The monthly GNU Column

BRAVE GNU WORLD

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Welcome to Georg's Brave GNU World. Although I'm new to you guys in the English edition of Linux Magazine, I've been writing for the German edition for two full years now. As a kind of birthday present to you all I've put together two features that explain what I have been working on for the last year. This will also help my new found audience catch-up.

CGIBurn [5] by Scott Gifford is a web-based front-end for writing CDs. It is meant to allow several users on one or several machines to share a single CD writer.

Since CD writing is rather susceptible to problems, the CD writer is traditionally put into a dedicated machine or the file server. Most CD burning software front-ends are not designed to be used by several users. Additionally they very often create problems when the display is being exported to some other machine over the network. In the cas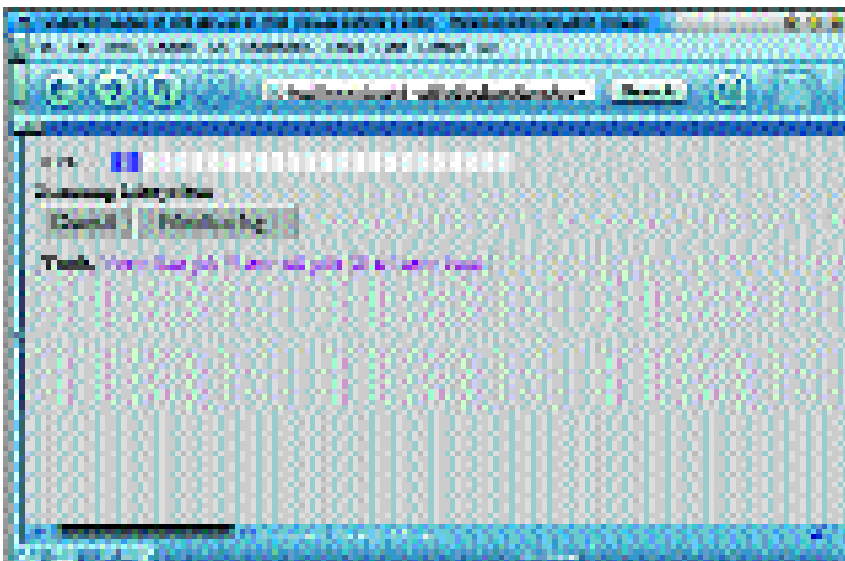e of a flaky network the writing process is inadequately insulated against network outages. Problems with the desktop machine also can lead to the production of wasted CDs. Fortunately, web-based front-ends do not have these problems.
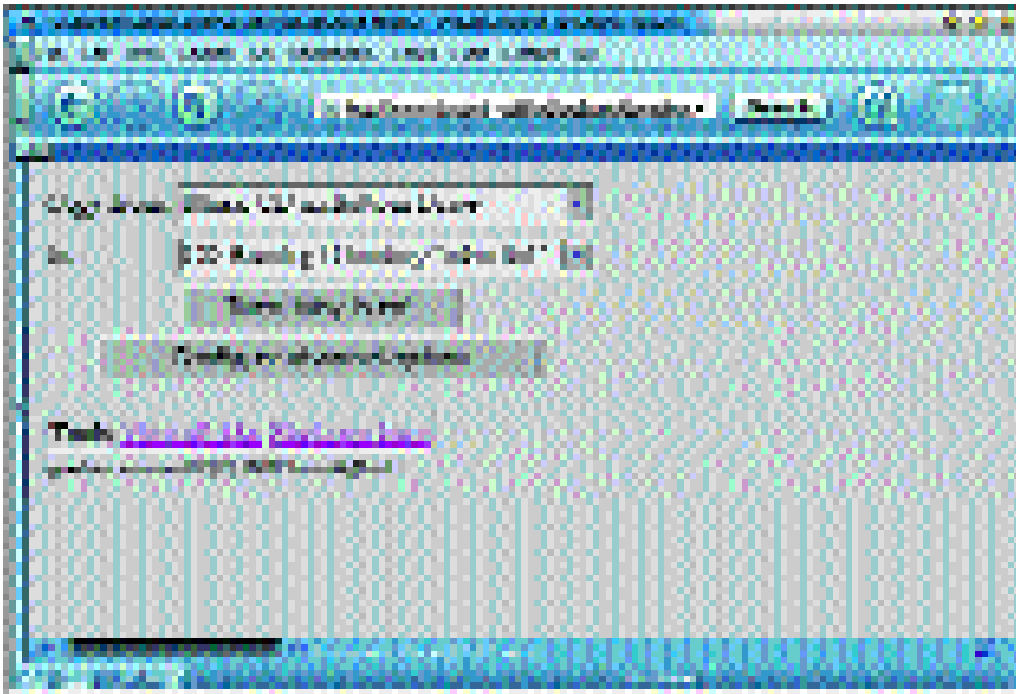
Additionally CGIBurn offers advantages in terms of usability. On a computer used by several people, one user can trigger writing a CD and then free up the workspace for someone else. Also, in heterogeneous networks this method offers several advantages. If the CD writer is housed in the machine that also hosts the SAMBA server then users can drop files into certain directories and use their favourite web browser to start writing them to CD.

According to Scott Gifford, one of the program's big advantages is its modular concept. The first public release already supports copying from CD to CD, between CDs and directories, as well as writing ISO images. Since the configuration files define certain actions and the modules used for them, it is rather easy to implement new functionality. The look and feel of CGIBurn can also be catered to personal taste by HTML templates.

As the previous paragraph perhaps implied, CGIBurn is still rather young. The current version is the first one publicly available. Not surprisingly the list of planned features is rather long. The next step will be copying music CDs to and from MP3 and WAV files. Also on the list is an option to erase CDRWs, directories or ISO images. If there is enough interest, Scott will consider rewriting the template system to

CD burning is easy with CGIBurn

CGIBurn also supports copying between directories and CDs

become more flexible and versatile as well as adding support for locking directories. And finally he can imagine writing front-ends for the command line, ASCII interfaces and even an LCD display with buttons.

The biggest weakness currently is the lack of audio support although Scott is certain to have that included within a few weeks. But despite the early version he already considers it to be quite stable. Interested developers and HTML designers should feel encouraged to get in touch with him. Help is very much welcome and Scott has documented the concepts and backgrounds rather well.

Personally I think one thing can be improved – the installation. Newbies or more basic users should take heed and not attempt the job unless you have sufficient nails to chew through and hair to pull out. Nevertheless CGIBurn has a great potential and is definitely worth taking a look at.

By the way, this project has quite an interesting history. Scott and his fiancé went to buy a CD writer to go into his GNU/Linux machine. But as his fiancé has limited knowledge of GNU/Linux she wouldn't be able to use the new drive. Scott looked on the FTP sites for a solution and didn't find anything that satisfied him so began writing CGIBurn. When he realized that this might also be of interest to other people he began to clean up the code and released it under the GNU General Public License.
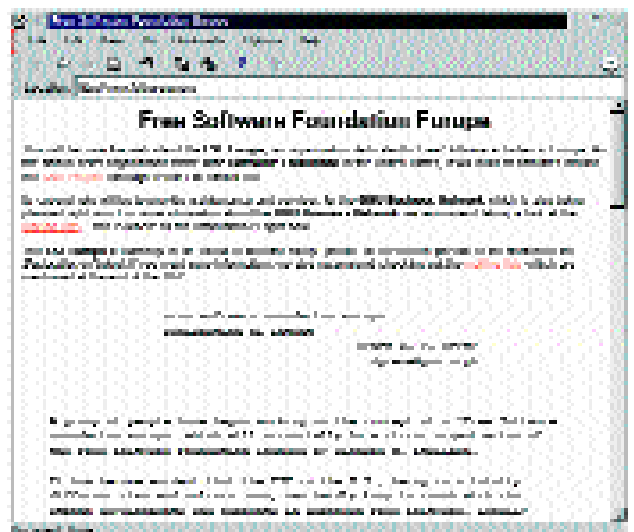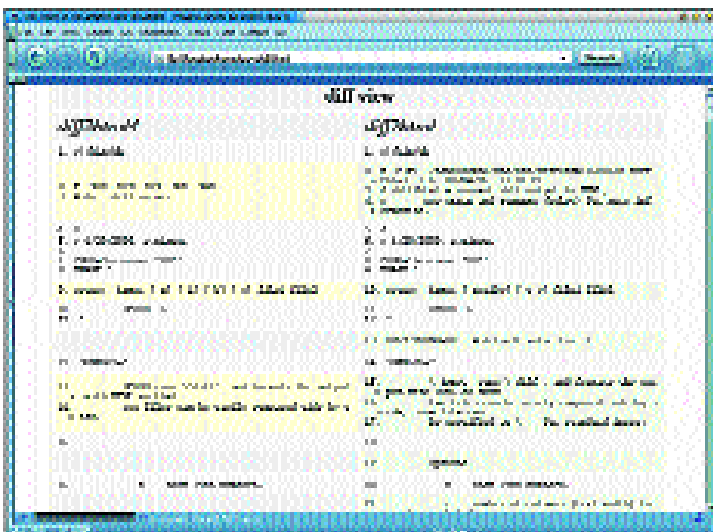
Multiple

Multiple [6] is a small command line tool by Oliver Bandel which was released under the GNU General Public License. Its function is to find identical files and get rid of duplicates.

Home directories in particular tend to collect quite a bit of saved news and mail as well as other files so duplicates are a relatively common thing. Finding duplicates in particular in saved news and mail was the very reason Oliver wrote the program.

**[left]
Diff2html shows in combination with dv the difference between files with similar content**

**[right]
Just starting: The Free Software Foundation Europe**

In order to do the task better than similar programs it offers the option to ignore everything before the first empty line in order to avoid problems with different time/date stamps in the saved mail.

Multiple can get rid of all duplicates, printing the name of the remaining files to *stdout* because deleting all files can hardly be what the user wants.

Unlike *diff* it can compare an unlimited amount of files and it is also not based upon md5 checksums which makes it relatively fast and efficient. People with a certain tendency of accumulating things might find this a useful tool.

According to Oliver, the big weakness of *multiple* is that in taking the files to compare from *find*, if anybody activates the *find* option to follow symbolic links this might result in deleting all files. This problem arises whenever files are given to the program multiple times. To avoid this, he's considering writing his own routine to search directory structures. At the moment he feels that writing proper documentation and a manpage would be more important, however.

diff2html and dv

Diff2html [7] and dv [8] are two interlinked programs from Daniel E. Singer. They come from the category of what you could call "something2html" programs.

As the name already indicates, diff2html is a program to present the output of the *diff* program in an HTML document. The output is colour coded and lists both versions next to each other in a pretty nice way. The colours can be defined by environment variables.

Dv stands for "diff viewer" and is essentially a wrapper for diff2html that starts a browser to show its output.

Being BASH shell-scripts, both programs are very portable which makes them useable on any Unix machine. Unfortunately the author did not specify a license for them since he did not consider this to be necessary as he has no wish to control them in any way. This is a disadvantage but the programs might be helpful for some users.

GNU GRUB

The GNU "GRand Unified Bootloader" (GRUB) [9] is an official part of the GNU Project and is of course published under the terms of the GNU General Public License.

GNU GRUB is quite probably the most powerful bootloader for i386 based machines. It has its origin in 1995 when Erich Boleyn began working on it. From 1999 Gordon Matzigkeit became the official maintainer and Okuji Yoshinori, a former Japanese translator of the Brave GNU World, has become the most active developer. But of course these aren't the only developers. A lot of people have contributed to GNU GRUB over the years and, unfortunately, the list is too long to be quoted here.

The capabilities of GNU GRUB are rather astonishing. It has a nice menu for an interface and even supports operating over a serial console. Additionally it has the capability to boot over the network via TFTP or NFS so workstations can be configured to pull their kernels off some central server.

At boot time GRUB can already deal with a lot of file systems (Ext2fs, ReiserFS, BSD UFS, MS-DOS FAT16 & FAT32 and Minix) in order to be able to load kernels or files for booting. This comes in very handy when trying out new kernels without having to reconfigure GRUB, not to mention troubleshooting, where it can be real life-saver.

Should something special be missing or not be supported, GRUB can chain-load another boot loader. Of course all these features can be password-protected if so desired.

The GRUB shell is a Unix program that emulates the GRUB bootcode under another operating system like GNU/HURD, GNU/Linux or *BSD. This makes it possible to test features without having to reboot the machine.

Right now GRUB is teetering on the brink of its 1.0 release and most of the work will be done in eliminating the last bugs and increasing stability – new features are not to be added.

However, after the 1.0 release a new infrastructure for GRUB called *Figure* [10], which is already being developed by Gordon Matzigkeit, will be tried out. Should this prove to be a good idea it would essentially give GNU GRUB the capabilities of a mini operating system with compiler, memory management and so on. Independently of *Figure* everything seems to indicate that the GRUB is headed towards becoming a kernel in its own right. The main reason is that it does make a lot of sense to have a tiny boot loader that extends itself by loading modules or a kernel that completely replaces the bootstrap environment.

But those plans are almost pipe-dreams compared to the here and now. It is much more important that with GNU GRUB we get a boot loader that can boot GNU/HURD and has features that could only be dreamt of so far. Knowing this it makes a lot of sense that several GNU/Linux distributions like OpenLinux, Plamo Linux, Mandrake, BestLinux and Conectiva Linux use it by default.

But now we stop discussing technical stuff and come to the special features.

FSF Europe

Founding a European sister organization of the Free Software Foundation is an idea I had over a year ago. Richard M. Stallman considered this a good thing and together we agreed that Werner Koch, author of the GNU Privacy Guard (GPG), and Peter Gerwinski, maintainer of GNU Pascal, would be ideal people to do this with. After an initial brainstorming phase we asked Bernhard Reiter, co-

founder of the FreeGIS project and board member of the FFII, to join us.

The four of us have discussed advantages and possible pitfalls as well as really got to know each other and our respective views on things we brought the discussion out in the open. In November 2000 it was finally time.

The main task of the Free Software Foundation in the United States is to provide a certain technical and organizational infrastructure as well as gathering, bundling and distributing funds. All these parts were underrepresented in Europe until now since in every day work, the United States is sometimes rather far away. Additionally the tax-deductibility of donations is an important point that was not possible so far.

The declared goal of the FSF Europe is to support the technical and organizational side of the GNU Project as well as other useful Free Software projects just like the original FSF does. Furthermore we want to maintain the financial side in Europe to provide better and more effective funding. And finally we seek to become a competent political partner in order to lay sound fundamentals for Free Software in Europe.

Together we have created a core concept and built up mutual trust in this closed group since discussing these things in public normally leads to very emotional debates that have the tendency to cloud the core issues. From the political side, this often looks like there is no consensus in the Free Software scene, which has proven to be pretty counterproductive. Now we feel that we have found a sound basis to provide a lasting reference point.

To assure longevity is our goal and for this the help of the whole community is desired. As points of reference for those interested we prepared the a fairly minimalist web page [11] and some public mailing lists [12].

But there is also a fourth job that the FSF Europe will be doing – it will maintain and organize the *GNU Business Network*.

GNU Business Network

Creating a "GNU Business Network" occurred to me when we were still discussing the FSF Europe prior to Bernhard arriving. It Network has become much more definite following the LinuxTag in Stuttgart when organizations and companies asked the LinuxTag for something like it. As an additional test I have talked about it with several people at the Linux Expo in San Jose and got positive feedback.

The idea is to have the GNU Business Network bring companies and the GNU Project closer together and to offer an additional incentive for companies to commit to deals according to the GNU philosophy. Its focus will be the web site that acts as a central hub with a worldwide list of all participants. This list serves essentially three purposes.

First of all it allows customers to specifically prefer companies that contribute to the Free

Software community in some way. This way everyone can indirectly strengthen the community with the money spent.

The second functionality it provides is a business to business contact platform for companies involved in Free Software around the world. This way companies can find possible distribution contractors, local support providers or build co-operations in software development. The last part especially does have a huge potential that is untapped. We hope to change this.

And finally we wish to encourage companies to reduce their proprietary activities in order to gain a better position in the GNU Business Network – membership in the GNU Business Network is not based on financial contributions but solely on the business activities of the company concerned.

Furthermore it is planned to offer a kind of certification for Free Software projects that will become a branding which can be used by companies to display their affinity to Free Software to customers and the community.

The core document of the GNU Business Network will be the "GNU Business Network Definition" that is being developed by the protagonists of the FSF Europe in permanent dialog with Richard M. Stallman. We are currently at about the 20th iteration and believe to have found a point that allows this to become a reality too.

Interested people and especially companies are very much encouraged to discuss the concepts and ideas on the public mailing lists [13].

that's it

That's the Brave GNU World for this month. I hope to get a lot of feedback [1] from what I've been discussing (both technical and political), and, of course I'll bring updates about the FSF Europe and the GNU Business Network in the future.   ∎

Info

[1] Send ideas, comments and questions to Brave GNU World <mailto: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] CGIBurn home page: http://www.tir.com/~sgifford/cgiburn/
[6] Multiple: ftp://www.belug.org/pub/user/ob/Programs/Tools/
[7] Diff2html: ftp://ftp.cs.duke.edu/pub/des/scripts/diff2html
[8] Dv: ftp://ftp.cs.duke.edu/pub/des/scripts/dv
[9] GNU GRUB home page: http://www.gnu.org/software/grub/
[10] Figure home page: http://fig.org/figure/ "
[11] Free Software Foundation Europe home page: http://www.fsfeurope.org
[12] Free Software Foundation Europe mailing lists: http://mailman.fsfeurope.org
[13] GNU Business Network mailing lists: http://mailman.gnubiz.org

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