

## The Monthly GNU Column

# Brave GNU World



**W**elcome to the Brave GNU World. This month we will be concentrating on projects, rather than the political and philosophical issues that have dominated the last few issues.

This column looks into projects and current affairs in the world of free software from the perspective of the GNU Project and the FSF. In this issue, we will be focusing on Loading Linux, ClusterSSH, and Mister House. **BY GEORG C.F. GREVE**

## Loading Linux

Loading Linux [1] is a GNU/Linux distribution for Client/Server-oriented operations in small networks without a full-time administrator. Loading Linux takes things one step further than typical distributions which allow you to choose between a client or server installation. Clients and servers run straight out of the box with this distro, without requiring any additional configuration steps.

This allows users without network and system administration skills to use the distribution. For example, a schoolteacher does not need to know how to configure an NFS server, but simply that the server uses NFS to export files to the clients.

Thierry Wonner had the original idea for the project. He introduced it to a group of students at Epitech [2], a computer science college south of Paris, France, at the end of 2002. Quite a few students volunteered to help, with work commencing in 2003. The first release, in the form of a bootable CD-ROM, was available by the end of last year.

The distribution builds on standard components. Shell scripts as installation routines on the CD, PHP for the Web administration tools, Perl, and C. NIS, NFS, and Samba are pre-configured for parallel use, as are OpenOffice, the file manager, and other programs. The distro uses the RPM package manager as a widespread package management system with many packages available for use.

The project team emphasizes the importance of the

project's independence and continuity. The fact that the project is non-commercial and centered on an educational institution, and the fact that the whole distribution is GNU GPL-licensed, all help to keep it free.

To ensure that the project will continue to thrive after they leave university, the maintainers are currently looking for new team members; both younger students, and people from outside their college. There is no shortage of plans for ongoing project development.

One thing on the wish list is a GUI-based installation routine, rather than Loading Linux's simple ASCII window system, which is a deterrent to first time users. The Web administration tool also needs more work. A group of students is working on a GUI-based install for a few more packages. Free projects also benefit from other people putting their software

to productive use, and providing feedback.

## ClusterSSH

After installing a network and performing a few manual modifications, admins often have to make some changes to all the clients on the network. ClusterSSH [3] by Duncan Ferguson, a tool that bundles SSH consoles, helps remove the monotony from this task.

ClusterSSH groups an almost arbitrary number of computers to form a cluster, allowing the administrator to perform the required steps simultaneously for all the computers from an administrative workstation. ClusterSSH uses SSH to transfer the input from the workstation to the targets, which can be enabled and disabled individually.

ClusterSSH was programmed in Perl and Tk, and released under the GPL.

This should make it easy for administrators (this project's main target group) to use. SunWCluster by Sun is a similar, but proprietary, tool, which unfortunately uses cleartext rather than SSH, and according to Duncan, Sun does not intend to change this.

ClusterSSH has been shown to run on Sun Solaris (x86 and Sparc), Red Hat, and Debian GNU/Linux. Duncan is looking to support more platforms in future. He needs some help with this, as he only has access to the architectures we just mentioned.



**Figure 1: Mister House, the software for the intelligent house. Use a Web browser to control any device in your home. A handheld computer like the Aquapad is highly recommended.**

## Ambient Computing

The topic of ambient computing has been a major focus of future-oriented IT research for quite a while. The term refers to the assimilation of computers in the human environment.

The supporters of this approach have visions, such as arriving home and using a big screen in their living rooms to continue working on a document they had on their laptops just a few minutes ago. If the IP phone rings, the document is iconized and the caller displayed in the foreground. After finishing the conversation, the display reverts to displaying the document.

Just like Professor Weizenbaum, the author of the Eliza program, and a globally renowned critic of the negligent use of computers [4], has been predicting for years, the ubiquity of information technologies makes them more or less invisible. Making computers as invisible and pervasive as air is in fact one of the major goals of ambient computing. It explains the characteristic name of the MIT "Oxygen" [5] project.

## Mister House

Bruce Winter's Mister House [6] home automation project uses the idea of ambient computing as a free GPL software in the form of an intelligent house. Bruce and his family live in a "passive solar, earth bermed house". These houses were built in the 70s and early 80s and belong to the category of underground houses, although they are not entirely underground in contrast to "chambered" houses.

The side walls are surrounded by an artificial embankment, or berm. The soil surrounding the house keeps the inside nice and cool in summer, and prevents it from cooling too quickly in winter. Sadly, it can get fairly cold without active heating.

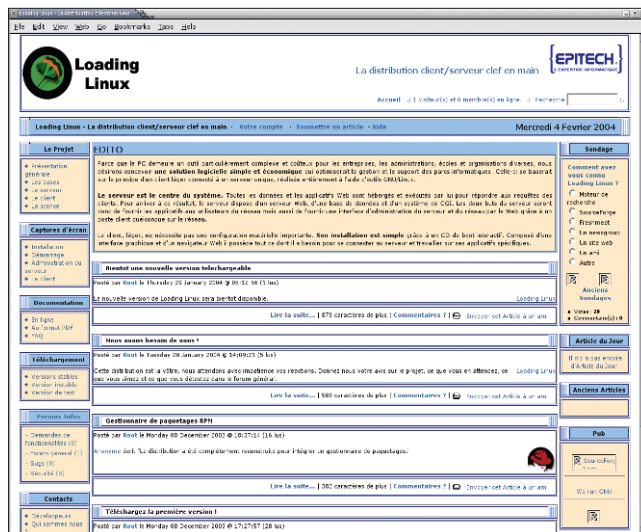


Figure 2: The French Loading Linux homepage. This GNU/Linux distribution is ideally designed for use in small networks that do not have a full-time administrator to look after the system.

Bruce's original motivation for starting work on Mister House was the fact that he wanted to open and close the curtains automatically. The first version of the program was released in 1998. Now there is an active team of developers and users. The mailing list comprises over 600 more or less active subscribers. Some 250 programmers have supplied source code and bugfixes. The software is updated approximately once per month.

Mister House has a modular design that allows it to interface with almost any input/output device. Input is event-

oriented, where events can be generated by the time of day, data in files, sockets, the serial interface, or even a voice recognition software. The output side provides output to files and sockets, "text to speech" (TTS), via the serial port.

The flexibility of the software makes it suitable for a wide range of applications: from security systems, through air-conditioning, ventilation, and heating, to notifying users of incoming email and voice messages. As using Mister House implies some kind of hardware, the project is mainly targeted at technically-oriented users.

The Winters [7] use Mister House to control their lighting, heating, ventilation and curtains. It uses a camera system to monitor the driveway, alerts the family if the front door is open at night, supplies the latest weather report and quake warnings, and interfaces with the video recorder to provide music, mail, news, cartoons, and the family's favorite TV programs. On top of all that, it can serve up entertaining quotes off the Internet and has an Automatic Position Reporting System (APRS) [8] to indicate the whereabouts of the family's vehicles.

Users can control these functions with their computers, tablet PCs, an X10 remote control, and even via the Internet (see Figure 3). Many readers will have ambivalent feelings about this system. Geeks and tinkers will love the technology the project is based on. Finding a family that will put up with a project of this scope, and is not put off by the bugs of a developer version, is probably not easy.

Others will be put off by the casual approach to personal data and privacy. As an example, the author of the APRS info page did not seem to mind publishing a graph of his whereabouts for the last 1000 hours on the Web.

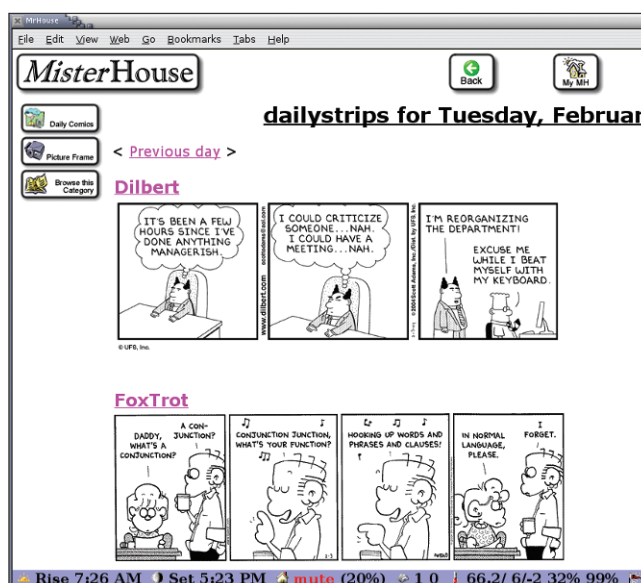


Figure 3: The Mister House Web interface provides for entertainment. The software regularly accesses the Internet to download the latest comic strips.



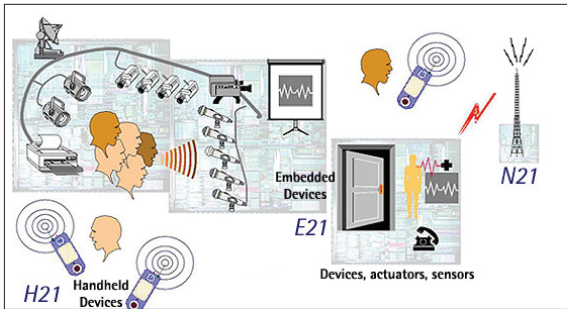


Figure 4: The Oxygen project aims to adapt technology to serve people's needs, using embedded devices such as cellphones (H21) and self-configuring networks (N21) to do so.

As Mister House runs on both GNU/Linux and Microsoft Windows, it is amazing to note that the Web server seems to be Windows-based. Malevolent hackers might be inspired to all kinds of misdeeds, keeping the users from their beauty sleep. Mister House is a free software application, and can be run on a free platform. So everyone can decide for themselves to what extent they want to compromise their privacy.

Proprietary platforms cause more concern, especially considering the fact that the Digital Millennium Copyright Act

personal data. As cameras continue to invade our privacy and it becomes increasingly difficult to be a part of modern society without resorting to digital technology, simply refusing to be a part of this kind of development is no longer a viable solution.

As a free software project, Mister House allows you to take complete control of your own home domain – that, and the gadgety thrills the experiment provides, make the project a good thing, despite the concerns I mentioned previously.

(DMCA) or the new European Copyright Directive (EUCD) prohibit any close inspection of these platforms. In addition, Trusted Computing (TC, better known as Treacherous Computing) is set to introduce some technological obstacles to prevent this from happening.

In this case, users have no control over who has what kind of access to their

### That's all for this month

As usual, please send your suggestions, ideas, and comments by mail to [10]. See you all next month.

#### INFO

- [1] Loading Linux: <http://loading-linux.sf.net>
- [2] Epitech: <http://www.epitech.net>
- [3] ClusterSSH: <http://clusterssh.sourceforge.net>
- [4] MIT LCS pages: Prof. Weizenbaum <http://www.lcs.mit.edu/people/bioprnt.php3?PeopleID=480>
- [5] Oxygen Project: <http://oxygen.lcs.mit.edu/Overview.html>
- [6] Mister House: <http://misterhouse.net>
- [7] The Winter family: <http://misterhouse.net:8080>
- [8] Automatic Position Reporting System: <http://www.aprs.net/>
- [9] FSF Europe WSIS pages: <http://www.germany.fsf.europa.org/projects/wsis/>
- [10] Send your ideas, suggestions, and comments to Brave GNU World: [column@brave-gnu-world.org](mailto:column@brave-gnu-world.org)
- [11] Georg's Brave GNU World homepage: <http://brave-gnu-world.org>

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