OF THE BEST THINGS ABOUT

FREE SOFTWARE

2014

This year will be the best ever for Linux and Free Software. Why?
Mike Saunders has 51 reasons…

For so long, it looked like Linux was on the cusp of causing a revolution, of pulling the masses away from Windows and introducing them to a new world of computing. Linux distributions were becoming easier to use by the month, desktop applications were being refined and polished, and PC vendors were starting to ship Linux with their machines.

While the almighty annihilation of Windows never happened, a much more subtle set of changes took place. Linux is everywhere now – but not many people know it. GNU/Linux powers many of the biggest websites in the world, serving up web applications to hundreds of millions of users. Android dominates the mobile scene, with countless people carrying little Linux machines in their pockets. And the Raspberry Pi has been a storming success, introducing children worldwide to open computing.

2014 has a huge amount in store for Linux users, and not just in terms of software – people, communities and events will also shape the course of the year. So read on for 51 awesome things to look forward to…

FEDORA 21

Fedora 21 bucks the trend of previous releases by having a longer development cycle than usual which will hopefully provide more time for new technologies like Wayland to settle down. All being well, the distro will arrive in August. And the lack of a codename is significant: some would argue that names like "Beefy Miracle" stopped certain users from taking Fedora seriously.

FIREFOX VERIFIED BUILDS

Even if you're running an open source browser, you can't be 100% certain that the binary executable doesn't have an NSA backdoor inserted, possibly via a rogue compiler. Well, this is changing: Mozilla is pushing ahead with Firefox verified builds, which means you'll be able to prove that nothing dodgy has been added to the source code before it was compiled.

Recent Fedora releases have been (in)famous for their quirky codenames; it looks like Fedora 21 will be a lot more serious.

FREEBSD 10

FreeBSD is more conservative than Linux in that it doesn't get fancy new features so quickly, but it's more stable in the long run. FreeBSD 10 has just been released, with the GCC compiler suite being replaced by Clang in the base system, Raspberry Pi support, and a new bhyve hypervisor. See **https://wiki.freebsd.org/WhatsNew/FreeBSD10**.

GIMP 2.10

Talk about development hell: GEGL, the Generic Graphics Library for Gimp, has been in development since 2000, yet still isn't an official part of the program. GEGL will support images with higher bit depths, along with non-destructive editing. Parts of it were implemented in Gimp 2.6, and we should see the whole shebang rolled into Gimp 2.10.

KDBUS

Lennart Poettering is at it again. After causing a stir among boot script and sound server developers with systemd and PulseAudio, the German coder is now trying his hand at inter-process communication (IPC) in the Linux kernel. Right now, applications and background processes can communicate with one another via D-Bus, which Poettering describes as "fantastic". But if it's so good, why do we need to replace it?

For starters, D-Bus is fine for sending short messages between programs (eg a desktop volume applet telling the sound server to knock it down a notch), but it's not so good for transporting data, as it adds latency and complication. Kdbus (Poettering's project) is an in-kernel version of D-Bus, designed for shifting large (multi-gigabyte) quantities of data with minimum overheads. It's still very much in development, but providing it gets a (usually very rare) thumbs-up from Linus Torvalds, we might see it in the mainline kernel tree by the end of the year.

Poettering is developing Kdbus with long-time kernel hacker Greg Kroah-Hartman and others; follow its progress here: **https://github.com/gregkh/kdbus**.

INKSCAPE 0.91

Hang on a minute – hasn't Inkscape been at 0.48.x for years now? Well, yes, but we've always thought this was unfair. Inkscape is an excellent vector editor already used in production environments, so we're glad to see the next release will get close to the magic 1.0 number. Version 0.91 will include: Cairo rendering for the display engine and PNG export; a new grayscale display mode; and heaps of performance improvements. It'll use 25% less RAM in some cases too, making it better for older hardware.

AKADEMY

Free software events are great. There's lots of hacking, lots of brainstorming, and lots of beer. Akademy is the annual summit for KDE developers: it's a free and non-commercial event organised by the community. This year it will take place from 6–12 September in Brno, second city of the Czech Republic, and a beautiful place at that. New features will be proposed and discussed, so head to **http://akademy.kde.org** if you want to take part.

Brno has Akademy, good beer and horses – what's not to like?

EDWARD SNOWDEN

To some he's a true American patriot, fighting to defend the US constitution against attacks by a spy-crazy government. To others he's a thrice-cursed traitor who revealed confidential intelligence information to the rest of the world, harming American interests. In any case, there's no doubt that Edward Snowden's leaks have caused a huge debate – not just in the US but around the world.

Whether it makes us safer or not, the sheer amount of spying on their citizens that governments are doing is shocking. Edward Snowden hasn't come out waving Linux flags and championing open source, but a lot of people are starting to ask: can I really trust my software? Can I be sure that Microsoft, Apple, Google *et al* are really doing their best to defend my data? How much are these companies sharing with governments?

Linux and Free Software is no panacea, but at least the openness of its source code provides reassurance that dodgy back-doors added by intelligence agencies would be spotted quickly. The NSA revelations provide useful ammunition for Linux advocates: we can confidently say "Our software is very unlikely to be spying on us, because we can read the source code".

There are more Snowden leaks due in 2014, and they will drive more people to investigate Linux and Fre Software. There's even a Snowden tribute distro: **www.binaryemotions.com/snowden**.

BANSHEE 3.0

Hopefully we'll see version 3.0 of this awesome music player very soon: it's being ported to GTK 3, and will also support synchronisation with Symbian devices. 37 bug fixes have been made since the 2.6 release too.

ENLIGHTENMENT E19

The next release of the world's fanciest window manager will bring a new compositor and better Wayland integration. Lead developer Rasterman hopes to "close the feature window sometime in February", so we're likely to see the final release hit the internet some time in the summer.
www.enlightenment.org

DIGIKAM 4.0

Arguably the best open source photo manager in existence, Digikam is going from strength to strength. The 4.0 release – due to be released in May – brings oodles of new features thanks to the Google Summer of Code. Working with tags will be much easier via a new hierarchical tags manager and drag-and-drop capabilities in the Tags Manager, while Pick Labels can be used to auto-tag images. Nepomuk support has been re-implemented, after being broken for a while. **www.digikam.org**

GNU HACKERS' MEETING 2014

The GNU Hacker's Meeting is an event to discuss technical, social and organisational issues relating to Free Software and the GNU Project. It will take place on 15–17 September in Munich at the Technical University, and while it's free to attend, you have to register, at **www.gnu.org/ghm/2014**.

Anyone can give presentations ranging from 30–60 minutes, so if you've been working on a piece of software you'd like to see in GNU, let the community know.

Edward Snowden's leaks are encouraging some people to try Free Software.
image: Laura Poitras / Praxis Films
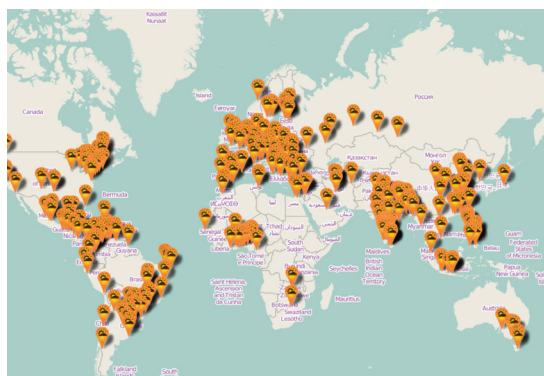
SOFTWARE FREEDOM DAY

We all try to spread the word about Linux and FOSS, but sometimes it's difficult, especially over the internet. So every September, Free Software supporters organise real-world events to promote the benefits and values of FOSS, and everyone is welcome to get involved. You could set up an installfest, for instance, where curious Windows or Mac users bring along their machines and you set them up with a newbie-friendly Linux distribution.

Alternatively, you could give a presentation explaining why Free Software is good for society and encourages sharing. It's a great way to demonstrate that our community isn't just a gaggle of geeks fiddling with code via the internet – we're real people trying to make the world better.
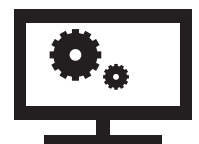
This year's Software Freedom Day will take place on 20 September, so to start your own event or join an existing team, visit **www.softwarefreedomday.org**.
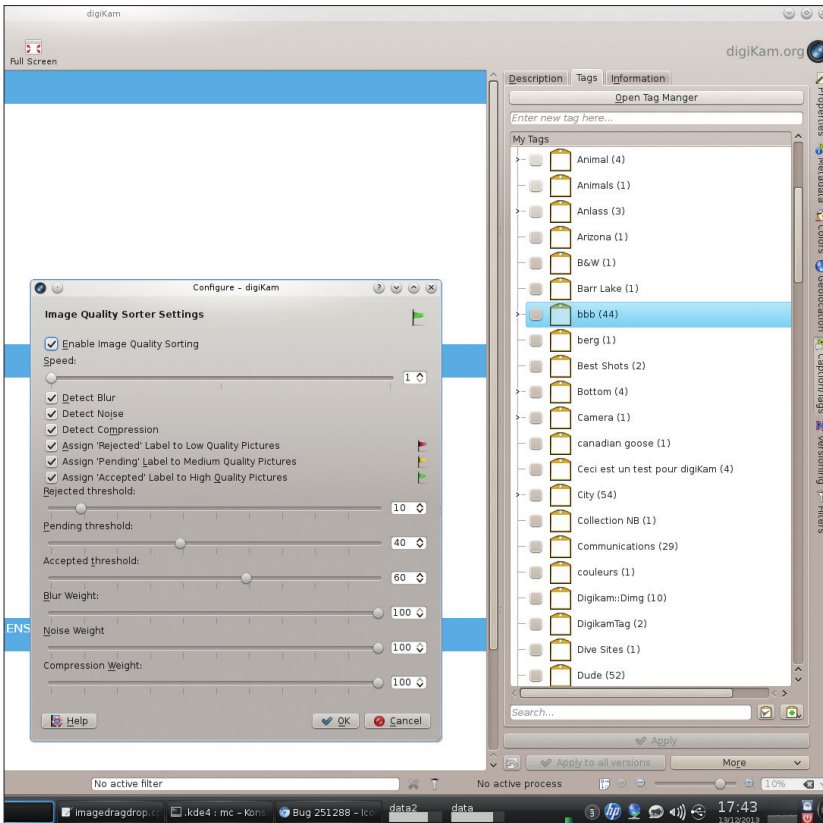
2013's Software Freedom Day saw a huge number of events across the whole globe.

Digikam 4.0 will feature much better tag management, and support for Nepomuk.

MIR

Few things in the recent history of Linux have been as controversial as Mir. Ubuntu's replacement for the X Window System was met with widespread hostility: why didn't Canonical go with Wayland, like everyone else? Was this a symptom of "not invented here" syndrome, or is Canonical trying to distance itself from the Linux mainstream?

Various technical reasons for the existence of Mir were put forward, and Canonical hoped to have Mir running by default in Ubuntu 14.04. This didn't happen, so maybe we'll see it in Ubuntu 14.10, but the controversy continues. An Intel developer working on an open source graphics driver recently removed support for XMir, a Mir compatibility layer for X applications. Intel's reasoning? "We do not condone or support Canonical in the course of action they have chosen". Some Intel developers are working on the Wayland project, so there's plenty of politics involved.

16

Say hello to Gedit's new interface, debuting in Gnome 3.12. Like Gnome 3, it might take some getting used to…

GNOME 3.12

17

Scheduled for release at the end of March, and due to land in the major distros shortly after that, Gnome 3.12 will be largely an incremental rather than a major improvement. That's fine by us: plenty of people are still trying to get their heads around the Gnome 3 interface, so the more fine-tuning the developers do, the better. Overall performance will be boosted thanks to Gnome Shell becoming a single binary file rather than a bunch of JavaScript files, while the Epiphany web browser has seen some interface polish.

Gnome Software will support a rating system along with the ability to launch installed apps, and the Gnome Online Accounts tool receives support for online bookmarking service Pocket. If you're a regular user of Gedit, be prepared for a big revamp of the interface. There's already a lot of debate about the UI changes, but you'll be able to try it for yourself very soon.

GCC 4.9

18

The next version of the GCC will include support for OpenMP 4.0, along with Intel's Silvermont and Broadwell microarchitectures. Our favourite feature? Coloured warnings and error messages!

HAIKU OS R1?

19

We've been following the progress of Haiku OS, an open source BeOS clone, for as long as we can remember. The goal is noble: a lightning-fast, trimmed-down, multimedia-friendly OS built specifically for the desktop (so it doesn't get sidetracked trying to be a server OS as well). As much as we love Linux on the desktop, it's always good to have some competition – and Haiku is starting to provide it.
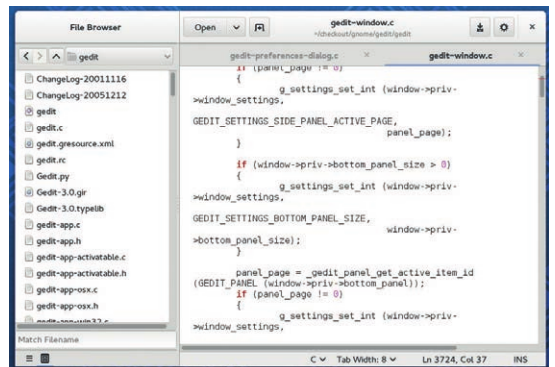
It's still in the alpha stages of development, but wrinkles are being ironed out and more native software is arriving all the time. We hope to see the first beta release this year, and maybe the first full one (R1) as well, if we're lucky. **www.haiku-os.org**
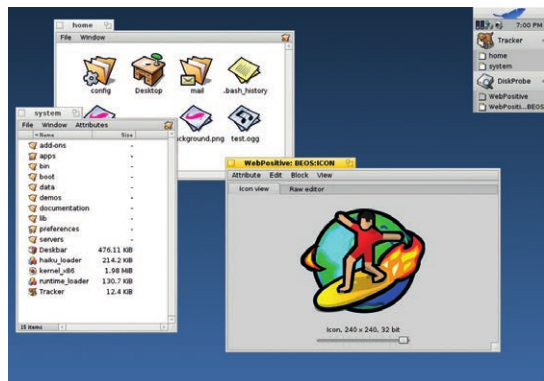
STEAMOS

20

It's going to be a huge year for gaming on Linux. Until very recently, PC gaming was almost entirely the domain of Windows, with just a tiny slither of triple-A titles making their way to our choice of operating system. Valve's decision to use Linux for its Steam Machines has caused quite a stir, though: suddenly Microsoft isn't involved at all. SteamOS isn't a typical distro and won't cause a mass influx of Windows users to Ubuntu or Fedora, but it will show that Linux is a great OS for gaming.
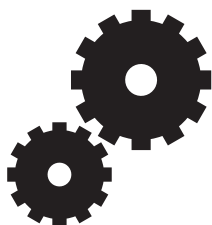
SCRIBUS 1.5

Scribus, the open source desktop publishing app, has been at version 1.4.x for over two years now, so we're eagerly awaiting the 1.5 release. It will bring tabs for working on multiple documents, a new Preferences dialog, support for more colour palette formats, and a new picture browser.
http://wiki.scribus.net/canvas/1.5.x_Roadmap

LINUXTAG 2014

Germany's biggest Linux show (it's been running since 1996) will take place from 8–10 May in Berlin. Droidcon, the "world's largest Android developer event", will also be housed under the same roof, so we can expect a feast of Linux-related fun in Germany's counter-culture capital
www.linuxtag.org/2014/en

CENTOS AND RED HAT

For years, Red Hat quietly accepted the existence of CentOS, a free rebuild of its Red Hat Enterprise Linux (RHEL) product. Linux admins could do testing work on CentOS builds, and pay Red Hat for commercial RHEL support subscriptions later if necessary. The two projects co-existed pretty well, and now they're going to work together.

Red Hat is employing a bunch of CentOS developers who will continue to work full-time on CentOS, but who will also enjoy greater integration with the RHEL and Fedora communities. It's a bold move from Red Hat, but it makes sense: CentOS users may not pay money to Red Hat now, but a healthy CentOS community means more potential RHEL customers in the future.

ROOTLESS X

Currently, some parts of the X Window System run as root, which opens up potential security vulnerabilities. Hans de Goede has patched X to work with systemd-login and obviate its need for root privileges entirely. Maybe we'll see it in distros this year...

We're (still!) really excited about Haiku, a streamlined OS built from the ground-up for desktop use.

GOBOLINUX 015

**After a five-year hiatus, GoboLinux is back. Chances are you've never heard of this distro, but it's rather cool: it has an entirely different filesystem hierarchy to other distros. Instead of program files being scattered across /usr/bin, /usr/lib, /usr/share and so forth, in GoboLinux every program lives in its own directory. This makes it much easier to manage installations by hand and copy programs to other machines.
www.gobolinux.org**

Richard Stallman constantly reminds us not be sidetracked by gadgets and walled garden 'app stores'.
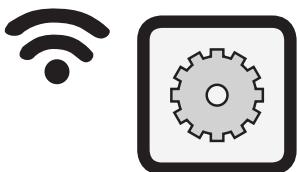
RICHARD STALLMAN

Love him or loathe him, Richard Stallman has a habit of getting things right. The founder of the GNU project (and Free Software Foundation) has been known to launch into rants about topics that don't seem immediately relevant, but a few years down the line, we all end up scratching our heads and thinking, "Hmm, RMS was right". His uncompromising stance on freedom makes him hard to deal with at times – but he has a knack of spotting problems way down the line.

Way back in 1997 he wrote a parable called The Right to Read (**www.gnu.org/philosophy/right-to-read.html**),

which described a futuristic world where the sharing of books and written information is punishable by law. Here we are, 17 years later, and DRM-laden eBooks are being sold by the millions. Customers are buying materials that they can't share, sell or pass on to their kids without potentially landing themselves in legal trouble.

Stallman saw this way down the line, so it will be interesting to see what topics he brings up this year. Even if he talks about threats to our freedom that don't seem looming right now, you can bet your bottom dollar/pound/euro that they'll come up in the future.

MAGEIA 4

We still can't agree on how to pronounce it, but this Mandriva spin-off is doing well, and version 4 will deliver a new welcome screen, software updates, and GTK 3 ports for most of its drak*/*drake configuration tools.
www.mageia.org

PARALLELLA

This dinky credit card-sized computer has a lot in common with the Raspberry Pi, but it's designed for developing high-performance, parallel processing applications. It comes with a 16- or 64-core Epiphany co-processor, and starts at $99.
**www.parallella.org**

OPENSUSE 13.2

We should have a new release of OpenSUSE to play with in July. It's still early in the development cycle, but it's planned that the installer will be simplified, and Plasma-nm should replace NetworkManager-kde4. The new installer could make its way into SUSE Linux Enterprise Server 12 as well, which should arrive around the middle of the year.

XFCE 4.12

Xfce picked up a bunch of new users in the last couple of years, many of whom left Gnome after the radical Gnome 3 redesign. Development is rather conservative in the Xfce camp: the last major release arrived in April 2012, and Xfce 4.12 won't actually move to GTK 3, as some people expected. Instead it will stay with GTK 2, but put the framework in place to move to the newer toolkit at a later date.

Feature-wise, Xfce 4.12's window manager (xfwm4) will sport a new smart placement mode, which has been rewritten to be more clever than the previous version and align windows next to each other (instead of putting them in a random gap). Thunar, the file manager, will support showing properties for multiple files simultaneously, and also show mounted remote locations in the shortcuts pane.
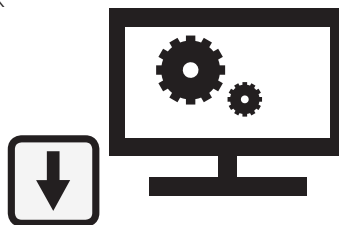
HURD 0.6?

Development on GNU's own kernel has been stagnant for many years, but the recent release of 0.5 could spur a bit more hacking activity. HURD is a microkernel that aims to be more secure and stable than microkernels like Linux. Maybe 0.6 will arrive this year: www.gnu.org/software/hurd/hurd.html

Parallella: it's like the Raspberry Pi, but with a 16/64-core co-processor for parallel processing applications to bump up the power (and the price tag).

KERNEL 3.14...

Kernel 3.13 has only just been released as we write this, but plans are already underway for 3.14. The zRAM filesystem, which creates compressed RAM filesystems (eg for use as high-performance swap areas) is now in the official kernel source tree, and we'll see improved Intel Broadwell microarchitecture support. Random number generation should be even more random and performance of the SquashFS filesystem has been boosted.

Other candidates for inclusion in 3.14 are enhancements to power management on Intel chips, support for dynamic refresh-rate switching in Intel's DRM driver, and Nvidia Tegra Prime support.

KDE

There are so many great KDE applications out there, but if you use a different desktop, they often don't fit in especially well with your graphical environment. Typically they expect various KDE services to be running and depend on lots of KDE-specific libraries, bumping up RAM consumption. KDE Frameworks 5 aims to fix this by moving lots of KDE's functionality into the Qt libraries – so pure Qt applications can benefit from this too.

This means that many current KDE apps can become Qt apps, making them simpler to install and port to other platforms. A beta release is planned for April, with the final release scheduled for June, but as always these dates can slip. The last major KDE architecture change (from 3.x to 4.x) wasn't well received at first, so hopefully this time the process will go more smoothly, and it won't take a couple more years before everyone is happy again.
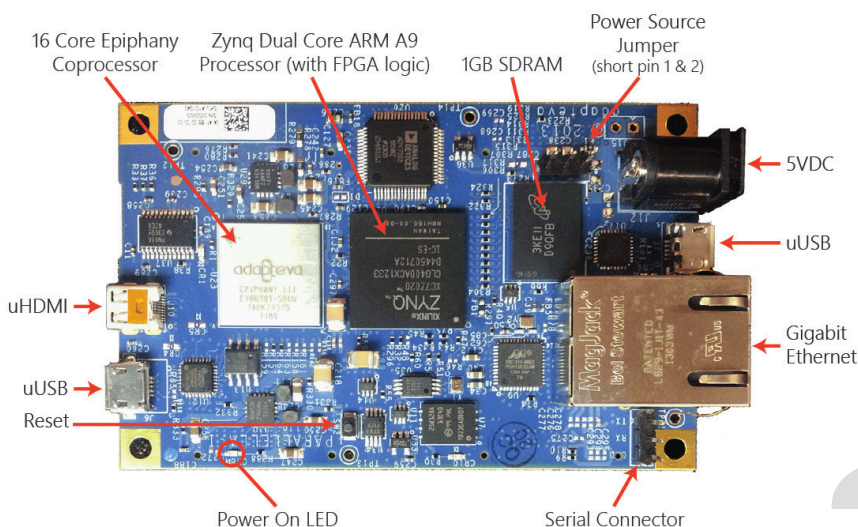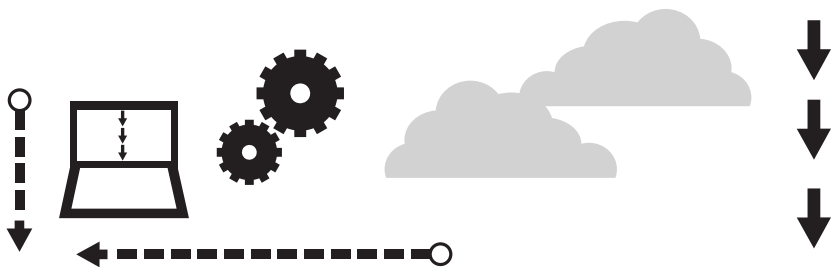
...KERNEL 4.0?

While announcing kernel 3.12, kernel maintainer Linus Torvalds said that he expects 4.0 to follow 3.19, probably some time this year. It won't be a big change – just to avoid the "crazy [version] numbers we had in the 2.x series". Stability will be a priority.

LIBREPLANET 2014

On 22 and 23 March in Cambridge, MA, USA, the LibrePlanet conference will assemble activists and developers to discuss challenges to software freedom. This year's topic government and corporate surveillance. **https://libreplanet.org/2014**

LibrePlanet 2013 was a great success, with 150 attendees and 35 talks, workshops and events. (Photo CC-BY-SA, Free Software Foundation).

X.ORG SERVER

36 Due in July, the next major update for the X Window System could include support for GLAMOR, an OpenGL-based acceleration library that speeds up 2D operations. In addition, veteran X developer Keith Packard has reduced the build warnings from 1,047 to zero. Nice one.

MAILPILE

37 Sick of Google, Microsoft and governments reading your emails? Looking for an alternative? Mailpile is a self-hosted, ad-free and open source email system with encryption built in. It's still undergoing heavy development, but an alpha release is due very soon. **www.mailpile.is**

MACBOOK PRO SUPPORT

38 Apple is the antithesis of Free Software in many respects: the company is secretive, makes proprietary software, and pushes developers into its highly controlled app store. Go to any major Linux conference, though, and you'll see lots of MacBooks running Linux: the hardware itself is well regarded for performance, weight and battery life. Kernel 3.13 brings lots of fixes for Retina MacBook Pros, fixing sound, display and power management issues. If you like Apple hardware but want to avoid OS X, grab a distro with the new kernel.

GUADEC 2014

40 This year's Gnome Users and Developers Conference takes place in Strasbourg, France, from 26 July until 1 August. The schedule hasn't been decided just yet, but there will be talks, presentations, hackfests and parties. **https://wiki.gnome.org/GUADEC/2014**

CRUNCHBANG 12

It's fast, it's light, it looks slick and it has Debian underpinnings: CrunchBang is an awesome distro. Version 12 will be based on Debian 8 (Jessie) sources, and lead developer Corenominal is looking for new ideas on the forums: **http://tinyurl.com/qdbkvta**

BTRFS

39 Btrfs (the B-Tree filesystem) is going to be big: it's jointly developed by Red Hat, SUSE, Intel, Oracle and other well-known companies. It's still marked as experimental, but the cool features it boasts (transparent compression, online resizing and snapshots, partitions spanning multiple drives) mean that it's getting a lot of attention. Some of the major Linux distros could move to Btrfs as the default filesystem this year, providing it's stable enough.

FIREFOX OS

42 We're very happy to see more competition in the mobile operating system space. Android is great, but if the market ends up dominated by just Android and iOS, things could get very stagnant. Firefox OS is currently targeted at low-end devices, and enables developers to write 'native' web apps by using APIs that communicate with the phone's hardware.
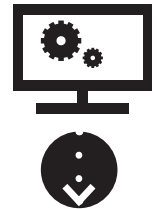
Right now there are very few devices running Firefox OS, but the range is slowly growing. Version 1.4, due in May, should bring: creation of ringtones from songs in the music app; sharing ringtones via Bluetooth and other protocols; support for NFC payments; application switching via edge gestures; and remote wiping for security.

Keep an eye on **https://wiki.mozilla.org/B2G/Roadmap** to see how the 1.4 release unfolds, and by the time you read this, the first Firefox tablet (the snappily named InFocus New Tab F1) may be available for aspiring developers to have a play with.

It's still early days for Firefox OS, but hopefully it will pump some innovation into the mobile OS market.

MINETEST

43 Minecraft is one of the most addictive games ever made – and in fact, it's unfair to call it a game. It's a giant construction engine, a world simulator, and a way of life. Minetest, an open source clone, is coming along well although it's still lacking many features and only at version 0.4.9 right now. Future releases this year should see a new map generation system, with more variation between biomes (landscape types). **www.minetest.net**

Explore and rebuild a gigantic virtual world with Minetest.

REACTOS
Creating a fully Windows-compatible open source operating system is a mammoth task, but the ReactOS team is chipping away at it. Version 0.4 will include better networking, sound and USB support, and is due to arrive this year. **www.reactos.org**

LIBREOFFICE 4.2
The current major release of LibreOffice arrived at the start of February, so it should be in your distro by the time you read this. We're always impressed by the effort that goes into LibreOffice releases, and 4.2 is no exception: it's a goody bag of new features.

You can now format individual characters with borders in Writer, while the spelling-checker pop-up menu now lets you do change tracking operations.

Additionally, you can export **.dot** (MS Word document template) files. Calc now has a random number generator, together with statistics functions for data analysis. In Impress, a new icon is shown in the Slide Sorter if a slide has a transition or animation effect, while integration with Gnome 3, MATE and Xfce has been improved. Then there's an Expert Config panel in the Options dialog for under-the-hood tweaking.

MATE 1.8
This fork of Gnome 2 has done better than many expected, with a healthy community building up around it. Version 1.8 will add support for G-Streamer 1.0, panel background rotation, and the ePub format in Atril (a fork of the Evince document viewer). In addition, work is underway to add support for Wayland and the AccountsService from freedesktop.org. MATE 1.8 was originally planned to be included in Mint 16, but we'll have to wait a bit longer for it now – it'll be worth it.

LLVM/CLANG
GCC has been the *de-facto* standard free compiler suite for years, but LLVM/Clang is catching up, offering a more modular design. Work is underway to make it compile the Linux kernel, and perhaps we'll even see a Clang-compiled distribution before the year is out...
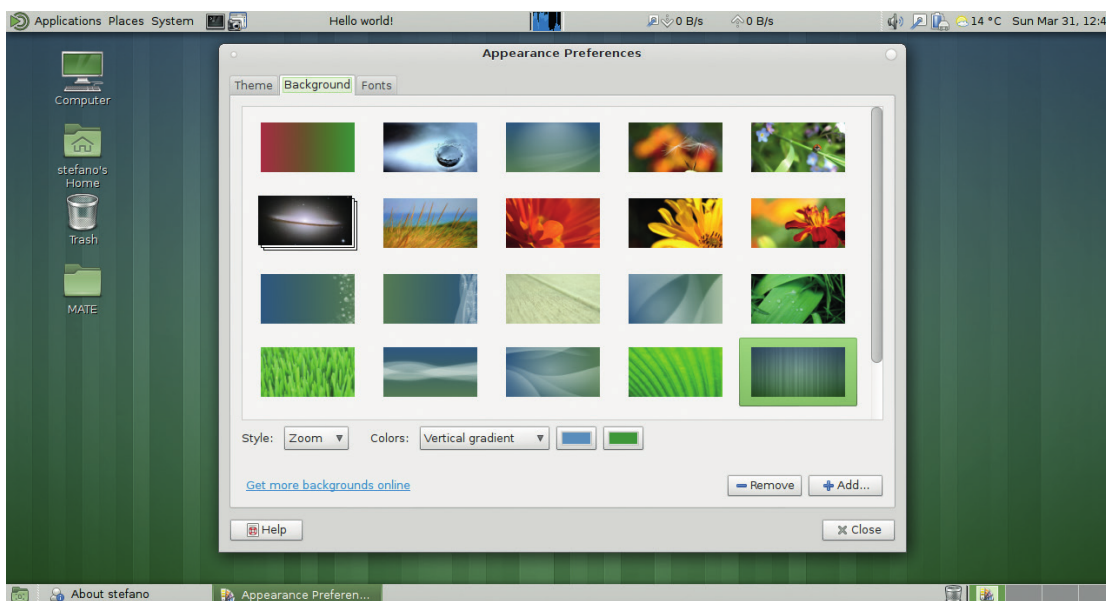
SAILFISH OS
It's still a baby and only available for one phone, but Sailfish could be a promising mobile OS in 2014. Built on a Linux kernel with Wayland and Qt providing the interface, Sailfish looks pretty, but it will have to work hard to avoid becoming another Maemo/Meego/Moblin/Tizen-like abandonware.
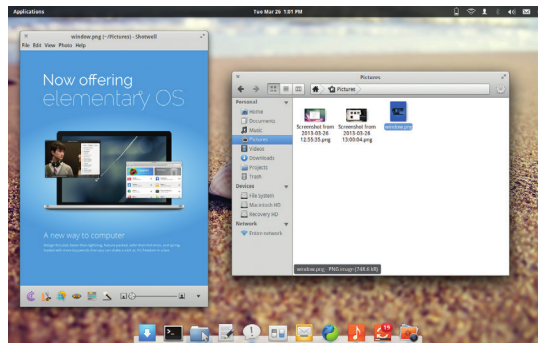
Elementary OS is still undergoing heavy development, but it already looks deeply gorgeous.

ELEMENTARY OS
One of the prettiest distros we've ever seen, Elementary OS's website (**www.elementaryos.org**) is just as polished as the software. This isn't just yet-another-distro with some glitz sprinkled on top; it sports its own applications. Another beta is due soon.

LINUX PLUMBER'S CONFERENCE
Everyone loves talking about wobbly windows and desktop apps, but this conference is for hackers who work on the guts of Linux: kernel subsystems, core libraries and so forth. It'll be held from 15–17 October in Düsseldorf, Germany. **linuxplumbersconf.org**

Some assumed that the MATE desktop wouldn't last – but it's thriving, with version 1.8 just around the corner.

YOU
Sure, it may be a bit cheesy to end with this, but it's true. It's you, the Linux community, that will make this an awesome year. Every little thing you do, whether it's helping a newbie on a website forum, or submitting a bug report for an app, adds up to make the Linux and Free Software ecosystem even better. There are times when it's frustrating, when progress seems to be slow and arguments break out, but providing we stick together, explain the advantages of Free Software and spread the word positively, we will succeed in the long run.

So, a hearty thank you to everyone in the Linux community – every user, developer, documenter, designer and tester. Great times are to come in 2014!