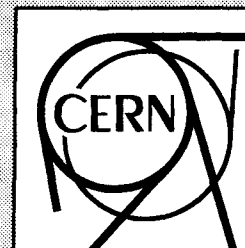


CERN COMPUTER NEWSLETTER



CERN - IT Division
CH-1211 Geneve 23
SWITZERLAND

APRIL – JUNE 1998

No. 231

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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 Christmas), unless the number of contributions is such as to make 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
232	Monday 14th September 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* (Cn1.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/231>

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 `cerncn1` $\text{\LaTeX}$ 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/231
ftp> binary
ftp> get cnl231.ps.gz (or get cnl231.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 cnl231.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 (Cn1.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 `Cn1.Registration@cern.ch`

N.B. You can cancel your subscription in both cases by filling in the appropriate form at the URL:

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

IF YOU NEED HELP (Contacts at CERN)

Please use the generic electronic mail address for the service 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				
Help Desk or 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				
User Relations and Service Manager	M.Marquina	513/1-011	74912	User.Support@cern.ch
Help Desk Manager	R.Woolnough	513/1-020	79156	User.Support@cern.ch
User Registration	M.C.Perler	513/1-017	75004	User.Registration@cern.ch
Accounting Service	A.Koppanyi	513/1-019	74933	User.Support@cern.ch
Computer Book Selling Service	M.Franceschi	513/1-022	72371	COBS.Service@cern.ch
Help Desk for Administrative Applications (EDH, BHT, etc.)		5/R-021	79933	Ais.Support@cern.ch
Opening hours: 8.30-12:30 and 13:30-17.30				
CENTRAL COMPUTER OPERATIONS				
Central Computer Operators (24/24 hours on call)		513/R-049	75011	Computer.Operations@cern.ch
<i>Public Login Servers (interactive UNIX servers)</i>				
RSPLUS (IBM/AIX)	P.Martucci	31/1-004	78611,160277	Pietro.Martucci@cern.ch
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
<i>CORE Services</i>				
CSF (Simulation Cluster)	V.Doré	31/2-012	72397,160363	Csf.Support@cern.ch
SHIFT (Reconstruction & Analysis Clusters)	T.Cass	31/1-017	78724	Tony.Cass@cern.ch
PCSF (Windows NT simulation cluster)	C.Boissat	31/2-012	73195,160132	pcsf-support@listbox.cern.ch
CORE Operations	M.Vergari	31/2-013	74979,160129	Mario.Vergari@cern.ch
Work Group Servers	T.Cass	31/1-017	78724	Tony.Cass@cern.ch
PaRC Service (Engineering Cluster)	P.Martucci	31/2-012	78611,160277	parcsp@mail.cern.ch
PIAF Service (Interactive Analysis)	B.Ferrero	513/2-006	74886	Piaf.Support@cern.ch
NAP and Parallel Applications	E.Mcintosh	31/3-023	74934,13+5584	Eric.Mcintosh@cern.ch
Direct Support for Physics	H.Renshall	31/2-007	72377	Harry.Renshall@cern.ch
Central VMS Services	T.Whibley	513/R-033	74849,160355	Tim.Whibley@cern.ch
Oracle (Relational Database)	S.Santiago	31/3-011	74134	Oracle.Support@cern.ch
Distributed Printing	J.L.Vosdey	513/R-049	74976	Printer.Support@cern.ch
Tape Allocations and Vault Space	R.Minchin	513/R-009	74936,160133	Richard.Minchin@cern.ch
Stager, tapes and TMS support	-	-	-	Tape.Support@cern.ch
APPLICATION SOFTWARE				
CERN Program Library	L.Besson	513/1-008	74951	HepLib.Support@cern.ch
LHC++	J.Shiers	513/1-002	74928	Lhc++Support@cern.ch
PAW	O.Couet	513/2-006	74886	Paw.Support@cern.ch
GEANT (maintenance and developments)	S.Giani	513/2-013	73102	Geant.Support@cern.ch
DESKTOP COMPUTING				
Desktop Infrastructure Services	A.Silverman	31/1-009	74955	Alan.Silverman@cern.ch
Distributed File Systems (inc. AFS)	R.Többecke	31/1-024	78985	Afs.Support@cern.ch
Mail Support	-	-	74952	Mail.Support@cern.ch
NICE (Networked PCs)	A.Pace	31/1-019	72897	Nice.Support@cern.ch
Macintoshes	K.Pluntke	513/R-045	75015/160023	Mac.Support@cern.ch
PC Shop (Repairs)	B.Fay	513/R-047	78723	
PC Shop (Sales)	R.Duval	513/R-048	78140	
UNIX Workstations and X Terminals: Front Desk	C.Ball	31/1-027	73349	Workstation.Frontdesk@cern.ch
UNIX Workstations and X Terminals: 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 s/w: 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				
INFORMATION, PROCESS AND TECHNOLOGY				
Software Development Tools	A.Khodabandeh	1/R-005	79099	swtool@ptsun00.cern.ch
Adobe FrameMaker	M.Ruggier	1/R-003	78072	docsys@ptsun00.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://network.cern.ch/wwwcs/public/contacts.html				

Service	Name	Address	Telephone	E-mail Address
OTHER SERVICES				
Computer Security	J.Gamble	31/3-030	160261	Computer.Security@cern.ch
Web Office (general)	R.Cailliau	53/R-014	75005	Robert.Cailliau@cern.ch
Web Office (support)	M.Dimou	53/R-010	73356	Web.Support@cern.ch
Document Computing	M.Goossens	513/2-002	75028	Michel.Goossens@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/
User Support	http://wwwinfo.cern.ch/support
User Consultancy Office (UCO)	http://consult.cern.ch/uco
User Registration	http://consult.cern.ch/uco/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://consult.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/
Software Development Tools	http://www.cern.ch/PTTOOLS/
FrameMaker Support	http://www.cern.ch/FrameMaker/
Network Connection Request Form	http://network.cern.ch/register
TvScreen (Systems Status)	http://wwwcio.cern.ch/0thers/TvScreen.html
PC Farms Homepage	http://wwwinfo.cern.ch/pdp/pc/
Web Office	http://www.cern.ch/WebOffice
Web Office / WPG	http://www.cern.ch/WebOffice/#WPG
Web Office / DWG	http://www.cern.ch/CERN/meetings/DWG/Members.html
Web Office / Guidelines	http://www.cern.ch/WebOffice/Guidelines/

OTHER COMPUTING NEWSLETTERS**Computing for Engineering:**

See *CERN Computing Support for Engineering Newsletter* (<http://wwwinfo.cern.ch/ce/newsletter/newsletter.html>)

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(s)	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
Informatics Tutorials	IT Auditorium 31/3-005	M.Marquina	IT		IT-Training.Service@cern.ch
		R. Ramos	IT		

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	Div.	Representative
AS	M. Draper	AT	P. Heymans	DSU	M. Draper	EP	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 URL: <http://nicewww.cern.ch/homepage/nicerepr.htm>

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://network.cern.ch/wwwcs/public/divreps.html>

Letters from the Editor

Dear CNL readers,

You will discover, in this CNL issue, quite a different structure for our *Computer NewsLetter*; this is most obvious in practice from the re-naming of most of the chapters, and the re-organization of the articles inside these chapters.

The CNL is still popular (looking at the number of people who continue to register) and constitutes one of the most important information channels of the Information Technology (IT) Division at CERN. The main objective for defining such a new structure was to offer to our readers something more oriented towards *services* rather than IT-internal (i.e., group-related). If the structure is well defined, readers should be able to know immediately, just looking at the table of contents of the CNL, where they will find the piece of information they are interested in.

I will summarize and explain briefly the new structure we intend to use. This is the new list of chapters you will find in this CNL:

- Announcements
- (*) Physics Computing
- (*) Desktop Computing
- (*) Internet Services
- (*) Application Software
- (+) Desktop Publishing
- (+) Informatics Training
- (*) User Documentation
- (*) Problems & Queries from Users

All chapters which are preceded by (*) should be considered as “regular”, meaning that they should appear in (almost) all CNL issues; chapters preceded by (+) are also regular, but in a less extensive way, and could be left aside more frequently.

The *Announcements* chapter will only contain “punctual (limited in time) or/and “divisional” information, such as the announcement for the “1998 CERN School of Computing” made in the last CNL, or changes of structure inside IT division or internal to groups.

The design of the proposed chapters is:

- *Physics Computing*: oriented towards the functional description of all the Central Public Services, specifically oriented to use by the Research sector, either for interactive (central and CPU intensive) or batch processing. Articles related to the *Oracle* Database Central Services, or to central networking issues can also be included.
- *Desktop Computing*: has more or less the same scope as today, with all articles related to the CERN desktop environment centrally provided either on UNIX or on NICE (NICE95 and NICE-NT), plus details about the support CERN users may expect for this environment.

- *Internet Services*: with everything related to *Internet* in a large sense; i.e., all technical *Web* issues, as well as various communication and network issues (mail, news, connection from home, video conferencing project, security issues on the network, etc.).
- *Application Software*: will group all articles related to any kind of “application software”, including the “engineering applications”, like the PaRC applications, or the ones developed/maintained by the *Controls* group, “software engineering” applications provided by the “*Software Development Tools Service*”, or, finally, the scientific applications and libraries from CERNLIB and LHC++, mainly used by the Physicists.
- *Desktop Publishing*: “renaming” of the old *Text Processing* chapter, with a “look towards the future”; it should be more and more oriented towards HTML issues but will also include all kinds of articles related to text processing in general: *TEX*, *Word*, *Framemaker*, etc.
- *Informatics Training*: should contain (in the future) announcements made by the “CERN Education Services / Technical Training Programs”, and digests of what is provided by the “IT Informatics Tutorials”, but also computing tutorials, like the very interesting one on “Object Oriented Technologies” in this CNL.
- *User Documentation*: “renaming” of the *Computer Documentation* chapter, with the regular series of articles: “Book News from the UCO”, “The UCO Reference Cards - Current List”, the “UCO Book Catalogue”, and the new series of articles sub-titled “COBS Review”, rating the books offered at the Computing Books Selling Service. Everything else related to “documentation” should be included in this chapter.
- *Problems & Queries from Users*: “renaming” of the “Questions and Answers from the UCO” section; this chapter can be extended with contributions from all groups in IT who maintain any kind of “Frequently Asked Questions” database.

In addition to that pre-defined list of chapters, it could be that occasionally a “special” chapter is added, such as the “The ‘Year 2000’ Problem” chapter in CNL 228. Readers who are interested in a more precise description of this new structure can refer to the IT/User Support internal document, *Proposal for a new structure of the CNL* (IT-US/1998/01). It is available at the URL

<http://wwwinfo.cern.ch/doc/IT-US/1998/01>.

Any comments from readers concerning this new structure is welcome, and can be addressed directly to me at:

Cnl.Editor@cern.ch

I guess that one other wish the CNL readers may express is to review the “appearance” of the CNL and to make it more “fashionable”; as you may know, this work was already undertaken for the *Computing for Engineers Newsletter* (<http://wwwinfo.cern.ch/ce/newsletter/newsletter.html>), which certainly looks more attractive than our present CNL. However, even though this task seems quite easy to achieve today by using one the various tools available on the PC-market, one goal of the CNL is that it should be **easily and quickly accessible to everybody**, for instance, by using the most basic Web browsers (like the free public domain *Mosaic*). Also, one must be aware that we must keep the printing cost of the CNL as low

as possible, so that we can continue to distribute it freely outside CERN. Consequently we are still waiting for some stabilization in Web technology (see, for instance, the article “The Web Prepares for the Future” (http://consult.cern.ch/cnls/230/art_xml.html in the last CNL) to go further in that direction. In this domain, a common agreement for all kinds of documentation distributed by IT division will have to be reached: a working group is being set-up for this (huge) task.

Let me finish this particular and long “Letter from the Editor” section and wish you an interesting reading of this new issue (no 231) of a “revised” CNL.

Nicole Crémel
CNL editor, IT/User Support

1. Announcements

This chapter only contains "punctual" (limited in time) or/and divisional announcements.

1.1 Reduction in Tape Vault Staffing - 1st July,1998

Richard Minchin, IT/PDP

As planned and previously announced, the staffing level in the tape vault will be further reduced as from 1st July,1998. From this date, manual tape operations will be performed during normal CERN hours, i.e. 08:30-17:30, Monday-Friday. Please note that any import/export activities normally involving the operator should be scheduled during these times.

Outside these hours, occasional mounting of tapes will be performed by the remaining central operator (75011) on a best-effort basis, but his other tasks will have priority.

Please contact the author (Tel. 74936, 160133, Email richard.minchin@cern.ch) if you have concerns about the above or urgent needs in the area of manual tape activities:

2. Physics Computing

Functional description of all the Central Public Services, specifically oriented to use by the Research sector, either for interactive (central and CPU intensive) or batch processing.

2.1 The Future of VXCERN

Tami Kramer, IT/DIS

Following the schedule announced in the last issue of the CNL (CNL 230, http://wwwinfo.cern.ch/cnls/230/art_vxcern.html), tape staging to VXCERN will be **stopped as of July 31st**. Archive saves and new user account creation have already been stopped.

Users still using VXCERN for mail are **strongly encouraged** to migrate to the Mailserver, following the procedure detailed in the VMS section of the *Pine* mail Web page:

<http://consult.cern.ch/service/mail/clients/pine>

In December of this year, a major review of VXCERN accounts will be made with the experiments, in order to identify those accounts which should be kept open beyond January 1st, 1999.

3. Desktop Computing

It includes CERN desktop environment centrally provided on UNIX and PCs (NICE95 and NICE-NT), desktop software strategy, etc.

3.1 Operating System Certification - Present List

Philippe Defert, IT/DIS

As stated in CNL 224 (http://consult.cern.ch/cnls/224/art_cert.html), here is the list of various versions of UNIX which we certify as working correctly with the CERN-recommended libraries, tools and utilities, as of June 8th, 1998:

- HP-UX 10.20 - certified
- Solaris 2.5.1 - certified
- Digital UNIX 4.0.b - certified
- AIX/6000 4.1.4 - certified
- Linux Red Hat 4.1/4.2 - certified

We are in the process of certifying Solaris 2.6 and Linux Red Hat 5.1.

For those interested in the certification process, it is described in the 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 cern.hp, etc.) and will be summarised both in the Web page listed above and in each forthcoming CNL.

3.2 Operating Systems Availability on ASIS

Philippe Defert, IT/DIS

The various Operating Systems (O.S.) for which there is software in the ASIS application software repository are:

- sun4x_55: SUN Solaris 2.5.1
- hp_ux102: HP-UX 10.20
- rs_aix41: IBM AIX 4.1.5
- rs_aix42: IBM AIX 4.2 (partial)
- alpha_dux40 (DEC OSF 4.0b)
- sgi_52: SGI Irix 5.3 (unsupported)
- sgi_64: SGI Irix 6.4 (unsupported and partial)
- i386_linux: Linux Red Hat 4.1
- i386_redhat50: Linux Red Hat 5.1 (partial)
- 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 said to be “frozen”, it means that all applications are kept in the repository but no new package or version of a package will be introduced in the repository for this architecture.

When a platform is said to be “partial”, it means that only some applications are generated for this particular O.S. Getting access to ASIS applications is to be done with the appropriate tools which will give you some applications of this particular platform and the rest from the “closest” O.S., called the “fail-over”.

3.3 CERN Linux CDs

Lionel Cons, IT/DIS

In order to ease the use of Linux at CERN, the IT/DIS/OSE section is producing CDs giving access to resources (files, programs, documentations, etc.) publicly available on the CERN network via NFS, AFS, FTP, etc. These CDs can be used for instance at home or on portable computers. If you have access to the CERN network, it's generally better to use the “live data” on the network which is guaranteed to be up to date.

There are currently two types of CDs:

Installation CD

It contains everything needed to install the CERN recommended version of *Red Hat*: DOS programs, diskette images, installation files, contributed software, etc. It is a partial copy of the CERN Linux Software Repository.

Application CD

It's an almost complete copy of the ASIS repository for Linux. It contains the CERN Program Library and

many public domain programs such as the GNU tools, *Perl*, *Netscape*, ...

Both CDs are now available from the UCO for *Red Hat 4.1* (the latest “certified” Linux version at CERN). Versions for *Red Hat 5.1* (the next version for CERN) will come during the summer.

The CDs are basically free. We only charge for the media, preparation, duplication and distribution costs. See the *UCO catalogue* (<http://wwwinfo.cern.ch/support/>

[cobs-service/books/](http://wwwinfo.cern.ch/books/)) for the exact prices.

More detailed information can be found at URLs:

CERN Linux CDs:

<http://wwwinfo.cern.ch/dis/linux/cds.html>

UCO COBS service:

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

3.4 HP-UX 10.20 and (no) Version 11

Lionel Cons and Alan Silverman, IT/DIS

After a survey of the main CERN groups and teams using HP workstations and servers, and at the request of the FOCUS committee, we have decided not to support HP-UX 11 for general use in CERN, at least not for the coming 18 months. Instead we will freeze on the currently-certified version, HP-UX 10.20, with the exception that we will re-certify it with the latest patches and some fixes which HP states will make it compatible with the Year 2000. We will also look into certifying the latest release of 10.20, the so-called ACE version. Freezing 10.20 in this state does not affect its support which will continue for the foreseeable future. This includes:

- user support,
- reporting problems to HP and providing patches (as long as HP supports this version),
- the provision of AFS,
- the availability of a central installation service based on 10.20,
- a working SUE for 10.20,

- the provision of ASIS tools based on 10.20,
- the provision of the current CERNLIB release based on 10.20,
- the provision of other tools, commercial and public domain, based on 10.20 for as long as the supplier supports this version.

In addition, there are currently no plans to upgrade the central HP batch and interactive servers beyond version 10.20.

Purchasers of HP workstations and servers should ensure that new systems bought can run version 10.20. A small part of HP's latest range only run under version 11; today, May 1998, this concerns mainly the V Class of servers. We cannot say today if future models, perhaps based on newer PA-RISC chips, will be able to operate under version 10.20 or not. Prospective users should check with HP before buying new HP equipment.

If you have any questions on this subject, concerning either version 10.20 or version 11, please contact Lionel Cons (Lionel.Cons@cern.ch) or Alan Silverman (Alan.Silverman@cern.ch).

4. Internet Services

*Everything related to **Internet** in a large sense: i.e., all technical **Web** issues, electronic mail, Internet news, home access to CERN facilities, video conferencing and multi-media, network security, etc.*

Incidentally please note that all Web activity at CERN is governed by the Web Policy Group (WPG) and the Divisional Webmasters Group (DWG). The Web Office coordinates the day-to-day tasks. The DWG provides Guidelines for Web sites at CERN; when in doubt, consult your Division's responsible member.

4.1 Quotas on the Central Mail Server

Arnaud Taddei, IT/DIS (for the Mail Support Team)

Along with your account on the Mail Server you have been allocated some disk space so that you can store your folders remotely and thus benefit from the location independence feature of the service. If you store your folders on the Mail Server you can travel and still access them remotely.

Of course, as on any system where users are sharing disk space, it is important to control its usage by allocating quotas. This should not be seen negatively. Our goal is not to cause problems, but, as this measure is accompanied by the right management tools, it should encourage you to identify no longer relevant mail messages and help you to keep the amount of information stored in your folders under your control instead of being controlled by the flow of information!

Quotas on the Mail Server work in a similar way to AFS. Every user of the Mail Server has by default a quota of 10 MBytes. Quotas are controlled by group administrators who are given a group allocation and have been asked to manage your quotas. Your group administrators can reset your quotas to whatever values you agree with them.

Mail Server quotas have, however, nothing to do with the quotas you have on NICE (Novell system) or on AFS. Do not confuse them. If you want to know your Mail Server quota simply connect to your Mail Server by following the instructions at:

[http://wwwinfo.cern.ch/service/mail/advanced/
tools#connect](http://wwwinfo.cern.ch/service/mail/advanced/tools#connect)

and once connected, enter the command:

quota

This will give you the information.

What happens when you are approaching your quota limit?

In most cases you will receive a mail message informing you about this and suggesting that you free some disk space. Our

advice is try to resist the temptation to ask for a bigger quota but to determine instead if you are wasting disk space, e.g., with some large message that was sent to you but is no longer relevant (see below).

Even when you are "over quota", new mail messages will **not** be refused. However you will not be able to store or file any messages you have read and a copy of your outgoing messages will not be filed on the mail server. Also, if you are processing mail automatically using 'enable-filter' (calling procmail), this tool will not be able to file any more messages to your Mail Server folders.

If you connect to the Mail Server as mentioned above you can use several commands to give you some indications as to where you are wasting space. Commands like:

```
list-myfiles
folders-status
```

will produce quite an accurate view on the status of your messages stored on the Mail Server.

To read more about what you can do and look at examples, read:

[http://wwwinfo.cern.ch/service/mail/advanced/
overquota](http://wwwinfo.cern.ch/service/mail/advanced/overquota)

Sometimes you might want to delete a folder on the Mail Server yet keep its contents somewhere. Please remember that any IMAP client gives you the possibility to download a folder to your local system (like NICE, AFS, VMS, your local machine's disk, a disquette, etc.) so that you can keep it as an archive.

In the future, tools to archive folders will be provided so that you can organise a real archiving schema for yourself and/or your colleagues.

4.2 Office Moves Involving Network Equipment

Mike Gerard, IT/CS

When any office move involves computer equipment which is connected to the CERN general-purpose computer network, it is almost always necessary to indicate the move details via a *Web Network Connection Request Form* at URL:

<http://network.cern.ch/register>

The only exceptions to this requirement are portable computers duly registered as such.

In the normal case that the new office already has the structured cabling it will be necessary to select an unused network outlet there. Checking which outlets are unused should be done from this request form via the function:

‘‘View or correct the registered information about a device’’

and specifying the ‘‘Building and room number’’ (‘‘Search by Location’’) of the new office.

Note that an outlet there may appear to be free (no computer physically connected) but yet be connected in the star point and reserved for some different equipment: specifying a non-free outlet will cause the device registered as on that outlet to be disconnected.

If there is no available free network outlet then the use of a fan-out, permitting multiple connections on a single outlet, will be necessary. Where necessary a user may call in at the *Network Operations Office* (513 R-034, 74927) to obtain one on loan.

The *Web Network Connection Request Form* also permits the user to select the function:

‘‘Move and Reconnection of a device’’

Inside this function it is possible to specify the computer equipment to be moved in any of several ways (name, location, owner etc.) and the new location. Users may also correct any wrong information concerning the device and indicate an e-mail address for any automatic correspondence concerning the move request.

Once all details of the move request have been accepted by the request form procedure, and confirmed by the user, then

the computer equipment may be physically moved. Note, however, that the network connection cables and any existing fan-out device should **not** be touched: the network support persons will recuperate old cables and supply new ones of a length appropriate to the new office.

Almost all computer equipment will have an associated *Internet Protocol (IP)* address. In moves inside buildings this address may often remain unchanged, although this *cannot be guaranteed*. If a new IP address is needed then the user sending the move request will be informed of the new address, and will be responsible for making the change as soon as the equipment is in the new place. For all standard equipment the procedures are documented and available on the Web and via the standard CERN support.

Portable computers properly registered may be moved around the site without any administrative procedures, although *they may only be connected to network outlets registered as portable*: such outlets should already have been clearly marked with a sheet of paper indicating the fixed IP address (or addresses, in the case of a fan-out) for the outlet. Such outlets also permit the use of the automatic IP configuration procedure known as DHCP.

Please note that it is **very important** to register any portable computer as such, including a device name (not the same as an IP name) which may be used to identify it when accessing the CERN NICE servers. It is also important that the physical *ethernet* address of the portable be included in this registration, so that, in case of any problem on a portable outlet, we know who to contact (and do not risk having to disable the outlet temporarily if the problem is serious). Portable computers are registered via the same request form using the included function:

‘‘Portable registration’’

In case of any problem with the use of the request form there is a large amount of included help information. If this information, plus the contents of any diagnostic messages, is not sufficient to make the required move request then a user may send e-mail to: Network.Support@cern.ch. In urgent or complex cases phone 74927.

5. Scientific Applications and Software Engineering

This includes descriptions of:

- scientific applications and libraries from CERNLIB and LHC++, mainly used by the Physicists,
- engineering applications like the ones on PaRC or those associated to online controls,
- software development environment.

5.1 Garfield Version 6.21

Rob Veenhof, NIKHEF (Amsterdam, the Netherlands)

Garfield (see URL <http://consult.cern.ch/writeup/garfield>) is a computer program originally written for the detailed simulation of two-dimensional drift chambers. The PaRC (<http://wwwinfo.cern.ch/parc/>) service has taken over the production of executables at CERN. The following article describes the list of modifications since the latest official release (previous releases have been described in past CNL articles, see the URL <http://wwwinfo.cern.ch/writeup/garfield/cnl.html>).

CELL section:

A new command, SOLIDS, has been added which can be used to define the 3-dimensional objects present in the chamber in case the field is derived from a field map. Entering these objects is not mandatory, but is helpful when studying collection efficiencies, computing calibration curves and signals. Some commands like RESET have been modified in line with the addition of the SOLIDS command. It is hoped that this information can in the future be derived from files produced by the finite element programs.

MAGNETIC-FIELD section:

No changes.

OPTIMISATION section:

Field maps can now also be used for the background field.

FIELD section:

As part of the on-going extension to three dimensional structures, a new scheme has been introduced for selecting the visualisation of the chamber. Apart from the traditional x-y view, it is now possible to produce plots for cut planes and three dimensional impressions of the chamber. The main command affected is AREA which now accepts a considerably extended argument list.

GAS section:

Ion diffusion coefficients have been added - they can be set with the PARAMETERS statement and are taken into account when performing Monte Carlo drift line integration for ions.

The diffusion coefficients are for the time being assumed not to depend on the field, but this limitation can be lifted if needed.

The TEMPERATURE and PRESSURE statements now accept a unit following the temperature and pressure. The latter, for instance, can therefore be entered in more common units like the atm or the hPa rather than in Torr.

Steve Biagi has released a Monte Carlo version of Magboltz which should have a substantially higher accuracy. An interface with this program is being written. Meanwhile, interested users should contact Steve Biagi (sfb@hep.ph.liv.ac.uk) of the University of Liverpool directly.

DRIFT section:

The same extended AREA command as in the field section has been introduced here.

SIGNAL section:

No changes.

Graphics:

No changes.

Histograms, Matrices, Formulae and Calls:

The argument list of PLOT_TRACK and PLOT_DRIFT_LINE has been modified to match the new projection scheme.

Procedures for drifting negatively charged ions have been added.

A procedure that integrates the charge contained in a cylindrical or spherical area has been added. There is now also a procedure that computes the flux of the electric field through a parallelogram.

Intrinsic functions called MINIMUM and MAXIMUM have been added. They operate on histograms and matrices and return the minimum and the maximum number of entries or value of the argument histogram or matrix.

Datasets and input / output:

No changes.

Global options:

No changes.

Compilation:

Executables are built on PaRC and can be accessed as /afs/cern.ch/project/parc/bin/garfield. For further

information, please contact Parc.Support@cern.ch or Juan Manuel Guijarro (Juan.Manuel.Guijarro@cern.ch).

Documentation

Currently, the most accurate description of the program can be found in the “on-line help” (<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 on the Web, as described at URL <http://consult.cern.ch/writeup/garfield>.

5.2 Software Development Tools Service

Arash Khodabandeh IT/IPT

In the “Information systems, Process engineering and software Technology” Group (IPT), 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 the URL <http://www.cern.ch/PTTOOLS/>.

Below is the list of currently available tools. For the latest information watch our News page which is updated as things happen:

<http://www.cern.ch/PTTOOLS/SoftNew.html>

Below is the list of currently available tools (for the most recent news look at the URL <http://www.cern.ch/PTTOOLS/SoftNew.html>).

Requirement Engineering

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

Analysis and Design

- **ADAMO** (group product): ER design and programming system.
- **OMW**: Martin/Odell analysis and design tool with C code generation.
- **Rose/C++**: OMT/Booch analysis and design tool with C++ code generation.
Upgrade to 4.0.16b with support for UML and for new platforms coming soon.
- **StP/OMT/Booch**: OMT/Booch analysis and design with C++ code generation.

Modelling and Simulation

- **Modsim**: Discrete event modelling and simulation tool.

Programming and Debugging

- **SNiff+**: Integrated development environment for C, C++, Java and Fortran.
Upgrade to 2.4 coming soon.

Graphical User Interface Builder

- **X-Designer**: Interactive X-platform GUI builder with OSF/Motif toolkit widgets, C, JAVA and Windows code generation.

Quality, Metrics and Testing

- **Logiscope Tool Kit**: Source code analyser and test coverage for C/C++/Fortran.
- **Look!**: C++ dynamic visualization system.
- **Insure++**: Comprehensive tool for error detection in C/C++ programs.
Upgrade to 4.0 coming soon.

Documentation

- **FrameMaker**: Complete and integrated publishing tool.
New CERN Templates for FrameMaker:
 - new WMLs for TechPaper (Technical Paper Template);
 - Slides is now replaced with 2 slides templates: Slides-ConnectedPages and Slides-DisonnectedPages.
- **WebMaker**: Generic configurable converter from FrameMaker to HTML (for UNIX, Mac and Windows).
- **IXgen**: Indexing and marker management tools for FrameMaker.
- **User Guide Templates** (group product): For FrameMaker and WebMaker.

6. Desktop Publishing

Everything related to "Text Processing": HTML issues, $\text{\LaTeX}$, Word, Framemaker, etc.

6.1 EMT, an Interactive Facility to Create $\text{\LaTeX}$ Documents on a PC

Johannes Hagel, PS/LP

As well known $\text{\LaTeX}$ is a typesetting program for mainly scientific applications using $\text{\TeX}$ as its formatting facility[1]. A special version of $\text{\LaTeX}$ has been written for IBM compatible PC's by Eberhard Mattes called EMTEX and is being used on a large number of personal computers. It is available in the CERN computer network (NICE) and is essentially compatible with the present agreed $\text{\LaTeX}$ standard[2]. Since the first versions of $\text{\LaTeX}$ were designed for use on mainframe computers, $\text{\LaTeX}$ but also EMTEX does not directly support user-friendly program environments as they are possible on PC's with other text processing systems (specially under Windows and Windows95) and this in spite of $\text{\LaTeX}$ being more powerful than many alternative applications.

Facing the need to directly include into a document the results of graphics output from numerical calculations and of analytic results from symbolic manipulation programs (e.g., Maple), the author decided to build a tool achieving these goals while processing the text.

Having this in mind and being a frequent user of $\text{\LaTeX}$ /EMTEX the idea was to write an interactive and user-friendly facility program for IBM PC compatibles called EMT. The EMT program that is fully menu-guided and helps to create a text based on a $\text{\LaTeX}$ /EMTEX file, translate it into a dvi file, preview it, generate an equivalent PostScript file and provide a means to edit and include figures obtained by the Windows Gnuplot program[3]. In addition a compiler was written to translate 15 new commands to standard $\text{\LaTeX}$ /EMTEX code. Amongst these commands one finds utilities to write fractions, partial and total differentials, vectors, matrices and tables, polynomials and rationals, to set up letters of correspondence and two commands to provide an interface to the symbolic manipulation program MapleV[4] available for PC's.

The facility EMT has been written for DOS using Microsoft QUICK BASIC V4.5[5] (available on the CERN computer

network). It is a fast compiler language very capable to design user-friendly software. Although EMT is an MS-DOS program, it uses links to Windows95 based applications like Gnuplot and MapleV. Evidently, it is possible to start EMT as a separate window when calling it from the Windows95 operating system and a few copies at the same time can run independently on the same computer as usual under Windows. Users wishing to work with Gnuplot or MapleV from within EMT must be in a Windows95 session (Windows3.1 does not offer the full functionality of EMT). It is also recommended to use as a minimum a 100 MHz Pentium PC in order to run EMT with acceptable speed.

For more information on the EMT system see the User Guide[6].

Bibliography

- [1] Leslie Lamport, *$\text{\LaTeX}$ -A Document preparation system-User's Guide and Reference manual (Second Edition)*. Addison-Wesley, Reading, 1994.
- [2] M. Goossens, F. Mittelbach and A. Samarin, *The $\text{\LaTeX}$ Companion*, Addison-Wesley, Reading, 1994.
- [3] T. Williams and C. Kelley, *Gnuplot-An Interactive Plotting Program, Version 3.5*, User's Guide, 1986.
- [4] B.W. Char et. al., *MapleV Language Manual*, Springer Verlag, 1991.
- [5] J.R. Ottensmann, *QuickBASIC Quick Reference*, Que Corporation, Carmel, Indiana, 1988.
- [6] J. Hagel, *EMT, A facility program to create $\text{\LaTeX}$ documents on a PC* PS/LP/Note 98-03, 1998.

7. Informatics Training

Everything related to computing training in a broad sense: tutorials, written digests of the presentations which are part of the "IT Tutorial Program", announcements made by the "CERN Education Services / Technical Training Programs", etc.

7.1 Forthcoming IT Tutorial Programme in 1998

Miguel Marquina and Raúl Ramos Pollán, IT/User Support

This year we have continued with the Tutorial Programme organized by IT Division, an activity which seems to be well appreciated from the level of participation. The tutorials are organized as a joint effort of different services and individuals as well as spanning across Divisions. The teachers, who participate on a goodwill basis, invest a significant amount of time in the preparation of the tutorials. But all this pays off immediately when we see you coming along to invest a couple of hours learning with us. We wish to thank through these pages all those who are making the Tutorial Programme possible.

We are (logically enough) observing the attendance at the tutorials in order to profile better the preferences of the participants. Our statistics show clearly some trends regarding the type of courses in which CERN users are interested; and it is in this spirit that we hope to satisfy forthcoming needs with the programme we are preparing for the second half of this year.

The following is a non-exhaustive list of topics planned until the end of 1998:

- Windows95, Windows/NT and the NICE environment,
- MSOffice for the Internet,
- UNIX: basics, programming environment tools (as requested),
- Basic OO Programming,
- Software Packages: Mathematica, (others as requested),
- Java Development.

Up to date information can be found at:

<http://consult.cern.ch/support/training>

Obviously the only way to ensure that the programme suits your needs is to send us your personal feedback. We encourage you to do so by filling in the user questionnaire linked at the above page, and we will certainly take your opinions into account when planning further tutorials.

7.2 An Introduction to Object Oriented Technologies

Raúl Ramos Pollán, IT/User Support

Many emerging Object Oriented (OO) based technologies are becoming increasingly more important, up to the point of gradually building the foundations for the activities of the Information Technology areas. These technologies have brought with them a new terminology (CORBA, Java, ActiveX, etc.) familiar to many but meaningful to a few. The aim of this document is to provide a minimum insight into them.

Object Orientation

OO is the heart

OO is a must to anyone trying to understand these new technologies. In fact, it is the Object Oriented paradigm which provides the most appropriate framework to hold their complexity and flexibility. The principles behind CORBA or Java could have been implemented using some other paradigm, but probably their applicability would have been much more limited.

Thinking OO

OO is not just another syntax for programming. It is a complete new way of facing problems and implementing them. OO principles are applicable to almost all phases in the Software Development processes. You can make your analysis, design and implementation following the OO principles. It is not always easy to change one's mind in such a drastic way. It might take some time before assimilating its concepts and thus, to fully appreciate what OO is.

Paradigms. OO vs. Functional

Think about what you do when you face a problem. This is, when you have to model a part of the world and transfer that model into a physical device (a computer) which will be integrated in some environment. Usually this is a three step process. First you make an *abstraction* of the world: you take the characteristics of the world which are interesting to you and forget about what you don't consider important. Then

you make a *decomposition* of the world: you divide it up into smaller more manageable parts. And finally, you *organise* those parts under a certain structure so that when they work together they do what they are supposed to do.

Each step can be done following very different criteria. A (programming) *paradigm* is just a set of rules and principles to carry out these three steps. For instance, the functional paradigm (which is the one offered by Fortran, C, Pascal, etc.) says:

1. *Look* at your problem in terms of actions or tasks to carry out.
2. *Decompose* your domain into functions, which will be implementing those tasks.
3. Then, *organise* your functions so that they can call each other.

Then, the different languages follow these principles. They may call things a little different (functions are offered referred to as subroutines, procedures, subprograms, etc.) and they may offer different ways of storing your functions (by using libraries, repositories, etc.) but the important idea is that they all follow the above principles. The functional paradigm is often referred to as the structured or algorithmic paradigm. Much of the power of a paradigm relies on few aspects of its principles, such as the convenience of the elements into which you divide your problem, the complexity that you can build up by using the organisational principles, how you can handle this complexity when you change the model, etc. You can consider a paradigm as instructions to build bricks (abstraction and decomposition) plus instructions to make buildings from those bricks (organisation). The complexity and characteristics of your buildings will depend on the quality of your bricks and of the architecture.

Now, the OO paradigm says:

1. *Look* at your problem in terms of individual, independent objects.
2. *Decompose* your domain into objects. Each object has some certain properties and a certain behaviour or set of actions particular to each object.
3. *Organise* your objects so that
 - they interact among each other by sending messages that may trigger actions on the object to which they arrive;
 - they are defined in a hierarchical way so that objects in lower levels inherit automatically all properties and behaviour of the objects in upper levels;
 - objects in lower levels may add or modify the properties or behaviour that they have inherited.

By now, try to compare the principles of the functional and OO paradigms. OO has a richer set of principles. Now think about the kind of buildings that you can build following such

principles. OO principles let you build richer and more complex structures with reasonable maintainability costs and still keep objects independent among each other. This is the basic argument on which OO advantages such as re-usability and maintainability are based.

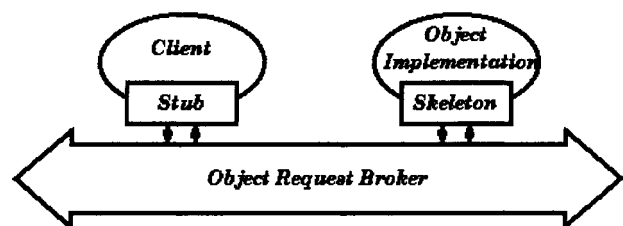
For more information:

I strongly recommend to take a look at references [1–4]. They are short, precise and include a couple of examples which will help you fix the abstract ideas I've talked about. The first two provide very simple examples.

CORBA

The Common Object Request Broker Architecture (CORBA) is an industry consensus standard that defines a higher level facility for distributed computing; this standard is described by the Object Management Group (OMG), an industry consortium whose mission is to define a set of interfaces for inter-operable software. CORBA simplifies distributed environment system software in several ways. The distributed environment is defined using an object-oriented paradigm that hides all differences between programming languages, operating systems and object location. CORBA's object-oriented approach enables diverse types of implementations to inter-operate at the same level, hiding idiosyncrasies and supporting reuse.

CORBA defines a message bus between objects (probably residing on different machines and built under different languages and OSs) that conveys operation invocation requests from clients to object implementations and their results on the way back, no matter what the object environments (language, location or platform) are. How CORBA does its work is of no concern for both the client and the remote object. CORBA provides the mechanisms for messages to be transported between objects and it requires the objects to *talk* in CORBA.



The ORB

At the heart of CORBA is the Object Request Broker, which provides the mechanisms and transparency for sending messages among objects regardless on where they are. A client object uses the ORB to obtain a service from a server object, giving to the ORB the request and its parameters. According to the way the request was made, the client object can either wait for the result of the call or do whatever it needs before accepting and computing the return value. The ORB is thus in charge and works to

1. locate the object that will implement the request,
2. activate it if it is not already running, passes the parameters to it,
3. pull for the result, and
4. provide the client with it, or with an exception if something unexpected occurred.

Besides the signature (name, arguments and return type) of the method it invokes, an object reference and its type, the client doesn't need to know anything specific about the client: no information about programming language, protocol, implementation or operating system is needed. This provides the freedom to implement the functionality of an object in the best way and on the more suitable platform for a specific case.

The difficulty of the tasks that the ORB performs is considerable. Once an object can talk CORBA it will see all other objects which also talk CORBA in the same way. This is a great advantage towards the development of distributed applications and architectures.

In order to do this, CORBA defines many other concepts and terms, which you will find in the links.

For more information:

Quick introductions can be found in reference [5] and some interesting stuff in [6].

Java

Java is an object oriented (OO), platform-independent, multi-threaded, dynamic, general-purpose programming environment based loosely on C++. Java "compilers" take Java source code and generate "executables" consisting of machine-independent bytecodes. One of the design goals of Java was to achieve platform independence- the ability to execute the same code on a variety of platforms.

Java accomplishes platform independence beyond the source level. A Java "compiler" creates platform-independent bytecodes. Bytecodes are binary files that can be executed on other platforms without having to compile the source for each target platform. These bytecodes are a set of instructions that look somewhat like machine code, but are not specific to a particular CPU. Java programs can be "executed" on any machine offering a bytecode interpreter or *Java Virtual Machine*. These "executables" can run unmodified on any platform that supports the Java runtime environment. The runtime environment beyond the *Java Virtual Machine* also includes a set of base classes which define how the program interacts with the native machine's environment.

Many people identify Java with the *Internet* because its platform independency makes it ideal for deploying applications without worrying about the kind of machine on which it runs. This way, WWW browsers may contain a Java interpreter, obtain Java bytecode from somewhere in the net and execute it. Due to bandwidth reasons, Java applications designed for

running on a WWW server (Applets) are usually small and perform minor tasks. However, this *Internet* affinity should not hide the fact that Java is a full object oriented programming language able to run complex and large applications. Java provides a clean and easy-to-learn language with full platform independency.

During the short life time of Java, there have been many implementations based on it. *Sun* is making a great effort to make Java the choice of many people. They and others have developed many Java utilities, libraries and projects which make Java quite attractive and time saving for many people. Some of these projects are:

- **JavaBeans:** A software component model written in Java. Any Java object which adheres to certain property and behaviour conventions can be a Bean. Then, development tools may exploit this fact. For instance, if a custom graphical object (such as a HEP event display) follows the JavaBeans conventions, it can be included in some other application by just drag&dropping using a graphical development tool which understands also the JavaBeans conventions.
- **Java RMI:** Java Remote Method Invocation (RMI) allows programmers to write distributed objects using Java. RMI provides a simple and direct model for distributed computation with Java objects. These objects can be new Java objects, or can be simple Java wrappers around an existing API. Its principles are, in essence, the same as CORBA's, but much less pretentious. In fact, it can be seen as a Java specific implementation of the main CORBA ideas.
- **JavaOS:** Is a small and efficient operating environment that executes Java applications directly on hardware platforms without requiring a host operating system. The goal of JavaOS is to enable the development of secure, high performance and highly robust network devices built on multiple hardware platforms in heterogeneous, distributed networks. Network devices are capable of executing programs locally even though they are inherently network oriented. This allows them to carry out locally the necessary tasks while being able to use the network for other tasks (storage, executing other programs, etc.)
- **JDBC:** Java Database Connectivity. Just as ODBC provides a standard interface to access a variety of databases from *Windows* programs, JDBC provides a uniform interface to access various databases from Java programs. When writing a Java application that must access a certain database, it only has to comply with the access method required by JDBC. Then JDBC takes care of how that specific database is accessed. This way, if the database is changed (for instance from Postgress to Oracle) Java programs accessing it need not be changed. The most widely use database systems already provide JDBC drivers.

For more information:

See references [7–8]

ActiveX

ActiveX is a technology designed to bring a greater level of interactivity and flexibility to Web sites and standalone applications. Based on Microsoft's object-oriented COM (Component Object Model) standard, ActiveX technology consists of two types of components: ActiveX controls and Active documents.

ActiveX controls are small, self-contained modules of code that work within Web pages and are designed to add functionality to them. From the user's perspective, controls work in a similar way to plug-ins, except that they load dynamically; in other words, when the user visits a site that contains an ActiveX control, the control is down-loaded automatically. Active documents enable users to view non-HTML documents, such as Microsoft Excel or Word files, through a Web browser. From their design, they were intended to work only on PCs running Windows OSs. This is an important fact to keep in mind, considering that users with non-Windows platforms won't be able to view sites relying on ActiveX controls.

ActiveX controls can be created in Visual Basic 5.0 or C++; however, most Web developers will probably want to utilize existing controls instead of creating new ones from scratch. Microsoft's Control Pad is designed to provide developers with an easy way to create ActiveX controls using existing components.

ActiveX versus Java

ActiveX is considered to be a complement to Java; they are not competitive technologies. In fact, ActiveX can be used side by side with Java. Java is essentially a programming language, and ActiveX can enhance this language by enabling it to access code written in any other language. This gives Web designers the flexibility to include multiple objects in a page (some built in Java, some in other languages) and have them communicate interactively. However, since Java applets and ActiveX controls can perform some of the same functions, there is some overlap. Due to the market wars, Netscape browsers do not run ActiveX controls. Also, as mentioned before, they are designed for the Windows world, which makes their portability quite limited.

For more information:

The above information was taken from Reference [9].

References

- [1] *What is Object-Oriented Software?* (<http://www.soft-design.com/softinfo/objects.html>) By Software Design Consultants.
- [2] *Object-Oriented Computing – What's the Big Deal?* (http://www.firststep.com.au/education/solid_ground/oo.html) By First Step Communications.
- [3] *Object-Oriented really is better than Structured* (<http://www.cs.uwa.edu.au/teaching/cs220.oop/readings1997/whyoop.html>). The University of Western Australia.
This is a general comparison with the structured paradigm and also gives very good criteria to judge OO.
- [4] *Object Oriented 8757 Links* (<http://www.uax.es/uax/oo/framesleft.html>): an OO collection of resources at University Alfonso X El Sabio, in Spain. Very well structured and complete for people with different base knowledge or backgrounds
- [5] The OMG Group's *CORBA for Beginners* page (<http://www.omg.org/news/begin.htm>) contains a variety of links which range in depth and length. Among them I strongly recommend to take a look at:
 - *What IS CORBA????* (<http://www.omg.org/about/wicorba.htm>);
 - *Overview of CORBA* (<http://www.cs.wustl.edu/~schmidt/corba-overview.html>)
- [6] "When to use CORBA" (http://www.javology.com/Javology/AprMay97/IS_CORBA_0497.html)
- [7] An *overview* of the ideas behind the design of Java, from Sun (<http://java.sun.com/docs/overviews/java/java-overview-1.html>).
- [8] Documentation on most of the other issues related to Java (such as the points mentioned above) can be obtained from *Javasoftware* (<http://www.javasoftware.com/docs>).
- [9] The *ActiveX Documentation Centre* (<http://www.activex.com>).

8. User Documentation

Everything related to "computer documentation": updates to computer documentation distributed by IT (including the UCO references cards), book reviews, offerings of the COBS service, etc.

8.1 Updates to the UCO Book Catalogue

Roger Woolnough, IT/User Support

Since the last CNL we have received the following new editions of books: Second Editions of *Java Tutorial*, and *Java Class Libraries* from the Addison Wesley "Java Source Series", as well as a Third Edition of the *C++ Primer* from Lippman.

For **PC users** I include below a list of new titles:

- *Inside Windows NT*
- *Micrografx User and Media Guide*
- *Running Microsoft Frontpage 98*
- *Microsoft Frontpage 98 Step by Step*

Frontpage 98 books are in stock following the installation on NICE. There was a demand for the *Micrografx* books which is again recently installed and there was a lack of available documentation.

Linux software is now available on the CERN CD-ROM. A preliminary version with a combination of 4.1/4.2 Red Hat Linux is available and coming soon will be version 5.1. We are able to print these CD's locally on request so we should never run short of them; please read the `cern.linux` newsgroup for more information and future offerings. There are also new books on Linux: one by O'Reilly, *Linux device drivers*, and one from Addison Wesley, *Linux Kernel Internals*.

Other books that have arrived since the previous CNL are:

- *Computer Networks*
- *AFS System Management*
- *MicroSim Series for PSpice*

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 URL:

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

We encourage users to consult this list and check specially if books are in "Stock" before coming to the UCO "Help Desk".

Coming in the next weeks is an alternative to the *C++ Primer* in the way of an *interactive CD-ROM training guide for C++*. There is a "Java with Corba" course at CERN planned in the coming weeks, and the recommended book *Teach yourself Corba in 14 Days* will soon be available. There are also a few copies of the Wiley book on Corba, *Java Programming with Corba*, available. Please follow the `cern.computing` newsgroup for information on all new titles.

8.2 Books on MicroSoft Office (*The COBS Review Series*)

Roger Woolnough, IT/User Support

This is the second in a series of articles where we intend to make a brief assessment on the books offered at the *CERN COBS Service* (Computing Books Selling Service, <http://wwwinfo.cern.ch/support/cobs-service/>). This time we have selected our offerings on *MicroSoft Office* (or *MS Office*).

Note that the list of books proposed may evolve in time according to the needs (e.g., new editions, new software or product versions, etc.) and to user feedback.

At the date of publication of this CNL (June 1998), the list of books proposed in the category **MS.Office** is:

- *Microsoft WORD 97 Step by Step* Microsoft [T/B]
- *Microsoft EXCEL 97 Step by Step* Microsoft [T/B]
- *Microsoft ACCESS 97 Step by Step* Microsoft [T/B]
- *Microsoft POWERPOINT 97 Step by Step* Microsoft

[T/B]

- *Microsoft FrontPage 98 Step by Step* Microsoft [T/B]
- *Word 97 Comment Faire* Simon,Schuster,Macmillan [T/B]
- *Excel 97 Comment Faire* Simon,Schuster,Macmillan [T/B]
- *Access 97 Comment Faire* Simon,Schuster,Macmillan [T/B]
- *Microsoft Word 97 Step by Step Advanced Topics* Microsoft [T/A]
- *Running Microsoft WORD 97* Microsoft [R]
- *Running Microsoft EXCEL 97* Dodge,Kinata,Stinson [R]
- *Running Microsoft ACCESS 97* Microsoft [R]
- *Running Microsoft POWERPOINT 97* Sagman [R]
- *Running Microsoft FrontPage 98* Microsoft [R]

- *Word 97 Bible* Heslop,Engell [T/A]
- *Excel 97 Bible* Walkenbach [T/A]
- *Office 97 Bible* Jones,Sutton [T/A]
- *Word 97 Annoyances* Leonhard,Hudspeth, Lee [S]
- *Using Project 98* Pyron [T/B]
- *CorelDraw 6 Unleashed* Coburn,Gonzalez,McCormik [B/R]
- *Media Guide* Micrografx [R]

[B] Beginners – [A] Advanced – [T] Tutorial

[R] Reference Guide – [S] Specialized

First general guideline to all these books

- The “*Step by Step*” guides are tutorials.
- The “*Comment faire*” series, books written in French, are tutorials for beginners. (As this series is addressed to a French public, future references we will make in this article on these books will be also written in French.)
- The “*Running*” series of books are for reference.
- The “*Bible*” series are tutorials and advanced guides.

Microsoft “Step by Step” series for *Word*, *Excel*, *Access*, *Powerpoint* and *Frontpage 98*

(~300 pages + diskette / Easy to follow tutorial for beginners)

This is the *Microsoft* self study kit for beginners. It is also useful for established users to learn new topics. You can learn at your own pace and whatever section interests you most may be selected individually. An ideal book to learn the subject with the ‘*Running*’ volume as a reference.

La série ‘*Comment Faire*’ pour *Word*, *Excel* et *Access*

(~350 pages / Cours pour debutants)

Cette série a connu beaucoup de succès au CERN. Ce sont des livres permettant de trouver des solutions aux besoins quotidiens. Très faciles à lire, ils contiennent de nombreuses images commentées de “copies d’écran”. Ce sont des livres “simples et efficaces”.

Microsoft Word 97 Step by Step Advanced Topics

(~300 pages / Tutorial for advanced Word users)

This book is ideal for well versed Word users to improve their skills still more. It contains methods of set-up and charts, merging documents, using forms and macros to make templates, how to make master documents for group projects and create WWW documents. If you think you already know quite a bit about Word 97 this will teach you more.

Microsoft ‘*Running*’ series for *Word*, *Excel*, *Access*, *Powerpoint* and *Frontpage 98* (2nd Edition)

(~900 pages + CD-ROM / Good desktop reference book)

This is the *Microsoft* Reference edition for office utilities. Each book comes with a CD ROM full of must-have extras and examples. There is also a quick-reference tear-out card with each book. Indexes are well cross-referenced which ensures that finding keywords is quite straight-forward. Aimed at the user who wants to do just a little bit more than what he can obtain from the ‘*Step by Step*’ guide.

IDG ‘*Bible*’ series for *Word*, *Excel* and *Office 97*

(~900 pages / In depth reference and tutorial)

This is the book you need to make yourself a guru. It starts in a tutorial fashion and builds on that knowledge so the reader can get as much, or as little as he requires. This is the series recommended by the tutorial teachers at CERN. Beginners can use this book but it is principally stocked for advanced users.

Word 97 Annoyances (published by O’Reilly)

(~340 pages / a book on changing built-in features of Word)

This is rather a specialised book but written in a very user-friendly fashion. It points out lots of interesting methods of making this utility work how you would like it to and not someone from *Microsoft*. It is one of the more pleasant computer books written with both humour and skill.

Using Project 98

(~1000 pages / beginners guide to in-depth reference)

This book is a complete reference for Project 98. The features of the utility are described firstly in a tutorial style and the later pages can be used for reference. This book can also be used with the Macmillan web site to get updates and a complete field dictionary. For beginner and expert alike this book has all you will need to learn the tool.

CorelDRAW 6 Unleashed

(~1300 pages + CD-ROM / Everything you need to know about CorelDRAW 6)

This is all you need to know for CorelDRAW 6 with a CD-ROM that includes all sorts of extra photos and graphics and all sorts of goodies. This is a typical book from SAMS crammed full with all sorts of information. Again the introduction is by way of a tutorial for various skills and then there is a huge reference volume.

Micrografx Graphics Suite / User and Media Guide

(~500 pages / The official guide)

This is the official user guide for the Graphics Suite of *Microsoft*. It also includes a media guide full of pictures which is maybe less interesting but it is the official guide and the two books are bound together!

8.3 The UCO Reference Cards—Current List

Jason Oh, IT/User Support

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

Computer Registration Documents

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

Electronic Mail

- 23 Intro to Pine
- 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
- 33 Unix Commands for VM and VMS Users
- 41 UNIX News Reader Survey

Browsers

- 18 xdvi and ghostview
- 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
- 51 Using Tape Services
- 52 Zephyr Messaging for Windows Users

8.4 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 227 Informatics books (aussi des livres en français) may be electronically ordered and paid

via TID, EDH, or cash.

The list, with all the relevant information, is compiled regularly at URL:

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

9. Problems & Queries from Users

We try to present here answers to questions and problems brought up by users in their daily use of the CERN computing facilities. Mostly they come now from our Help Desk, but we hope that other Divisions can benefit from this section to transmit their own tips to their user community.

9.1 Questions and Answers from the UCO

A more complete collection of Frequently Asked Questions can be found on our Web page at the URL:
<http://wwwinfo.cern.ch/support/direct-service/#FAQs>.

Question – ASIS products

Is there a list of all the products available on ASIS?

For instance, is there a better way than the UNIX command “`ls /usr/local/bin/X11`” to see all products related to X11 with their description?

Answer

There is something (still under construction) on the Web, at URL: <http://wwwinfo.cern.ch/dci/asis/products/>. In this page you can first select the “product family”, e.g. X11, which will give you access to a more specific page, e.g. “ASIS Products in X11”.

Question – Netscape -remote

I would like to start Netscape on a given HTML page and handle properly the case when a Netscape session is already running: I tried to use the option -remote but I did not succeed.

Answer

The -remote command line option expects a Netscape session to already be running on your display. For instance:

```
netscape -remote 'openURL(http://somedwwplace)'
```

will use the current Netscape session in your display to open the indicated URL. But, if no Netscape session is currently open, the -remote option will fail complaining about that.

Consequently you must write a small script and test whether there is already a Netscape session running and then you can issue the command:

- netscape -remote 'openURL(http://somedwwplace)'
if there is a Netscape session running, or,
- netscape http://somedwwplace
if there is **no** Netscape session running.

Question – PostScript utilities

Is there a utility to re-format a PostScript document, which is very long, into another PostScript file with 2 pages on one sheet, so that it takes fewer pages (as done for most manuals distributed at the UCO)?

Answer

Yes, this can be done using some utilities of the package *PSUtils*, which is installed on ASIS. Especially the command *psnup* should answer your question. For more information

type “`man psnup`”, or “`man psbook`”. You can also look at the Web page (still under construction):

<http://wwwinfo.cern.ch/dci/asis/products/TeX/psutils.html>

Question – Paw and Geant for Windows NT4

Where can I find the latest version (release 98) of Paw and Geant for Windows NT4?

Answer

This was the object of an article in CNL 229, that you can access at the URL:

http://consult.cern.ch/cnls/229/art_cernlibnt.html

Following this article, please note that:

- For *asisftp*, the full address is *cernlib/intel_wnt/98*.
- On Nice, the Physics start menu was incorrect but this will be fixed. The files are in the directory:

Z:\P32\cern\98

Question – Problem with Mathematica

I have problems running Mathematica: some files are locked and I got a warning that results cannot be saved because space/files may be in use by another user. When I tried to save the results into a new filename, the application crashed.

Answer

The problem may be because you had previously opened a given notebook. *Mathematica* creates a lock file everytime that it opens a new notebook. If it crashes without removing those lock files, it is not possible to write on the corresponding notebook anymore. A solution is probably to remove those lock files.

Question – fvwm2 desks

Is it possible, using the Hepix scripts and fvwm2, to open the different windows of an application on pre-defined desks?

Answer

Yes, this is an option (*StartsOnDesk*) of the command “Style that you can specify in the configuration file: `~/.hepix/wm/fvwm2_configuration`. The syntax is : *Style windowname options*.

For instance, if you want all your Netscape sessions to start on Desk 3, you can add in this file the line:

Style "Netscape StartsOnDesk 3

This is explained in the manual pages for *fvwm2*, at URL:
<http://www.hpc.uh.edu/fvwm/fvwm2-man.html>
(or type `man fvwm2`).

Question – X-Windows fonts

I need Adobe fonts for use under X-Windows, with roman-8 encoding. Can I get them from a CERN font server?

Answer

Many hints regarding X-Windows font management are given at the URL:

<http://wwwinfo.cern.ch/umtf/working-groups/X11/fonts/>

If you are looking for “HP’s roman 8 encoding” these fonts are available on any HP machines or in AFS under:

`/afs/cern.ch/project/fonts/hp/hp_roman8`

The best solution is to make a tar file out of these fonts and ‘ftp’ them to your home institute.

Question – Exceed from home

I would like to start an X session on RSPLUS from home, using Exceed. Stated that I don’t use the CERN call-back system but a normal Internet provider, is this possible?

Answer

There is a security bridge at CERN that will not allow X-sessions outside CERN unless you connect to specific machines with special TCP/IP numbers. So, unless you connect to CERN via the callback service and install *Exceed* on your PC locally, you will not be able to do this.

Question – Mail server password

Is it possible to add the name of a private workstation as a “trusted” host for the Mail server so that I am not requested to enter a password each time I load my mail agent?

Answer

Yes, this is possible but it works only for *Pine* on a UNIX workstation: you can do it with the tool `userinfo` (or `xuserinfo`) available on all central platforms. After loading this tool (e.g., on UNIX type `userinfo` or `xuserinfo`) and pressing the button “Hosts, you will get access to “HOSTS/WORKSTATIONS for MAILSERV pre-authentication” where you can add any host name and userid.

Note that this does not work for *Pine* on PCs (*PCPine*), nor for *Netscape Mail*. In these cases you will always have to enter your “Mail Server” password.