# news

## UPDATES ON TECHNOLOGIES, TRENDS, AND TOOLS

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# This Month

**Time to Brush Up on IPv6**

You can't say we weren't warned. We've known for a long time that IPv4 addresses were an endangered species. I remember reading about the problem before the turn of the century, and Cisco Systems issued a report by Tony Hain in 2005 saying that "the remaining pool … will be exhausted in about 5 years." So Hain was a *tiny* bit generous, but here we are, and now? They're gone.

Granted, it's not panic time *just yet*. When I say "gone," I mean that the pool of IPv4 addresses held by the Internet Assigned Numbers Authority (IANA) is depleted, having been assigned to the Regional Internet Registries (RIRs). But it's just a matter of time before those are all gone as well.

The good news is that Linux and most applications on Linux should be IPv6-ready. I say *should*, because the amount of testing that's been done is minimal, in that very few people are actually using IPv6 networks. I suspect we'll see a number of interesting bugs and problems during the transition from IPv4 to IPv6.

The transition could also mean opportunity. Because many companies aren't ready for the transition yet, that could mean short-term opportunity for consultants, or a leg up on other candidates when looking for IT jobs, or a chance to stand out in your current job by being on top of the transition.

Even if you are not working with Linux professionally, you should start brushing up on IPv6: You should know how it differs from IPv4 and how it will affect your system's networking. Now is also a good time to check in with your ISP and find out how they are preparing for the transition and whether your cable or DSL modem are ready for the IPv6 transition.

The IPv6 transition is likely to be a bit of a pain for everybody, whether you're running Linux, Windows, Mac OS X, or some combination of all the above. The good news is, if all goes as planned, we're unlikely to endure a similar changeover again.

## THIS MONTH'S NEWS


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- Red Hat files amicus for Microsoft
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## MORE NEWS ONLINE

Canonical Makes Ubuntu Component Catalog Public

*http://www.linux-magazine.com/Online/News/Canonical-Makes-Ubuntu-Component-Catalog-Public*

Nokia Microsoft Partnership

*http://www.linux-magazine.com/Online/News/Linux-Foundation-Responds-to-Nokia-Microsoft-Partnership*

Ubuntu Increasing Its Diversity

*http://www.linux-magazine.com/Online/News/Ubuntu-Increasing-Its-Diversity*

# Two Quick OpenSSH Releases: Upgrade Now

OpenSSH releases come out regularly but usually at a more leisurely pace than the 5.7 and 5.8 releases in the last month. OpenSSH 5.7, a major update over 5.6, was released on January 24, 2011 – and was followed in less than two weeks by OpenSSH 5.8. At issue? A vulnerability in certificate signing that was discovered by Mateusz Kocielski on January 26. According to the release notes, legacy certificates signed by OpenSSH 5.6 and 5.7 would include data from the stack in place of random data. So far, it doesn't look like the data would include the private key or other sensitive data – but it's impossible to test across all platforms and compilers, so the project rushed a fix in the form of 5.8, as well as a patch that can be applied to 5.6 and 5.7. OpenSSH users, which include most people using Linux, should check with their vendors for updates. Note that many recent Linux releases, such as Ubuntu 10.10 and Fedora 14, include an older release of OpenSSH (5.5p1) that isn't affected by the vulnerability. OpenSSH is released in two forms – the native OpenSSH for OpenBSD and OpenSSH Portable (designated by a *p* following the release number) for other operating systems, including Linux.

Aside from the security fix, users will find a number of improvements in 5.8. OpenSSH now supports Elliptic Curve Cryptography modes for key exchange and for host-user keys, which are reported to offer better performance than Diffie-Hellman (DH) or DSA keys. OpenSSH 5.7 introduced a new option for `scp` to copy data between two remote hosts through the local host. The `sftp`/`sftp-server` combo has received a protocol extension to support doing a hard link with `ln`, in addition to the existing `symlink` command. Finally, 5.8p fixes a compilation failure when enabling SELinux support. OpenSSH is available from *http://www.openssh.com/*.

# Red Hat Sides with Microsoft

Here's a statement you don't hear often: Red Hat is siding with Microsoft on a patent dispute. Red Hat filed an amicus brief before the US Supreme Court in the case of *Microsoft v. i4i Limited Partnership*, with a number of other companies in and out of the tech industry – including the Consumer Electronics Association, Comcast, Dell, Google, Hewlett-Packard, HTC, Intuit, L-3 Communications, LinkedIn, Lockheed Martin, MasterCard, The New York Times, Rackspace, Shutterfly, Software & Information Industry Association, Time Warner, Verizon, Wal-Mart, and Zynga. You don't see Red Hat or Google rallying for Microsoft every day, but the i4i case is special. The amicus brief – a filing from a party not part of the case intended to inform the court's decision – concerns the burden of proof placed on a party trying to prove that a patent should not have been granted. In the *Microsoft v. i4i* case, Red Hat is arguing that a "clear and convincing" level of proof is an unfair burden, particularly considering the lower barrier of entry for being granted a patent. In other words, the brief argues that, in practice, it is easy to get a patent – even one that should not be granted – but the standard of proof that a patent is invalid is much higher.

The original case concerns a patent suit Microsoft lost to i4i for features found in Microsoft Word. If the Supreme Court finds against Microsoft, the company stands to lose about $300 million. The feature in question concerns adding special data to Word files and was shipped by i4i more than a year before its patent was filed, which, if found to be prior use, would render it ineligible for a patent. The court should decide the case by the end of its 2010-2011 term.

# NEWS BITES

## Oops, Intel Did It Again

Intel disclosed on January 31 that its new Cougar Point chipset, which is designed to work with the second generation ("Sandy Bridge") Core processors, has a little flaw when working with 3Gbps SATA ports. Specifically, performance can degrade over time and eventually lose the device altogether. The flaw is in the chipset, rather than the processors themselves but could cause delays of systems that were planned with the Cougar Point chipset. Intel updated its recall to say that the chipset works fine with 6Gbps SATA, so manufacturers that disable the 3Gbps ports and utilize the 6Gbps ports can still ship as planned. Intel has had problems of this type before, such as back in the Pentium Processor days with the infamous "f00f" bug that could crash affected systems and cause data loss.

## Hudson Forks; Jenkins Created

Oracle's stellar track record with open source projects continues unabated. It started with an apparently innocent misunderstanding when Oracle was migrating to a new Java.net infrastructure, but the company failed to notify the Hudson developer community about its migration. Hudson, a continuous integration system that monitors building of software projects, had a fairly active and large developer community. Because founder and lead developer Kohsuke Kawaguchi felt the transition would take too long (a week or longer), he moved development over to GitHub when it became apparent the migration would not allow for developers to commit code until it was finished. In the interim, Oracle raised an objection about its being hosted on non-Oracle infrastructure and invoked the trademark for Hudson to try to stop it. That led the former Hudson community to choose a new name (Jenkins) and set up shop at *http://jenkins-ci.org/*.

# Debian Squeeze Released: Now with FreeBSD?


## Debian 6.0, otherwise known as "Squeeze," released in February

If you had February 6, 2011, in the pool as the date Debian 6.0 would be released, get ready to collect your bets. Debian Squeeze released with nine supported architectures and a brand new port to the FreeBSD kernel. Squeeze ships with no proprietary firmware in the default kernel. Debian 6.0 will run on x86, AMD64, PowerPC, SPARC, MIPS, Itanium, S/390, and ARM chips with the Linux kernel (2.6.32) and supports AMD64 and x86 for FreeBSD. The FreeBSD port of Debian (kFreeBSD) brings support for the Zettabyte filesystem (ZFS), which is not available natively on Linux. Debian comes with tons of updates, including KDE 4.4.5, Gnome 2.30, Xfce 4.6, OpenOffice.org 3.2.1, and GIMP 2.6.11, with more than 10,000 new packages for 6.0. The project has renamed "custom Debian distributions" to "Debian Pure Blends" with this release and introduced five new customized Debian spins, including a multimedia blend, a release for users with disabilities, and Debian GIS (Geographical Information Systems), in addition to the existing Debian Edu, Debian Med (medical), and Debian Science releases. Users have a slew of options for downloading and installing Debian, including BitTorrent, HTTP, and Jigdo. Images are available as ISO images for CDs, DVDs, and even Blu-ray discs. Net install and "business card" ISOs are also available for users who want small downloads. Naturally, users running Debian 5.0 (Lenny) can upgrade in place to Squeeze. Special images are available for users who need firmware not included with the default kernel, and firmware is available in the non-free Debian archive if needed. Finally, the installer is available in more than 70 languages. Now work begins on Debian 7.0 "Wheezy." I'm placing my bet on an April 17, 2013, release.

# OpenStack Releases Bexar


## Canonical Joins Community

The OpenStack community has been busy since its unveiling in July 2010 at OSCON. The release brings improvements for large file support, an image registry and delivery service, and new features in the OpenStack Compute (Nova) project. OpenStack is a collection of open source software to build private and public clouds.

The OpenStack Compute component is the "operating system"; it manages the virtual machines that do the work, including networking, authorization, and scaling. The Object Storage component handles data storage and can scale to petabytes of data. The Image Registry and Delivery service (Glance) handles services for discovering, registering, and retrieving virtual images. Updates in the Bexar release include improvements in storage, allowing downloads from object storage larger than 5GB. An experimental Amazon Storage (S3) compatibility layer in Bexar might make OpenStack storage compatible with Amazon S3 applications. Initial support for internationalization of logging messages has also been added to the storage component. The Compute component has support for raw disk images with libvirt or Xen hypervisors and now adds IPv6 support to almost all network modes. For recovery, Nova now has a "rescue" mode to mount disks to fix problems. Hardware staging allows services to be load-tested before rolling into the cloud.

The final word is that OpenStack is maturing rapidly and becoming a viable alternative to services like Amazon EC2/S3 and Eucalyptus … which is probably why Canonical has joined the OpenStack community and is including OpenStack Bexar in the 11.04 Ubuntu release. The Bexar release and full documentation are available at *http://openstack.org*.

# Nmap 5.5 Released: Now with Gopher!

The focus of Nmap 5.5 is the Scripting Engine (NSE), which takes "network discovery to the next level," says Nmap author "Fyodor." Nmap is a popular open source utility for network exploration and security auditing. It also includes a GUI (Zenmap), Ncat, and Ndiff for comparing scan results. Release 5.5 doubles the number of NSE scripts to 177 and the number of libraries from 30 to 54. With scripts, you can discover host services, find Microsoft SQL servers on the same domain, find Citrix servers, retrieve a list of music from a DAAP server, launch a "fuzzing" attack against DNS servers, or test for FTP servers that allow anonymous logins. The NSE was upgraded and now features pre- and post-rule scanning phases. The Zenmap GUI performance improvements handle larger scale networks, and now is able to scan more than 1 million IPs in less than two minutes – down from hours. And, yes, now you can list files at the root of a Gopher server, if you can find one. Nmap and utilities are licensed under the GPL; source and binaries are available for Linux, Windows, and Mac OS at *http://nmap.org/download.html*.

# Google Summer of Code 2011

Google is once again gearing up to sponsor the Google Summer of Code (GSoC). Kicked off in 2005, GSoC offers students a stipend for working on projects with sponsored open source projects, ranging from Debian to WorldForge. Open source projects apply for spots each year and GSoC pairs students with mentors from the project to work on code, with oversight over the summer, so it's an opportunity for students to "flip bits, not burgers," and gain experience with open source on summer break. Mentoring organizations can submit applications to Google from February 28 to March 11. The accepted organizations will be announced on March 18, followed by the discussion period between mentors and students from March 18 to 27. Students may apply after the 28th, and the deadline is on April 8. This application period is followed by the interim period for mentoring organizations to review and rank proposals and have discussions with students about their applications. The final announcement for accepted applications is on April 25. Coding starts on May 23 and lasts through "pencils down" on August 22. The stipend for students participating this year is US$ 5,000 for the student, and US$ 500 per student for organizations. The stipend is doled out in three installments, providing successful completion. Students and organizations are strongly advised to read the entire FAQ for GSoC and other documentation as provided. Since 2005, the project has funded more than 4,500 successful student participants who have worked with more than 3,000 mentors from supported organizations in more than 100 countries. For more on the Google Summer of Code, check out *http://code.google.com/soc/*.

## NEWS BITE

### EFL Hits 1.0 Milestone

Duke Nukem 3D move over, you've been beaten to the punch by the Enlightenment Project, which, after a decade of tinkering, has released the first bits toward a new stable series of the window manager. On January 29, the project released its 1.0 set of Enlightenment Foundation Libraries (EFL), which includes the building blocks for the Enlightenment window manager – although not the actual e17 release that has been in development since 2000. The libraries run on Linux, BSD, and Mac OS X among other OSs. No word yet on when another release is expected. For more on Enlightenment, see *http://www.enlightenment.org/*.

# Ada Initiative Launched

A number of open source projects have instituted individual initiatives to encourage and recruit more women, but the open community has lacked a unifying project that would address the problem as its primary mission. Mary Gardiner and Valerie Aurora decided to remedy that with the Ada Initiative, a non-profit organization dedicated to increasing participation of women in open culture and technology. The scope is a bit broader than open source and includes encouraging women to participate in FOSS development and projects like Wikipedia or other open social activities.

The project, named after Countess Ada Lovelace – considered the first computer programmer for her algorithm for Babbage's analytical engine – is focused on recruitment and training programs for women and cooperating with other projects to improve outreach efforts. Examples of projects the Ada Initiative will undertake include a "First Patch Week," for projects to encourage and mentor women when writing and submitting their first patch, and a survey to develop a baseline for measuring progress in encouraging women's participation. The project is seeking contributions, but its services are completely free of charge to projects, companies, and conferences. The project will also provide public relations advice to companies for developing and maintaining a women-friendly reputation. Aurora and Gardiner have a long history of activism in the open source community, with more than 10 years each of participation in groups like Systers, Geek Feminism, and LinuxChix. Aurora is known for her work as a Linux kernel developer and has left a full-time position at Red Hat to concentrate on the Ada Initiative. Gardiner is a FOSS developer and has worked as a senior software engineer and contributed to the Python-based Twisted project.

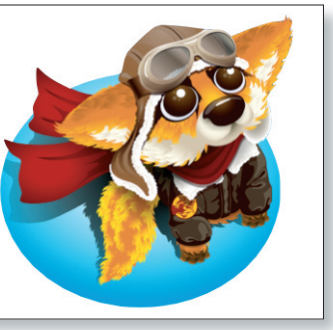
More about the project can be found at *http://adainitiative.org*.

# "Chromeless" Launched

Goodbye Prism, hello Chromeless. Mozilla Labs released v0.1 of Chromeless on December 15, an experimental toolkit to create a browser application using only HTML, JavaScript, and other web standards. On February 1, 2011, Mozilla announced the Prism project would no longer be maintained and Chromeless would take its place.

The Prism project dates back to 2007 and offered a customized version of Firefox to provide a site-specific browser for Web apps like Gmail or Zimbra Desktop. (Zimbra Desktop is based on a modified Mozilla Prism.)

The current implementation provides a "blank canvas" that can run JetPack add-ons using JavaScript, but no XUL or XPCOM are necessary. Chromeless is based on the XULRunner platform (which also powers Firefox), but it is a more general project than Prism and might allow developers to create desktop applications using Chromless that are as feature-complete and responsive as native desktop applications. Mozilla has been working hard to lower the barrier for development on top of its platform. The JetPack initiative allows web developers to create add-ons for Firefox with HTML, CSS, and JavaScript – albeit with some limitations compared with extensions written with XUL. The Chromeless initiative could mean easier cross-platform development, which would be a boon for Linux users. Importantly, this step means developers do not have to know or work with Mozilla's XUL and XPCOM technologies to modify the browser interface and could allow the creation of site-specific applications on top of Chromeless.



As the 0.1 version number indicates, the release is somewhat limited at this point, including features for developers to track page load progress, determine whether a page is served over SSL, capture images, toggle to full screen, and more. The release is available with a set of demonstration tests and runs on Linux, Windows, and Mac OS X. However, the project only provides source code at the moment, rather than builds for each platform. For more on Chromeless and Mozilla Labs, see *http://mozillalabs.com/*. For the Chromeless repository on GitHub, see *https://github.com/mozilla/chromeless*.

# SourceForge and Fedora Experience Break-Ins

Fedora and SourceForge reported separate break-ins. The Fedora incident, reported by Project Leader (FPL) Jared Smith on January 25, was noticed after a Fedora contributor received email on January 22 that his account details had been changed. The Infrastructure Team investigated and determined that the victim's credentials, rather than Fedora Infrastructure, were compromised. Fedora's response to the incident is in marked contrast to an earlier intrusion of the Fedora infrastructure hosted by Red Hat, in which Red Hat was slow to release details.

SourceForge reported on January 29 that it was the "target of a directed attack," via a root privilege escalation on one of its platforms but that "network partitioning prevented escalation" to other parts of the network. The company shut down several services while it performed its audit and recovered from the attack. SourceForge will be re-evaluating the way it handles public Project web services and be considering an end-of-life for the CVS version control in favor of Git.

Be careful out there!