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. We pick the best of the bunch for you. In this issue: The Windows NT clone ReactOS, Software in the Public Interest and trouble at GNU Hurd.

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Martin Loschwitz is from a small German town called Niederkrüchten and a developer for Debian GNU/Linux. Martin's leisure time is mainly preoccupied with activities in the Debian or GNU community.

This issue looks at the ReactOS operating system which looks set to become a major desktop contender. We will also be looking into "Software in the Public Interest" and reporting on the ousting of the Hurd maintainer, Thomas Bushnell.

ReactOS

Linux users occasionally need to run Windows programs on Linux. In this case, most users opt for commercial tools such as VMware [1], which emulates a computer with a BIOS of its own, or the free Wine [2] software, although Wine may not run the Windows programs you need.

The ReactOS [3] operating system provides a completely new approach to this issue. The idea is to create an operating system with binary and driver compatibility to Windows NT 4.0. The

developers aim to provide a large range of interfaces for various APIs. For example, there are moves to support the direct execution of Java programs. In addition, subsystems for OS/2 and DOS programs are planned.

The ReactOS project now has a tar archive with the operating system kernel sources, and ISO images, on its website, but it hasn't been easy going. The project's predecessor was launched way back in 1996 with the aim of programming a free Windows 95 clone. The project's initiators called it FreeWin95 to reflect their goal. Their ambitions at the time were to make the project multifunctional and well-known. But that was not to be. Kernel code was never produced. Instead, the project members got bogged down in tedious discussions on the operating system design. By the end of 1997, FreeWin95 was more or less dead.

Jason Filby agreed to become the new project co-ordinator. He immediately contacted all the members of the FreeWin95 mailing list with the aim of instilling new life into the project. The developers agreed to cancel their plans for a Window 95 derivative and instead

concentrate on a Windows NT clone. FreeWin95 became ReactOS. They also reached another fundamental decision: to concentrate on creating working code, rather than those endless discussions.

After this, ReactOS went quiet for a whole year. Not because the team members had broken their resolutions, but because they were all heavily involved in creating a kernel and a set of major drivers. As Linus Torvalds describes in his book "Just for Fun" [4], this can be an extremely tedious and fairly boring process. What made things even more difficult was the fact that only a few of the developers in the ReactOS group actually knew how to design kernel code. This meant that the first lines of ReactOS code were the work of just a few programmers. The kernel hacker group started growing after support for basic hardware such as IDE controllers and keyboards became available.

A port of the GNU compiler collection is one of the biggest success stories in the history of ReactOS development. This makes it possible to compile new versions of ReactOS on ReactOS. ReactOS also supports a few well-known Linux

programs, Midnight Commander being one of the more prominent examples. One or two minor Windows programs also run on ReactOS. As Figure 1 shows, we managed to launch the Windows 2000 calculator with the help of a *shell32.dll* borrowed from the WINE project.

The roadmap the project has laid out makes you want more. A functional network interface is due in April. There is some network code available, but the code is unusable due to large gaps in some places. Also, the GUI should be available shortly – it will include programs such as a Task Manager, an Explorer, and a calculator. More milestones are planned for the fall: Open Office, Mozilla, and DirectX should work, and the kernel should be capable of supporting USB and NTFS. It will be interesting to see if ReactOS finally manages to code a free NTFS implementation capable of reading and writing. The aim is to have ReactOS generally usable as a desktop platform by early 2005.

If you want to try out ReactOS, check [5] for the tools. But be aware of the current obstacles: ReactOS will only install on FAT16 and FAT32 partitions. The setup program can format FAT32 parti-

tions, but it does not check for the existence of data on these partitions. There is some danger of data loss if you accidentally choose the wrong partition. If you prefer to read a detailed installation guide before you start, the ReactOS download page provides a link.

ReactOS is an extremely interesting approach to combining the advantages of free software with Windows programs. If ReactOS 2005 is only half as functional as the developers suggest in their roadmap, it will certainly be an interesting new alternative on the desktop front.

Software in the Public Interest

Most free software projects, such as Debian, have a fundamental problem: they are not legal entities. This means they cannot issue tax-deductible receipts for donations, although a receipt is a major prerequisite for many potential donors.

The people behind the Debian project realized this back in 1997, and this led them to found a non-profit organization thus avoiding taxation. The Debian project leaders at that time, spearheaded by

Bruce Perens finally had the charters for Software in the Public Interest, or SPI for short, completed by June 10 1997 (see Figure 2). In 1999 the USA Internal Revenue Service [6] finally recognized SPI as a "not-for-profit" organization, which is not subject to tax on income (including donations).

There are two ways to run an organization of this kind in the US. The founders can decide against opening up membership to the general public; the organization will then comprise a fixed group of persons. The board of an organization of this type can still agree to accept new members. This type of organization is typically chosen when there is a defined goal and the organization will be disbanded after achieving that goal.

The second type of public interest organization is open to the general public. It has to allow anyone so wishing to join, although it can define different levels of membership. The members hold periodic elections to elect the board or change the statutes. SPI is an organization of this type.

SPI distinguishes between two types of members: anyone who agrees to uphold the principles of SPI, and registers with SPI, can become a "non-contributing" member. In contrast to this, "contributing" members are required to prove their active participation in a project supported by SPI. "Contributing" members regularly elect new members to the "Board of Directors". And the board votes for a President once a year.

The general intention of SPI is to support free software globally. Free software projects can apply to SPI to become officially supported projects. Once the application has been approved, the project can apply for sponsorship or legal aid.

The other aims of Software in the Public Interest are to promote the public distribution of software and support school involvement on the Internet. This includes events designed to show users how to draw maximum benefit from the Internet.

The projects SPI supports, besides Debian, are the Fresco graphics system [7], Gnome [8], Linux Standard Base [9], the OFTC IRC network [10], the Open Source Initiative [11] and the GNU Texmacs Editor [12]. If you want to help SPI
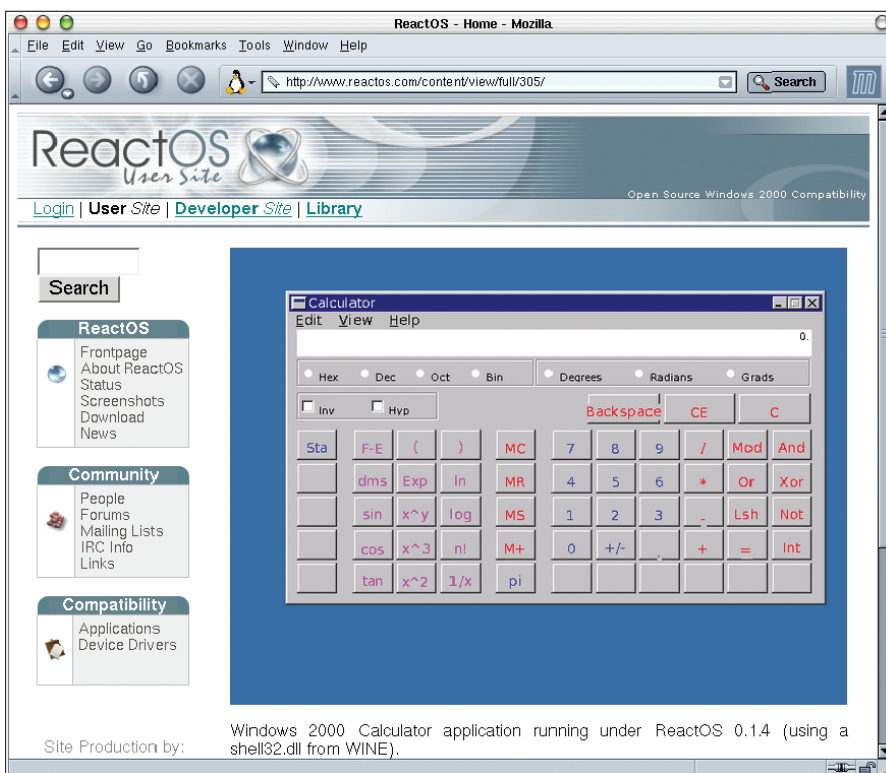

Figure 1: As the website of the ReactOS Windows NT clone demonstrates: the Windows 2000 calculator runs on ReactOS with the WINE *shell32.dll*. ReactOS will be able to run Linux programs, and Java code directly.
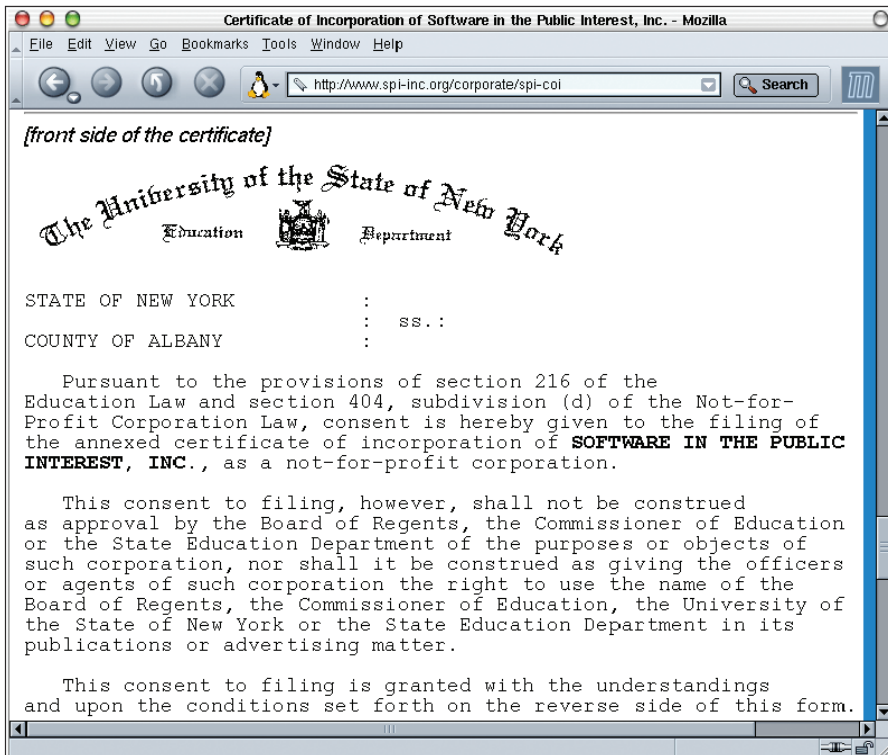
Figure 2: Charters of the not-for-profit organization Software in the Public Interest (SPI). SPI is one of the biggest organizations actively involved in supporting free software. In 1999, SPI was recognized as a charity and exempted from income tax.

and the projects it supports, you can now donate online at [13].

Trouble at Hurd

People often say that Richard Stallman does not get on too well with Linus Torvalds. After Stallman completed the first GNU tools, Torvalds released the first Linux versions, and thus indirectly inherited the success of the GNU tools. Richard Stallman probably had a different plot in mind for his programs. They were intended for release with the GNU operating system Hurd, and were to mark the victory of Open Source.

This is ten-year-old history by now, and Hurd has more or less detoriorated to vaporware. Release 1.0 has been postponed numerous times by the developers. Hurd is not state-of-the-art. Current versions cannot efficiently use hard disks with 160 GBytes or more, as the faulty system design prevents Hurd from handling filesystems of more than a few GBytes. Hurd also fails to support modern soundcards. Historians can now open a new chapter in the continuing story of Hurd. But this time history relates a tale of differing philosophies rather than technical aspects.

The GPL has a free documentation counterpart known as the Free Documentation License (FDL), which is quite controversial on the Open Source scene. It contains paragraphs that allow authors to add passages with non-technical content that cannot be changed by later editors. For many developers the FDL thus constitures a license that is clearly not free.

Figure 3: Richard Stallman is well-known for his extreme views. A short while ago, he ousted Hurd maintainer Thomas Bushnell for criticizing the GNU Free Documentation License.

The developer and maintainer of Hurd, Thomas Bushnell, is one of the FDL's critics, and this was his downfall just recently. Stallman dismissed Bushnell as maintainer for criticizing the FDL too often and too openly.

This was seen as unacceptable for a representative of the GNU project. Immediately after this news broke, there were fierce reactions from the developer community. Even Werner Koch, well-known for GnuPG, criticized Stallman's approach. He failed to understand how a community that propagates "freedom as in free speech" could withdraw its support for a person simply for using this right.

Stallman is unlikely to reconsider his decision, although the GNU FDL is fairly certain to continue to provide material for controversial discussions.

That's all folks...

… for this month at least, but we do have one request before we go: If you can recommend a program that you would like to see featured in *Projects on the Move*, why not mail me with your suggestion [14]? I look forward to your comments! ∎

INFO

[1] VMware: *http://www.vmware.com/*

[2] Wine: *http://www.winehq.org/*

[3] ReactOS: *http://www.reactos.com/*

[4] Linus Torvalds and David Diamond, "Just For Fun: The Story of an Accidental Revolutionary", ISBN: 1587991519

[5] ReactOS-Tools: *http://www.reactos.com/content/view/full/62*

[6] USA Internal Revenue Service: *http://www.irs.gov/*

[7] Fresco: *http://www.fresco.org/*

[8] Gnome: *http://www.gnome.org/*

[9] Linux Standard Base: *http://www.lsb.org/*

[10] Open and Free Technology Community: *http://www.oftc.net/*

[11] Open Source Initiative: *http://www.opensource.org/*

[12] GNU Texmacs: *http://www.gnu.org/directory/GNU/GNUTeXmacs.html*

[13] Donations to SPI: *http://www.guidestar.org/partners/networkforgood/donate.jsp?ein=11-3390208*

[14] Tips and suggestions: *projektekueche@linux-magazin.de*