30, Tuesday-Friday 9.00-12:30 and 14:00-17.30				
Help Desk	R.Woolnough	513/1-020	74952,79156	User.Support@cern.ch
User Registration	M.C.Perler	513/1-017	75004	User.Registration@cern.ch
Accounting Service	A.Koppanyi	513/1-016	74933	User.Support@cern.ch
Computer Book Selling Service	M.Franceschi	513/1-022	72371	COBS.Service@cern.ch
CENTRAL COMPUTER OPERATIONS				
Central Computer Operators (24/24 hours on call)		513/R-049	75011	Computer.Operations@cern.ch
CERNSP (IBM SP2/AIX)	H.Renshall	513/1-016	72377	Harry.Renshall@cern.ch
Work Group Servers	T.Cass	31/1-017	78724	Tony.Cass@cern.ch
<i>Public Login Servers (interactive UNIX servers)</i>				
- HPPLUS (HP/HP-UX)	T.Smith	31/1-013	73713	Tim.Smith@cern.ch
- DXPLUS (DEC-ALPHA/Digital UNIX)	A.Miotto	31/1-021	79576	Alessandro.Miotto@cern.ch
CORE Services				
- CSF (Simulation Cluster)	V.Doré	513/R-031	72397,13+3830	Csf.Support@cern.ch
- SHIFT (Reconstruction Cluster)	F.Hemmer	31/3-006	76104,160128	Frederic.Hemmer@cern.ch
PaRC Service (Engineering Cluster)	P.Martucci	31/2-012	78611,160277	parcsp@mail.cern.ch
PIAF Service (Interactive Analysis)	F.Collin	513/R-039	79457,160278	Fabien.Collin@cern.ch
CS-2	E.Mcintosh	31/3-023	74934,13+5584	Eric.Mcintosh@cern.ch
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AFS Service Manager	R.Többecke	31/1-024	78985	Afs.Support@cern.ch
Oracle (Relational Database)	S.Santiago	31/3-011	74134,13+5580	Oracle.Support@cern.ch
Distributed Printing	J.L.Vosdey	513/R-049	74976	Printer.Support@cern.ch
Magnetic Tape Operations	R.Minchin	513/R-009	13+5559	Richard.Minchin@cern.ch
CERN PROGRAM LIBRARY OFFICE				
Distribution of CERNLIB material	L.Besson	513/1-014	74951	Heplib.Support@cern.ch
CERNLIB Librarian	I.Mclaren	513/1-009	75010	Heplib.Support@cern.ch
LHC++ Librarian	J.Shiers	513/1-002	74928	Heplib.Support@cern.ch
DESKTOP COMPUTING				
NICE (Networked PCs)	A.Pace	31/1-019	72897	Nice.Support@cern.ch
Macintoshes	K.Pluntke	513/R-045	75015/160023	Klaus.Pluntke@cern.ch
UNIX Workstations and X Terminals				
- Front Desk	C.Ball	31/1-015	73349	Workstation.Frontdesk@cern.ch
- Team Leader	P.Defert	31/1-026	73923	Workstation.Support@cern.ch
Contact Accounts (according to OS):				
HP 700 s/w: Hp.Support@cern.ch - SUN software: Sun.Support@cern.ch - Solaris s/w: Solaris.Support@cern.ch				
RS/6000 s/w: Aix.Support@cern.ch - DEC's OSF/1 s/w: Osf.Support@cern.ch - X terminals: Xterminal.Support@cern.ch				
COMMUNICATIONS AND NETWORKS				
General network operational problems		513/R-034	74927	Network.Support@cern.ch
The complete and up-to-date list of contacts is at URL: http://wwwcs.cern.ch/wwwcs/public/contacts.html				
OTHER SERVICES				
Computer Security	J.Gamble	31/3-030	160261	Computer.Security@cern.ch
Tape Allocation to Experiments	H.Klein	13/3-024	72124,72060	Hansjorg.Klein@cern.ch
Web Office	M.Dimou	53/R-010	73356	WWW.Support@cern.ch
Computer Science Library (mornings only)	J.Megies	513/1-024	72379	Jutta.Megies@cern.ch

SERVICE URLs (Some Useful Web Pages)

IT Home Page	http://wwwinfo.cern.ch/
Web Office	http://www.cern.ch/WebOffice
User Support	http://wwwinfo.cern.ch/support/
User Consultancy Office (UCO)	http://wwwinfo.cern.ch/support/uco
User Registration	http://wwwinfo.cern.ch/support/user-registration
COMputing Books Selling (COBS) Service	http://wwwinfo.cern.ch/support/cobs-service
Computing Books Catalogue	http://consult.cern.ch/books
Accounting Service	http://wwwinfo.cern.ch/accounting/
CERN SP2 Service Page	http://wwwsp2.cern.ch/
NICE Home Page	http://nicewww.cern.ch/
UNIX Workstation and X Terminals Support	http://wsspinfo.cern.ch/file/
Network Connection Request Form	http://network.cern.ch/register
TvScreen (Systems Status)	http://wwwcio.cern.ch/Others/TvScreen.html

Other Computing Newsletters

COMPUTING FOR ENGINEERING: See the CERN Computing Support for Engineering Newsletter,

Available from M.Tate-Lavergne 513/2-010 72863 Monique.Tate-Lavergne@cern.ch

Editor L.Pregernig 31/1-006 72666 Ludwig.Pregernig@cern.ch

SEMINARS AND PRESENTATIONS

Designation	Usual Location	Organizer	Div.	Telephone	E-mail Address
Computing Colloquia	Auditorium / bldg 500	S.Jarp	IT	74944	Sverre.Jarp@cern.ch
Computing Seminars	IT Auditorium 31/3-005	G.Folger	IT	79778	Gunter.Folger@cern.ch
		J.P.Porte	ECP	73457	Jean-Pierre.Porte@cern.ch
Technical Presentations	IT Auditorium 31/3-005	S.Cannon	IT	75036	Stanley.Cannon@cern.ch

COMPUTER RESOURCES ALLOCATION AND DIVISIONAL CONTACTS

COMPUTER RESOURCES ALLOCATION COMMITTEE (COCOTIME):

Chairman: L.Foa/DG 4/1-048 78126 Lorenzo.Foa@cern.ch

Secretary: A.Ball/ECP 14/6-023 73849 Alan.Ball@cern.ch

DIVISIONAL REPRESENTATIVES FOR COMPUTING

For questions about new registration and resource allocation please ask the contact person for your division.

Div.	Representative	Div.	Representative	Div.	Representative	Div.	Representative
AS	M. Draper	AT	P. Heymans	DSU	M. Draper	ECP	A. Grant
EST	Ch. Delamare	FI	M. Saitta	IT	A. Koppanyi	PE	D. Duret
PPE	H. Klein	PS	J. Riche	SL	A. Hilaire	ST	E. Sanchez-Corral
TH	P. Nason	TIS	G.R. Stevenson				

NICE DIVISIONAL REPRESENTATIVES

An up-to-date list can be found at the URL: <http://wwwinfo.cern.ch/support/nice-representatives>

DIVISIONAL REPRESENTATIVES FOR NETWORKING

For questions about new installations, testing, local coordination, etc., please ask the contact person for your division (or, if you are an experimental physicist, the networking contact person within your experimental group).

The complete and up-to-date list of contacts is at URL: <http://wwwcs.cern.ch/wwwcs/public/divreps.html>

Letters from the Editor

I take the opportunity of this “*Letter from/to the Editor*” section to thank Mike Metcalf, who has acted as an “anonymous” (but very careful) proof-reader of the CERN Computer NewsLetter over many years, checking both the English syntax and the contents. This CNL is the last one for him, as he is leaving CERN for early retirement. Let me wish him, on your behalf, all the best for his future life.

I hope you will have some good and interesting reading, and, at this time of the year, I wish you a:

Merry Christmas and Happy New Year !

Nicole Crémel, nicole.cremel@cern.ch
IT/User Support, CNL editor

1. Central Services

1.1 Plans for the CERNSP Service in 1998

T. Cass, P. Martucci and H. Renshall, IT/PDP

The CERNSP complex consists of three main parts:

- An IBM SP2 machine of 65 nodes interconnected by a high speed switch, which runs the interactive service CERNSP on 24 nodes, the *Loadleveler* public batch jobs service on 18 nodes, the *Loadleveler Engineering* batch jobs (PaRC) service on 8 nodes and the remaining 15 SP2 nodes act as disk, tape and network servers.
- 8 older SP1 nodes which also run batch jobs for the PaRC service.
- A cluster of 21 independent IBM PowerPC workstations which runs public and PaRC batch and also the SP2 management software.

All the machines run the IBM AIX UNIX operating system. The SP2 part of this complex is now three years old and is definitely overloaded, giving poor response for interactive users and long turnaround times for the longer batch jobs. In addition, the maintenance contract under which it was bought ends this year and, as is often the case with today's fast changing technologies, more new capacity can now be bought for less than the cost of maintaining the old. We have therefore consulted the committee which advises the director for research on two to three year computing planning, the *Forum on Computing: Users and Services* (FOCUS), on the strategy to adopt towards the CERNSP services, and as part of this a user survey and pricing enquiry were made.

The conclusions were that there was a strong demand for the public interactive and batch services provided by CERNSP and that an interactive service based on AIX should continue, but that batch services could be provided on a different UNIX architecture should this have a significant advantage. The committee also recommended a strategy whereby public batch capacity is reviewed each three years in order to buy, with a three-year maintenance built in, the current best value while keeping the previous system unmaintained for a three-year overlap. The pricing enquiry showed that two UNIX vendors, one of which was IBM, were offering batch type capacity at almost the same relatively low price while the other vendors were higher. Given this situation, the committee agreed that public batch should also stay on AIX to avoid the manpower costs of converting applications to another UNIX flavour.

During the coming Christmas shutdown we will install new machines that will soon replace the 24 SP2 nodes providing the interactive service, namely, 15 twin-CPU PowerPC 43P workstations, each CPU being some two to three times faster than SP2 nodes (depending on the application), with twice the memory and bigger local scratch space. We will also install the replacements for the 18 SP2 public batch nodes, namely, 15 single CPU PowerPC 43P workstations having a faster chip, about four times faster than the current SP2 batch nodes, and also more scratch space. The PaRC engineering batch nodes will stay unchanged for the moment as these are funded via the *Computer Aided Engineering Committee* (CAEC). The disk and tape server nodes will be concentrated into one frame of the SP2 to save on maintenance costs, and the 18 existing PowerPC batch nodes will stay unchanged.

We plan to restart the CERNSP service on January 5th, based on the current nodes, and as soon as possible start the new services and run them in parallel for some time. Users will be able to telnet `rsplus` (instead of `telnet cernsp`) to reach the new interactive nodes and, when we are happy with their functioning, probably towards the end of January, we will redefine the telnet name `cernsp` to point to the new nodes. For the public batch service, the FOCUS committee has also approved that we standardise on one batch system at CERN and the only serious candidate is LSF, the *Load Sharing Facility*, which has the right functionality and portability. We will hence start the new public batch nodes to run LSF only and publicise how to use LSF. As users migrate we will gradually close down the *Loadleveler* batch on the old SP2 nodes and then migrate the existing PowerPC nodes running *Loadleveler* to use also LSF.

Last year we were able to keep the CERNSP interactive service running during the shutdown with minimal attention and good success. This year, we will try to provide a continuous interactive service, but given the amount of work required to reconfigure a reduced SP2 system, with some 10 nodes to move and all having new software, interruptions are likely. The most difficult period will be the few days before the January 5 startup, but we will attempt to work so that there are always some interactive nodes available to define the CERNSP service. The work that needs to be done means, however, that there will be no SP2 batch or PaRC services during the shutdown.

1.2 Tape Usage Trends and Guidelines for 1998

Richard Minchin, IT/PDP

As has been announced in previous editions of the CNL, IT/PDP is moving ahead with a project to automate all tape mounting. Over the past few months there has been a gradual decrease in the number of manual tape mounts, and there have been promising signs of a move towards automatically mounted STK *Redwood* volumes.

There are three types of *Redwood*:

- 10Gbyte tapes (ideal for very frequent access),
- 25Gbyte tapes,
- 50Gbyte tapes (for large volume data storage or infrequent access).

(It should be noted that 1 Gbyte = 10^9 bytes.)

Adequate supplies of 25Gb and 50Gb volumes are currently available and 1,000 10Gb volumes have been ordered. Contact R.Minchin or your group representative to purchase volumes.

Such tapes can contain thousands of files which can make tape management more complex and duplication of critical volumes far more desirable, as a tape lost or corrupted by accident could mean losing large amounts of data. However, STK tapes are the recommended solution for tape users for the future. They are relatively cheap—*Redwood* media costs roughly Sfr2/Gb, the silo cost is very low (Sfr30 per slot) and one slot can take 50Gb. Compare this to DLT automation which costs an order of magnitude more per slot. We have now had almost a year's experience of using 25 and 50Gb

cartridges and expect that they can offer a reliable automated service.

As far as DLT's are concerned, manual DLTs continue as the biggest part of our manual load. We try to promote busy volumes dynamically to the TL820 robot and have thus succeeded in containing the manual load. However, we have just equipped one tower of the TL820 robot with DLT 7000 drives and have started to populate this tower with the *CompacTape* IV cartridges. This has reduced the maximum "unused" lifetime of volumes in this machine to one month. These *CompacTape* IV 35Gb cartridges for use with DLT 7000 are now available from R.Minchin via TID at around Sfr110 per cartridge.

Next year's automation capacity can be summarised as follows:

- 18,000 *Redwood* slots, 32 units at ~300 mounts/hour.
- 1,000 DLT2000 slots, 12 units at ~40 mounts/hour.
- 250 DLT700 slots, 3 units at ~10 mounts/hour.
- 3,000 3590 slots, 6 units ~80 mounts/hour.

It should be remembered that the manual tape mounting service will be reduced from 1 January to remove cover from 21:00–05:00 and will be further reduced from 1 July, when cover will be reduced to 08:30–17:30 on Monday-Friday (no overnight and no weekend service).

Any comments or questions should be sent to Tape.Support@cern.ch.

1.3 Operating Systems Availability on ASIS

Philippe Defert, IT/DIS

The status of the ASIS application software repository will be as follows as of the beginning of 1998:

- sun4x_55: SUN Solaris 2.5.1;
- hp_ux102: HP-UX 10.20;
- rs_aix41: IBM AIX 4.1.5;
- alpha_dux4: (DEC OSF 4.0b);
- sgi_53: SGI Irix 5.3 (unsupported);
- i386_linux: Linux redhat 4.1 (unsupported);
- sun4c_411: (SUNOS 4.1.3) is frozen;
- hp700_ux90: (HP-UX 9.05) is frozen;
- alpha_osf32: (DEC OSF 3.2c) is frozen.

When a platform is designated "frozen", it means that all ap-

plications are kept in the repository but no new package or version of a package will be introduced in the repository for this architecture.

Moreover, sgi_64 (SGI Irix 6.4) and rs_aix42 (AIX 4.2) will be introduced as partial architectures in ASIS. This means that the ASIS tools running on such partial architectures will make the links towards the native platform for all packages present on this architecture, and towards the fall over platform (respectively sgi_53 and rs_aix41) for software not present on the native architecture. Only the main packages supported in ASIS will be generated for such partial architectures and only if their counterpart on the fall over does not work properly on that platform.

1.4 Operating System Certification - Present List

Philippe Defert, IT/DIS

As explained in CNL 224 (information also available at the URL http://consult.cern.ch/cnls/224/art_cert.html), we regularly publish a list of the various versions of UNIX which we certify as working correctly with the CERN-recommended libraries, tools and utilities. As of December 8th 1997 this list is the following.

- HP-UX 10.20 – certified;
- Solaris 2.5.1 – certified;
- Digital UNIX 4.0.b – certified;
- AIX/6000 4.1.5 – certified;

- HP-UX 9.05 – support was stopped, as explained in Section 1.5 of this CNL;
- Digital UNIX 3.2.d - support was stopped.

For those interested in the certification process, it is described in more detail in a Web page at the URL <http://wsspinfo.cern.ch/file/certified.html>.

The latest news on the certification procedure is always published in the newsgroups associated with each UNIX flavour (for example, CODEcern.hp), and summarised in the Web page listed above and in each CNL.

1.5 Closure of CERN Support for HP-UX 9 Operating Systems

Lionel Cons, IT/DIS

As announced several months ago (e.g., in CNL 226, see URL http://wwwinfo.cern.ch/cnls/226/art_hpux9.html), CERN support for HP-UX 9 will stop at the end of 1997. In concrete terms, HP-UX 9 will be frozen and there will be no more update of:

- the operating system (patches);
- HP layered software;

- AFS;
- ASIS and the CERN Program Library (CERNLIB);
- SUE.

All users of HP-UX 9 systems are strongly encouraged to upgrade to HP-UX 10.20. If you need help for this upgrade, please contact HP.Support@cern.ch.

1.6 Digital Support Policy

Tim Whibley, IT/CIO

Digital's support policy for its operating systems is explained in detail in a document available at the URL

<http://wsspinfo.cern.ch/file/digital-os-support.html>

An important change is that Digital now issues end dates after which Engineering will no longer provide support.

Since 1st September, 1997, Digital no longer provides support for: Digital UNIX V3.2C, V3.2D, V3.2E, V3.2F.

However, The UNIX Support Engineering Group (USEG) will support CERN on V3.2C through to the end of the year. The last day of support will be 31-Dec-97.

The following URL gives a table of supported products.

http://www.digital.com/services/mcs/mcs_europelist.htm

For further information and/or clarification, please contact: Dunix.Support@cern.ch.

2. Mail and News Issues

2.1 Two Different Ways to Handle your Mail

Miguel Marquina, IT/User Support

IMAP vs POP: the protocols

IMAP and POP are two mail protocols which allow users to access and handle electronic mail stored on a remote “mail server”, IMAP being a superset of POP. They are based on different conceptual models, but as far as you, the users, are concerned, the main characteristics of their behaviour are that:

- POP “imports” your e-mail from the mail server to your computer, and from then on you handle your e-mail “locally”,
- IMAP “leaves” your e-mail at the mail server and allows you to handle it “remotely”.

The consequences of using either of these two models on your working habits are clear:

- If you are a “mobile” user; you work in your office, sometimes in a lab, also sometimes at home, then have professional trips from time to time. If you need access to your e-mail any time from any location, you want to find it *always* at a unique place (the mail server) and then handle it from the computer you are connected to at a given moment. You need an IMAP-compliant mail agent.

- If you work on a single computer and do not mind keeping all your e-mail on its hard disk, then you may happily use a POP-compliant mail agent (but be aware of the security backup issues).

IMAP vs POP at CERN

Given the characteristics of a typical CERN computer user, you may now understand why we have chosen IMAP as the recommended protocol for the MAIL Service. POP is also supported in order to help out users who fall into the second category above. Please notice that:

- pine and Netscape 4 are IMAP-compliant,
- Netscape 2 and 3 and Eudora are POP-compliant.

This is the reason we recently started to promote *Netscape 4* as a possible “recommended” mail agent while we were not doing this with its previous versions. This is also the reason why UNIX users may find in “pine” the best possible mail agent for the moment (and, in addition, it allows access to your e-mail from workstations as well as from simple ASCII terminals).

2.2 MOWGLI – The Mailing List Web Interface

Germán Fernández, IT/DIS

MOWGLI is an interactive Web interface to ListBox, the central electronic mailing list server at CERN. It provides easy access for both list users and administrators for file retrieval, list membership, registration, etc.

Besides the functionality of the standard e-mail interface to ListBox, MOWGLI offers:

- full list display allowing easy subscribing and unsubscribing;

- entry editing;
- simultaneous display of multiple lists;
- user authentication;
- formatted list display and printing.

It also includes a simple form for new list requests.

Full documentation on MOWGLI can be found at URL

<http://wwwinfo.cern.ch/service/mail/listbox/>

2.3 E-mail - Restrictions When Using Internet at Home or from a Portable PC

Dietrich Wiegandt, IT/DIS

We were forced to take measures recently against the misuse of our resources from senders *not* at CERN relaying large quantities of *commercial* mail through our machines. Quite a few people from outside CERN were wondering why CERN was permitting this “spamming” by relaying the spammers’ mail.

In order to stop this, we now no longer relay mail from external hosts. But of course we do still accept mail from external hosts for CERN destinations. Mail forwarding from a CERN host to an external destination is also not affected by this change of policy. Mail from an external host to an external host routed through one of our mail hosts will however be rejected.

CERN users should not see any obvious change as far as mail to or from them is concerned, but there are, unfortunately, a few exceptions. Users who have copied the mail setup they use on their CERN host to a machine at home or to a portable

PC may no longer be able to send mail to non-CERN destinations, because the SMTP server set in their configuration is a CERN machine.

Please ask your Internet Service Provider for the name of their SMTP service machine and replace the SMTP server, `smtp.cern.ch` or `mail.cern.ch`, in your mail setup by the name of this machine. Don’t change your mail server for incoming mail—this should remain `userid.mailbox.cern.ch`. This change should re-enable the sending of mail to non-CERN destinations.

Note that hosts at CERN not registered in the CERN host database are also considered as “foreign”. Either have the machine properly registered or don’t use it for sending mail.

We apologize for the problems that this decision may have caused to some users but we could no longer tolerate this blatant misuse of CERN for commercial purposes.

2.4 End of dxnews - New News Server

Dietrich Wiegandt, IT/DIS

Following the announcement of 13 November, 1997, host `dxnews.cern.ch` has ceased to act as a news server in the late afternoon of Monday, 8 December, 1997. Please change all references to it in the configuration of your news reading program to point to `news.cern.ch` instead.

In principle, switching from the old to the new newsserver

machine should be transparent to users, except for a possible small desynchronisation of article numbers which is unfortunately unavoidable. So do not be surprised if you sometimes see an article again that you have seen before.

Contact News.Support@cern.ch in case of problems when you read or post news.

3. User Environment

3.1 Access to Personal and Service Pages from xwho

Bernd Pollermann, IT/User Support

The main objective of this article is to describe the present possibilities of giving access to both *personal* and *service* Web-pages from the Web-version of xwho. For simplicity reasons I will concentrate on how things are done now, and, for the sake of completeness, there will also be an example of how to create a *personal homepage*.

Personal homepages

A personal homepage is a Web-page describing the professional activities and background of a person working at CERN. If you have a *personal homepage* and you know its URL, do the following in order to allow access to it from xwho:

1. Call (x)userinfo on your preferred platform.
2. Type the homepage URL into the appropriate field (without the prefix `http://`) and save this change of your personal data. This could be, for example, `wwwinfo.cern.ch/~loginid`.
3. Wait until next morning.

You will then find a clickable link, represented by the word (**homepage**), added to your entry in xwho.

If you do not have a homepage and you have access to a public UNIX service (AFS-based) you can easily create one. Just do the following after logging in:

1. Type the command “webaccess”, which will create the directory `~/www` with the adequate AFS ACLs.
2. Put or edit your homepage in this sub-directory `~/www` with filename `Welcome.html`.

Immediately after you have done this you can access your homepage under the URL:

`http://wwwinfo.cern.ch/~loginid`

with loginid being your username.

Service homepages

A *service homepage* is a Web-page describing (usually together with a set of “subpages”) all aspects of a service offered by a single person, a team or even people in different groups. It informs the user why (s)he might need this service, how to start it and how to use it normally. Usually, it will also warn the user about potential pitfalls and offer further reading for advanced users.

Example of a service homepage:

`http://consult.cern.ch/service/mail`

Giving access to a service homepage from xwho We encourage the teams with service entries registered into the CCDB database (so called “Service Users”, like *Mail Support*), to allow their *service homepage* to be accessed from xwho. The procedure of doing this is the following:

1. Verify that the homepage of the service represents well the service and respects the (divisional/CERN) guidelines for this type of pages.
2. Send the name of the “Service User” and the URL of the *service homepage* to `Xwho.Service@cern.ch`.
3. You will then receive a mail informing you whether the link will be established and when.

Just as for persons, the clickable word (**homepage**) is added to the entry of the “Service User” in xwho.

3.2 Access to Internet Dictionaries at CERN

Miguel Marquina, IT/User Support

CERN being an international institution, questions are brought up regularly by users of our Computing facilities as to what kind of online dictionaries and translator tools could be used to cope with the creation and maintenance of multilingual documentation.

One aspect of this kind of task concerns the production of documents in a given language. There, NICE and Macintosh users are well off through using the “Spelling and Grammar” and the “Language” (including thesaurus and hyphenation) components of MS-Word (present in the “Tools” menu).

Although a native *Microsoft Office* suite is not available for

UNIX platforms, UNIX users of our public services have access to “Framemaker” (in addition to this being an alternative for NICE and Mac users too). Details on access, installation and setup instructions are available at:

`http://www.cern.ch/PTTOOL/FrameMaker/`

Another aspect is the translation process, when you may need to check on the correct wording in a language which is not your mother tongue. There are different products available in the market to do this work locally on your machine. However a number of Dictionary sets have been appearing in the Internet and we have made a compilation at:

<http://wwwinfo.cern.ch/support/internet-dictionaries>

As this page is just a collection of links to sites elsewhere, we cannot guarantee that they will continue working indefinitely. However we offer to maintain this page with up-to-date information as far as it is known to us. Please feel free to send your suggestions if you learn about dictionaries which, from your point of view, are of better quality.

I would like to call your attention specifically to the translator EURODICAUTOM, which is a very interesting EU project now in its initial phase. You will find at our page the full interface (quite rich in options and very powerful) and two subsets of relevance at CERN, namely the English-French and French-English translators. In our opinion this interface satisfies the requirements of standard CERN users regarding the European multi-lingual issue.

3.3 Facilities in the UCO User Area

Miguel Marquina and Roger Woolnough, IT/User Support

One of the remaining public "terminal" areas at CERN is the so called "User Area" in building 513. It does not resemble at all to one of those former terminal rooms or RIOS centers which were popular years ago (when it was not common to have one machine at each desk).

The added value of this "User Area" is not to offer additional connectivity to visitors (who typically are adequately hosted by their CERN contacts including access to CERN's Computing facilities) but to make accessible to CERN users facilities which are rarely found on site otherwise.

We are in the process of refurbishing this area and adding new functionality, which will hopefully be in place at the beginning of 1998:

- three color scanners (one connected to Mac and two to PCs);
- dedicated printers attached to the PCs and Macs.

In order to make room for the above the outdated Falco terminals will be removed.

We take this opportunity to point out that this equipment is left at the users' disposal on a trust basis. The Macintosh Support team has to intervene every now and then to reload the software after the machine is left in a bad state. A considerable budget and considerable manpower is invested in this area for public use, so we kindly ask you to respect it and leave the machines in the state in which you would wish to find them.

Here is a list of the facilities available (as of January 1998):

- seven X terminals;
- three PCs with dedicated printers
- two Macintoshes with a dedicated printer;
- three color scanners (2 PC + 1 Mac);
- one A3-capable recto-verso printer;
- one high-output Mac printer (513-pub);
- one recto-verso HP printer (513-cc);
- one recto-verso QMS printer (513-qms);
- four colour printers for paper/transparencies.

In addition the UCO Reference Cards are freely available at the self-service documentation area.

In the coming month we will be offering users a self-service documentation PC and printer for smaller documents. We will also have dedicated printers for paper and transparencies on the PC and Mac machines. Please note that high quality transparencies from HP Deskjet 1600CM colour machines and Tektronix Colour printers are available in some divisions—see the printer support list for details at URL:

http://wwwcio.cern.ch/Printers/sup_printers.html

New HP colour and transparency machines will be installed in January, as the Tektronix printers 513-cpx will soon be removed from the user area, as will the 513-lps Vax type recto-verso printer, to keep the total installation as up-to-date as possible.

3.4 Extensions to the Weekly Accounting Reports

Attila Koppanyi, IT/User Support

The Web-based weekly accounting reports have been extended to show the evolution of user accounts on each of the division's services. In addition to the already accounted login identifiers using a service, and the corresponding cpu time, the newly registered, deleted and total ids will also be shown for the given week. This will provide an additional measure in the evaluation of the activity and evolution of a service.

An extension has also been made in the area of statistics on the electronic mail service, by reporting on the distribution of the physical addresses across the major mail server nodes. Both extensions of the report may be displayed graphically as

well by clicking on the Java applets, provided your browser is Java-enabled (*Netscape 3* and above recommended).

The usefulness of this information will grow with the accumulation of data, which has just begun.

You are invited to browse through these reports which can be found at the URL <http://wwwinfo.cern.ch/accounting>.

Besides summaries, you will also find detailed information on individual services down to individual user level in most cases. For the interactive services you will get information on your group's user activity in prime time, number of distinct users per week, etc.

4. Desktop Computing

4.1 Deployment Strategy of Netscape at CERN

Miguel Marquina, IT/User Support

In my role as the person responsible for the User Support activities, I have been invited to offer you some clarifications concerning the deployment strategy followed by IT Division regarding the *Netscape* browser, and also to launch a new proposal which, we hope, will improve the situation as far as you, as End User, are concerned.

Although you may find this article rather verbose, I felt it was important to provide you with the necessary information so you could have a better perspective for understanding why the events have happened the way they did.

The article is structured into three different sections: first of all a brief summary of the current availability on the different CERN platforms is given. This is followed by a short history of the deployment made so far and the background reasons for it. (You might want to skip this in a first reading.) Finally the immediate steps for the near future and a new proposed policy, which IT Division would like to follow after endorsement by the User Community, are presented.

What is available at CERN and who looks after it?

The following is a summary of the *Netscape* versions available at present on the different public services:

On NICE

From *Start Menu:More Applications:World Wide Web:*

2.02	Netscape 2 Gold
3.01	Netscape 3
3.01 Gold	Netscape 3 Gold
4.04	Netscape 4
4.04	Netscape 4 mail

On UNIX

2.02	netscape
3.01 Gold	netscape -version beta
	netscape -version gold

On Macs

From *NOVELL:Srv0_Nice:Srv0_Nice.MACPGH:*
Install Applications:Install

2.02	Netscape Lite
3.01	Netscape
4.03	Netscape Test

The corresponding responsible teams and the contact points are:

- WWW.Support@cern.ch: availability of the UNIX versions, software licensing.
- NICE.Support@cern.ch: availability of the NICE versions.
- Mac.Support@cern.ch: availability of the Mac versions.

Netscape: the complete story

Sometimes the reasons behind the way the *Netscape* browser has been introduced and deployed so far on the different CERN platforms may have not been explained clearly enough to users. This has created, in fact, some confusion regarding policy (or, from the user point of view, an apparent lack of it).

The last "light" version of *Netscape*

When *Netscape Navigator* (version 2, or 2.02 to be more precise) was introduced at CERN in April 1996, we all considered it one of the best Web browsers ever released (beating its closest competitor *NCSA Mosaic*, which never went beyond version 2.6, leaving 2.7 in a beta state forever). *Netscape* was packed with plenty of functionality, even with the early touches of JavaScript, and still was relatively modest in required resources compared to version 1.1N.

Version 3, still called "*Navigator*", came about six months later, and there the problems began. First of all, the UNIX versions were not completely stable. As usual in the commercial world, the company had developed first the PC version, followed by the Mac and UNIX ones, and the consolidation and quality of the finished product seemed to have the same ranking of priorities. By the time UNIX users were starting to experiment with version 3, the PC users were well using it as a de-facto standard.

One problem above all showed up immediately during our deployment tests: version 3 required at least twice as much memory resources, imposing on PCs and Macs a bare minimum configuration of 16Mb to have it usable. For a NICE user this was not really a problem (they had gone into standardizing on 32Mb PCs a while before), but many Mac users were left behind and serious concerns were raised on the impact of the concurrent running of the UNIX versions on the overall performance of our public UNIX Services (PLUS and WGS).

Due mainly to this dramatic change in the resources required to run *3.01 Gold* (the *Navigator* final stable release), it was decided to make it available on the UNIX platforms through the ASIS repository via the commands:

```
netscape -version beta, netscape -version gold
```

but not to turn it into the default user version (which stayed as 2.02). The NICE Service, on the other hand, proposed it to their users as the recommended version since the typical NICE-PC configurations could afford it without problems.

The deployment asymmetry created by the above did not disturb users too much until version 4 came out (except for

CERNSP where 2.02 was not Java-ready and users wanting these features had to resort to the “beta” version).

Netscape Communicator

Its release history is quite disappointing. Scheduled initially to be released by spring 1997 and after several months of waiting for the promised software, versions started to be available (starting of course with the PC one) in June.

One of the major points of interest from CERN’s point of view was the change of its mail protocol to be aligned with the one recommended here (IMAP versus the previous POP3; see also the article in Section 2.1). Actually the decision of *Netscape* to support IMAP in its latest release gave some hope to the CERN Mail Service team that the Mail component would allow the long-desired cross-platform standardization on a single mail agent which could be used by NICE, Macintosh and UNIX users alike.

It has been perhaps the one most outstanding single reason to have driven our different teams to be definitely pro-active about the deployment of version 4 on the various platforms, although not the only one; the slow degradation of the Quick-Mail service was putting pressure on the decision making process and the response from enthusiastic beta-test users was encouraging.

The feelings about the “Holy Grail” solution were so strong that something essential was being “ignored”: the fact that we were testing the different version upgrades (four by now, the latest dated November 1997) almost at the same speed as *Netscape Corp.* was producing them.

As a consequence we were in the debugging front-line of their product rather than allowing a safe period of time and letting their large customer market do it for us (as had been done in the past, a reason for which the software has been always introduced at CERN with a bit of delay compared to its official release).

The other point of concern (even greater than before) is that the *Communicator* suite is now a product which exceeds in complexity and size any of the previous versions. Care has to be taken in deciding which of the modules to offer, and even then how to provide default user configurations which match CERN recommendations (thus simplifying notably the support tasks).

While 4.04 seems to be solid enough on Macs and PCs (fixing a variety of bugs present in earlier upgrades), we wish to be reassured of the stability of the UNIX variants and evaluate in a controlled environment their possible impact on our public Services.

Proposed Deployment Strategy

I have tried to explain and, to a certain extent, justify the criteria used so far by IT services in the introduction of the different versions of *Netscape* on-site. They have certainly not been intended and should not be understood as a deliberate brake to allowing users to get the latest technology on their desktop.

Having said that, it is clearly desirable (and you have already pointed this out to us) to have a uniform policy regarding *Netscape* releases on the different CERN platforms, if for no other reason than to prevent de-synchronization effects such as access to different features depending on the platform you work on.

For these reasons, we intend to submit the following proposal to the relevant bodies where user representatives are involved:

1. Keep only one default version, the so called “Certified” version, available on all platforms (NICE, public UNIX Services and Macs through the DIS/MAC software repository server). The aim is to offer the same release (4, 5, etc.) everywhere, although sometimes it may not be possible because we depend on *Netscape* producing stable versions on all platforms within a reasonable timetable.
2. Offer *Netscape 2.02* as the “Light” version (as long as it is compatible with the CERN Recommendations and Guidelines concerning the production of WWW information on all platforms at CERN).
3. Offer a “Test” version of the software at any given moment, which will be made available as soon as basic stability criteria are fulfilled (as far as the corresponding services can certify). The name is supposed to convey to users the idea that the software has not yet been certified by the relevant CERN services and should, in that respect, be used with caution. For instance, pages produced for the test version may not be usable/browsed correctly by users of the current default version.

In general the test products need not be the same version across all platforms, but will frequently be the latest version released by *Netscape* for that platform.

As far as access is concerned, the software will be offered to users in the following way:

On NICE

```
From Start Menu:More Applications:World Wide Web:
  Certified Netscape
  Light       Netscape 2 (Light)
From Start Menu:Test Applications:World Wide Web:
  Test       Netscape
```

On UNIX

```
Certified netscape
Light      netscape -version 2
           netscape -version light
Test       netscape -version test
```

On Macs

```
From NOVELL:Srv0_Nice:Srv0_Nice.MACPGH:
  Install Applications:Install
  Certified Netscape
  Light      Netscape 2 (Light)
  Test       Netscape Test
```

Steps for the immediate future

Netscape 4.04 is stable on the PC side, and this seems to be true also on the MAC side. In order to bring all services concerned into gradual harmonization, we intend to complete evaluation of the UNIX versions at the beginning of 1998. After a testing period during which we would like to collect

all relevant user feedback, we hope that version 4.04 will be introduced as “Certified” at the end of January 1998.

We hope that from then on we will be able to satisfy better your expectations or at least you will have a better understanding of why we have become rather conservative when implementing for 10000 CERN users what many have already available on their home computers.

4.2 End of the Central Support for UIM/X on HP-UX

Lionel Cons, IT/DIS

Because HP ceased selling *UIM/X* (Graphical User Interface Builder), we have decided to stop the central support for this product. This will be effective in January 1998.

As far as we know, this product is very seldom used at CERN. If needed, individual users can purchase support directly from the *UIM/X* makers: *Visual Edge Software Ltd.*, see the URL <http://www.visualedge.com>.

4.3 Linux at CERN

Lionel Cons, IT/DIS

Here is some information about Linux at CERN. Since things change frequently, you should keep an eye on the Web pages at the URL <http://wwwinfo.cern.ch/dis/linux/>.

Although Linux is not an officially supported operating system at CERN, IT Division is providing an infrastructure to assist and advise the CERN Linux community. This includes:

- the `cern.linux` newsgroup where users can share their expertise and ask questions;
- a recommended version of Linux based on RedHat (in-

cluding AFS, SUE, ASIS, CERNLIB, ...) that can be easily installed over the network;

- two CDs (one installation CD with the recommended version of Linux, one application CD with most of ASIS including $\text{\TeX}$ and CERNLIB) that we plan to distribute;
- the `Linux.Support@cern.ch` mail account where you can report problems; there is no guarantee of support but we will do our best to forward the problems to the appropriate experts.

4.4 Sun WorkShop University Edition 3.0

Ignacio Reguero, IT/DIS

Please note that the latest version of the full Sun Development environment for *Solaris SPARC* systems is available on the CERN site. The name of the academic product bundle that we are using is *Sun WorkShop University Edition 3.0*.

List of products included.

Sun WorkShop Compiler C 4.2
 Sun WorkShop Compiler C++ 4.2
 Sun WorkShop Compiler FORTRAN 77 4.2
 Sun WorkShop Compiler Fortran 90 1.2
 Sun WorkShop Compiler Pascal 4.2
 Sun WorkShop Tools.h++ 7.0
 Sun WorkShop Tools.h++ 6.0.4
 Sun WorkShop Visual 2.0

Sun WorkShop IPE 4.0
 Sun WorkShop CodeManager 2.0
 Sun WorkShop Distributed Make 2.0
 Sun WorkShop FileMerge 3.0
 Sun WorkShop FreezePoint 2.0
 Sun WorkShop Maketool 2.0
 Sun WorkShop VersionTool 2.0
 Sun WorkShop Dbx 4.0
 Sun Performance Library 1.2
 Sun WorkShop Performance Analyzer 4.0
 Sun WorkShop LoopTool 2.1
 Sun WorkShop LockLint 2.1
 Sun WorkShop Thread Analyzer 1.2
 Sun WorkShop XEmacs 20.00

Because of the new packaging, licenses are available for a much larger number of tools than in the previous versions, more specifically we have now the license for the complete *Sun WorkShop* tool set. The documentation is provided in HTML format so that you can access the manuals on AFS via the file

[/afs/cern.ch/project/sun/solaris/opt/SUNWspro42/DOC4.0/lib/locale/C/html_docs/index.html](http://afs.cern.ch/project/sun/solaris/opt/SUNWspro42/DOC4.0/lib/locale/C/html_docs/index.html)

Some migration notes and last minute issues can be found both in PostScript and plain text in the directory

[/afs/cern.ch/project/sun/solaris/opt/SUNWspro42/READMEs](http://afs.cern.ch/project/sun/solaris/opt/SUNWspro42/READMEs)

For the detailed CERN installation and licensing instructions please check out the *CERN Solaris Installation Guide*, at the URL

<http://wsspinfo/file/doc/solinst.html>

4.5 Java Workshop

Ignacio Reguero, IT/DIS

As the inventor of *Java*, SUN offers a complete development environment for this language. This environment is automatically installed in the default CERN Solaris SUE configuration.

Java WorkShop is a complete graphic development environment for *Java*. It includes the JDK (*Java Development Kit*) which is used as compiler back-end (the JDK binaries are freely available on the network.)

The latest version of *Java WorkShop V2.0* (built September 3 1997) is now available for *Solaris*. This kit is based on the JDK 1.1.3 and includes:

- usability enhancements;
- support for *JavaBeans* components;

- built-in Java JIT (Just-In-Time) compiler.

This kit provides a several-fold increase in performance over previous versions.

Java WorkShop V2.0 is licensed with a *ScholarPac* site license key valid for the CERN site.

Java WorkShop V1.0 (based on the JDK 1.0.2) is also available now under the same *ScholarPac* site license key so it does not require “per user” registration within the CERN site.

For detailed installation and licensing instructions for both versions you should check the *CERN Solaris Installation Guide* at the URL

<http://wsspinfo/file/doc/solinst.html>

4.6 The Zephyr Messaging Service for the NICE Environment

Tony Cass, IT/PDP and Dan Pop, PPR/LE

The *Zephyr Messaging Service* is a network efficient way of sending messages between individual users, to a group of users or to every logged in user at CERN. *Zephyr* was developed as part of *Project Athena* at MIT and was introduced for UNIX Services at CERN in 1994. As *Zephyr* has only been available on UNIX until now, the service is probably well known only to some users but, following development work over the past few months, we are ready to extend the *Zephyr* Service to cover NICE users—and thus almost all computer users at CERN.

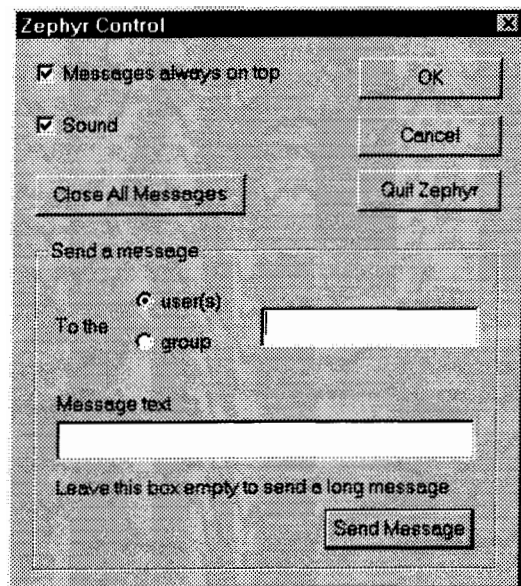
The *Zephyr Messaging Service* will, therefore, become part of the standard NICE environment after the Christmas shut-down. In particular, *Zephyr* will become the standard way for the Central Computer Operations team to inform users of both UNIX and PC services about any important service information.

Some users may remember a brief test of *Zephyr* as part of the NICE environment during October. We have since improved the integration of *Zephyr* with both *Windows 95* and

Windows NT and we have also improved the *Zephyr Control* application, which puts the little *Zephyr* icon at the right of the task-bar, so that many useful functions can be accessed directly. Once *Zephyr* has become part of the standard environment, NICE users will notice the little *Zephyr* icon near the clock at the right of the task-bar:

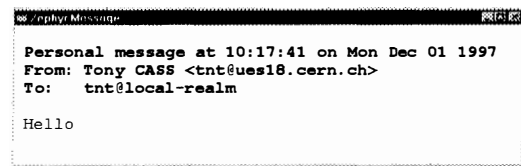


Clicking on this icon will bring up the *Zephyr* control panel which allows you to alter aspects of *Zephyr* behaviour, to send messages to other users or to close any *Zephyr* messages you may have received.



To send a *Zephyr* message to somebody else—whether they use UNIX or PC services—simply type their userid and your message in the appropriate text boxes of the *Zephyr* control

panel. The message will appear to them in a window like this.



You can use *Zephyr* to send a message to a group of users—such as everyone in your section or everyone who should attend a meeting. Please consult the *Zephyr* documentation available from the UCO for more information about these more advanced functions.

A one-page sheet will be available from the UCO covering basic *Zephyr* functions such as how to send a *Zephyr* message and how to handle the windows that may pop up on your NICE desktop. A more detailed *Zephyr* manual, covering all *Zephyr* functions but aimed more at UNIX users, is also available. If you would like more information about *Zephyr*, or if you have any problems with the *Zephyr Service*, please send an e-mail to Zephyr.Support@cern.ch.

4.7 Software Development Tools Service

Arash Khodabandeh, ECP/IPT

In the ECP/IPT Group we actively help software projects in CERN experiments to identify, evaluate, purchase and use industrial software development tools. Network floating licences are used as much as possible, so that the tools can be run remotely. We can also, if you have an AFS account, give you access to our Solaris server in case the binary for your platform is not available. You can find the complete information on what we have and how to use it at URL: <http://www.cern.ch/PTTOOLS/>.

Below is the list of currently available tools. For the latest information watch our News page at the URL <http://www.cern.ch/PTTOOLS/SoftNew.html>, which is updated as things happen. New products (NEW) and upgrades or newly supported platforms (signaled with an exclamation mark) are clearly marked on that Web page.

In the URLs below ... stands for <http://www.cern.ch>.

Requirement Engineering

PSS-05 URD Template: for *FrameMaker* and *WebMaker* (group product)

Analysis and Design

ADAMO .../Adamo/ADAMO_ENTRY.html
ER design and programming system
(group product)
3.2 for UNIX, VMS, VM

OMW	.../PTTOOLS/Kappa/ Martin/Odell analysis and design tool with C code generation. 1.3 for SunOs, Solaris, HP-UX.
Rose/C++	.../PTTOOLS/Rose/ OMT/Booch analysis and design tool with C++ code generation. 3.0.5 for SunOs, Solaris, HP-UX.
StP/OMT/Booch	.../PTTOOLS/Stp/ OMT/Booch analysis and design with C++ code generation. 2.3 for Solaris, HP-UX and OSF1.

Modelling and Simulation

Modsim	.../PTTOOLS/Modsim/ Discrete event modelling and simulation tool. 1.9.15 for SunOs, Solaris.
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Programming and Debugging

SNiFF+	.../PTTOOLS/Sniff/ Integrated development environment for C, C++, Java, Fortran and CORBA IDL. 2.3.1 for SunOS, Solaris, HP-UX, AIX, OSF, IRIX, and Linux.
--------	--

Graphical User Interface Builder

X-Designer .../PTTOOLS/XDesigner/
interactive X-platform GUI builder with
OSF/Motif toolkit widgets, C and JAVA
and Windows code generation.
4.6.B for SunOS, Solaris, HP-UX, OSF1,
AIX, IRIX.

Quality, Metrics and Testing

Logiscope Tool Kit .../PTTOOLS/Logiscope/
Source code analyser and test coverage for
C/C++/Fortran.
1 & 2 for SunOS, Solaris, HP-UX, AIX,
OSF1.

Look! .../PTTOOLS/Look/
C++ dynamic visualization system.
3201 for SunOS, Solaris, AIX.

Insure++ .../PTTOOLS/Insure/ Comprehensive
tool for error detection in C/C++ pro-
grams.
3.1 for Sunos, Solaris, AIX, HP-UX,

IRIX, OSF and Linux.

Documentation

FrameMaker .../PTTOOLS/FrameMaker/
Complete and integrated publishing tool.
5.1 for Sunos, Solaris, HP-UX, OSF1,
AIX, IRIX, Mac and Windows.

WebMaker .../PTTOOLS/WebMaker/
Generic configurable converter from
FrameMaker to HTML (for UNIX, Mac
and Windows).
3.0 for SunOS, Solaris, HP-UX, AIX,
IRIX, Mac and Windows.

User Guide Templates (group product)
Complete FrameMaker and WebMaker
book templates for the preparation of user
documentation. Includes predefined for-
mats for cover pages, preface, table of
contents, chapters, appendices, bibliogra-
phy and index. Editors can choose one
of two document styles. Package also in-
cludes a comprehensive user's manual.

5. Communications and Networks

5.1 Computer Security and the Web

J.N. Gamble (CERN Computer Security Officer), IT/CS

The Internet is a hostile place. Hackers, or perhaps more correctly “crackers” take pleasure in trying to break into computer systems. More often than not the conquering of computer systems is an end in itself, however, sometimes this is not so and the victim’s computers are used for other purposes. We have encountered cases where accounts have been used as a dropping-off place for hacker’s software and for a hiding place from which to attack other systems. Normally, we try to limit the access that anyone outside of CERN has to our computers, however, the very nature of the Web and Web publishing is to disseminate information, making it available over the Internet.

What can possibly go wrong? For web-servers hackers are primarily interested in two things: information leaks, and access holes. Information leaks can be to confidential or private information, available on or through a web-server. They may also be to account information, such as the password file on UNIX systems. If a hacker is able to obtain the “real” password file, then it is only a matter of time, using commonly available tools, for them to obtain the passwords of users. In general, information leaks can be protected by a well-configured web-server that restricts the information available through it in a sensible way. Access holes, on the other hand, are ways in which a hacker may gain immediate access to a web-server as if he/she were logged in. Access holes appear through either bugs in the web-server software, or through poorly written CGI scripts. The latter is by far the more common and even computer manufactures have distributed example CGI scripts with their standard software that have serious security holes in them. I cannot go into all the details in this article, but the most common problem is that the writers of CGI scripts are too trusting. They often overlook checking that what they expected to be returned from their

Web forms is what they receive.

Hackers are also very inventive. They do not rely on “Al-tavista” to locate their victim Web sites. For many years they have had tools that “scan” the Internet, IP address by IP address, looking for computers that have weaknesses. Recently these have been adapted to look specifically for web-servers and to exploit known security holes. CERN has been the target of at least one such attack.

To conclude, the best defence is to make sure that your web-server is correctly configured. I strongly recommend all who are writing CGI scripts or who manage web-servers to read carefully the WWW security Frequently Asked Questions found at URL

<http://www-genome.wi.mit.edu/WWW/faqs/www-security-faq.html>

The CERN Web Office also has documents with guidelines for setting up web-servers, including sections on security at URL

<http://www.cern.ch/WebOffice/Guidelines>

As a closing remark, this is not fiction. CERN is frequently “attacked” from the Internet. You may think that the chance of being burgled is small—but that does not mean that you do not lock your doors. To be safe, follow the guidelines above in setting up your web-servers and double check all CGI scripts. If you need any further information, do not hesitate to contact either the Web Office at WWW.Support@cern.ch or me at John.Gamble@cern.ch. If you think that you have security problems then contact Computer.Security@cern.ch or cert@cern.ch.

6. Application Software

6.1 CERNLIB 98 Release

Ian McLaren, IT/ASD

Release 98 of the CERN Program Library is scheduled for early March 1998. As the basic libraries in Cernlib are frozen, most of the changes are bug fixes or ports to new operating systems. A considerable effort has successfully been made to incorporate all the modifications for the *Microsoft Windows* port, using *Digital Visual Fortran*, into the Cernlib sources.

The Release Schedule can be found at the URL <http://wwwinfo.cern.ch/asd/cernlib/schedule98.html>. It contains details of the planned supported platforms and compiler levels as well as details of the changes made since the 97a release. Some changes may be made to the compiler levels in the light of feedback and late developments.

6.2 Cernlib on Windows NT/95

Ian McLaren, IT/ASD

The Windows NT/95 Cernlib 98 can be obtained in the usual way from our ftp server [asisftp.cern.ch](ftp://asisftp.cern.ch) and from the "Physics" item on the NICE start menu at CERN. There is a README in both these locations giving details of the *Digital Visual Fortran* and *Microsoft C* options that were used. On the NICE start menu there are options to execute PAWNT and to set the environment for Fortran applications that use Cernlib.

The most convenient way to access the libraries is by having a *Developer Studio* project that includes them in the project/settings/link dialog box. In addition, there are help menu links to the *Digital Fortran* manuals, the *Program-*

mer's Guide being particularly useful on linking procedures.

For information on distribution, pricing and other details of *DIGITAL Visual Fortran Standard Edition V5.0* go to the *Digital Fortran WEB site* (URL <http://www.digital.com/fortran/dvf-update.html>). PAW on NT is called `pawnt.exe` and is identical in functionality to `pawX11` on Unix. There are no plans to make `Paw++` as *Motif* is not available. On Windows 95 the HOME environment variable has to be set by issuing the command (or putting it in your `autoexec.bat` file):

```
set HOME=c:\tmp
```

6.3 Garfield Version 6.19

Rob Veenhof, IPN Orsay and NIKHEF

The main new feature of this version is the extension of the interface with the Maxwell finite element program, both for 2-dimensional and for 3-dimensional configurations.

CELL section

An interface for Maxwell 3D files has been added, and the interface for 2D files has been extended to include also the fields needed to compute signals on conductors present in Maxwell models. The very fruitful collaboration with Salvador Iranzo is gratefully acknowledged.

MAGNETIC-FIELD section

No changes.

OPTIMISATION section

A background field and potential, expressed in analytic form, can be added with the BACKGROUND-FIELD command.

FIELD section

A command, VIEWING-PLANE, has been added for making plots of 2D cuts through 3D field maps,

The axis labeling for PLOT SURFACE in HIGZ compilations has been corrected (the x and y axis labels were interchanged).

GAS section

The cross section parametrisations for Argon in Magboltz have been replaced. The new cross sections are in better

agreement with the Townsend data of Abdullah et al. and of Davies and Milnee. The transport properties at low and moderate fields do not change significantly.

An instruction, called ADD, has been added which enables one to add/replace elements to/of the gas tables.

Comparison of Magboltz calculations and measurements has shown that the diffusions estimates returned so far by the interface are less accurate than other estimates available in Magboltz. After consultation with the Steve Biagi, the default set of diffusion coefficients has been modified—the old set can still be obtained via options described in the *help file* (URL <http://consult.cern.ch/writeup/garfield/help>). The transverse diffusion is particularly affected by this modification.

We have also observed that the Townsend coefficients computed with the ITERATE-ALPHA and SWITCH options, although in principle more accurate, agree less well with the data for several gasses than those computed with the NOITERATE-ALPHA option.

The AXES command has been extended and has been renamed PLOT-OPTIONS.

DRIFT section

Options have been added to the CLUSTERING-HISTOGRAMS command to enable user control of the histogram binning.

SIGNAL section

Routines have been added to compute signals in polygonal tubes.

A numerical inaccuracy has been corrected in cells with 4 equipotential planes. Signals were accurate close to the wires, but inaccurate close to the planes.

Signals can now be computed on conductors for which a weighting field has been entered via the FIELD-MAP command in the cell section.

The units of signals written out to a dataset are now under user control.

Graphics

Vector plots are now drawn with true vectors rather than line elements. The top angle of the vectors can be modified with the ARROW-TOP-ANGLE graphics command.

Tickmarks were absent in the first decade of log scaled axes. This has been corrected now.

Two new models of markers have been added: TRIANGLE and HEXAGON, the triangles can have 4 orientations.

Histograms, Matrices, Formulae and Calls

Along with the total number of arithmetic errors, details of their nature are now printed. An option IGNORE-UNDERFLOW has been added to the algebra subsection to set exponential underflows equal to zero, without further warnings.

The argument list of procedure GET_CLUSTER has been modified to include the energy deposited in the cluster.

A mistake in the return arguments of FIT_FUNCTION has been corrected—the correct results were displayed, but they were not stored in the proper global variables.

Procedures have been added for the conversion between matrices and histograms, MATRIX_TO_HISTOGRAM and HISTOGRAM_TO_MATRIX.

A new procedure AVALANCHE has been added. This procedure is an extension of the Monte Carlo drift line integration procedures in which the generation and absorption of electrons and ions is simulated using the Townsend and attachment coefficients. Secondary electrons and ions are traced, and can induce further avalanches. Space charge is currently not taken into account.

Datasets and input / output

Most WRITE instructions now check whether the dataset to be written to already contains a member of the same type and with the same name. A set of global options has been added to control the action to be taken if such a member exists.

Global options

See datasets.

Compilation

No changes.

Documentation

Currently, the most accurate description of the program can be found in the *on-line help* (URL <http://consult.cern.ch/writeup/garfield/help>), the printed manual is not available at the moment, for lack of SGML at CERN. A set of *examples* can be found at the URL <http://consult.cern.ch/writeup/garfield>.

7. Questions and Answers from the UCO

A more complete collection of Frequently Asked Questions can be found on our Web page at URL:

<http://wwwinfo.cern.ch/support/direct-service/#FAQs>.

General (*Miguel Marquina and the UCO Team, IT/User Support*)

Question

Is there a video conferencing service available at CERN?

Answer

There is a videoconference system at CERN which is based on traditional CODEC (ISDN) systems. This service is managed by Gillian Bezar-Brown (Email: Gillian.Bezar-Brown@cern.ch), whom you should contact directly.

There is not yet a service for packet-based videoconferencing (using computers and packet networks). For this, please talk to Christian Isnard in IT Division.

Question

Is there any mail agent that can handle Japanese characters?

Answer

Netscape 4 is able to handle national characters including Japanese. For more information on how to compose a message with international encoding look at URL <http://help.netscape.com/kb/client/971112-44.html>.

Question

There is a new newsgroup in the alt. list that I would like to be able to read at CERN for professional purposes.*

Answer

Send your request, with the exact name of the newsgroup, to News.Support@cern.ch.

Question

How can I find out the members of a mailing list (listbox service)?

Answer

Send a mail to ListServer@listbox.cern.ch with a body containing:

```
who <name-of-the-list>
```

or use MOWGLI, as described in Section 2.2.

Question

How can I add an extra pop-up window command in the HEPiX system menu or in one of its sub-menus?

Answer

Everything concerning "HEPiX Fvwm2 default configuration and customisation" is explained at the URL

http://wwwinfo.cern.ch/umtf/working-groups/X11/window_managers/fvwm/doc/fvwm2.html

Question

On CERNSP (or other AIX systems) I cannot run emacs and get the following error message:

```
Could not load program emacs
member shr.o not found or file not an archive
Could not load library libXmu.a[shr.o]
Error was: No such file or directory
Exit 255 emacs bello.f
```

Answer

You probably need to "unset" the environment variable LIBPATH (e.g., type command "unsetenv LIBPATH" if using the tcsh shell).

Note also that LIBPATH on AIX (equivalent to LD_LIBRARY_PATH on SUN/Solaris) tells the dynamic loader where to find the shared libraries and to ignore the information contained in the binary command file. A normal CERNSP user does not have LIBPATH set, so the programs from ASIS (like emacs) have, when needed, embedded LIBPATH (for emacs it has to be set to /usr/local/lib:/usr/lib). Setting a specific value for LIBPATH invalidates this "embedded setting" contained in the binary command file, as for emacs (and many other commands).

Question

How can I "archive" files from CERNSP?

Answer

The command "pubarch (type man pubarch) gives you access to a "Public Archive Service for AFS Files".

Question

What is the exact syntax of the cernlib command to link a program with CERNLIB libraries?

Answer

Typing man cernlib, or looking at the *CERN UNIX User's Guide* gives the answer (see Section 7.4.1 in that Guide): where you will read:

7.4.1 The cernlib command

The cernlib command has been designed to ease access to the CERN program library software, while allowing access to user libraries. It is platform independent and accepts the POSIX syntax. Note that you must have the directory /cern/pro/bin in your path in order to use this command. cernlib alone grants access to packlib.

cernlib mathlib grants access to mathlib and packlib.
cernlib -L \$DELPHI_LIBS -l dstanaxx -l ux26xx grants access to libraries dstanaxx and ux26xx in the directory defined by the environment variable DELPHI_LIBS

The cernlib command is used in combination with the link command by enclosing it in back-quotes on the link command line. It is recommended to use it in conjunction with

the `hepf77` command, with is a CERN wrapper to the UNIX native FORTRAN compilers on all central platforms.

For instance, to link an application `hsimple.f` with `HBOOK`

```
hepf77 hsimple.f 'cernlib packlib'
```

will produce an executable `a.out`, whereas

```
hepf77 -o hsimple hsimple.f 'cernlib packlib'
```

will produce an executable `hsimple`.

NICE (Jason Oh, IT/User Support)

NICE (*NICE-95* and *NICE-NT*) provides an integrated environment for all the PC users at CERN, where all applications are centrally supported, installed, and managed. It is the standard environment at CERN for *Windows 95* (*NICE-95*) and *Windows NT* (*NICE-NT*). Below is a selection of questions that have been asked at the UCO or have arisen from the *NICE* working group. More questions (with answers) regarding *NICE95* can be obtained via URL:

<http://wwwinfo.cern.ch/support/uco/faqs#nice95>.

Question

I have a Word document which contains embedded graphics. Every time I launch Word the graphics are visible only using the Print Preview utility; what must I do to make them visible in the normal document view?

Answer

Graphics can be made visible by clicking on the following drawing icon containing the triangle, cube and cylinder: . This will also enable the drawing toolbar.

Question

I have NT installed on my PC and I have just installed NICE 95. Nice 95 works fine but now NT will not boot, why?

Answer

To create a dual-boot system, Nice 95 must always be installed first, otherwise NICE 95 will overwrite the NT boot record resulting in NT failing to load. To repair the system:

- on another NT machine create the 3 set-up disks using the command: `winnt /ox`;
- insert the Windows Setup disk #1 into the machine with the NT boot problem and start the machine;
- after a short while you will be prompted to insert NT Setup disk #2 <return>;
- a menu then appears, select the repair option and press <return>;
- then on the following screen uncheck all options except inspect boot sector <return>;
- insert the NT Setup disk #3 <return>;
- NT then detects the controller type, press <return>;
- another screen then appears asking if you have the "Emergency Repair Disk" (ERD):
 - if you have the disk, press <return>;
 - If you don't have the ERD, press ESCape. NT will then try and detect if a repair directory exists: if it does the system is repaired.

If the repair directory happens not to exist you will have to create an ERD from another NT machine.

It should be noted that usually an "Emergency Repair Disk" is machine specific but to solve this problem any ERD will suffice. Consider also the possibility of reinstalling NICE NT (selecting the FAT file system option). Please remember, if there is any important data on your local disk, ensure that it is backed up. For more information contact by e-mail User.Support@cern.ch.

Question

Is there any temporary scratch space available on NICE?

Answer

Yes, this can be located by navigating from the start menu to

More Applications ->

System Configuration ->

Get Temporary Disk Space

The temporary space allocated will be available for at least one week. Unmodified files older than one week will be deleted. Please be aware this is provided as an AS IS facility and everybody has the rights to read, write, modify and delete files on this volume.

Question

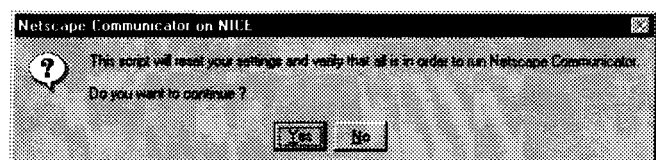
I am using Netscape Communicator 4: how do I remove the drop down list in the location window?

Answer

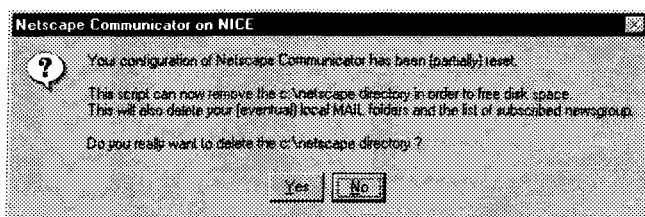
This can be done by editing the `prefs.js` file located in `c:\netscape\users\login_name\` but the recommended method is to use the "reset Netscape 4 config utility" located in

More Application -> World Wide Web

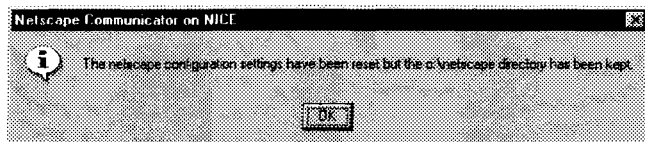
Then, without launching Netscape click on the utility with the icon:



When the first dialogue box appears, click **Yes**, then you get:



Click **No**, this will preserve your local Mail Folders and list of subscribed news groups.



Press **OK**, this will now modify your `prefs.js` file accordingly.

Question

I have reinstalled my NICE NT machine but when I try to connect to the domain I get the message that the domain controller for this domain cannot be found: what is the problem?



Answer

There are two possible solutions to the problem. Firstly, check that the WINS addresses are correct in the TCP/IP properties. This can be found in the Network icon of Control Panel -> select Protocols and double click on TCP/IP.

The WINS addresses should be 137.138.16.248 and 137.138.17.248. Secondly, each NT machine has a unique Security Identifier (SID) which has to be registered on the CERN domain controller with its PC (Netbios) name. When a machine is reinstalled, the SID changes and no longer matches the entry in the security database. To "Resynchronise" the information the computer account has to be recreated. For NT computer account recreation please e-mail a request to User.Support@cern.ch.

8. Computer Documentation

8.1 New Book Ordering Procedure at the UCO

Michel Franceschi, Miguel Marquina and Roger Woolnough, IT/User Support

When the service first started we were able to treat orders on a rather individual basis but, as it has grown, we have had to look at ways of organising everything automatically. As of January, 1998, all orders will be handled through a Web-based form to facilitate both the inventory and the accounting.

This form will have to be filled-in in place (at the UCO premises) when coming to fetch the books, rather than writing down the corresponding information on TIDs or through EDH (which will just state the amount of the purchase to be approved by the relevant budget holder). You'll need to complete your name, budget code and mark the required books, obtaining a WWW "bill" as follows:

COBS Service - Book Order Form

Date: November 27, 1997 - 08:34:40

PhoneBook Information matching "woolnough":

WOOLNOUGH Roger 79156 160870 IT US 513 1-020

Budget Code: 99999

I wish to purchase the following:

Qty	Stock	CHF	Loc	Title	Author(s)
1	8	55	j1	Word 97 BIBLE	Heslop,Engell
1	8	40	j1	Microsoft WORD 97 step by step	Microsoft
1	15	50	j1	Running microsoft WORD 97	Microsoft
Total: 3 books for a total amount of 145 CHF					

Order submitted. Thank you for using our Service

An electronic copy of the bill will be sent to your email address (a paper copy may optionally be produced in place). Procedures for payment according to the chosen method (EDH, TID or cash) stays unchanged. Further instructions may be found at the URL <http://consult.cern.ch/books>.

Unfortunately we cannot offer remote distribution and delivery for purchased books, and you'll have still to come along to get them. Still we anticipate this system will make the procedure simpler for everyone concerned and should you have any comments we will be pleased to hear from you at COBS.Service@cern.ch

8.2 Book News from the UCO

Roger Woolnough, IT/User Support

Since the last CNL we have received the following books: second editions of *Unix Power Tools*, and *Effective C++* as well as the new Perl book from O'Reilly, *Advanced Perl*.

For **PC users** I include below a list of new titles. Due to the success of the *Excel Bible* from IDG books we have decided to stock titles for both *Office* and *Word*. There are two new O'Reilly titles, the *Windows NT file system internals* is particularly complete. We have been asked for books on *Project* and so have just got a book in the *Using* series but as there was none for 97 the book is in the 98 series.

1. *Office 97 Bible*;
2. *Word 97 Bible*;
3. *Using Project 98*;
4. *Windows NT file system internals*;
5. *Word Annoyances*;
6. *Visual Basic Power OOP 5*;

Linux software has been a problem, but just to keep up with the demand! We obtained the official *Red Hat* software along with a good stock of the *Dr Linux* books. The software was soon out of stock and we are now getting new stock from a European supplier to avoid the delays. We can now ensure an adequate stock of *Applixware* and *Motif* on site by the time this CNL is published and we will also have plenty of copies of both 4.1 and 4.2 available.

Several new books are in stock for **UNIX**, including a second edition of the book from Stevens, *Unix Network Program-*

ming. This is in fact Volume 1 of what will be a 3-volume series, although the other two are not scheduled until end-1998. Due to the success of the *Comment faire* series for PC users we have a few copies of the Unix book in the same series.

Other books that have arrived since the previous CNL are listed below:

1. *C++ for Fortran Programmers*;
2. *Tk Tcl Tools*;
3. *Using HTML 3.2, Java & CGI*;
4. *Java in a Nutshell Deluxe edition*;
5. *Developing Java Beans*;
6. *Oracle SQL high performance tuning*;
7. *Physicists Guide to Mathematica*;

As usual these books are available via TID, EDH or cash at the UCO Help Desk (building 513). A full list of titles, prices and stock available can be found at

<http://consult.cern.ch/books>.

We encourage users to consult this list and check specially if it is in "Stock" before coming to the UCO "Help Desk". Please also read the new instructions for book ordering which we will initiate in the New Year: this is explained in detail in the previous article.

8.3 The UCO Reference Cards—Current List

Jason Oh, IT/User Support

The list is compiled regularly at URL: <http://wwwinfo.cern.ch/uco/reference-cards>

Computer Registration Documents

- 01 CERN Computer Centre User Registration (GU/SS)
- 02 CERN Computer Centre User Registration (OU)
- 03 CERN Computer Center User Registration (Super Computer)
- 04 Request for Account Modification/Deletion
- 05 Règlement révisé pour l'utilisation des service informatiques au CERN
- 06 Revised rules for use of computing facilities at CERN

Electronic Mail

- 07 Using QuickMail at CERN
- 23 Intro to Pine
- 29 Pine Key Reference for VM mail users
- 50 Cross Reference for Mail Services at CERN

Text Processing

- 20 Include ps and eps files into L^AT_EX

Text Editors

- 15 vi editor
- 16 pico editor
- 17 Emacs mini reference
- 30 Emacs and vi Commands for VM/XEDIT Users
- 34 GNU Emacs reference card

Programming Languages

- 22 SQL Basic introduction

Unix

- 08 Submitting a batch job on the SP2

- 09 Should I have a dot (".") in my PATH
- 10 Customising your shell – zsh specific
- 11 Customising your shell – tcsh specific
- 12 Customising your shell – zsh options
- 14 Unix Introduction
- 25 AFS Reference
- 33 Unix Commands for VM and VMS Users
- 41 UNIX News Reader Survey

Browsers

- 18 xdvi and ghostview
- 21 NCSA mosaic
- 28 Lynx browser

Software Packages

- 26 EDH (French)
- 27 EDH (English)

VAX/VMS

- 31 VAX/VMS Card

Miscellaneous

- 13 UNIX connectivity from Falco terms
- 19 make command
- 35 CMZ refcard
- 36 Zephyr Messaging Service for Unix Users
- 37 Falco infinity/Setup du terminal
- 38 Falco 5220e setup du terminal
- 39 Importing CERN Computer Equipment into France
- 40 Obtaining and Configuring a Modem to Connect to CERN from Home

8.4 The UCO Book Catalogue

Michel Franceschi and Roger Woolnough, IT/User Support

The Computing Book Selling Service is located at the UCO premises in building 513 and may be used exclusively by CERN users.

Our current offering of 216 Informatics books (aussi des livres en français) may be electronically ordered and payed via TID, EDH, or cash.

The list, with all the relevant information, is compiled regularly at URL: <http://consult.cern.ch/books>

Operating System.PC

The Complete reference to window... by Kadnier
The Mother of all Windows 95 by Leonhard,Simon
Windows NT made simple by Hobbs

Windows NT for Open VMS professi... by Solomon
Inside the windows 95 file system by Mitchell
Windows NT File System Internals by Nagar
Windows NT in a nutshell by Pearce
Windows annoyances by Karp
Windows NT4 workstation by Brannon,Mansfield
MS Windows NT workstation 4.0 by Microsoft
Microsoft Windows NT server reso... by Microsoft
Advanced windows (third edition) by Richter
MS Windows NT server res. kit su... by Microsoft
Windows NT 4 by Kretschmer

Operating System.Linux

A practical guide to Linux by Sobell

The complete red hat Linux 4.1 by Redhat
Linux Network Administrator's guide by Kirch
Running Linux by Kaufman,Welsh
Applix ware office suite for Linux by Redhat
Doctor Linux the complete refere... by Redhat
Motif for red hat Linux by Redhat
Official red hat version 4.2 Linux by Redhat

Operating System.Unix

Unix System Administration Handbook by Nemeth,Snyder,Seebass,Hein
Unix for VMS users by Bourne
The Design and Implementation of... by McKusic,Bostic,Karels,Qu...
Unix for the impatient by Abrahams,Larson
Unix Power Tools by Peek,Loukides,O'Reilly
A practical guide to the unix sy... by Sobell
A practical guide to unix sys 5 by Sobell
Unix for fortran programmers by Loukides
System performance tuning by Loukides
Essential system administration by Frisch
Unix in a Nutshell system V by Gilly,O'Reilly
Learning the Korn Shell by Rosenblatt
Posix 4 Programming for the real... by Gallmeister
Using csh and tcsh by Dubois
Learning the Bash Shell by Newham,Rosenblatt
UNIX comment faire quand on y co... by Taylor,Armstrong

Networking

NetWare 4.1 by Sheldon
Understanding networked multimedia by Fluckiger
Unix network programming by Stevens
TCP/IP illust. Vol 1 protocols by Stevens
TCP/IP illust. Vol 2 implementation by Stevens
TCP/IP illust. Vol 3 by Stevens
Managing NFS and NIS by Stern
TCP/IP network administration by Hunt
Pretty good privacy by Garfinkel
Building internet firewalls by Chapman,Zwicky
Practical unix and Internet secu... by Garfinkel,Spafford

X Windows

X Window sys. admin's vol 8 by Mui,Pearce
Xview programming manual vol 7 by Heller
Xview reference manual vol 7b by Raalte
Xlib Programming manual vol 1 by Nye
X Toolkit int. program. vol 4 by O'Reilly,Nye
Xlib Reference manual vol 2 by Nye
X Toolkit int. ref. manual vol 5 by Flanagan
X Toolkit int. prog. OSF/MOTIF v... by O'Reilly,Nye
X Window system user guide vol 3 by O'Reilly,Quercia
X Window sys usr OSF/MOTIF vol 3M by O'Reilly,Quercia
X Window system in a Nutshell by Cutler,Gilly,O'Reilly
X user tools by Mui,Quercia
X Protocol reference manual vol 0 by Nye
X companion CD for R6 by Nye
Programmer's supplement for Rele... by O'Reilly,Nye

Graphics

OpenGL Programming Guide (second... by Neider,Davis,Woo

OpenGL Reference Manual (second ... by OpenGL
Open Inventor C++ ref. man. by Open,Inventor
The Inventor Toolmaker by Wernecke
The Inventor Mentor by Wernecke
Motif reference manual vol 6b by Paula,Ferguson
Motif tools by Flanagan
Encyclopedia of graphics by Murray,VanRyper
Motif for red hat Linux by Redhat

WWW.HTML

Framemaker to HTML by Jackson,Keene
Cascading Style Sheets (WEB) by Lie,Bos
HTML3 by Raggett,Lam,Alexander
Using HTML 3.2 JAVA and CGI by Ladd,ODonnell
Using HTML3.2 (3rd edition) by Brown,Honeycutt
HTML The Definitive Guide by Musciano,Kennedy

WWW.Java

Just JAVA by Linden
Java Beans Developer Resource by Sridharan
Java how to program (2nd edition) by Deitel
JDBC Database Access with Java by Hamilton,Cattell,Fisher
The java language specification by Gosling,Steele
The java virtual machine specifi... by Lindholm,Yellin
Java appl prog init vol 1 by Gosling
The java Tutorial language by Campione,Walrath
The Java FAQ by Kanerva
Java Class Libraries by Chan,Lee
Java appl prog init vol 2 by Gosling
Concurrent Programming in Java by Lea
Using HTML 3.2 JAVA and CGI by Ladd,ODonnell
Java Script by Flanagan
Java in a nutshell, (second edit... by Flanagan
Developing JAVA Beans by Englander
Java in a Nutshell - Deluxe Edition by O'Reilly
Java language reference, (second... by Grand
Java in 21 days by Lemay,Perkins,Morrison

WWW.Other

Hyperwave by Maurer
How to set up world wide web site by Stein
Netscape 4 Communicator 6 in 1 by Guilford,Kraynak
Designing Web Graphics 2 by Weinman
Managing internet information se... by Liu,Peek,Jones,Buus,Nye
CGI programming on the WWW by Gundavaram
Netscape navigator Gold 3.0 by Simpson
Microsoft FrontPage 97 step by step by Microsoft
Netscape 4 Communicator 6 en 1 by Guilford,Kraynak

MS Office

Excel 97 Bible by Walkenbach
Office 97 Bible by Jones,Sutton
Word 97 BIBLE by Heslop,Engell
Using microsoft powerpoint 97 by Kasser
Using Project 98 by Pyron
Word 97 annoyances by Leonhard,Hudspeth,Lee
Microsoft WORD 97 step by step by Microsoft
Microsoft EXCEL 97 step by step by Microsoft
Running MS POWERPOINT 97 step by... by Microsoft
Running microsoft WORD 97 by Microsoft

Running microsoft EXCEL 97 by Dodge,Kinata,Stinson
Running Microsoft Office by Microsoft
Running microsoft POWERPOINT 97 by Sagman
Word 97 comment faire by Simon and Schuster Macmi...
Excel 97 comment faire by Simon and Schuster Macmi...
Office 97 comment faire by Simon and Schuster Macmi...

Text Processing/Editing

TeX CD ROMS by Tex
Postscript language ref. man. by Adobe
LaTeX user guide by L.Lamport
The LaTeX Companion by Goossens,Mittlebach,Samarin
Portable document format ref manual by Adobe
LaTeX Graphics Companion by Goossens,Rahtz,Mittelbach
Learning the vi editor by Lamb
Learning GNU Emacs by Cameron,Rosenblatt
Learning Adobe Framemaker 5 by Adobe
Classroom in a Book FrameMaker by Adobe
GNU emacs manual by Stallman
LaTeX guide pratique by Rolland

Databases

Oracle The Complete Reference by Koch,Loney
Oracle Beginners guide by Corey
Oracle SQL High-performance tuning by Harrison
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