An Up-to-date Overview of Free Software and its Makers

Projects on the Move

Free software covers such a diverse range of utilities, applications and other assorted projects, that it can be hard to find the perfect tool from all that programming effort. As the range increases so rapidly, you occasionally need a little help to make your choice of what to use. We pick the best of the bunch for you: Gnocatan, ACPI4Linux, IPv6 on Debian and a look back at the Linux-Tag. **BY MARTIN LOSCHWITZ**

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Assuming that all the geeks have returned home safely from various Debian birthday parties and the Debconf, this month's column will be looking at free software again, starting with the Gnocatan game. In addition to that, we will be investigating ACPI4Linux.

ACPI4Linux

Laptop users who run Linux and need advanced power management functionality are often faced with a challenge. Version 2.4.21 of the Linux kernel has an old ACPI implementation that does not come anywhere near interoperating with current laptops.

The "Advanced Configuration & Power Interface" (ACPI) was developed in 1996 by HP, Intel, Microsoft, Phoenix, and Toshiba as an open industrial standard, and was designed to replace the by then obscure "Advanced Power Management", APM, standard. Amongst other things APM is responsible for various power saving functions such as "Suspend to RAM" or "Suspend to disk".

ACPI works on entirely different lines and is far more advanced than its predecessor. Although the operating system still uses BIOS routines, it has to handle a large chunk of the workload itself. In addition to power management, ACPI also provides functions that allow the operating system to allocate IRQs, or switch off the CPU on a running system.

But just forget all these features if we are talking about the ACPI implementation in the 2.4.21 kernel. In an attempt to provide a working ACPI implementation for Linux, the ACPI4Linux Project [1, 2] was founded under the leadership of Paul S. Diefenbaugh with the aim of implementing the ACPI standard for Linux. Unfortunately, the kernel patches did not make the original deadline for the stable release of the kernel.

In fact the ACPI4Linux Project code was not integrated into Linux until the 2.5 developer was initiated. Andy Grover has only recently managed to convince Marcelo Torsatti to add the project's offerings to the stable kernel, after Alan Cox had performed exhaustive testing in his own *-ac* patches. This happened in version 2.4.22-pre1, and meant that laptop users with Linux 2.4.22 could look forward to a working ACPI implementation. For most modern laptops this means a reliable display of the battery power remaining, and even allows you to use the special function keys that many modern laptops have on Linux.

Unfortunately, Linux 2.4 users still have nothing to write home about. As previously mentioned, Marcelo did add the ACPI4Linux patches, but they do not provide the whole range of functions that Linux 2.5 will have. The reason for this, is that 2.4 does not provide the required Kernel infrastructure. There is no support for the S3 and S4 sleep states, "Suspend to RAM" and "Suspend to disk".

Sadly, many laptop manufacturers misinterpret the ACPI standard in their

implementations. This has give rise to a number of model-specific patches for the ACPI4Linux code. However, the development team refuses to add code of this type to the official patches, instead insisting on implementing only the official standard. One of the projects that works on optimizing ACPI for specific laptop types is the ACPI4Asus Project [3].

The fact that both Linux 2.4 and Linux 2.6 have a standardized ACPI implementation is good news. It remains to be seen if enough programmers can be found to adapt ACPI4Linux to specific models.

Gnocatan

"The Settlers of Catan" have rescued many a boring evening, and it is hard to think of another board game that has won over so many fans in recent years. Gnocatan [10] by Dave Cole now brings the Settlers to your computer.

Gnocatan is a GTK application based on the Gnome library. The game does not need any video acceleration à la OpenGL, and is perfectly happy running on older hardware with slower graphics adapters.

Gnocatan appears quite Spartan when first launched. In fact you don't even get to see a playing field, as the program is a client/server type application. To actually play Gnocatan, you first have to connect to a server and log on, along with other players. If you do not have a networked computer, you can always install the server locally on your computer.

The *gnocatanai* tool allows you to compete against a computerized opponent.

Apart from that, the game is very much like the board game. Each player starts off by building up an initial settlement, and then everyone takes turns at throwing the dice until one player has collected enough points to win the

game. The programmer took care to implement the elements and rules of the board game one-to-one. For example, players can exchange development cards, which are needed to create units such as roads, settlements and cities. The game is easy to use and intuitive and should provide hours of fun.

Gnocatan is not merely a half-hearted attempt at computerizing a board game (in contrast to many other efforts), but a must for Linux fans who can't wait to get the Settlers onto their machines.

Debian and IPv6

IPv6 is "the Next Generation Internet Protocol". It was created to resolve the ROADS issue (Running Out of Address Space) with IPv4 addresses. Today, some Internet service providers actually offer native support for IPv6, that is without the detour via IPv4 and a special tunnel.

Unfortunately, native IPv6 from your Internet Service Provider is not all you need, to leverage the power of the new IP version on your SOHO computer. As most programs are still based on version 4, they will need some added attention by software developers before they can support the latest IP version.

About two years ago, a group of Debian Project developers got together to concentrate on adding IPv6 functionality to Debian programs. The group is led by Craig Small, who also has a homepage

on the subject of "IPv6 on Debian" [4].

The team mainly works on checking the Debian distribution packages for IPv6 capabilities and adding them if required. Previously written patches are used to do this with most programs, and in fact you will often find a patch to add IPv6 functionality to a program somewhere on the Internet, just waiting for the author to add it. The Debian developers check these patches, modifying them if required, and send them to the authors with a request to add them to the official code.

When a program is seen to provide adequate IPv6 support, the Debian developers add it to the *main* distribution tree. Larger packages are being targeted first. For example, the Debian IPv6 team released XFree 4.3 packages with IPv6 protocol support several months before the official beta packages of XFree 4.3 by X Strike Force [5] became available. The enhanced Cyrus IMAP daemon, and its subsequent integration into the *main* tree, was another important milestone. Many projects for whom the Debian team wrote and integrated the IPv6 code themselves have now added the new code to the official sources.

The project has its own server that allows public access to these developments before the packages actually make the official distributions. [6] contains the latest packages with IPv6. Fabio Massimo Di Nitto is responsible for deciding which packages will be added to the archive. And Jochen Friedrich has taken on a major part of the development work required to add IPv6 support.

The project's next major target is to add IPv6 support to the Apache HTTP server. But this has turned out to be quite a challenge. Although a patch is available, it modifies the ABI/API specifications (and thus the interface for some programs that
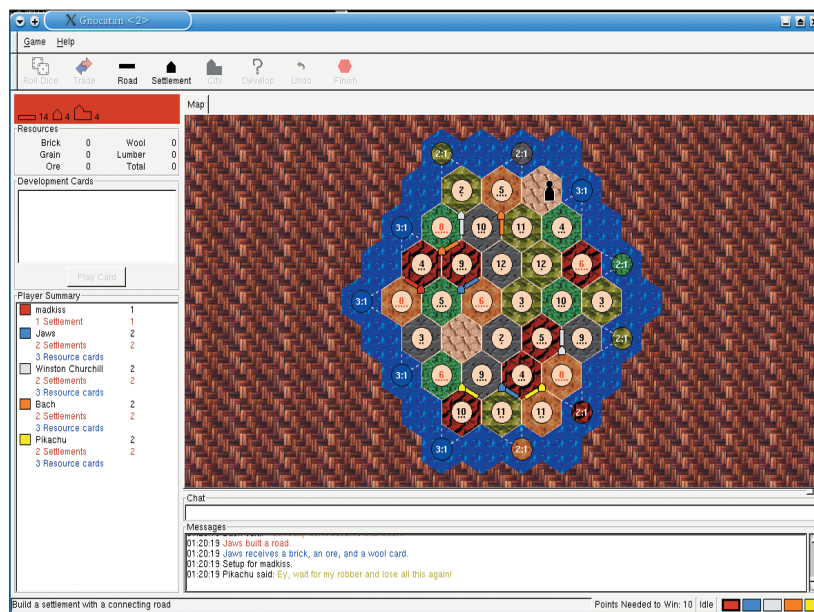

Figure 1: Gnocatan is the computer variant of the popular "Settlers of Catan" board game. The players are listed bottom left, with development cards directly above and the player's resources at the top
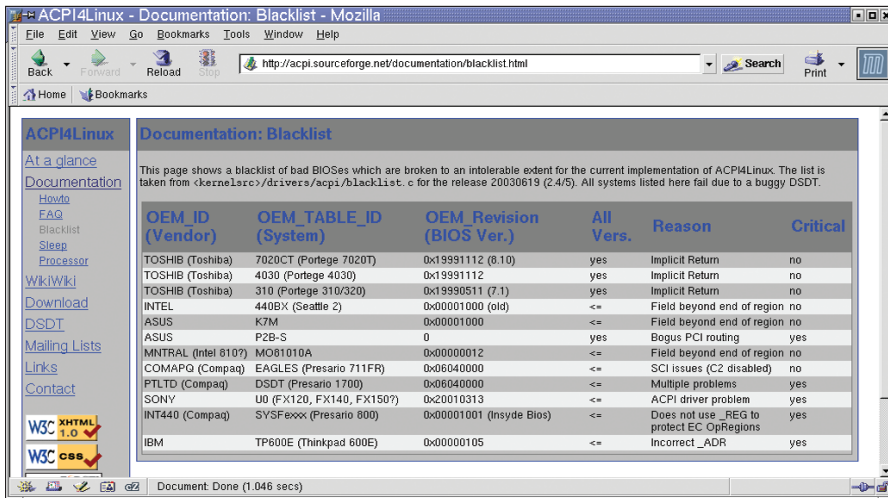
Figure 2: The ACPI website showing laptop models that it does not recommend

access Apache headers). The patch would also require some changes to the Apache configuration files. Debian developers are currently looking into whether this would be acceptable and searching for a workaround.

The work put in by Debian IPv6 is a major contribution to IPv6 support on Debian. If you are looking for IPv6 support for specific packages, or if you would like to get involved with the development work, you can contact Fabio Massimo Di Nitto [7] or the Debian IPv6 mailing list [8].

Looking Back: Debian at the LinuxTag

There were 19,500 visitors to this year's LinuxTag [9]; and that makes it Europe's biggest Linux event. The Debian booth also benefited from the general crush,

with a whole bunch of developers and users hanging out at the booth most of the time.

The Debian GNU/Linux LinuxTag CD, a version of the current *stable* release with some add-ons (like XFree 4.2, for example) went down well with the visitors. The demand was so heavy that the Debian developers were asking for a small donation in return for the CD by the end of the event. Pins with the Debian swirl and Debian stickers for PC cases were almost as popular. Of course there were the ubiquitous T-shirts – and some stocks had run out by the second to last day.

Many visitors asked whether the installation system, the *debian-installer*, was on the LinuxTag CD; unfortunately it wasn't. But still, the interest shown makes it quite clear how many people

are looking forward to the new installer. And the *debian-installer* presentation on Debian Day was hopelessly overbooked.

Debian Day has become somewhat of a tradition. This is a "conference within the conference" that takes part on one day during the event, mainly targeting Debian developers and anyone interested in Debian development issues, and providing Debian developers with a platform to report on recent experiences. This year's Debian Day was the Friday, and it was opened by Martin Michlmayr, the Debian Project Leader, who held a lively talk on his role as the DPL and his aims during his term of office.

There was also a lot of interest in Skole Linux, a Debian-based groupware solution specially designed for schools. In combination with a router and IP masquerading it provides a simple interface that allows you to allow or block Internet access simply for whole classes. One of Skole Linux' additional goals is a simplified installation routine, and this is where *debian-installer* saw its first taste of action. Let's hope that Skole Linux helps to establish Linux in schools.

To conclude, let me just say that the LinuxTag was a big success for the Debian Project. Developers and users alike very rarely have access to this kind of direct input on the Project's various activities. ∎

Figure 3: The Debian booth at this year's LinuxTag was well visited, and saw Debian developers answering questions put by large numbers of visitors

INFO

[1] The ACPI4Linux Project: *http://www.acpi. info/*

[2] ACPI4Linux Project Homepage: *http:// acpi.sf.net/*

[3] ACPI for Asus Notebooks: *http:// sourceforge.net/projects/acpi4asus/*

[4] IPv6 on Debian: *http://people.debian.org/ ~csmall/ipv6/*

[5] X Strike Force: *http://people.debian.org/ ~branden/xsf/*

[6] Debian packages with IPv6 support: *http://debian.fabbione.net/*

[7] Fabio Massimo Di Nitto: *fabbione@fab-bione.net*

[8] Debian IPv6 Mailing List: *debian-ipv6@lists.debian.org*

[9] LinuxTag Homepage: *http://www. linuxtag.org/*

[10] Gnocatan Homepage: *http://www. gnocatan.sourceforge.net/*