CERN COMPUTER NEWSLETTER

Volume XXXIX, issue 2   November–December 2004

Contents

Your feedback will help define future of CNL
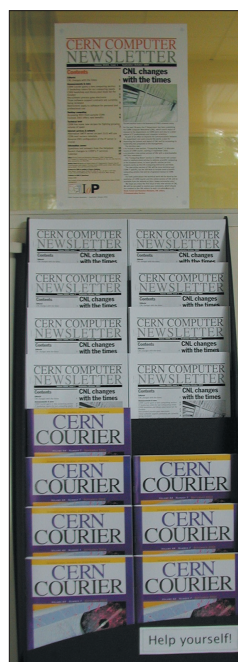
Stand and deliver: hard copies of the CNL PDF.

Welcome to the second issue of the new-style CERN *Computer Newsletter* (CNL). We hope you enjoyed the first one; if for some reason you missed it, you can find it on the Web at www.cerncourier.com/articles/cnl/1/9/ or at http://cern.ch/cnl.

The impetus for renewing CNL was the result of an informal survey of some of its readers that we carried out exactly one year ago. At this point, we would like to repeat the survey, inviting all readers to contact us with their feedback. Key issues we would like your opinion on are:

● Contents – CNL aims primarily to provide CERN users with the sort of information that will make their life easier when using the IT infrastructure at CERN. Is the new CNL maintaining your interest? Are there new features you appreciate? Are there aspects of the previous style that you miss?

● Distribution – mailing individual issues, and keeping mailing lists up to date, adds significantly to costs. For these reasons the new CNL is primarily accessible on the Web, although we are making black and white print-outs of the PDF available at several sites on the CERN campus (B31, B28, B40, the Computer Centre, the Users Office and Central Library). How did you get your copy (real or virtual) of the new CNL? What could be done to make it more easily available to the target audience? Would being sent your own copy make a big difference to you, and if so why?

● Layout – are there aspects that could be improved in the online HTML version or the associated PDF?

● The link with *CERN Courier* – part of the strategy for the new CNL is to move articles of more general interest into the pages of *CERN Courier*, in a "Computing News" section that will appear every second issue to coincide with CNL. Links between the two publications exist both in individual articles and in the shared website. How do these links work in practice for readers? How could they be improved?

Of course, any constructive feedback you may have on other aspects of CNL is also welcome, as are suggestions for future articles. Just drop us a line at cnl.editor@cern.ch. We will publish the results of your feedback in the next issue, and thank you in advance for your help.

Nicole Crémel, IT/UDS, and Hannelore Hämmerle, IT/DI, CNL editors

CERN Courier reports on Grid project in Asia

The articles that are listed below have been published in the November 2004 issue of *CERN Courier*. Full-text articles can also be found on the *CERN Courier* website at www. cerncourier.com, together with the rest of the issue's contents.

Computing News

● **Fostering Grid computing in Asia**
Academia Sinica Computing Centre is acting as Grid operation centre and global Grid user support.

● **New infrastructure to aid collaboration**
Kick-off of a new digital-library infrastructure with the DILIGENT project.

● **All Hands Meeting spreads the word**
Presenting the LHC Computing Grid to researchers from other disciplines in UK e-science.

● **A production Grid infrastructure for science**
Open Science Grid to provide coherent environment for diverse scientific teams.
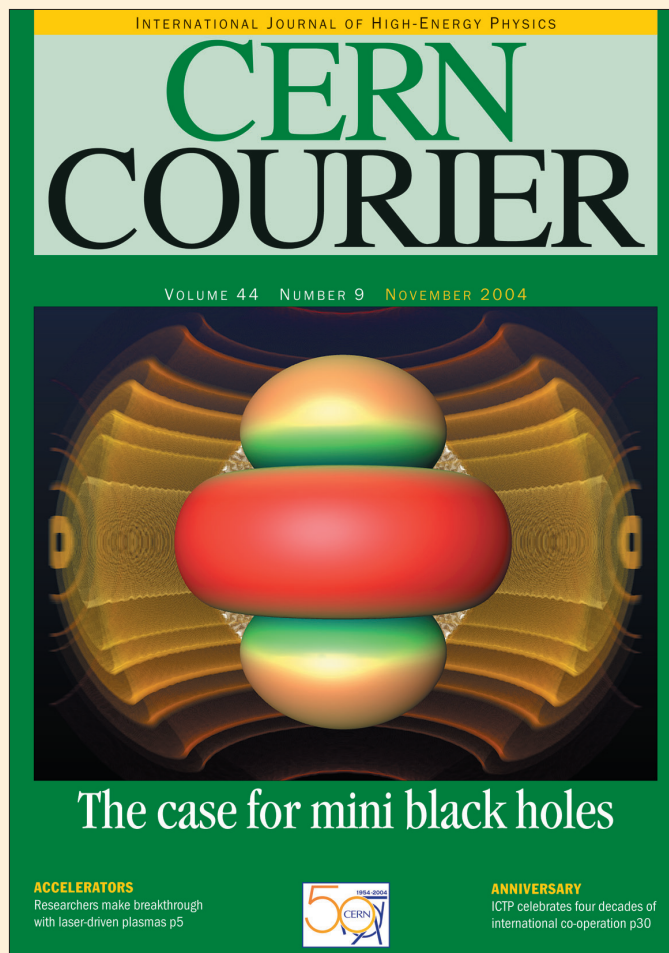
● **Processor farm grows at Berkeley**
Increasing processing power and disk space for the Parallel Distributed Systems Facility.

● **A look back at the pioneers of the net**
Celebrating the 35th anniversary of the ARPANET.

● **IHEP launches fast Internet channel**
Satisfying the growing

communication needs of the Russian Institute for High-Energy Physics.

● **Rewind: 15 years ago – first mention of TCP/IP**

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CERN COURIER

VOLUME 44   NUMBER 9   NOVEMBER 2004

The case for mini black holes

ACCELERATORS
Researchers make breakthrough with laser-driven plasmas p5

1954-2004
CERN

ANNIVERSARY
ICTP celebrates four decades of international co-operation p30

Calendar of Events
Workshops and conferences, including EGEE2 and HiPC 2004.

New IT products

IT department announces its closure timetable for Christmas

CERN will close for its annual shutdown on Friday 17 December 2004 at 5.30 p.m. and reopen on Monday 3 January 2005 at 8.30 a.m.

The final arrangements and decisions will be made sometime in December. As soon as these are complete, information concerning the availability of IT Services during the shutdown will be published in the weekly bulletin and posted in the computing newsgroups (cern.computing and cern.nice2000).

The Computing Helpdesk (78888, or helpdesk@cern.ch) will be closed, but an operator service will be maintained throughout the shutdown and can be reached at extension 75011 or by e-mail to computer. operations@cern.ch.

Please remember to shut down and power off any equipment in your office that you don't expect to be used during the closure.

Note that you can find a calendar of the official CERN holidays and the school holidays in the surrounding areas of France and Switzerland at http://cern.ch/User/Institute/ Organization/OfficialHolidays/ OfficialHolidays.html.

A reader writes to right our wrongs in article about SMTP server

Our last issue included an article "Alternative SMTP server on port 2525 will use CERN mail servers remotely" (p9). In response a reader has written the following.

It might not have been clear that the alternative SMTP server on port 2525 is supporting secure connection (TLS). Setting the SMTP port to this TLS secure connection on port 2525 (instead of 25 in the past) is the recommended configuration and should be checked (or done) by all users in their mail client configuration.

CHEP'04 hailed a great success

Computing in High Energy and Nuclear Physics (CHEP) is a major series of international conferences for physicists and computing professionals in the fields of high-energy and nuclear physics, computer science and information technology. This year, CHEP'04 took place in Interlaken, Switzerland, and was organized by CERN on the occasion of its 50th birthday.

On the last day of this

successful event, 1 October, seven speakers summarized the main topics discussed during the conference: online computing; event processing; core software; distributed computing services; distributed computing systems and experiences; computer fabrics; and wide-area networking.

Lothar Bauerdick from Fermilab presented the overall conclusions: CHEP'04 had a stimulating programme and a well-thought-out schedule, including many interesting posters; the organization,

facilities, networks, food and drink were all superb; and there was a wonderful "birthday party" on Wednesday. He gave thanks to all who were involved for a very successful conference!

In his closing remarks, Wolfgang von Rüden thanked all the speakers, chairs, sponsors and conference organizers for their contributions, and the delegates for attending. Before bidding farewell and wishing everybody a safe trip home, he announced the venue for CHEP'06: TIFR Mumbai, India, in February 2006.

Desktop Support makes smooth transition to improved services

As many CERN users already know, a call for tender was issued early in 2004 to renew the outsourced contract for Desktop Support, which includes the front-line Computing Helpdesk as well as General and Local Support. The company chosen was SERCO Holland, who took over the contract in July 2004. Since then, some new people are staffing the Helpdesk, and many users have already heard new voices when calling 78888.

A presentation of the new contract with some statistics and first conclusions was given at the Desktop Forum meeting in October 2004. Here are the most important points of the presentation, and the changes resulting from the new contract.

New structure
There is no longer a strict separation between Helpdesk, General and Local Support. Most contract staff will do all the work according to the nature of the task and its complexity. As in the past, departments who have decided to pay for Local Support can ask Support for special configurations and expect a faster response. However, precise procedures must be documented by the local CERN representative and a precise service-level agreement (SLA) must be established. These procedures should represent user expectancy, which was something globally lacking in the previous contract. On the other hand, users must be aware of the agreed procedures and SLAs, so that they know what to expect. It is the duty of the Desktop Support departmental manager to inform their users accordingly.

Staff
A smooth transition between the old and new contracts has been ensured by SERCO taking over some staff from the former contract. It was especially useful for the new Helpdesk, the front line of all their services, to ensure continuity of their experience. For the immediate future the plan is for staff to rotate in order to broaden their experience and ensure service during absences and holiday periods. Experience during the last four months has shown that staff who already knew the CERN environment have been training the new recruits, and the new staff have added an extra dimension. The contract management from SERCO, which ensures a regular follow-up and quality control, is dynamic.

Procedures
In the old contract the Local Support procedures were agreed orally between the Local Support client and the Local Support staff member, who was generally a dedicated person. The new contract is strictly service-based and there is no longer a dedicated Local Support person. Therefore a clear description of the job, and all the non-standard procedures provided by the previous Local Support contacts, must be written down. This has become a handbook, maintained by SERCO and available on the Web. Not all the Local Support clients have been contacted yet about providing these procedures, but this will be completed in the coming weeks.

Helpdesk
Most of the staff in the contract are now sharing one large office space. This has proved useful for the sharing of knowledge. In order to receive all e-mails and phone calls at the Helpdesk (the front line) three new people have been hired and two people have been kept on from the previous contract. Together with the fact that the call volume during the summer period was rather low, this has helped with training and ensured a smooth transition.

There is still a member of the User Assistance team in IT/UDS (User Services and Documentation) who is acting, on a daily shift basis, as the "IT Helpdesk Manager on Duty" (or MOD). He/she and the SERCO contract manager receive copies of all tickets to retain good overall control of the service. They may reopen call tickets, for instance when a user reply indicates that the solution provided is not sufficient.

The MOD is also maintaining and updating the IT Service Status Board as soon as he/she is informed by a service manager about a possible service incident, a scheduled intervention or a service change. Please note that at any time you can consult the status board at http://cern.ch/it-servicestatus/.

A new phone system has been installed at the Helpdesk. New functionalities such as cascading calls from helplines and providing announcements will be added in the near future. Some solutions are being investigated with SERCO, Alcatel and Boport for an outstanding licence issue. Outside Helpdesk working hours (8.30 a.m. to 5.30 p.m.) calls are redirected to the operators (75011). If the problem is not urgent they invite users to send an e-mail that will be treated by the Helpdesk the next working day, but if there is an urgent problem on central services, they will contact the service manager directly. Please note that the Computer Operations are staffed by a separate contractor.

Problem tracking
The same system (the Action Request system from Remedy) and CERN application (PRMS) are used for problem tracking as in the previous contract. Since the Administrative Information Services (AIS) have joined the IT department in 2004, PRMS is the only Remedy application that is now used for all the computing services provided by the department, and interfacing directly with the users. This means that all the notification messages that are used to communicate with the users have been standardized.

The current internal structure of the PRMS application was not suited to the new Helpdesk organization and a new categorization scheme is now in place to reflect the actual workflow. Many support e-mail addresses that were in the past directed to specific services are now directed to the Helpdesk which is the central call centre for all computing questions. For instance, Linux.Support has been redirected to the Helpdesk since mid-September and more addresses will follow in the future (e.g. AIS.Support as of January 2005). Therefore we are expecting a significant increase of cases at the Helpdesk.

Some ongoing improvements in the messages used to communicate with users have been made (for instance, it is now possible to communicate in French). Apart from this, there is not much difference for users contacting the Helpdesk by e-mail, although now the notification message with the ticket number is sent back as soon as the mail is registered in the system. This ticket number, in the form CTnnnn (nnnn is a number), must be quoted in the subject of any further message related to the same query (Outlook users may simply use the link that is provided in the first notification message for all future communication related to that query). We strongly recommend that users, when replying to a mail sent by the system, do not include the original mail in their reply; after several replies the message gets very long and quite difficult to understand in the PRMS application (which already tracks all mail replies internally).

Conclusion
We hope that you, as a user, are happy with this new contract, even though computing issues are not always simple to solve and everything cannot be supported. E-mail any comments to User.Relations@cern.ch, which is looked after by the User Assistance team.
Nicole Crémel and Roger Woolnough, IT/UDS

Physics computing

LINUX upgrade required to keep operating systems up to date

Currently most of the nodes providing the LXPLUS and LXBATCH services at CERN run a tailored version of the Red Hat 7.3 LINUX distribution.

Red Hat released a new version called Red Hat Enterprise server 3 (RHES3) some time ago and no longer supports 7.3. CERN and other HEP sites, notably Fermilab, have decided to standardize on their own compilations of the RHES3 open source that contains packages needed for scientific computing and is fully binary-compatible with RHES3. This packaging is termed Scientific LINUX 3.

There are local differences between CERN and Fermilab, such as the version of AFS/Kerberos; the version at CERN is called SLC3 (Scientific LINUX CERN RHES3) and is currently under certification testing by the LHC experiments. An important change for them is that the default and only gcc compiler and libraries change to version 3.2.3. In Red Hat 7.3 versions 2.96 (the default), 3.2.2 and 3.2.3 were all available.

We need to migrate all our services to this version as soon as possible since we cannot base production services on an unsupported operating system for long.

Currently the generic service name lxplus maps to about 70 PCs running Red Hat 7.3. In parallel, we have a cluster of PCs running SLC3 under the service name of lxslc3 and users, especially experiment-code and production-chain managers, should log in there, instead of to lxplus, to test their programs.

Batch submission from lxslc3 will automatically be to worker nodes also running the SLC3 operating system. All users are encouraged to try the service lxslc3 instead of lxplus. Eventually lxplus will be changed to point to lxslc3 – so be prepared!

There is a high degree of compatibility between Red Hat 7.3 and SLC3 and the main changes are described at the website http://cern.ch/linux/scientific3. An overview and specific issues for lxplus users are at http://cern.ch/plus/SLC3.html.

We have recently taken delivery of 400 new PCs which have faster CPU speeds of 2.8 GHz and 2 Gb of memory. Most of these nodes will be put into the lxslc3 interactive and batch services so users will see an improvement over the current lxplus which runs on 1.0 GHz CPUs which have 1 Gb of memory.

The SLC3 services will soon contain most of the new PCs and we will start converting existing machines to SLC3.

The service name to reach Red Hat 7.3 is already available under the name lxplus7. This will be continued on a small number of nodes after the changeover of lxplus but only as long as it is absolutely necessary.

Harry Renshall, IT/FIO

New Time Units simplify procedures

CERN batch facilities have always been heterogeneous with a wide variety of differing CPU speeds among the nodes. We have hence specified our accounting reporting and job queue CPU limits in an arbitrary unit to which all machines are normalized.

The current unit is the NCU, or normalized CPU unit – though it started life as the New CERN Unit equal to 100 CERN units, one CERN unit being the power of an IBM 168 mainframe circa 1980. On a given machine the NCU is obtained by running a benchmark suite of what used to be typical CERN programs, but this is now out of date. Our current machines range in speed from 1 to 4 on this scale, so a CPU-intensive job submitted to run for 8 NCU hours, queue name 8nh, would run about eight real hours on our oldest machines and two real hours on our newest.

Soon most of our capacity will be on faster machines and LHC jobs will become longer as code develops, so it makes sense to redefine the normalization of our CPU factors so that one unit of queue time corresponds to about the same CPU time on our fastest nodes. We will hence renormalize all machine speeds by a factor of four while leaving the queue names the same. A CPU-intensive job submitted to the 8nh queue would hence run about eight real hours on our fastest machines and 32 hours on our slowest.

Another factor is that with the increasing use of the Grid it becomes important to attempt to find a standard CPU speed normalization between machines that all sites will recognize. The most common one is the SpecINT2000 benchmark, or SI2K, supported by the Standard Performance Evaluation Corporation. In fact for some time experiment requests for computing time resources have been made in SI2K units. Nearly all machines have an SI2K rating while very few have a CERN benchmark rating. Note that differences of 20% between SI2K and CERN benchmark ratings for a machine are not uncommon.

At the same time as multiplying the queue time limits by four, we will convert the accounting reporting to be in time units of thousands of SI2K, or KSI2K. The reason to use thousands is that 1 NCU is about 180 SI2K, so rather than going to a base unit of 4 NCU or about 720 SI2K we will anticipate the future and go to a base unit of 1000 SI2K – namely the KSI2K.

In fact, our newest machines have an SI2K rating of 1037, very close to 1 KSI2K. An accounting report that a user used one hour of KSI2K time would mean he ran for one hour of CPU time on our newest machine, or four hours of CPU time on our oldest machines.

We intend to make this change when full services reopen in the first week of January 2005, so as to have full accounting years in one unit. Users who submit to a queue will not have to change, except that there is an advantage in turnaround time if you submit to the shortest queue possible. A job that runs today in the 1nw (one week) queue could then be submitted to the 2nd (two days queue). Usage reporting will then match the units in which experiments make requests, so they will be easier to understand.

Harry Renshall, IT/FIO

LSF webpages feature enhanced statistical data

The batch farms at CERN.

The LSF webpages found at http://cern.ch/batch or from the IT department homepage include a "usage and statistics" link that has now been enhanced. There are two new links to the CERN LEMON (LHC EDG monitoring – see http://cern.ch/lemon) monitoring repository. They lead to displays of the queue distribution of running jobs (globally and for individual users) and job turnaround time distributions (for individual users). There is also a set of displays of performance measurements (for clusters of nodes and individual nodes).

Harry Renshall, IT/FIO

CERN switches from Office XP to Office 2003

Currently the NICE environment supports two operating systems on desktop machines (Windows 2000 Professional and Windows XP Professional) and three Office Suites (Office 2000, Office 2002 also known as Office XP, and Office 2003).

Microsoft supports its major applications for five years after their release date, and for Office 2000 this support ended in June 2004. The new Microsoft Office 2003 has been tested at CERN on a panel of computers and will progressively replace Office XP since it offers several improved functionalities like the offline mode in Outlook. What follows is a reminder of the current NICE support level.

● Machines already installed will not be forced to upgrade to a new version. Installing the old versions of the software will remain possible when these versions are specifically needed.

● Security updates will be deployed for the old versions, when they are published by Microsoft.

● Since June 2004, Office 2000 has become "not supported at CERN". Users having difficulties with this product will have to seek the solution themselves.

The Computing Helpdesk recommends upgrading to the latest version of Office (Office 2003) to obtain support.

● Office 2003 is now pre-installed on all new machines as they come from the PC Shop (with Windows XP Professional). Office 2003 is also installed instead of Office XP when the machine is re-installed from scratch with a NICE XP floppy disk (see http://cern.ch/win/docs/WinXPSupport).

● Upgrading from Windows 2000 to Windows XP is possible (just select the "Upgrading from Windows 2000 to Windows XP" entry in the Add/Remove Programs tool in the Control Panel). Note that this upgrade will also update Office 2000 to Office 2003 and can require up to two hours to complete.

● For computers running Windows XP, upgrading from Office XP to Office 2003 is possible (use this form to register your machine: http://cern.ch/win/services/office2003mgr, then just reboot your machine). Note that this upgrade can require half an hour to complete.

Michel Christaller and Djilali Mamouzi, IT/IS

Scheduling powers of Outlook make meetings easy to organize

Every user of CERN Mail services has a calendar included in the mailbox which is fully integrated with e-mail, contacts and other features, and can be accessed using Outlook XP, Outlook 2003 and even Outlook Web Access (Webmail) by a click on the Calendar icon or folder.

The Calendar lets you:
● Create appointments and events – just as you would write in a paper-based organizer (box 2).
● Organize meetings – Outlook will help you find the earliest time when everyone is free. When the meeting notice is e-mailed to invitees, each will receive a meeting request in their Inbox. When they open it, Outlook notifies them if the meeting conflicts with an item in their Calendar. They can accept, tentatively accept or decline by clicking a single button. When an invitee accepts, the entry will be automatically added to their Calendar. If allowed by you, as meeting organizer, invitees can propose an alternative meeting time. You can track who has accepted, declined or counter-proposed times (box 3).
● Resources such as conference rooms, cars and video projectors can be added and handled by the Calendar service (box 4).

Emmanuel Ormancey, IT/IS

1. Calendar views

New appointment

Select view.

Select day or month. Bold days indicate an appointment.
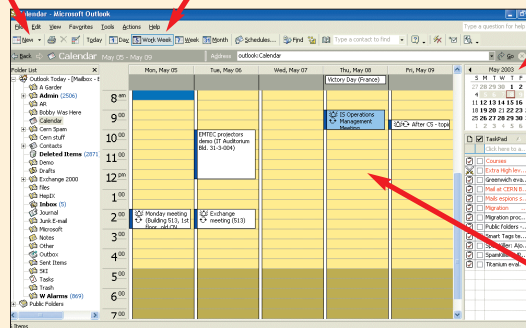
Work-week view of the Calendar function in Microsoft Outlook.

Views can be configured to fit the user's preferences. The basic view modes that can be selected are:
● Day
● Work week (Monday to Friday, configurable in Tools_Options_Preferences Tab_Calendar Options)
● Week
● Month

Month view of the Calendar function in Microsoft Outlook.

Desktop computing

2. Create an appointment

Click **Scheduling** to invite attendees to the meeting.

Select meeting date, time and duration.

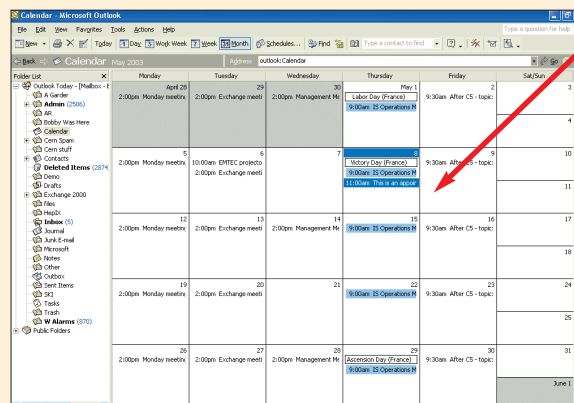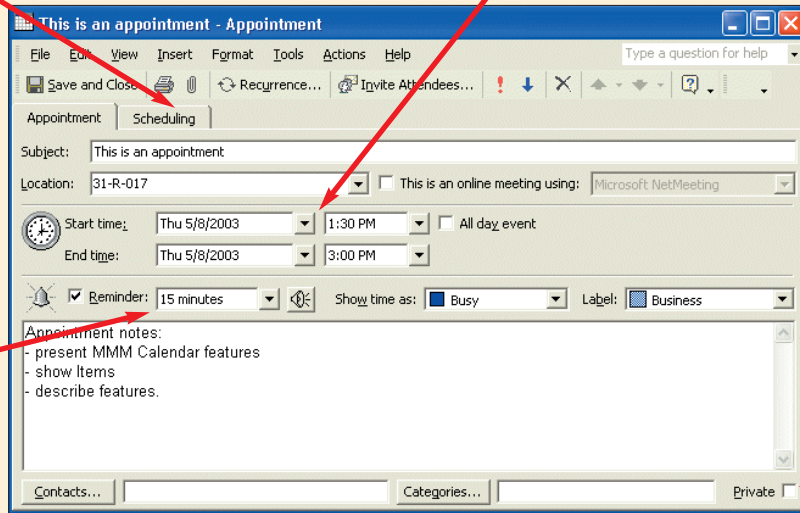You can click on any time slot in the Outlook Calendar and begin typing. You can opt to have a sound or message remind you of appointments, meetings and events, and you can add colours to items for at-a-glance identification.

Set a reminder, to be warned before the meeting starts.

Check **Private** box to keep privacy on a shared calendar.

*In Calendar view click **New** to create a new appointment. In the pop-up window, fill in basic fields like subject, time and duration. Note the **Private** checkbox to keep privacy on shared calendars.*

3. Organize a meeting and invite attendees

Simply select a time on your Calendar, create an appointment and select people to invite.

Click **Scheduling** to invite attendees to this meeting.

Click **Send** when finished. An invitation will be sent to every participant.
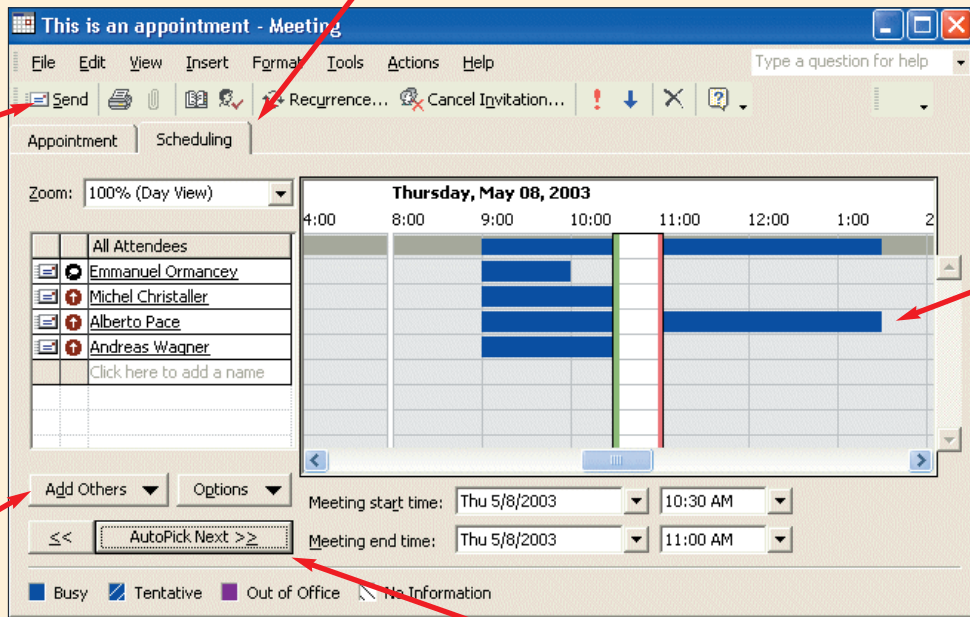
Blue bars show periods where the user is not available.

Type attendees' names or click **Add Others** to add users.

AutoPick Next will automatically select the next period of time where all attendees are free (non-blue).

The appointment can be scheduled with other users. Outlook will help to determine other attendees' availability, and to schedule the meeting at a date and time convenient to all. Invitation handling and participation status are also handled automatically.

*When a meeting with participants is created, an invitation is automatically sent to all expected attendees. This invitation will propose buttons to **Accept** or **Decline** the meeting. Upon receiving an accept or decline answer, the Appointment entry in the Calendar will be updated with responses. You can check the tracking tab in the appointment to view answer status.*

3. Organize a meeting and invite attendees *continued*

Click **Accept**, **Decline** or **Tentative** for "try to attend".

◁1   2▷

Acceptance

Tracking tab

Answer status per user

3▷

Correspondence to invite people to meetings: (1) Invitation received by attendee – note Accept, Tentative and Decline buttons; (2) Response (accept) received by meeting organizer; (3) Tracking responses – answer status for each user is given in the tracking tab of the appointment.

4. Add resources

Click **Add Others** to add a resource.

Blue boxes show periods where the resource is not available.

AutoPick Next will automatically select the next period of time where all attendees and resources are free (non-blue).

Select a resource and add it to the list.

Resource booking status is known instantly when sending or saving the appointment.

Resources for the meeting can be booked in the way attendees are invited, and will be automatically accepted or declined depending on their availability. Note that not all the CERN resources are currently available – if you would like to have a new resource added, please refer to the help pages on the Mail Service website at http://mmm.cern.ch or contact the Helpdesk.

Licensing system works to give users access when they need it

Have you ever been unable to use some software because of licence problems? Do you want to know how a licence server works? If so, keep reading this article and we will explain all the details to you.

The Product Support (PS) group of the IT department at CERN distributes and supports more than 100 software packages, ranging from tools for computer-aided design, field calculations, mathematical and structural analysis through to software development. Most of these tools, which are used on a variety of LINUX/UNIX and Windows platforms by different user populations, are commercial packages requiring a licence.

Keeping track of the large number and variety of licences is no easy task, so in order to provide a more automated and more efficient service, the PS group has developed a database system to track detailed licence configurations and to monitor their use. The system is called PSLicmon (PS Licence Monitor). PSLicmon consists of four main components: report generation, data loader, Oracle product database and a PHP-based Web interface. The system also has an alarm system to notify about licence expiry.

Thanks to PSLicmon, the support team can better match licence acquisitions with the diverse needs of its user community, to keep licence costs within limited budgets and to be in control of migration and phase-out scenarios between different products and/or product versions.

The rest of this article provides a description of software-licensing schemes as well as the PSLicmon system and its main features.

Definitions you need to know

A *product* is a software package. Many of the products supported by our group are commercial ones, such as Ansys, Mathematica, Euclid and Mafia.

A product may have several components or modules, each of them called a *feature*. Different features in many cases correspond to different binaries. For instance, Mathematica has two different features: a front-end and the kernel.

A *licence* is a key to control the use of a software product and its features. A licence is usually stored in a file, and there are different types of licence. First of all, there are site licences that allow anyone in the organization to use the product. In a site licence, there are no restrictions on the number of users. Another type of licence, and the most common these days, is the floating licence.

In this case, there is a maximum number of concurrent users for each feature of the product. If that number is reached, and a new user tries to use the product, access to the feature will be denied, and the user will have to wait until one of the current users stops using the product and frees a licence.

A *licence server* is a computer that hosts the licence files and keeps track of the number of concurrent users. For each licence there is a process in the licence server, called *vendor daemon*, that handles the licence for a product.

When a user tries to use a feature of a product, the application will first try to contact the vendor daemon of that licence and check if it is allowed to run. The licence server normally holds the licence log files of product and feature use. If anything fails during the communication with the licence server, the users will not be able to use the product. This makes licence servers a critical element of computing infrastructure: if for any reason a licence server has problems, all the people using products covered by that licence server will be unable to work.

To prevent this situation, the PS group has set up a redundant licence-server configuration: a set of three machines that deal with the same licences. The three machines are in constant communication with one another, and as long as at least two of them are operating correctly they can serve licences. Thanks to this redundancy, we can carry out maintenance on the licence servers without disturbing the end users.

On the licence servers we use a locally developed alarm system UIMON (http://uimon. cern.ch/uimon/) to ensure that all the vendor daemons are up and running.

There are many different schemes for implementing floating licences. The PS group currently hosts licence servers for Flexlm (http://www. macrovision.com/products/ flexlm/), LUM (http://www-306. ibm.com/software/awdtools/ lum/), Mathlm (http://www. wolfram.com/products/network/ mathlm.html) and Elan. The most widely used licence manager is Flexlm, which is becoming the *de facto* standard.

PSLicmon

The core of PSLicmon is a product database, where we keep information about all of the products the PS group supports.

The database contains essential information about each product, such as contacts at the supplier company, CERN power users, support webpages, etc. Part of the information is useful to the user community and is available via a public "Product Index" (http://uimon.cern.ch/index/) webpage that provides a list of all supported products.

The rest of the information in the product database is related to installation, support, purchasing and so on, and is reserved for the support team. The database contains information about product licences and the expiry date for all product features. Automatic reminders are sent to the person responsible for the product before a feature expires, in order to allow the support team to take action and renew licences in due time.

Application- and licence-monitoring is the core of PSLicmon and statistics of application use are stored in the database. At the moment, we can monitor four different types: Flexlm, LUM, Mathlm and SMS (http://www.microsoft.com/ smserver/). However, adding products based on other licence managers is straightforward, as long as some log facility is offered to report the usage of the licensed products.

A Web interface to maintain and browse the database has been implemented (https:// uimon.cern.ch/licmon/). From this webpage, the person responsible for the product can display and update the information stored in the database. New products can be easily inserted into the system. The Web interface allows members of the support team to browse through the usage statistics of monitored products.

Another webpage ProductStat (http://uimon.cern.ch/ ProductStat/cestat.pl) provides online information on the current usage of products and features. This allows the support team to contact the users in case of blocked licences or to warn the users about system interventions. The ProductStat webpage is made available to the user community at CERN and allows them to contact colleagues to free a licence when necessary. (In some cases a licence may be blocked inadvertently after a system crash, and the user is not aware of the problem.)

These are the main components of PSLicmon. If you want to know more, please consult the information provided at the websites we have mentioned, or contact us and we will be happy to help you. We also invite you to consult the index of supported products on the Web.

Nils-Joar Høimyr, IT/PS, and Pablo Saiz, IT/GM, for the PS Support team

Don't miss out – keep up to date with changes in Web Services

The whole infrastructure for Web Services has been updated this year. By the end of 2004, we will be finishing the migration of all the centrally managed websites. Therefore we are taking this opportunity to present the key features of the service and highlight the changes introduced by this update.

This is not a manual for the CERN Web Services; we encourage you to read the full documentation on the service's website for more information: http://cern.ch/web.

Web Services and centrally managed sites

Web Services at CERN aim to enable users to create and manage websites for the organization's internal use as well as for a worldwide visibility. All tasks related to websites are performed from a single Web interface at http://cern.ch/web, and users may request help or report problems to the Helpdesk (web.support@cern.ch or telephone 78888).

The Web Services team is committed to managing and maintaining the infrastructure that allows those websites to run. This infrastructure consists of 30 dedicated servers (most of them part of the NICE server environment) hosting 6500 sites. Those websites are referred to as "centrally managed sites": the common administration tasks are performed for the users.

They are not the only websites at CERN: the central Web Services do not meet all needs and some well known websites and applications use their own infrastructure and servers, such as EDH, CDS, EDMS, or the Welcome page. These are all non-centrally managed sites.

What you can do with Web Services

Web Services offer three ways to host a website, each hosting service having its own features:
● hosting on the central Web servers (also known as "frontpage" websites);
● hosting on the AFS home directories;
● hosting on the NICE home directories (also known as DFS).

Centrally hosted websites are the most versatile ones, and should be preferred: they can range from a simple, static information site to a full-featured Web application with back-end databases. The website's files are stored on the central web servers, hence the site is "centrally hosted". Such sites are typically edited from a workstation with Web-authoring tools such as FrontPage, Dreamweaver and Visual Studio.

AFS- or DFS-hosted sites have existed historically and use files located in the file system of the AFS or NICE environments. Authors edit the website directly by modifying files in their home directory or shared workspace. Depending on the environment, there is more or less support for advanced features such as dynamic content generation (scripts), databases, etc.

How to edit a website

The methods are different depending on the hosting service. AFS and NICE/DFS-based websites are edited directly from their respective environment, because they consist of normal user files: any editor can be used. The constraints on editing those sites from outside CERN are the same as for accessing the associated environment. For instance, off-site access to DFS files is possible from http://cern.ch/dfs or via Windows Terminal Services (see http://cern.ch/wts).

Frontpage (i.e. centrally hosted) websites are stored in the Web server itself. They are typically edited with dedicated Web-authoring software that connects to the Web server in order to manipulate the files. However, any other tool can be used provided a connection to the files stored on the Web servers is established.

CERN Web Services support Windows-based Web-authoring software such as the following.
● Microsoft FrontPage is the recommended authoring software. It is supported by the Helpdesk and training is provided. It uses proprietary interfaces to manipulate files on the Web server, and works from both inside and outside the CERN network.
● Dreamweaver can be installed from Add/Remove Programs on NICE computers. It connects to the Web server using WebDAV. It cannot be used from outside CERN but is available on Windows Terminal Services.
● Microsoft Visual Studio can be used by advanced developers. It takes advantage of the proprietary interfaces used by FrontPage (the "FrontPage Server Extensions" method).

Non-Windows users can run those tools from Windows Terminal Services (http://cern.ch/wts).

If other tools need to be used, there are several ways to set up a connection to the files stored on the Web servers. Here is a short explanation – details are available at http://cern.ch/web.
● WebDAV is a standardized protocol for remote file management; clients are available for virtually all platforms. It should be considered as a replacement for FTP, and can be used from outside CERN if encrypted.
● A Web interface is available to manage files from any Web browser, anywhere. It is accessible only to the registered authors of the website.
● SMB (the Windows file-sharing protocol) is of course usable from Windows, but clients also exist for LINUX (Samba project) and Mac OS X (out of the box). This is restricted to the CERN network.
● FTP is now available only on demand, and within the CERN network. FTP presents security risks(http://cern.ch/security/ftp) and WebDAV should be preferred whenever possible since it supports encryption.

A few recommendations

● Do not use different authoring tools on the same website. They may conflict with each other, with unpredictable results.
● Even if you are not a FrontPage user, do not delete the special FrontPage folders (their name begins with _vti). They are required for the website to work properly.
● Use HTTPS (encrypted communications) instead of HTTP whenever sensitive information is involved, such as passwords. HTTPS links should always begin with https://www.cern.ch/MySiteName, regardless of the actual hosting server. The Web infrastructure will take care of rewriting the URL if necessary.

Changes introduced in the new infrastructure

The motivations for those changes have been to make new technologies available to users, improve stability and security, and improve manageability (with the possibility of fixing most typical problems automatically).

For users familiar with the existing system, here are the key changes with the introduction of the new infrastructure regarding centrally hosted websites.
● Dynamic content generation: the technologies available by default now include ASP.NET and PHP, in addition to ASP and Perl. ASP remains the simplest (and the recommended) technology for beginners.
● FTP access is not provided by default.
● WebDAV access and a Web interface to manage files were added.
● The only way to change file permission on centrally hosted websites now is to use the Web interface to manage the site's permissions, accessible from the http://cern.ch/web website. (Or use the built-in permission management feature of FrontPage.)
● Some advanced features of FrontPage XP/2003 are now supported, e.g. file uploads.
Alexandre Lossent, IT/IS

Internet services & network

Updated Listbox service takes the hassle out of e-mailing lists

CERN has been providing the high-energy physics community with a large number of mailing lists for several years. The current service has more than 3000 mailing lists with more than 50 000 users worldwide and around 400 000 archived mails.

In September 2004 a new platform for the CERN Listbox service was put into production offering several improved functionalities. This evolution was approved by the Desktop Forum held on 27 May 2004 after a detailed analysis of user requirements (you can access this document at http://simba. cern.ch/Help/SIMBA2Users RequirementsDocument.pdf).

Behind the new interface there is a completely new distribution mechanism and all CERN mailing lists will be moved to the new service during the next two months. This change will be almost transparent for users and list owners will be informed by e-mail when their list is moved to the new system. The new SIMBA2 interface (the website is still http://simba. cern.ch) gives access to all lists and users are automatically redirected to the old interface for lists that haven't been migrated yet.

We strongly recommend that every CERN "official" mailing list is registered in the Listbox Service. Some of the advantages of having a list in Listbox compared with a private list in some user's address book are shown in the table.

The main task of Listbox is to distribute mails to list members. But it also keeps an archive of the mailing lists and asserts tight permissions for both posting to the list and accessing the archives.

Members can be regular CERN users with a NICE account or external users without a NICE account. Those people are provided with a "CERN External account" in order to be authenticated by the system. A CERN External account is a restricted account, defined by an e-mail address that gives any people registered in the system the ability to be a member of some mailing lists and to access some list archives. A password is attached to the CERN External account. Users with such an account can authenticate to the Listbox service and use it like regular CERN users.

If you already are a member of any mailing list on the CERN Listbox service, and your e-mail address is not of the form FirstName.Surname@cern.ch or loginid@mail.cern.ch, then you are considered to be an external Listbox member.

To log on to the SIMBA service you need to enter your e-mail address as your login ID

CERN Listbox Services.

(username) followed by a password, which we have assigned to you already (if we haven't, or if you can't remember the password, you can request a new one at the CERN Externals website at http://cern.ch/externalsweb/).

If you are not a CERN user and are not a member of any mailing list at CERN then you will need to have an account created for you by our administrators. E-mail Listbox.Support@cern.ch and explain that you want to connect to the Simba service and/or which list you wish to become a member of.

How do I go about obtaining a subscription to a Listbox list?
To subscribe, you can write to the list owner. You can also subscribe to a list by visiting its property page in SIMBA. Please note subscription may be moderated by the list owners; that is why we recommend using the first method.

I receive messages but when I try to post to the list, I'm told that I'm not on the list. What can I do?
In order to send messages to a list you must use the exact e-mail address you subscribed with. If you are using a different address and posting to the list is restricted to members only, then your messages will be rejected. To see if this is the case, send a test message to yourself. Then check the "From:" field of the test message. If the address is different from the address you subscribed with, please change your mail-reader configuration or update your address in the list membership.

Why do I need to authenticate to the old SIMBA after having authenticated to the new one?
The old SIMBA and the new one are hosted on two different systems. That is why it is not possible to forward your authentication to the old SIMBA. Once authenticated to both, your Web browser will cache your authentications and you will not be asked again for the same session. Anyway, the old SIMBA interface will be decommissioned at the end of this year.

What is the basis for the new system?
The new Listbox is highly integrated with the Mail Service that was just introduced last year. Besides reducing operation costs, this allows for infrastructure redundancy and removes the need to synchronize a separate password for each side. As this new infrastructure is based on product-managing collaborative tools, mailing lists may be revisited in the future to integrate closely some collaborative tools.

Further help
For more details on how to use the Listbox service please consult the Listbox Services Documentation website at http://simba.cern.ch/Help/ ?kbid=010001. An FAQ is provided at http://simba.cern. ch/Help/?kbid=014000.
Michel Christaller and Ruben Leivas Ledo, IT/IS

Advantages of using Listbox

Factor	List in address book	List in Listbox
Availability	When the list owner is away, the list is unavailable.	The list is always available.
Data quality	It's the responsibility of the list owner to keep the list up to date.	The list can be updated automatically using the CERN central database (either to follow users' preferred e-mail addresses or to recreate the list following some selection criteria).
Data consistency	If two people want to share a list (e.g. to overcome the availability problem), consistency can be compromised.	The list is always stored in one place.
List management	By hand.	Web interface.

# How to stay in touch with CERN wherever you are in the world

What is the difference between being on the Internet and being on the CERN internal network? None, if you are accessing services on the Internet. However, when accessing services located at CERN from the outside, the CERN firewall can restrict your access.

Connecting to the CERN internal network from the Internet

As a general guideline, all the services that should be accessible from home and/or from the Internet should be opened in the CERN firewall. There should be no difference in accessing CERN services from the Internet compared with when the same services are accessed from inside CERN.

CERN has made a major effort to ensure that all central computing services are also available from outside over the Internet. This is true in particular for the Electronic Mail, Web Services, Terminal Services, LXplus, AFS, DFS (via the web interface at https://dfs.cern. ch/), EDMS, CDS, EDH and all AIS administrative applications. Also the future Grid computing services are all designed to be globally available. There should be no need to request a special access to the CERN internal network, including for website browsing. If you find a website that has any IP address restrictions, it would probably be better to ask the website's owner to remove them. The owner should then replace them with one restriction on authenticated users that would simply prevent anonymous website browsing and restrict it to CERN users, wherever they are in the world.

Having said that, exceptions always exist. Therefore here is the simplest recommended way to connect to the CERN internal network when you are outside: open an interactive session on the "Windows Terminal Services" (see http://cern.ch/wts) or to the central public LINUX cluster LXPLUS (see

Connecting your home computer to the Internet.

http://cern.ch/plus).
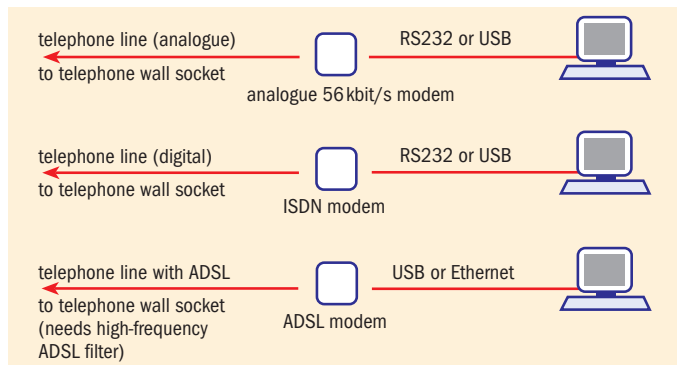
As a final solution, reserved for advanced users who know what they are doing, you can use the virtual private network service (see http://cern.ch/vpn). However, given the security implications this should be used only for extreme and rare cases, and users are formally discouraged against using it as a general solution. This is also because the availability of the VPN service may be discontinued in the future for security reasons.

In conclusion, then: once you are connected to the Internet, all the central computing services are available and there is no general need to connect to the internal network. If this need exists in particular cases, users are recommended to use LXPLUS or the Windows Terminal Services.

Connecting to the CERN Technical Network from the Internet

The CERN Technical Network is designed to be inaccessible from outside CERN. Therefore no further information will be given on accessing it from the Internet. If you need to access equipment on the Technical Network from outside CERN you may want to reconsider why it was located on the Technical Network in the first place.

Connecting your home computer to the Internet

This is the simplest case of connecting to the Internet. All you need is a computer, a telephone line and a modem (note that the modem can be built-in inside the computer). The modem connects to the telephone socket on the wall. There are several types of Internet connection:
- an analogue modem, where the data are transmitted over a normal analogue phone call at a speed of up to 56 kbit/s (kilobits per second).
- a digital ISDN (Integrated Services Digital Network) telephone line that gives you 64 kbit/s. You can also group two simultaneous ISDN lines to have a total of 128 kbit/s. However, the advent of ADSL (see below) means that the ISDN solution is used less and less, and is therefore no longer recommended for home use.
- An ADSL subscription where the modem is connected via a special "high frequencies" filter on the line. In this case you can have from 256 kbit/s to 2 Mb/s or even higher.

There are additional types of Internet subscriptions that can use satellites or television cables. These will not be discussed here, but the model is always the same: a modem that connects a telecommunication device to the computer.

Note that when using ISDN or an analogue modem the computer is typically connected using the serial (or USB) lines. Because of the higher bandwidth of ADSL, an ADSL modem always connects using

an Ethernet or USB interface.

Detailed information on how to install a particular modem and the required software on your computer should come from your Internet service provider (ISP) with whom you need to subscribe to get an Internet connection. It is strongly recommended that you enable the local firewall of your computer. For the CERN standard portable computer running Windows XP, this is explained at http://cern.ch/Win/docs/XP-firewall.

For connecting multiple computers to the Internet at home please refer to the extended version of this article: http://cern.ch/RemoteAccess/doc/Scenarios/.

Connecting your CERN portable computer to the Internet when you are at home

This is identical to the way to connect your home computer described above. Since the vast majority of CERN portable computers are equipped with Wireless cards, the ADSL with wireless access point solution at home is ideal because it allows you to move your portable computer to/from your office transparently. In all cases, especially if you do not have ADSL at home, any other solution to connect your computer to the Internet at home remains valid, including the analogue modem.

Connecting your CERN portable computer to the Internet when you are travelling

When travelling, things get much more complicated because you never know what you can expect at the remote location. Most probably one of the following four possibilities will be offered to you: connecting to the Internet using an analogue modem, connecting using a GSM portable phone, connecting using a Wireless provider or connecting using Ethernet.

It would take too long to

Internet services & network

describe all the four cases in this article. We again invite you to refer to the detailed descriptions in the extended version at http://cern.ch/RemoteAccess/doc/Scenarios/.

How visitors to CERN can connect to the Internet from hotels and homes in the CERN neighbourhood
If you are a temporary visitor to CERN and you require a short-term Internet connection from your flat, the easiest and quickest solution is the analogue-modem connection. In both France and Switzerland there are "free" ISPs that provide you with unlimited Internet access for the cost of a local telephone call. If you buy "packages" and you commit to a minimum number of hours connected per month, then you can obtain even better deals.

The major difficulty that visitors may have is finding an ISP with Web information pages available in English.

If you live in Switzerland there are two providers (Infomaniak and Tiscali) that provide you with a simple number to dial in and get an Internet connection from anywhere (see table).

If you live in France then you have to get a free subscription. This costs nothing but activation can take up to 48 hours according to the ISP. Once this is done, the provider will give you the national phone number (at a local-call cost) to call and your username and password for the dial-in parameters.

Links to available service providers are at the http://cern.ch/remoteaccess homepage.

For more details, please refer to the extended version of this article on the Remote Access website at http://cern.ch/RemoteAccess/doc/Scenarios/.
Alberto Pace, IT/IS

Access numbers for Internet service providers in Switzerland

Provider	Website	Dial-in information
Infomaniak	www.infomaniak.ch/ www1.infomaniak.ch/acces_internet/ num_acces_free.php	username: infomaniak, password: infomaniak, telephone number: 107410840560999
Tiscali	www.tiscali.ch/ http://products.tiscali.ch/fr/ prod-freenet-index.htm	username: tiscali, password: freenet, telephone number: 0840840850

Details correct at press-time, but are subject to change. In both cases you should check the phone cost with your telecom operator before proceeding. Please check the service providers' websites for details.

The deadline for submissions to the next issue of CNL is 13 December 2004

E-mail your contributions to cnl.editor@cern.ch

Comedy corner: the peril of plants

Please avoid eating anything near your keyboard at CERN because seeds might fall in and damage this delicate instrument…let the photograph above be a warning to us all.

We would like to wish you a very merry Christmas and a happy New Year!

Questions and answers from the Helpdesk

Edited by Nicole Crémel

The User Assistance Team in IT/UDS maintains a database for Questions and Answers that have been dealt with by the Computing Helpdesk. This provides many tips on daily computing issues. You can search the database at http://cern.ch/qa/.

Below is one example of a Question and Answer (Q&A) that is related to the Mail services at CERN.

Subject
Mail or NICE account blocked

Question
I have tried to change my MAIL/NICE password with the standard MMM tool, but soon after that my mail account was blocked. Why?

Answer
One possible problem is that you have saved the old password locally in your mail client, and when opening this client it uses this wrong, old mail password. After five incorrect logins your NICE or

Mail account is automatically locked (and blocked). This is an intruder-detection mechanism for security reasons.

The solution is to change this locally saved password and reset it to the new value before opening the mail client.

One known client with this behaviour is Mozilla, and not only in the password used for IMAP, but also the password used for outgoing SMTP authentication. We know of several users who reset the password used for the IMAP

session on the mail server but forgot to change the stored password for the outgoing SMTP authentication.

In all cases, a locked account is unlocked automatically after 15 minutes (but re-locks if a wrong password is used again).

Other general-interest Q&As and their corresponding websites

Windows (NICE – Office) related

- http://consult.cern.ch/qa/3529 — Windows Installer Service could not be accessed
- http://consult.cern.ch/qa/3532 — Spyware: how to get rid of it
- http://consult.cern.ch/qa/3535 — Outlook 2003 error but the rest of the Office suite is okay
- http://consult.cern.ch/qa/3537 — About \\SWSMS04\SMSPKGE$\CRN00050\WUJustDoit.wsf \s
- http://consult.cern.ch/qa/3597 — Users of a CERN division and group in NICE GM security group
- http://consult.cern.ch/qa/3602 — Printer icon is lost on the Windows taskbar
- http://consult.cern.ch/qa/3609 — Scheduled Windows task doesn't run any more after password change
- http://consult.cern.ch/qa/3621 — Which Service Pack version of Office am I running?
- http://consult.cern.ch/qa/3623 — NICE account intruder counter: how do I reset it?

UNIX (AFS–Lxplus/Lxbatch) related

- http://consult.cern.ch/qa/3229 — Printing from a private LINUX PC on CERN printers
- http://consult.cern.ch/qa/3652 — Remote X-windows display from a laptop
- http://consult.cern.ch/qa/3596 — Function keys on a LINUX keyboard

Mail (Outlook–pine–mail services) related

- http://consult.cern.ch/qa/3658 — Inbox is huge slowing down logout/login
- http://consult.cern.ch/qa/3644 — Full mail header with Outlook

Web-related

- http://consult.cern.ch/qa/0688 — Writing permissions for scripts in the central Web servers

Recent changes to CERN's IT services

Changes to services in the IT department are announced and published in the Service Status Board at http://cern.ch/it-servicestatus. Below are the most recent changes and their dates of posting.

4 October	Upgrade and merge of DEVDB and DEVDB9 Oracle services
27 September	WinZip 9.0 Service Release 1
16 September	X Terminal servers move and X Terminals reboot
11 August	AFS users on Windows XP must install OpenAFS1.3.7
5 August	New tool to deploy Windows Security Patches

Recent acquisitions at the IT bookshop

The shop is situated in Building 513 R-047. CERN users can buy books and CDs there at discount prices. The service is open on weekdays from 8.30 a.m. to 12.30 p.m. and it can also be contacted by e-mail (Bookshop@cern.ch) or phone (74050).

Books are purchased from some 15 publishing houses and the bookshop's catalogue offers a selection of documentation aimed at the range of computing utilities that are currently available at CERN. The service welcomes suggestions from the user community for acquisitions.

The bookshop's most recent

CERN Book Fair, 28–29 October.

acquisitions include the physics book **Physics for Scientists and Engineers with Modern Physics**, plus in the computing field:
- **Exceptional C++ Style** by Sutter (who has already written **Exceptional C++** and **More Exceptional C++**)
- **A Practical Guide to Red Hat**

Linux by Sobell (new edition containing a CD)
- **Designing Software Product Lines with UML**
- **The Unified Modeling Language Reference Manual**
- **Oracle SQL by Example**
- A new series of three **MySQL** books by MySQL Press

The complete list, with all of the relevant information, is integrated into the CERN library system. It is compiled regularly and is made available on the CERN network at http://cdsweb/tools/itbook.py.

Roger Woolnough and Jutta Megies, IT/UDS

Calendar

November

8 **5th IEEE/ACM International Workshop on Grid Computing**
Pittsburgh, PA, www.gridbus.org/grid2004/

22–26 **EGEE 2nd Conference**
The Hague, The Netherlands, http://public.eu-egee.org/events/conferences

December

19–22 **HiPC 2004**
Bangalore, India, www.hipc.org/

February 2005

7–11 **GlobusWORLD 2005**
Boston, MA, www.globusworld.org/

14–16 **European Grid Conference**
Amsterdam, The Netherlands, http://genias.biz/egc2005/

21–25 **Tridentcom 2005**
Trento, Italy, www.tridentcom.org/