The monthly GNU Column

Brave GNU World

In this monthly column we bring you the news from within the GNU project. In this issue we will look at ways to beat oppressive regimes, FSF Europe's activities, Developing with BASIC, auditable accounting and system monitoring. BY GEORG C. F. GREVE

Since we seemed to have concentrate on creative methods of wasting out time in the last issue, this issue we will be dealing with some more work-related aspects. We will start with a groupware solution.

Minkowsky

Stefan Kamphausen, author of the Brave GNU World logo, has pointed out to me a groupware solution by his colleague Rüdiger Götz. The program has a calendar, address and task management and is therefore dedicated to managing space and time. Following the humour of Physicists, as this program manages "space-time" it has been named after the Minkowsky-diagrams used in the Special Theory of Relativity and is therefore called Minkowsky. [5]

The program started life at the end of 2000, when the company employing both Stefan and Rüdiger were looking for a groupware solution. Faced only with the alternative Outlook, Rüdiger decided to write Minkowsky and the company has been successfully using it since February 2001.

Minkowsky allows for access rights to be fine-tuned by the administrator in order to give secretaries or other co-workers in related groups the possibility to access appointments, and to allow for better co-ordination.

From experience it is the increase in the co-ordination and communication within a group that makes Minkowsky special. As a task, Minkowsky is oriented towards groups living on a single LAN.

Minkowsky is based on C++/C with Tcl/Tk/Tix and it does not require an additional database, which can be an advantage in some situations. Being Free Software under the GNU General Public License, Minkowsky also secures the independence of companies using it in this rather crucial area. Following the first public release in May 2001, the release process is about to publicize the first version.

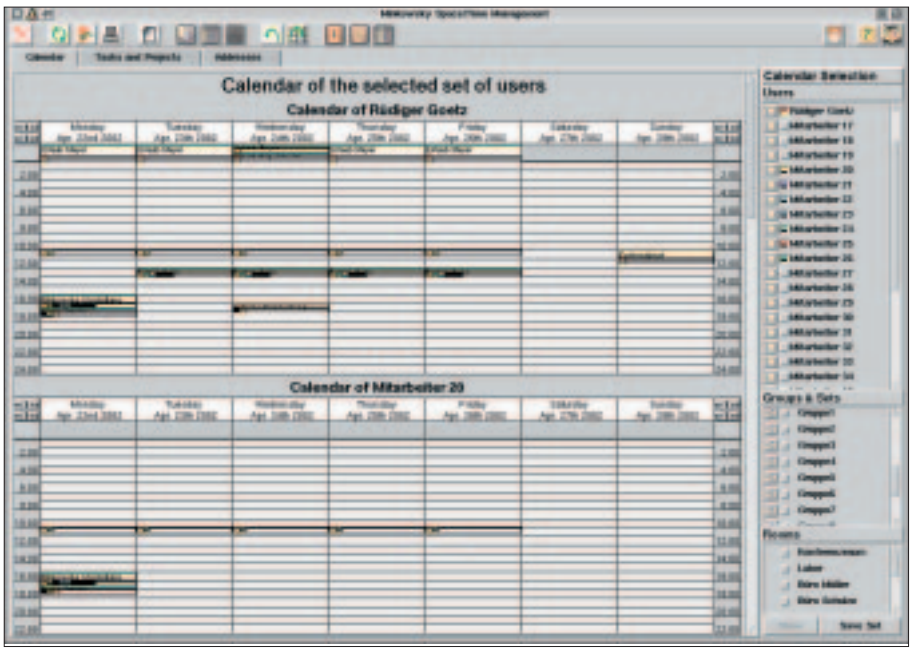

Figure 1: Minkowsky showing a group view and single calendars

Further plans include the stabilisation of communication between client and server, the PDA synchronisation, a port to Mac OS X (Minkowsky has been only developed on GNU/Linux) and of course the search for and fixing of bugs.

Rüdiger would welcome help with a communication layer that is more stable, English translation and synchronisation with Palm-handhelds.

Webminstats

Webminstats [6] allows monitoring of multiple relevant system parameters through a web browser. Since browsers are usually available on all platforms, such projects are usually very popular with administrators of (heterogeneous) networks.

David Bouius began working on Webminstats in August 2001. Towards the end of 2001 he started receiving support by Eric Gerbier, who took over the project when David lacked the time to maintain it.

According to Eric Gerbier, who answered the Brave GNU World questionnaire, Webminstats offers several advantages over similar projects. It is, for instance, much faster than a classic of this genre, the MRTG [7], because unlike Webminstats, MRTG also creates graphs that are usually not needed.

As the name implies, Webminstats is based on the Webmin [8] project, which allows web-based administration of Unix systems. This allows sharing the access control features of Webmin for Webminstats and also this makes it browser-configurable.

The Webminstats backend is based on the RRDTool (Round Robin Database

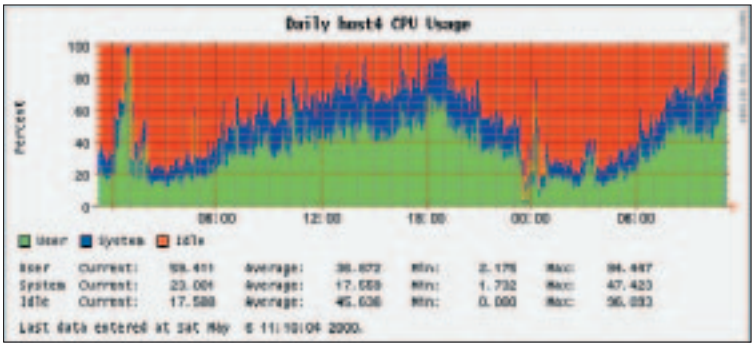

Figure 2: Webminstats showing a daily CPU usage chart.

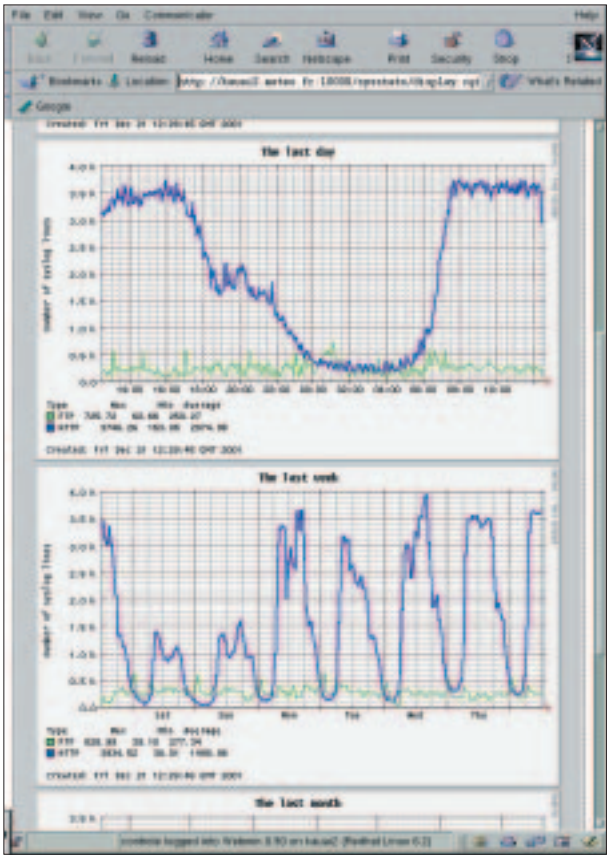

Figure 3: Webminstats showing the ftp/http module

Tool) [9] by Tobi Oetker, which provides a faster and more flexible re-implementation of the storage and display capabilities of the already mentioned MRTG project. Since it does not provide its data-collection and frontend features, RRDTool is not a replacement for MRTG. MRTG can use it as its database.

These database-capabilities are also used by Webminstats. For collecting data, Webminstats provides 9 modules, which allow monitoring of CPU-load, disk space, IRQ, internet (FTP/HTTP), mail (sendmail, pop, imap), memory, processes and the number of users with a time-resolution of one minute.

With the help of Webminstats, Eric has been able to find and fix a problem with his web server. By knowing the exact time of the crash and with the user module providing information about a new logon immediately before the crash, he was able to narrow down the possible problems, which in turn made it much easier to find that specific bug.

Webminstats was written in Perl and the Bash-Shell and is being released under the GNU General Public License as Free Software. New modules will expand the functionality with firewall monitoring capabilities and it is planned to customise it for other Unix systems. On top of this, the team has also considered adding "alarm messages". Help is requested in form of attractive icons for modules, customisations for other languages and operating systems as well as any new features required.

LinCompta

By beginning work on the LinCompta [10] project early this year, Pascal Conrad has started to close one of the most important gaps of Free Software: Professional analytical accounting.

His last employer did not see the benefits of, or have the appropriate understanding and appreciation of Free Software and GNU/Linux, Pascal decided to provide the LinCompta project to the community under the terms of the GNU General Public License.

During its brief history, the project has already made remarkable progress – it has a very usable graphical interface that most users find easy to understand.

Programming languages used in this project include C with GTK+/GNOME support and Pascal. It uses MySQL as the backing database.

The project currently lacks a way to print data and only French is currently supported. The highest priority on the task list is translation to both English and Russian. Any help with this aspect or with the web page will be gratefully accepted. Should the project see enough interest, Pascal plans to expand it with other aspects of business accounting, so if you would like to see such projects come along, you should probably try to support Pascal by testing, translating or programming.

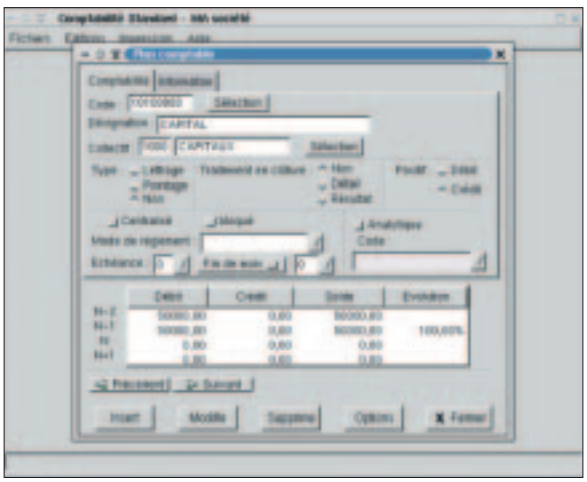

Figure 4: French accounting with LinCompta

GNUnet

Many months ago, Brave GNU World presented some background of the FreeNET project by Ian Clarke, which had the goal to create a decentralised network which would make central control and censoring impossible and also allow data to "wander" through the network.

Faced with the increasing attempts to censor the internet, file sharing services like Napster have a problem, their reliance on a central reference point. The idea of such peer-to-peer networks is common knowledge today.

With GNUnet [11], a project by the students of the Purdue University, such a network has also become part of the GNU Project now.

Let me try to give a short introduction for those who have not yet come into

contact with such a system. Most data is stationary and with the URL it can be mapped to a certain host. This allows – by blocking access to that one computer – censoring and also information about the provider of that content. This is problematic in countries such as China, where access to any media that is not controlled by the Chinese government is restricted and providers of critical information have to expect sanctions.

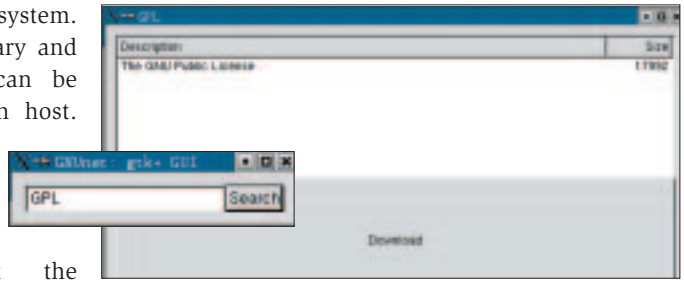

Figure 5: GNUnet running a search for GPL and finding the document

Networks like FreeNET or GNUnet undermine this by making extensive use of cryptography and adding anonymity, which protects the provider and makes a physical localisation of any unwanted information impossible. You would use such networks whenever privacy is more important than efficiency.

Other than the normal anonymous networks, GNUnet allows a form of accounting, which ensures that nodes providing more to the network will receive better connectivity. Exclusive consumption ("Freeloading") is possible, but it has to take whatever capacity is "left over."

As we mentioned before, the GNUnet projects originates in Purdue University, where it began as a cryptography project of some students. By the way: Their biggest problem was to convince their professor that this project was to do with cryptography. They are now giving their first appearances at crypto-conferences and GNUnet is in beta test state, so that should not be a problem anymore.

The authors see the advantages of anonymity as a feature in the GNUnet project, which they believe to be more effective than the methods employed in other networks. They are also proud of their "Deniability" which provides for protection against black sheep within the network.

And finally GNUnet allows searching for "natural" strings, instead of random hashcodes used by FreeNET for instance. As far as they know, GNUnet is the only entirely decentralised network offering these capabilities.

The authors see its biggest weakness in the lack of enthusiasm to program a GUI. The currently available GTK + based GUI works, but it is not very comfortable. Further development is concentrating on porting it to more platforms. It runs on GNU/Linux and BSD, and so work is being done on versions for Solaris/OS10 and Win32.

Plans for the future include transport mechanisms other than UDP. They have thought about using steganography to hide data in pictures in order to bring the network through the Chinese wall – sorry – firewall. Also expansion of the network beyond filesharing – to transport email, for instance – might be possible.

Help is very welcome in form of more nodes running GNUnet, help with the Win32 port, documentation, web pages, creation of graphics and so on.

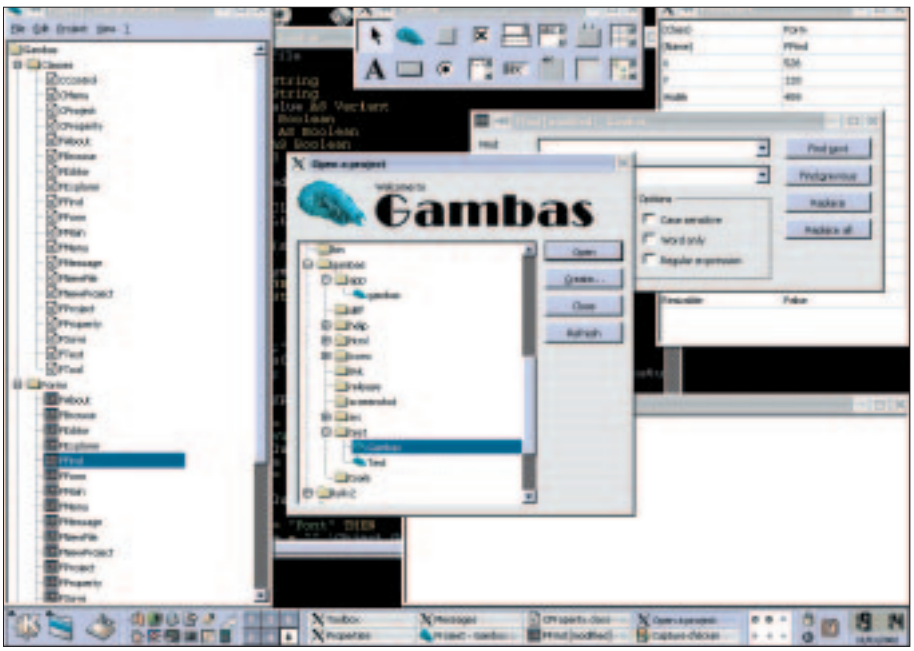

Figure 6: Gambas is not just Super Basic

Gambas

Gambas [12] is an acronym for "Gambas Almost Means BASic", which gives us a hint about the type of the project, because it is a graphical development environment based on a BASIC interpreter with object-oriented expansions. Benoit Minisini, the author of this project, drew inspiration from Java and Visual Basic.

The project hopes to create an environment in which graphical programs can be assembled efficiently and with a shallow learning curve. Benoit found Java too complex and Visual Basic too buggy for this task, also Visual Basic only runs under Microsoft Windows.

He also wanted a language that would secure freedom in terms of choice of desktop (KDE or GNOME) as well as license. Therefore he published Gambas under the GNU General Public License.

The project has seen about three years of development, using C for the interpreter and compiler, C + + for Qt-bindings and Gambas itself for the graphical development environment. Benoit aims for the best syntactic coherence and compactness possible, making the interpreter without the Qt component should save about 200k in size. This should make it relatively easy to port Gambas to embedded environments.

Thanks to its modular structure, the currently used Qt-based GUI component can easily be replaced by one based on GTK + . Further targets are the creation of a good debugger as well as a database component.

It will probably take some time until Gambas is truly a complete programming language/environment, but it is certainly possible to speed up the process through

INFO

[1] Send ideas, comments and questions to Brave GNU World column@brave-gnu-world.org

[2] Home page of the GNU Project *http://www.gnu.org/*

[3] Home page of Georg's Brave GNU World *http://brave-gnu-world.org*

[4] "We run GNU" initiative *http://www.gnu.org/brave-gnu-world/rungnu/rungnu.en.html*

[5] Minkowsky home page *http://www.r-goetz.de/minkowsky/en/*

[6] Webminstats home page *http://webminstats.sourceforge.net*

[7] Multi Router Traffic Grapher (MRTG) home page *http://people.ee.ethz.ch/~oetiker/webtools/mrtg/mrtg.html*

[8] Webmin home page *http://www.webmin.com*

[9] "Round Robin Database" (RRD) Tool home page *http://www.caida.org/tools/utilities/rrdtool/*

[10] LinCompta home page *http://lincompta.tuxfamily.org*

[11] GNUnet home page *http://www.gnu.org/software/GNUnet/*

[12] Gambas home page *http://gambas.sourceforge.net*

[13] GNU Make home page *http://www.gnu.org/software/make/*

[14] Cook home page *http://www.canb.auug.org.au/~millerp/cook/*

[15] Free Software Foundation Europe *http://fsfeurope.org*

[16] Recommendation by the FSF Europe for the 6th framework programme *http://fsfeurope.org/documents/fp6/*

help. What Benoit needs most right now are people trying Gambas in order to give him feedback.

Once the component interface has been finished, Benoit plans writing some proper documentation for it, so adding Gambas components will be an easy task for everyone.

When replying to the Brave GNU World questionnaire, Benoit added the following little story that he would like to share with the Brave GNU World readers: One day Benoit tried reinstalling Windows, he decided to reformat the partition under MS-DOS. Unfortunately the drive letters were inverted between Windows and MS-DOS, so he ended up deleting the wrong hard drive – which of course he did not have backups of.

Having, involunterily, gained 30GB of free disk space, he then attempted to try and fiddle around with another, recently released, proprietary operating system, which really did not appeal to him. So he thought: Why not format that other hard disk from here? One mouse-click later his GNU/Linux "/home" partition no longer existed. Of course Gambas was on this partition and of course there were no backups.

By sheer luck there was still a one-month old copy of Gambas on the Windows partition that he had tried to format initially. His advice to all readers: Save important things everywhere. Be paranoid!

Even though the importance of backups is certainly widely known in theory, this little experience report may trigger some readers to back up the last three years of work. Of course one could also think that you should simply keep away from proprietary operating systems. :-)

Cook

Brave GNU World in issue 20 illustrated the weaknesses of the Make program [13], this issue will introduce another alternative: Cook [14] by Peter Miller.

Peter Miller, who is also author of the Aegis project, began working on a Make replacement as early as 1988. He chose C for the programming language and Cook is published as Free Software under the GNU General Public License.

Advantages of Cook in comparison with Make include the possibility to do parallel builds, recipes can have hostnames connected to them in order to run them on specific machines, dependencies can be resolved, recipes have optional conditions to fine-tune their execution and much more.

Those who read features about GNU Cons and SCons will be interested to hear it also supports detection of modification by fingerprints to avoid unnecessary recompilations.

The transition is made easier with a make2cook program, although this of course does not remove the necessity to deal with a new program and new syntax.

Those who have not yet found their way out of Make are given another great opportunity here.

Free Software for Europe

At the end of April, the FSF Europe [15] issued a recommendation for the 6th European Community framework programme, which has kept me pretty busy as the president of the FSF Europe.

On the grounds of a very lively and strong Free Software developer and user community in Europe, the FSF Europe suggests that the European Union should capitalise on this and set an emphasis on Free Software in all aspects of the 6th framework programme. Also to make explicit calls for Free Software in some areas.

Some reasons for this recommendation were an increased sustainability for public funds, securing the democratic tradition in Europe, strengthening regional and trans-regional markets, independence from American oligopolies and intensifying European research.

For these reasons the recommendation are being supported by companies and educational establishments throughout Europe. On the list of supporting parties you will find, among others: Bull (France), the TZi of the University of Bremen (Germany), the Centro Tempo Reale (Italy), MandrakeSoft (France), the FFS (Austria), Ingate Systems AB (Sweden) and Eighth Layer Limited (UK).

The complete recommendation and list of supporting parties can be found on the FSF Europe home page. [16]

Closing

Enough Brave GNU World for this month, I hope to have given some inspiration and as usual hope for many ideas, suggestions, comments and project introductions at the usual address. ■

THE AUTHOR

Georg C. F. Greve Dipl.-Phys. has been using free software for many years. He was an earlier adopter of GNU/Linux. After becoming active in the GNU project he formed the Free Software Foundation Europe, of which he is the current president. More information can be found at http://www.gnuhh.org.