



Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #144 - April 2019



Photo: Michael Coghlan
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LINUX CERTIFIED HOW TO BECOME CERTIFIED



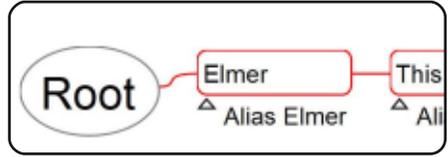
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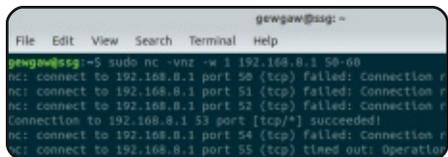
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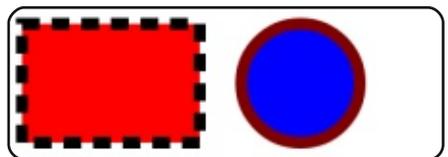
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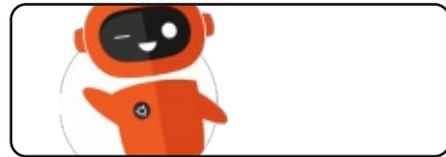


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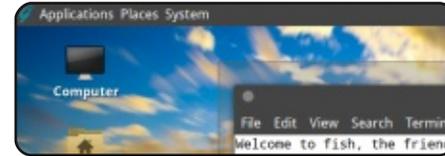
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```
#An alias to make the ls
command more detailed
alias ls = "ls -la --
color=always --classify"
```

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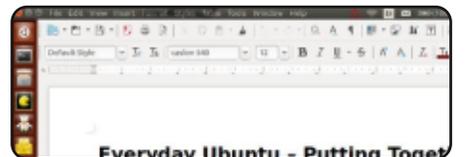
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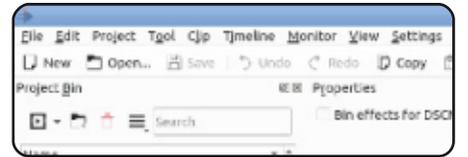
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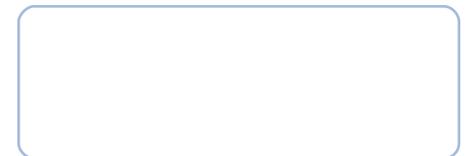
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WELCOME TO THE 12TH YEAR OF FULL CIRCLE!

That's right folks. This issue marks **TWELVE YEARS** of Full Circle Magazine. Incredible. I have to say a **BIG** thank you to all the people behind the scenes who help with writing articles every month (both past and present), and those who proof-read (again, past and present). Without them I doubt Full Circle would have lasted twelve issues, never mind twelve years!

This month we have the usual Python, Freeplane, and Inkscape. But we have a couple of new things too. For the next little while SJ's Loopback column will be focusing on BSD in its many guises. Prolific writer, Erik, has started a monthly series about becoming Linux Certified, and (for good measure) he's thrown in a Linux themed crossword for this month. Please don't write the answers on your screen! We can not be held responsible for that.

Richard has dedicated this month's Everyday Ubuntu article to show how he writes an article for FCM. Not that I'm hinting that you, yes you dear reader, should write an article. If we're to continue for another 12 years we need articles. So, you know, feel free to follow along with Richard and surprise me with an article. Go on. You know you want to. It won't take you long.

All the best, keep in touch, and heres to another 12 years!

Ronnie

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<http://tunein.com/radio/Full-Circle-Weekly-News-p855064/>

FEDORA 30 BETA RELEASED FOR BLEEDING-EDGE LINUX EXPERIENCE

Developed by the community-driven Fedora Project and sponsored by the IBM-owned Red Hat, Fedora Linux distribution is known to feature cutting-edge technologies that often inspire other Linux distros to innovate; the Wayland display server is one such example. Fedora also serves as a testing ground for Red Hat's commercial RHEL distribution.

The Fedora Project recently announced the release of Fedora 30 Beta to test its six variants: Workstation, Server, Silverblue, Spins, Labs, and ARM. The popular Workstation desktop ships with GNOME and you also get the option to go for KDE Plasma, Xfce, Pantheon, and DeepinDE. The Deepin DE and Pantheon desktops shipping with Fedora 30 Beta are the new options made available starting with this version. Talking specifically about the GNOME environment, it ships with the

recently released GNOME 3.32 'Taipei' that comes with a total of 26,438 changes. The base style colors are now saturated, and the overall visual style has been refreshed to offer a modern look.

Fedora Linux uses the DNF, or Dandified yum, software package manager to take care of different packages. To improve its performance, Fedora 30 Beta compresses all its DNF repository metadata with zchunk compression for higher efficiency.

Source:

<https://fossbytes.com/fedora-30-beta-linux-features-download/>

'SPURV' PROJECT LETS YOU RUN ANDROID APPS ON DESKTOP LINUX

A UK-based software development Collabora has come up with an "experimental containerized Android environment," which allows Android apps to run in a Linux

operating system.

Dubbed SPURV, the software is an open source and available to everyone. It will help users run Android apps in the same graphical environment as a system running native applications alongside on desktop Linux.

SPURV software is basically a set of tools that lets you install a fully functional Android OS in a compartment and then facilitates access to a computer's graphics, audio, networking hardware, and other such resources.

It is comparable to emulators like Bluestacks which helps the Android apps to run in windows just like native apps, and that too with hardware-accelerated graphics, touchscreen displays, and other features.

However, SPURV has a distinguishable feature which sets it apart from other software that runs Android on a computer. Termed as 'SPURV HWComposer,' this feature helps in rendering

Android apps in windows, along with the native Linux applications.

But please note that for this to work, the Linux desktop has to use the Wayland display server.

The ability to run Android apps also offers some advantages over native Linux applications, especially when it comes to the availability of apps and app developers.

But SPURV also has a downside to it — since you'd be essentially running two OS at the same time, it could take a toll on your system's resources and performance.

Users should also know that pre-built binaries for SPURV are not available yet. This means you will have to build it from the source code yourself.

Source:

<https://fossbytes.com/run-android-apps-on-desktop-linux-with-spurv/>

FIRST ARCH LINUX ISO SNAPSHOT POWERED BY LINUX KERNEL 5.0 IS HERE

Arch Linux 2019.04.01 is the first ISO image of the widely used Linux-based operating system, which follows a rolling release model where you install once and receive updates forever, to ship with a kernel (version 5.0.5) from the latest Linux 5.0 series, along with the latest updates released in March 2019.

Linux kernel 5.0 brings several hardware enhancements over the Linux 4.x series, including FreeSync support for AMD Radeon GPUs via the open-source AMDGPU graphics driver, which enables a stutter-free viewing experience on LCDs with dynamic refresh rates, and a new energy-aware scheduling feature that improves power management in devices using ARM big.LITTLE CPUs.

Furthermore, the Linux 5.0 kernel series adds support for swap files in the Btrfs file system, support for the Adiantum file system encryption for low power devices in fscrypt, support for the GRO (Generic Receive Offload)

feature in the UDP implementation, and support for the binderfs file system to enable running of multiple Android instances.

Source:

<https://news.softpedia.com/news/first-arch-linux-iso-snapshot-powered-by-linux-kernel-5-0-is-here-525604.shtml>

UBUNTU MATE 19.04 AND 18.04.2 ARE NOW AVAILABLE FOR GPD POCKET & GDP POCKET 2

Coming six months after the release of Ubuntu MATE 18.10 (Cosmic Cuttlefish) for the GPD Pocket and GPD Pocket 2 computers, the team lead by talented Martin Wimpress released today images of the Ubuntu MATE 18.04.2 LTS operating system, which was possible thanks to the recent hardware enablement (HWE) stack upgrade, and the beta version of Ubuntu 19.04 for the tiny devices.

"Back in October 2018 the Ubuntu MATE team released

bespoke images of Ubuntu MATE 18.10 for the GPD Pocket and GPD Pocket 2 that included hardware specific tweaks to get these devices working "out of the box" without any faffing about. Today we are releasing Ubuntu MATE 18.04.2 and Ubuntu MATE 19.04 images for both devices," said Martin Wimpress.

As expected, the Ubuntu MATE 18.04.2 LTS (Bionic Beaver) and Ubuntu 19.04 Beta (Disco Dingo) releases for GPD Pocket and GPD Pocket 2 bring numerous updates and enhancements to make your GDP Pocket experience on Linux much more pleasant. These include the enablement of TearFree rendering by default to prevent tearing, and a usable GRUB boot loader instance for both models.

Track scrolling was enabled as well when you hold down the right point button and touch screen rotation has been updated to support both Wayland and X.Org Server display server technologies, along with support for the xorg-video-intel and modesetting graphics drivers for the X.Org Server and frame buffer display rotation.

Source:

<https://news.softpedia.com/news/ubuntu-mate-19-04-and-18-04-2-are-now-available-for-gpd-pocket-and-gdp-pocket-2-525603.shtml>

MX LINUX 18.2 IS HERE -- DOWNLOAD THE DEBIAN-BASED OPERATING SYSTEM NOW

With the Linux Mint development being severely strained, and the future of that particular operating system being in slight doubt, many Linux "haters" are seemingly taking pleasure. Hardcore fans of Microsoft Windows will point to the Mint situation as proof that Linux (and open source ideology overall) doesn't have a future on the desktop. Thankfully, these negative people couldn't be more wrong. Regardless of what happens with Mint, Linux still has a bright future -- not only on mobile and servers, but desktop too. Maybe that success will be Chrome OS or Android. Whatever. The point is, the open source Linux kernel cannot be stopped.

As people are concerned about Linux Mint, another distro has been gaining in popularity. While not new, the attention it gets has been growing lately. Called "MX Linux," it is based on the excellent Debian Stable and uses the lightweight Xfce desktop environment by default. If you are intrigued by this newly en vogue distro, I have good news -- a new version is available for download. While not a major release, the 18.2 ISO is chock full of changes, fixes, and of course, updated packages. If you are already running MX Linux 18, there is no need to download this ISO -- you will get all of these updates.

Source:

<https://betanews.com/2019/04/09/mx-linux-182-debvia/>

RED HAT AND FEDORA WORKING TO BRING LINUX-POWERED ARM LAPTOPS

In late 2017, Microsoft launched Windows 10 on ARM to let users run its operating system on the ARM processor-powered laptops, especially the ones powered by Snapdragon chips. The company

also released a bunch of devices in partnership with OEMs like Asus, HP, and Lenovo, and marketed them as "Always Connected Devices."

Earlier this year, when a project named aarch64-laptops started gaining traction on GitHub, it seemed like a great idea to run Linux on ARM laptops. The project initially allowed users to run Ubuntu on Snapdragon-powered laptops like NovaGo TP370QL, HP Envy x2, and Lenovo Miix 630. Now, it has been revealed that Red Hat is working with Fedora team to bring Fedora Linux to such devices.

Red Hat is known for its commitment to the Linux hardware and it seems like this joint effort will be enough to clear different roadblocks. Red Hat's Peter Robinson, in a tweet, mentioned that such Fedora running ARM laptops are coming "very soon."

Just recently, we witnessed the release of Fedora 30 Beta and the final release is also around the corner. So don't expect Fedora on the ARM laptop to ship in this cycle.

To start with, the initial focus of

this collaboration will be Lenovo devices running Snapdragon 850, which was introduced as a higher-binned version of 845. Yoga C630 and Miix 630 are a couple of great machines with this chip and it would be really interesting to see Linux running on these laptops that deliver ~20 hours battery life on Windows.

Source:

<https://fossbytes.com/red-hat-fedora-bring-linux-arm-laptops/>

LINUX IS THE MOST POPULAR & LOVED PLATFORM AMONG DEVS: STACK OVERFLOW SURVEY

Just yesterday, we brought you the list of the most popular programming languages as per the Stack Overflow's annual developer survey. Being the largest survey of its kind, it's able to deliver some fascinating insights regarding the current software development landscape. We, unsurprisingly, discovered that JavaScript continues to be the most popular programming language with about 70% of respondents using it.

In the second article of that series, we are going to tell you about the preferred platforms for development. The development platform is critical as it can either make you fall in love with your work or just drive you nuts. That's why Stack Overflow asked developers about the platforms they love working for and the ones they've actually worked for in the past year.

As the article's title has already revealed, Linux is the most popular platform among the survey respondents. Out of the 80,144 responses, 53.3% were in favor of Linux. This means that they'd done development work for Linux over the past year. This number has increased from last year's 48.3%, which is a really encouraging sign for the open source community.

Linux was followed by its closed source nemesis Windows, which gained 50.5% votes. For the first time, Stack Overflow included container technologies in the survey, and Docker ended up at #3 with 31.5% votes.

Without a surprise, Linux also turned out to be the most loved

platform for development with 83.1% votes. It means that developers surely loved working on Linux technologies. This is, again, an encouraging sign as this number has risen considerably as compared to last year's 76.5%.

Source:

<https://fosbytes.com/linux-is-the-most-popular-loved-platform-among-devs-stack-overflow-survey/>

GNOME 3.32 "TAIPEI" DESKTOP ENVIRONMENT GETS FIRST POINT RELEASE, UPDATE NOW

Released a month ago on March 13th, GNOME 3.32 brings numerous improvements over previous versions of the open-source desktop environment used by numerous GNU/Linux distributions. Today, the first point release, GNOME 3.32.1, is here to add a stability and reliability layer by fixing bugs and updating translations.

Users who already installed the GNOME 3.32.0 release can now

update to GNOME 3.32.1 by using the official BuildStream project snapshot or by compiling the sources packages. Of course, we recommend installing GNOME 3.32.1 from the official software repositories of your favorite GNU/Linux distribution.

In the good tradition of the release cycle of the GNOME desktop environment, the GNOME 3.32 "Taipei" series will have a total of two point releases published during its support period. GNOME 3.32.2 will be the second and last scheduled point release, expected to arrive next month on May 8th.

Source:

<https://news.softpedia.com/news/gnome-3-32-desktop-environment-gets-first-point-release-update-now-525634.shtml>

GRUB 2.04 IS NEARING COMPLETION

The GRand Unified Bootloader (Grub) is one of the best known free boot loaders. Once developed as a replacement for LILO in the context of the GNU

Hurd project, now hardly a distribution comes without him. Because the modular boot loader supports a number of platforms and offers functions that are searched for in other systems in vain. Among other things, Grub can access the operating system cores stored as files via the file system. In contrast to other bootloaders, Grub does not need to know the exact location of the files - however, one prerequisite is that Grub masters the file system itself. For this purpose, the developers have gradually expanded the loader with support for new file systems, so that Grub should also be able to cope with new functions of current platforms.

With the now released first release candidate, the developers behind the boot loader have ushered in the final phase of the development of Grub 2.04 two years after the last release. After Grub has dealt with Btrfs partitions for over seven years, the developers have further expanded the loader. Among other things, the new version supports the compression using Zstd as well as RAID5 and RAID6. In addition, Grub now comes with the F2FS file system and is able to load various

pre-images of Initrd before the actual start of the system. The change results from an attempt to start an alternate code before starting a system, for example, to fix bugs in an architecture in advance.

Platform support has been further developed and existing platforms have been improved. New features include support for RISC V systems and improved support for Xen. The support for UEFI systems was further expanded and Grub extended, among other things, with a new framework for UEFI Secure Boot and UEFI TPM. Furthermore, the framework can also be used by external modules, so that, for example, Grub himself can verify his signature by means of PGP. A list of other changes can be found in the changelog.

Source: <https://www.pro-linux.de/news/1/26962/grub-204-n%C3%83%C2%A4hert-sich-der-fertigstellung.html>

PRIVACYIDEA 3.0 RELEASED

In the new version 3.0 of privacyIDEA there are numerous internal, but also some visible changes and new functionality. So the system based on the Python framework Flask is now executable both under Python 2.7 and under Python 3. Furthermore, the database schema has been rebuilt so that in the future it will be possible to assign one authentication device to multiple users. The old crypto library pycrypto has been replaced with cryptography and the stored signatures and encrypted data are now provided with a version tag, which will make it easier to exchange crypto-mechanisms in the future.

The token management system also adds a new token type. The push token allows the Firebase service to send a push message to the user's smartphone if they want to log in to an application. The user confirms the request on his smartphone with just one click. The answer signed on the smartphone is sent back to privacyIDEA, so that the application can now check whether

the user has given the consent to register. The user is logged in automatically.

privacyIDEA is a powerful system in which behavior can be customized through policies. This can become confusing for the administrator in complex systems. Even so far, all actions that occur in the system have been recorded in the audit log. Now the audit log has been extended to include information on which policies contributed to the decision and behavior of each action. This is to make the work easier for the administrator and the service desk.

All changes can be read in detail in the change log. The new version of privacyIDEA is available for download via Github or the Python Package Index. privacyIDEA can also be installed on the Univention Corporate Server via the AppCenter. Possible installation variants are described in the online documentation. In addition, an updated corporate edition will be available shortly with support and warranties.

privacyIDEA is a multi-factor authentication system that manages additional authentication

factors for users. For example, two-factor authentication can be implemented on web applications, VPN, SSH and Windows or Linux desktops. privacyIDEA accesses existing user sources such as LDAP, Active Directory or SQL databases, but can also manage users if required. It supports a variety of authentication types such as OTP (HOTP, TOTP, mOTP), Smartdisplayer OTP cards, Nitrokeys, Yubikeys, smartphone apps like Google Authenticator, FreeOTP or TiQR, U2F and also SSH keys and X.509 certificates. With its built-in, easy migration capability, it is an alternative to commercial products such as RSA SecurID, Vasco Indentikey or cloud solutions like DUO or SafeNet Authentication Service.

Source: <https://www.pro-linux.de/news/1/26965/privacyidea-30-erschienen.html>

LINUX WILL BE THE LAST OPERATING SYSTEM LEFT ON THE DESKTOP

While the concept of Linux being the primary operating system on the desktop is an

industry joke, there is a belief that it might get there by default. Software King of the world Microsoft is moving to Windows to a Desktop-as-a-Service model, and it is possible that Linux will be the last traditional PC desktop operating system standing. The only problem is that there is not a standardised Linux desktop. Even IT's Mr Swearly Linus Torvalds has said that he is tired of the fragmentation in the Linux desktop and no major Linux distributors are that interested in supporting the Linux desktop. Linus would like to see a foundation create a common desktop for all Linux distros and the Linux world could finally reap the benefits of standardisation.

"This would mean that many more Linux desktop developers could make a living from their work. That would improve the Linux desktop overall quality. It's a virtuous cycle, which would help everyone", he said.

Once this is sorted out, it would mean that Linux would replace Windows for those users who want to keep their operating system on the desktop. It is a long way before any of this happens, but it is nice to

think that some year Linux will have its "Year of Linux on the desktop" even if it is such a niche product used by very few.

Source:

<https://www.fudzilla.com/news/pc-hardware/48507-linux-will-be-the-last-operating-system-left-on-the-desktop>

UBUNTU 19.04 DELIVERS A WELCOME SURPRISE FOR NVIDIA GPU OWNERS

Ubuntu 19.04 is a only few days away, and it's looking like the forthcoming Ubuntu Linux Gaming Report may get a slightly higher score than expected. That's because the "out-of-box" graphics driver situation for Nvidia GPU owners is getting a very welcome update.

On the Ubuntu MATE blog, Martin Wimpress outlines what has changed between the 18.10 release last year and this week's release, calling Ubuntu MATE 19.04 a "modest upgrade." And there are indeed some notable new features so go check out those release notes. But Nvidia graphics card

owners -- particularly those who enjoy gaming and may be new to the desktop Linux world -- will discover a new feature I'm thrilled to see.

During an Ubuntu MATE 19.04 installation, (and other flavors in the Ubuntu 19.04 family*), users can as always select the option to install 3rd party software. Said software now includes Nvidia's proprietary graphics driver "suitable for your generation of Nvidia GPU." For example, if you have an Nvidia RTX 2080 Ti, you'll get version 418. Laptop users with an older GTX 960m would receive version 390.

Source:

<https://www.forbes.com/sites/jasonevangelho/2019/04/15/ubuntu-19-04-delivers-a-welcome-surprise-for-nvidia-gpu-owners/#724a2e8b3c93>

ENTROWARE UPDATES ITS LINUX LAPTOPS WITH 8TH GEN INTEL CPUS, NVIDIA RTX GRAPHICS

Entroware currently sells up to eight Linux laptops, namely the 14" Apollo, 14" Orion, 15" Aether, 15" Kratos, 16" Zeus, 17" Athena, 17" Helios, and 17" Hybris. The British computer company has recently updated the hardware components of the Athena, Helios, Proteus, and Zeus laptops with latest Nvidia GeForce RTX 20-series graphics and 8th and 9th Gen Intel CPUs.

While the Proteus laptop received 8th Gen Intel CPUs upgrade, allowing customers to buy it with either the Intel Core i5 8265U or Intel Core i7 8565U processors, both featuring 4 cores and 8 threads, the Athena and Zeus laptops can now be purchased with an Intel Core i7 8750H processor featuring 6 cores and 12 threads.

On the other hand, the Helios laptop now features 9th Gen Intel CPUs, as customers can choose to configure and buy it with either the Intel Core i5 9600K processor with 6 cores, Intel Core i7 9700K processor with 8 cores, or Intel Core i9 9900K processor with 8 cores and 16 threads.

The Athena, Helios, and Zeus laptops also got Nvidia GeForce RTX 2060/2070/2080 graphics cards featuring up to 8GB memory. It should be noted the fact that the Zeus laptop can only be purchased with the Nvidia GeForce RTX 2080 Max-Q graphics card. Also, it would appear that the Helios laptop now features a 16GB RAM option and the Proteus laptop a 8GB RAM and 120GB SSD options.

All four laptops are now shipping with the Ubuntu 18.04 LTS (Bionic Beaver) operating system installed by default, though that can choose to have it shipped with the Ubuntu MATE 18.04 LTS flavor featuring the lightweight MATE desktop environment, as well as the newer Ubuntu 18.10 (Cosmic Cuttlefish) or the Ubuntu MATE 18.10 flavor.

You can purchase the updated Athena, Helios, Proteus, and Zeus laptops from Entroware's online store starting today.

Source:

<https://news.softpedia.com/news/entroware-updates-its-linux-pcs-with-8th-gen-intel-cpus-nvidia-rtx-graphics-525689.shtml>

PENGWIN: A LINUX SPECIFICALLY FOR WINDOWS SUBSYSTEM FOR LINUX

When Microsoft and Canonical first announced they were bringing the Linux shell to Windows 10 in Windows Subsystem for Linux (WSL) in 2016, people couldn't believe it. Today, on both Windows 10, you can run not only Canonical's Ubuntu, but Debian, Kali, openSUSE, and SUSE Linux Enterprise Server (SLES), as well. Now, you can also run a Linux designed to work with WSL from moment one: Whitewater Foundry's Pengwin.

The only thing I find surprising about this is that it took so long. WSL will never be popular with the hoi polloi, but sysadmins and developers love being able to run Linux on their office Windows machines.

That said, this isn't Whitewater's first Linux distro for WSL. Earlier, the company released versions of Red Hat Enterprise Linux (RHEL) and Fedora. Neither have Red Hat's support. But, according to Whitewater, members

of the Fedora community helped on their Fedora Remix for WSL -- and they have the support of Fedora leadership. The company is also a Red Hat Business and Technology Partner.

Pengwin, formerly WLinux, though, is all Whitewater's. It's based on Debian Linux and work by Microsoft Research.

Like other WSL Linux distros, Pengwin primarily provides a shell. That's not to say you can't run graphical programs on it. You can. To do this, however, you must install a Windows-based X server, such as X410.

Source: <https://www.zdnet.com/article/pengwin-a-linux-specifically-for-windows-subsystem-for-linux/>

UBUNTU 19.04 COMES REFRESHED WITH THE LINUX 5.0 KERNEL

The heart of the Linux desktop beats on with the latest release of Canonical's Ubuntu distribution: Ubuntu 19.04. But, in addition, the server version comes

ready with the latest cloud and container tools.

Now, if you're using Ubuntu in production, you probably should stick with the Long Term Support Ubuntu 18.04. After all, it comes with ten years of support. But there's a lot of tempting goodness in Disco Dingo, Ubuntu 19.04's playful moniker.

Under the hood, Ubuntu 19.04 runs on top of the Linux 5.0 kernel. While this kernel doesn't include any powerhouse improvements, it brings some decent updates. These include: support for AMD Radeon RX Vega M graphics processor and Intel Cannonlake graphics. It also comes with USB 3.2 and Type-C and power-savings improvements.

What I found much more interesting is it comes with the brand new GNOME 3.32 desktop. The changes in this release are primarily on the surface. It comes with a refreshed look featuring new app icons and many of saturated base colors. The buttons are also more rounded and have a softer "shadow" border. The result is a more vivid, vibrant look, which I like a lot -- and I've not been a fan of GNOME's appearance for quite

some time.

The default desktop also has a more consistent look. Ubuntu's default Yaru theme, which first appeared in Ubuntu 18.10 now has wider support with third-party applications.

Another nice new visual feature is fractional scaling for HiDPI screens which is now available with both the X-org and Wayland windows manager. In English, what that means is this makes reading fonts, especially in the terminal, on HD screens much easier.

Source: <https://www.zdnet.com/article/ubuntu-19-04-comes-refreshed-with-the-linux-5-0-kernel/>

RED HAT TAKES OVER THE MANAGEMENT OF OPENJDK 8 AND 11

Red Hat is stewarding the Oracle OpenJDK 8 and OpenJDK 11 projects after Oracle's withdrawal and licensing change, according to the Linux expert.

With the takeover of the leadership, Red Hat reiterated the support of the Java community and wants to follow a similar path as in the project control of OpenJDK 6 and OpenJDK 7. Oracle announced in late 2018 that the binary releases for Java would no longer be free after six months patch. This also applies to OpenJDK, which publishes Java in source code. Red had then announced to jump with their own LTS versions in the BBresche. Lifecycles is introducing Red Hat here.

In the new role as steward of the update versions of OpenJDK 8 and OpenJDK 11, Red Hat intends to work with the community to drive further innovation, Red announces in the announcement.

Red Hat announced that the company has been a member of the OpenJDK community since 2007 and one of the largest contributors. Andrew Haley, Java Technical Lead at Red Hat, has been Project Leader for OpenJDK 8 and OpenJDK 11 since February 2019. He has also been an active member of the OpenJDK Governing Board for seven years and is helping to determine the

future direction of Java and OpenJDK.

Source: <https://www.linux-magazin.de/news/red-hat-uebernimmt-die-leitung-von-openjdk-8-und-11/>

UBUNTU KYLIN 19.04 ADDS A NEW VISUAL EXPERIENCE, LATEST WPS OFFICE SUITE

Chinese Ubuntu users will be happy learn that the Ubuntu Kylin 19.04 operating system has been released as part of the Ubuntu 19.04 (Disco Dingo) series, a release that adds various enhancements and updated components.

Featuring the same internal improvements as the Ubuntu 19.04 (Disco Dingo) operating system, Ubuntu Kylin 19.04 shops with a fresh and all-new visual experience through a unified style that revamps the boot animation, login and lock screens, adds a transparency effect to the applications menu, notification area, and taskbar, as well as other smaller enhancements.

On top of the new visual experience that will benefit those who want to migrate from Windows to Linux, the Ubuntu Kylin 19.04 release adds a timer utility, a file preview function in the file manager, a window merge function in the taskbar, a simplified network setting tool in the panel, as well as the latest Kingsoft WPS Office suite and Sogou input method.

Just like Ubuntu 19.04 (Disco Dingo), Ubuntu Kylin 19.04 is powered by the latest Linux 5.0 kernel for the best in the market hardware support, upgraded biometric authentication framework and manager, improved Youker Weather and Youker Assistant applets, as well as many other smaller improvements for a better Ubuntu Kylin experience.

Source: <https://news.softpedia.com/news/ubuntu-kylin-19-04-adds-a-new-visual-experience-latest-wps-office-suite-525754.shtml>

NETRUNNER ROLLING 2019.04 DELIVERS A MANJARO LINUX-BASED POLISHED DESKTOP

Netrunner Linux distro is available in two versions: Netrunner, which is based on the testing branch of Debian and Netrunner Rolling, which is based on Manjaro Linux. The developer team recently released the latest Netrunner Rolling 2019.04 snapshot, and you can download the 64-bit ISO file right away.

Starting with the basics, Netrunner Rolling 2019.04 is powered by Linux kernel 4.19.32 LTS. It ships with KDE Plasma 5.15.3 desktop and KDE Applications 18.12.3; version 19.04 of KDE Applications has just been released and you can install that as well.

The most visible change in Netrunner Rolling comes in the form of a new dark theme that's powered by Kvantum theme engine. Kvantum is an SVG-based engine for Qt; it's also optimized for LXQt and KDE desktops. So, thanks to the Alpha-Black Plasma

theme and Kvantum engine, you now get a 3D-looking, dark design.

Firefox shipping with Netrunner Rolling comes with Plasma-Integration addon which brings visual feedback when downloading files.

Users can also access all UI-related KCM modules under a common section "Plasma Tweaks" in the sidebar Layout. Lastly, a new category named "Webapps" has been added to the menu; it lists all the popular website links.

There are a few distros that boast of a great out-of-the-box KDE desktop experience. Just like KDE Neon, the Netrunner Rolling edition is also known for its visually pleasing and fluid KDE Plasma experience.

Netrunner developers list the exclusive packages and under the hood patching as reasons to choose Netrunner Rolling over Manjaro Linux. Additionally, Netrunner packages get updated less frequently and they undergo more rigorous testing.

Source:

<https://fossbytes.com/netrunner-rolling-2019-04-manjaro-linux/>

SYSTEM76 RELEASES POP!_OS 19.04 FOR ITS LINUX PCs, BASED ON UBUNTU 19.04

Based on the recently released Ubuntu 19.04 (Disco Dingo) operating system, Pop!_OS 19.04 is here to offer System76 computer owners a highly customized and beautified GNOME desktop environment with a brand-new icon theme, as well as top-notch hardware support for their machines and all the latest software updates included upstream.

Among the highlights of the Pop!_OS 19.04 operating system, we can mention a Slim Mode option for application windows that reduces the height of their header bars to maximize the screen's real estate, along with a Dark Mode for those who prefer to work at night in an eye strain free environment. Both features can be enabled in the Appearance

settings menu.

Additionally, Pop!_OS 19.04 comes with a "Refresh Install" option on new installations that lets users reinstall the operating system without losing their personal data in the Home directory, nor the existing users. This feature is not available when upgrading Pop!_OS. Being based on Ubuntu 19.04 (Disco Dingo), Pop!_OS 19.04 is powered by Linux kernel 5.0.

Source:

<https://news.softpedia.com/news/system76-releases-pop-os-19-04-for-its-linux-pcs-based-on-ubuntu-19-04-525773.shtml>

LUBUNTU 19.04 RELEASED WITH LATEST LXQT DESKTOP AND CALAMARES INSTALLER

The Lubuntu 19.04 operating system has been released as part of the Ubuntu 19.04 (Disco Dingo) series, a version that brings various enhancements and up-to-date components.

Bundled with the same new features and improvements implemented by Canonical in the Ubuntu 19.04 (Disco Dingo) operating system series, Lubuntu 19.04 is here as the second Lubuntu release to ship with the modern and lightweight LXQt desktop environment by default as the development team's focus is now only on LXQt, not the old LXDE desktop environment, which is no longer supported.

Apart from the LXQt 0.14.1 desktop environment, which already offers users a much-improved and richer LXQt experience, the Lubuntu 19.04 release ships with up-to-date components including the Mozilla Firefox 66.0 web browser, LibreOffice 6.2.2 office suite with the Qt 5 frontend, VLC 3.0.6 media player, Trojitá 0.7 email client, and Featherpad 0.9.3 text editor.

The Plasma Discover 5.15.4 software center from the KDE Plasma 5.15.4 desktop environment has been included as well in Lubuntu 19.04 as default graphical package manager. Under the hood, Lubuntu 19.04 is powered by the latest Linux 5.0 kernel and uses the Qt 5.12.2

application framework.

Source:

[https://news.softpedia.com/news/ubuntu-19-04-released-with-latest-
lxqt-desktop-and-latest-calamares-
installer-525772.shtml](https://news.softpedia.com/news/ubuntu-19-04-released-with-latest-lxqt-desktop-and-latest-calamares-installer-525772.shtml)

UBUNTU 19.10 DEVELOPMENT HAS STARTED — DAILY BUILD ISO IMAGES NOW AVAILABLE

Ubuntu 19.04 desktop arrived in a variety of flavors last week and it turned out to be a well-received release. Thanks to certain GNOME 3.32 tweaks, the open source desktop feels a bit snappier. Linux 5.0 has also added support for newer hardware and brought better mitigation for Spectre and Meltdown flaws.

The release of Ubuntu 19.0 has also kickstarted the Ubuntu 19.10 development process. The daily build ISO images are also now available for download and testing. You can go ahead and install them on a secondary system or virtual machine but you won't notice any

considerable changes at the moment.

At the moment we don't have a certain list of features and changes that will be a part of the next release, it's certain that the upcoming GNOME 3.34 will keep on adding its performance and visual improvements to Ubuntu.

As this will be the last regular Ubuntu release before next year's major Ubuntu 20.04 LTS release, I don't expect 19.10 to bring any major changes. However, there are slim chances that the Ubuntu desktop team might use it as a testing ground for some big feature additions. Overall, we'll just have to wait and watch.

The full codename of 19.10 is yet to be revealed but we now have the adjective. Ubuntu Launchpad, the Ubuntu code hub, has now revealed that the first half of codename is Eoan. As per Merriam-Webster, it's an adjective that means "of or relating to the dawn or the east."

Source:

[https://fossbytes.com/ubuntu-19-
10-features-release-date-
download-codename/](https://fossbytes.com/ubuntu-19-10-features-release-date-download-codename/)

NETBEANS AND SKYWALKING AS NEW TOP- LEVEL PROJECTS OF THE APACHE FOUNDATION

The Apache Software Foundation (ASF) has now dismissed NetBeans and SkyWalking from the incubator and declares them to be top-level projects of the foundation. The Apache incubator is a transit station for projects that want to become a full-fledged top-level ASF project. In addition to legal and fiscal aspects, the focus is primarily on the quality of code development and the formation of a sustainable community.

Developed since 1996, the open source project NetBeans IDE is a development environment that supports C, C++, Python, Ruby and PHP as well as Java. Acquired by Sun Microsystems in 1999, NetBeans moved to Oracle in 2010 with the acquisition of Sun, which delivered the project as NetBeans 9.0 in 2016 to the ASF, where it has since been further developed in the incubator.

For the ASF, NetBeans is the

largest project the foundation has ever adopted. In addition to NetBeans itself, it also received the so-called »NetBeans IDE Download Packages« from Oracle, which provided plug-ins with support for many languages besides Java SE. The ASF first separated the Java IDE and the plugins in various repositories and focused on "Apache NetBeans (incubating)" itself. The IDE has since been published in the Incubator in versions 10 and 11. With NetBeans 10, the plugins for JavaScript, PHP and Groovy became officially accessible again. Last year, on the ASF blog, the foundation said all NetBeans plug-ins would be subject to a compatibility and license review when NetBeans leaves the incubator. NetBeans is used in many organizations and companies, including NASA, NATO, Airbus and Boeing.

SkyWalking, the second project that is now a first-class citizen of the ASF, is less well-known and falls into the category of Application Performance Management (APM) and monitors the performance and availability of software applications. SkyWalking focuses on cloud and container

applications. The still young project was started in 2015 and transferred to the ASF incubator in December 2017. It is used by companies such as Alibaba, Huawei, China Eastern Airlines and China Merchants Bank.

Source: <https://www.pro-linux.de/news/1/27002/netbeans-und-skywalking-als-neue-top-level-projekte-der-apache-foundation.html>

GNOME 3.34 DESKTOP ENVIRONMENT DEVELOPMENT KICKS OFF WITH FIRST SNAPSHOT

GNOME 3.34 will be the next major release of the popular free and open-source desktop environment for Linux-based

operating systems, expected to hit the streets later this year on September 11th. During its entire development cycle, GNOME 3.34 will be developed under the GNOME 3.33.x umbrella.

Work on the GNOME 3.34 desktop environment begun a few weeks ago, after the launch of the GNOME 3.32 "Taipei" desktop environment, which is already the default desktop environment of the recently released Ubuntu 19.04 (Disco Dingo) operating system and other GNU/Linux distributions.

If you want to test the GNOME 3.33.1 release, you'll have to download the official BuildStream project snapshot or manually compile the sources. But keep in mind that this is a very early development build, so don't install and use it on a production

computer, nor for any production work you might do.

The next development milestone in the development cycle of the GNOME 3.34 "Thessaloniki" desktop environment will be GNOME 3.33.2, due for release next month on May 22nd, followed by two more such milestones, GNOME 3.33.3 and 3.33.4, on June 19th and July 17th respectively.

The GNOME 3.34 desktop environment will enter beta testing in August 2019. Two beta releases will be provided to testers, on August 7th and August 21st, and a Release Candidate (RC) milestone is expected to hit the streets on September 4th, a week before the final release on September 11th, 2019.

Source:

<https://news.softpedia.com/news/gnome-3-34-desktop-environment-development-kicks-off-with-first-snapshot-525791.shtml>



DistroWatch.com

Put the fun back into computing. *Use Linux, BSD.*



The last few months have seen me spending more time trying to collaborate with other people (on statically generated websites, generally). In doing so, I've discovered a system that I find works well for me, and for most of the people I've worked with. As such, I wanted to share my method with my readers, and a few gotchas I ran into along the way.

THE SETUP

I start by setting up any project in a private git repository on GitLab, and sharing the repository with other people (or having the other person set it up, depending on who should have ownership of it). Once the repository is created, I bootstrap out the folder structure and install the tools we need (such as a package.json for Node). The reasoning here is simple - I want a repository where the major structure won't change too much over the course of the project, and having control over who has access is useful at the start of a project. If you want to open-source it later,

just change the access level of the repo.

Once I've pushed the basic structure into the repo, it's usually a joint effort when it comes to creating or carrying over content. I'll usually set up an example or two as guidelines to follow, but I find having the other person generate as much content as possible allows them to feel comfortable with the process quicker.

Once the content is largely there (even if in draft form), that is when I start creating templates and shortcodes, or tweaking standard settings for special use-cases. The reason for this is pretty simple - if the content isn't there, it's hard to tell what repeats often enough to warrant a shortcode, or what elements you want to put into a partial template to reduce repetition.

Managing the actual commits and repository is done using GitHub Desktop or the command-line (although the desktop app is

very user friendly for those less comfortable on the CLI).

That's pretty much it. All the discussions and bug tracking happens in the repository itself. If documentation is required, I'll use the Wiki function. If you want to have a collaborative brainstorming session, I wouldn't recommend trying to fit it all into an issue on GitLab, but something like Discord/Wire/Slack/etc. can help a group quickly plan out ideas. Alternatively, you can go old-school with a good ol' phone call.

WHY GITLAB?

I started using GitLab before GitHub offered private repositories to free users, which is the main reason I'm still using it. I also just generally find the features offered in GitLab are a little less tucked away for new users to adjust to.

I've never had a repo go over the 10GB storage limit, and the issue tracker allows people to assign tasks to themselves and

plan time estimates out. Overall, it's a pretty nice choice for a project planner that everyone can access.

GOTCHAS

First and foremost, you need to make sure you're using a good .gitignore before you start working with a lot of static site generators. At the bare minimum, you should make sure to ignore node_modules/ and .DS_Store. I also include the output files for the generated site, any cached folders, the Resources folder in the case of Hugo, and any other hidden files that can show up. The reason for this is really quite simple - it slows down your pushes, and the node_modules files need to be installed on the client anyways, so there's no benefit to keeping it in the repo.

Also, try to commit groups of files at a time using GitHub Desktop, as it's easier to roll back a feature if each commit is dedicated to one change or topic. This also doesn't need to be done after



every change, but just take some time to check/uncheck the corresponding files while creating the commit. You can also do this in the CLI, but it requires you adjusting the commit, or adding things manually instead of with “git add .”

Merge conflicts - sometimes you start a change while someone else is plugging away remotely, only to find out you need to pull before you can push your changes to the server... Then it turns out that some of the changes you’ve made were done by someone else too. It can be a bit of a pain, but there’s nothing more to do than to go through and sort out any conflicts that can’t be automatically remedied. Just keep this in mind, and remind the other people you’re working with to pull regularly (in the day and age of Dropbox, some beginners have trouble to remember it’s a manual sync).

Image files - those you’re working with should have a shortlist of things to do to reduce overall image sizes. Since a lot of images from DSLRs or mirrorless cameras (and even some phones) can have massive resolutions, it’s a

good idea to reduce them down. If you don’t know what size you want exactly, you can still make assumptions about the maximum size you’ll ever need. Crop or scale images before committing them to the repository. It will make the pushes run smoother, and save space in the long run.

Issues - in GitLab, I tend to put multiple items in a single issue (such as “design issues” full of CSS changes that need to be fixed). As I go through fixing them, I use strikethrough formatting to show which items are done and which are not, while also commenting the commit hash value. This way, anyone who reads the issue can get a good grasp on the timeline of edits, and I can check back to see when exactly I fixed an issue (in case it’s mistakenly re-created later). Also, if you aren’t subscribed, tagged, being replied to, or assigned to an issue, you won’t get email notifications for comments. Keep that in mind if you want to receive them anyways.

CAN I USE THIS FOR OTHER THINGS TOO?

Sure! You don’t need to be a

programmer to use git. I can see this approach being useful for managing documentation for something, or a curated cookbook (as I have done for C&C at one point). Even if the repository stays largely empty, you still have access to an issue tracker, Wiki, and other useful tools.

CONCLUSION

I hope this article is helpful to anyone who is trying to collaborate with other people, but hasn’t yet found an ideal way to keep everyone up to date. If you have any comments, questions, or suggestions, feel free to email me at lswest34+fc@gmail.com.



Lucas has learned all he knows from repeatedly breaking his system, then having no other option but to discover how to fix it. You can email Lucas at: lswest34@gmail.com.





First, I would like to congratulate Ronnie and the entire FCM staff for 12 years of FCM! I am honoured to be a small part of this wonderful publication.

Now on to the meat of this month's article...

On April 4, 2019, PEP 570 (Python Enhancement Proposal) was accepted by the Python Steering Council, which includes Guido van Rossum. While it is unknown how soon it will be able to be implemented, the changes this brings suggest that we all should considering getting up to speed on the subject sooner than later.

Here is the link for the official page explaining the changes: <https://www.python.org/dev/peps/pep-0570/#specification>

and the original PEP can be found at...

<https://discuss.python.org/t/pep-570-python-positional-only-parameters/1078>

Note: The information presented in this article is not meant to be an in-depth teaching article on Python programming using the PEP 570 syntax. It's intended to only give you a digested overview of what to expect, once it is implemented, and to encourage you to do more research into the subject on your own.

SOME BACKGROUND

Currently, Python uses what is called positional-or-keyword parameters. When we define a function, as we all know, we do it like this...

```
def my_function(parm1=None,
               parm2, *args, **kwds):
```

...

and for the most part, that is sufficient for most purposes. However, if someone wants to design a library, the number of parameters, placement and parameter names need to stay the same from release to release. Otherwise, it will break any

```
def name(positional_only_parameters, /,
         positional_or_keyword_parameters, *,
         keyword_only_parameters):
```

I borrowed the following from the PEP announcement, which I believe illustrates the syntax a bit more clearly...

```
def f(pos1, pos2, /, pos_or_kwd, *, kwd1, kwd2):
    |           |           |
    |   Positional or keyword   |
    |           |           |
    -- Positional only           -- Keyword only
```

software that calls it.

The new syntax for function definitions would look like that shown above.

Here are some important notes:

- 1) All parameters left of the / are treated as positional-only.
- 2) If / is not specified in the function definition, that function does not accept any positional-only arguments.
- 3) The logic around optional values for positional-only parameters remains the same as for positional-or-keyword parameters.
- 4) Once a positional-only parameter is specified with a default, the following positional-

only AND positional-or-keyword parameters need to have defaults as well.

5) Positional-only parameters which do not have default values are REQUIRED positional-only parameters.

To show some of the ramifications of these changes, let's look at how we would access a function under the new requirements. Again, I borrowed the following lines from the PEP announcement...

If we have only positional_only arguments, you would use a definition like this...



```
def my_function(p1, p2, /):  
    ...
```

It's pretty much as what we are used to right now, with the exception of the “,/” characters. This satisfies the first condition above. Per condition 2 above, in this case, the “/” must be included, or it will cause a syntax error. The next example shows a positiona_only parameter set where the second parameter has a default value of 'None'. This is consistent with condition 3 above.

```
def my_function(p1, p2 =  
None, /):  
    ...
```

However, if the parameter for “p1” has a default value, per condition #4, 'p2' would also need to have a default value assigned as well. So,

```
def my_function(p1 = None,  
p2, /):  
    ...
```

would result in a syntax error.

```
def my_function(p1 = None, p2  
= None, /, p_or_kw):  
    ...
```

Would also be invalid, since condition #4 above says that once

a default value for a parameter is defined, all subsequent parameters, positional_only and positional_or_keyword inclusive must have a default value as well. This does not apply, however to keyword_only parameters. The following,

```
def my_function(p1 = None, p2  
= None, /, *, kw):  
    ...
```

would be perfectly valid and fine.

A final borrowing from the specification document is shown top right.

That's all I have this time, so I wish you a great upcoming month.

Therefore the following would be valid function definitions:

```
def name(p1, p2, /, p_or_kw, *, kw):  
def name(p1, p2=None, /, p_or_kw=None, *, kw):  
def name(p1, p2=None, /, *, kw):  
def name(p1, p2=None, /):  
def name(p1, p2, /, p_or_kw):  
def name(p1, p2, /):
```

Just like today, the following would be valid function definitions:

```
def name(p_or_kw, *, kw):  
def name(*, kw):
```



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HOW-TO

Written by Elmer Perry

Freeplane Pt.13

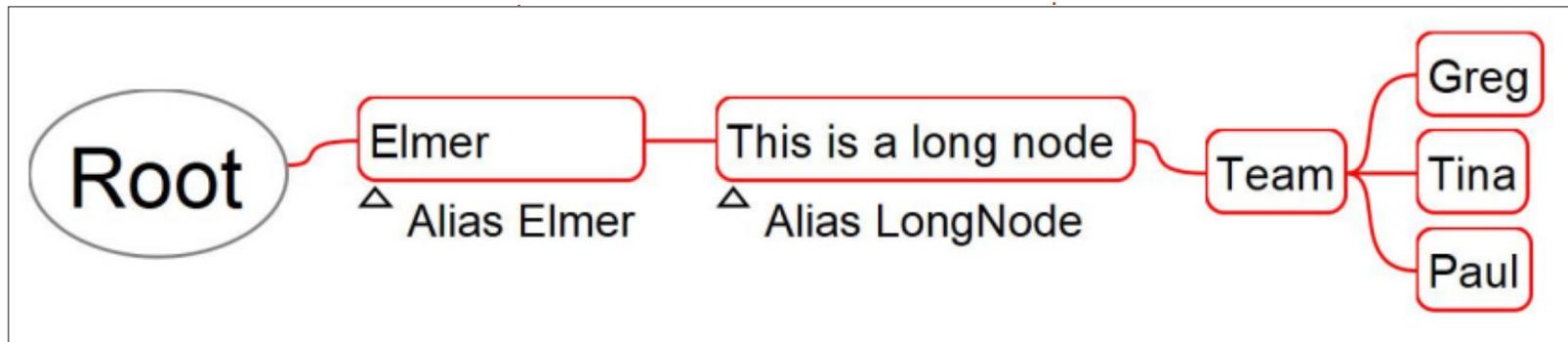
I recently took two months off from writing articles, and I focused on other things in my life. When I returned to writing again, I discovered Freeplane had gone through a couple of updates. When Freeplane went from 1.6 to 1.7, bug fixes and cosmetic changes were made, and the interface got new features added. This month, I'm looking at the editor changes made by the programmers. As of this writing, the latest stable version is 1.7.5, and you can download it at

<https://www.freeplane.org/wiki/index.php/Home>.

The installation is pretty straightforward, and updates your current version of Freeplane. If you choose to stay with the 1.6 release, the features I discuss this month will not work.

NODE ALIASES

You can reference and link nodes together through features



already in place, but when a node is on the other side of the map, making these links becomes cumbersome. Node aliases make referencing important nodes easier. Freeplane allows two types of aliases, regular and global. A global alias is directly accessible, while a regular one is not.

To create an alias, select the node you want and follow the menus Edit > Node properties > Set node alias. The Alias dialog pops up. In the text box, type a name for the alias. The name must contain at least one letter but can have numbers and underscores too. Spaces are not allowed. Check the Globally accessible checkbox to

make the alias global. The OK button saves the settings, and Cancel closes the dialog without any changes.

ALIAS AS A FILTER

Now that you have an alias, you want to use it. You can filter a search or conditional style based on a filter. When creating a condition, you select "alias" from the "criteria" drop-down. The drop-down list for the "object" is a list of aliases in the current map.

Since aliases work as a tag for the node, you can have nodes with the same alias name. You can use this as a type descriptor to quickly

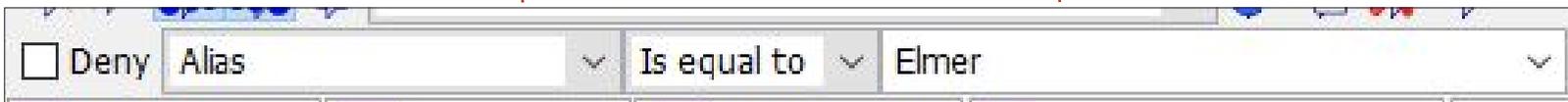
filter a specific type of node. When filtering by an alias, Freeplane doesn't care whether the alias is global or not.

NODE PATHS

Now that you have a node alias, you will want to use it for something. In the new release of Freeplane, you can create a path to any node in the map, and the quickest path leads to a global alias. Aliases can help to make the path to a wordy node easier to compile.

For the examples, I'm using the branch shown top right.

My examples of paths are as internal links, but node paths work



in scripts using the `node.at` function, too.

When using paths as links, the pattern is `#at(path)`. To add a link to a node, use the quick keys CTRL+K. You enter the `#at()` path into the text box.

Example 1:

```
#at ('Elmer'/'This...'/'Team'/'Tina')
```

The path in this example starts at the root node. The root is denoted by the backslash (`/`) at the beginning. The backslash also separates the individual nodes. Elmer in single quotes points to the first node from the root. The next node in the path looks for a node that starts with the word This. The ellipses (...) shows the node has more characters after the word quoted. The last two nodes in the path demonstrate referencing a node by text. If you click on the link for a node assigned this path, Tina becomes the active node.

Example 2:

```
#at (:~Elmer)
```

This example shows the power of global aliases. Since Elmer is a global alias, we can jump directly

to it. The tilde (~) is used to reference aliases, but when a global alias starts the path the colon (:) is added. This path jumps straight to the Elmer node.

Example 3a:

```
#at (:~Elmer/'This...'/'Team')
```

Here we use the global alias Elmer to start a path to another node. The path will activate the Team node. But there is a better way. The node "This is a long node" has an alias of LongNode. We can change the path to example 3b.

Example 3b:

```
#at (:~Elmer/~LongNode/'Team')
```

By directly addressing the alias, we don't take any chance on another node containing the text "This" getting in our way.

Example 4:

```
#at (:~Elmer/~LongNode/'Team'/'~3
```

In the path, we continue the previous one a bit further. The `~3` at the end selects the third child of the node Team, Paul.

These are just a few examples of the use of aliases and node paths. For a more detailed

description of node paths, you can click on the link:

<https://sourceforge.net/p/freeplane/discussion/758437/thread/950530ab/>. On the forum page, developer Dimitry Polivaev provides more details.

OTHER FEATURES

If you press an unassigned function key, Freeplane presents a dialog to create a shortcut to a menu. If you don't want this feature, you can check the box 'Don't ask me again', and Freeplane will ignore the pressing of unassigned function keys. Besides the checkbox, you can change this option in Tools > Preferences. The keystrokes tab has a checkbox labeled 'Ignore Unassigned F-keys'. Check the box to ignore the key presses, and uncheck it to get the assignment dialog.

Sometimes, when you create a filter, you want to flip the results, meaning you want everything that doesn't match the conditions. Now, you can. In both the search and the conditional formatting dialog, you have a checkbox tagged 'Deny'. Checking the box creates a filter with everything that doesn't match

the filter's condition.

In previous versions, if you wanted to export a branch, you had to copy it to a new map. Now, you can export without creating a new file. After activating the node, select the menu File > Export branch. A 'save file' dialog pops up. Browse to the location where you want to create the file. After you choose the file type and give it a name, click the Save button.

Finally, the documentation and tutorial maps have been updated to reflect the latest release. A big "Thank you" from me to the programmers for this one. The updated information makes my work a little easier.

And there you have it, These are just some of the features and updates found in Freeplane 1.7. For a full list, see the tutorial map included with the update.



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Web:
<http://netcat.sourceforge.net/>
Version: 0.7.1 (2004)

Netcat is a utility that uses TCP/IP to read and write data across network connections. It is mainly used for testing TCP and UDP connections, but it is so much more. Some people refer to it as the Swiss army knife of network tools. Netcat is all about network connections, monitoring, testing, and sending data with this admin tool.

If - for some reason, you don't have it, install it with:

```
sudo apt install netcat
```

Any system administrator or hacker – we don't judge which way you lean – should have a solid understanding of netcat. Skilled system administrators can do almost all of their work using the built-in tools without having to install additional software, and, indeed, netcat is baked into most distributions.

Looking at the man page for netcat is bleh. Netcat is better understood with examples. Don't go rushing off installing bro pages, netcat is not listed in it yet. The basic syntax for netcat is:

```
netcat [options] host port
```

You can use netcat typed out in full, or simply shortened to nc.

As stated before, netcat is a utility that does things via TCP/IP; should you require UDP, you have to specify the -u switch. If you are using ports 1-1024, you will require root privileges, anything else is fine as a normal user. You can add netcat to your scripts and it will work just fine. You can also use netcat to scan a range of ports (this is called port scanning), to test if your firewall setup was successful.

IMPORTANT - When scanning addresses on your internet connection, make sure that your ISP allows this, so that you do not get banned from the network.

It is also very handy to check your router ports, consider the following:

Here (shown below) I scanned my router, ports 50-60, and discovered that port 53 is open. The reason I knew it would be is because DNS uses port 53. (further reading here:

```
https://en.wikipedia.org/wiki/List\_of\_TCP\_and\_UDP\_port\_numbers)
```

If it was not - and I had no internet connectivity, this would be why. I used switches -vz (clumped, I could also have used -v -n -z) as:
v - verbose output
n - no DNS lookup
z - don't send data to the ports
w - is just so that the listening times out and does not wait

forever.

As you can see, crafting custom scans is very easy in netcat, which in turn, makes crafting your own tools very easy.

By adding a u after -vz = -vzu, will do the scan via UDP, very handy for servers.

Let's not kid about the power of netcat. Hackers can use netcat to make a backup of all your data and have your server send it to them! Hacker is seen in such a negative light, let's call it 'Rogue administrator doing an unauthorized backup'? Hello GDPR?

```
File Edit View Search Terminal Help
gewgaw@ssg:~$ sudo nc -vz -w 1 192.168.8.1 50-60
nc: connect to 192.168.8.1 port 50 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 51 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 52 (tcp) failed: Connection refused
Connection to 192.168.8.1 53 port [tcp/*] succeeded!
nc: connect to 192.168.8.1 port 54 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 55 (tcp) timed out: Operation now in progress
nc: connect to 192.168.8.1 port 56 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 57 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 58 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 59 (tcp) failed: Connection refused
nc: connect to 192.168.8.1 port 60 (tcp) failed: Connection refused
gewgaw@ssg:~$
```

HOWTO - NETCAT

For the sake of completion, let us explore this. On your laptop run the following command:

```
nc -lp 8888 | sudo dd of=/home/backups/image.img.gz
```

then, on your server, run:

```
dd if=/dev/sdc | gzip -c | nc 192.168.8.103 8888
```

Now, in this example, my server was at 192.168.0.102, and my laptop at 192.168.0.103. (assuming port 8888 is open and because hosted VM's don't have root access and port 80 can't be used, hint-hint, nudge-nudge, wink-wink.) In my backups folder, I now have a 100% copy of my server drive, or your server drive, depending on my inclination. I would not use this to make a backup normally, but in a pinch, this will do. Now we can also do the opposite, a restore.

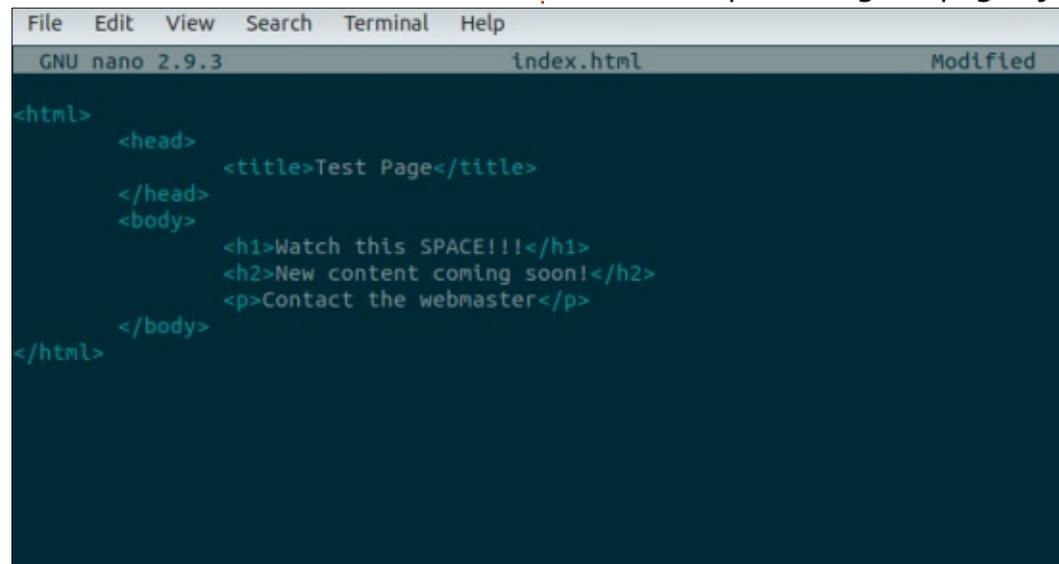
```
nc -lp 8888 | gunzip -c | sudo dd of=/dev/sdc
```

and

```
cat /home/backups/image.img.gz | nc 192.168.8.102 8888
```

The -lp switch is very handy; it listens on a specific port. In the old

days before Teamviewer and the likes, we used the screen command to mirror a screen and chat to one another. Another way of chatting, server to server, or workstation to workstation, would be via netcat. Just go typing everything before the pipe '|' in the example, on one side, and the address and port on the other, you can have a rudimentary IRC chat. Very handy for talking to an IT person in a large server room, when you are at the monitor. Just like we streamed a whole hard drive from one computer to another, we can stream any file as well. (and play it on VLC ~ hello own Netflix!) Here is a nice tutorial I found: <https://linuxide.com/tools/simple-chat-netcat-linux/>



```
File Edit View Search Terminal Help
GNU nano 2.9.3 index.html Modified
<html>
  <head>
    <title>Test Page</title>
  </head>
  <body>
    <h1>Watch this SPACE!!!</h1>
    <h2>New content coming soon!</h2>
    <p>Contact the webmaster</p>
  </body>
</html>
```

So far we have used netcat with IP addresses, you can also use domain names, which make it handy for testing your websites. The syntax is:

```
netcat domain.com port
```

If you have an empty domain, and want to park something there, you can, with netcat. If you spun up your server at digital ocean, or wherever, netcat can display a static webpage for you.

Let's make an index page:

```
nano index.html
```

```
while true; do sudo nc -lp 80 < index.html; done
```

This keeps serving the page by

looping, as if you did not, it would otherwise stop after serving the index page once.

There is lots more netcat can do, and many ways a sharp mind can form this versatile tool. Examples include TCP banner grabber, relays, backdoor shell, etc. Hopefully, you now have an idea of the range of netcat's usefulness.



Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.



HOW-TO

Written by Mark Crutch

Inkscape - Part 84

This month, we're going to look at using CSS classes with your SVG in order to simplify the JavaScript you have to write when you want to change the style of your objects interactively. Note that we're still talking only about changes that can be achieved using CSS styles – fill and stroke colors, line thickness and similar. Changing other aspects of your objects – such as the shape of a path – can't be done simply by using CSS classes.

First of all, what is a CSS class? In short, it's simply a way to group similar objects for styling

purposes, by giving them all the same class name. Consider this super simple SVG file, consisting of one red rectangle (top right).

You've seen previously that we can remove the values in the 'style' attribute and put them into a <style> block elsewhere in the document (bottom right).

The <style> block contains CSS declarations, consisting of a 'CSS selector', followed by a number of rules that will be applied to any elements in the file that match the selector. In this case, the selector is just the word 'rect', meaning that

```
<svg xmlns="http://www.w3.org/2000/svg">
  <style>
    .important-thing {
      fill: #ff0000;
      stroke:#800000;
      stroke-width:10;
    }
  </style>

  <rect
    id="rect1"
    class="important-thing"
    width="150"
    height="100"
    x="15" y="20"
  />
</svg>
```

```
<svg xmlns="http://www.w3.org/2000/svg">
  <rect
    id="rect1"
    width="150"
    height="100"
    x="15" y="20"
    style="fill: #ff0000;
          stroke:#800000;
          stroke-width:10;"
  />
</svg>
```

```
<svg xmlns="http://www.w3.org/2000/svg">
  <style>
    rect {
      fill: #ff0000;
      stroke:#800000;
      stroke-width:10;
    }
  </style>

  <rect
    id="rect1"
    width="150"
    height="100"
    x="15" y="20"
  />
</svg>
```

the rules applied here will match any <rect> elements in the file. Alternatively, we could use the id of an element, prefixed with a hash character, to make the rule apply to only the single element with that id:

```
<style>
#rect1 {
  fill: #ff0000;
  ...
```

We could also add a 'class' attribute to the element, then use the class name, prefixed with a dot, as the CSS selector (bottom left).

In this case, I've used the class name 'important-thing', since the styling of a red fill with dark red background suggests this might be



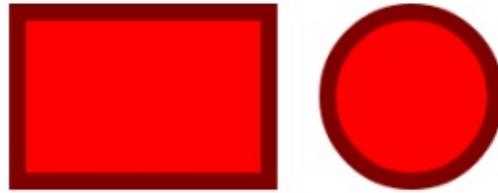
used to indicate important elements. But the class can be anything you like, provided you use only alphanumeric, underscores and hyphens. Note that you can't use spaces in class names, for reasons that will become clear later.

In this example file, we've not really gained much by using classes. The end result is the same whether we use a style attribute, or any of the three CSS selectors we've looked at, because there's only one element in the file that can be affected. But what if we were to add a second element to our file:

```
<circle
  id="circle1"
  class="important-thing"
  cx="250"
  cy="70"
  r="50"
/>
```

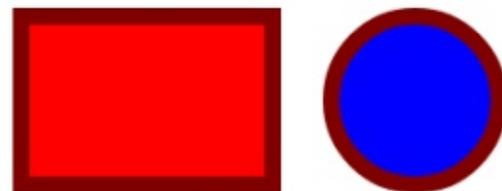
This is a different type of object, so styling it through a <style> using the element selector 'rect' won't work. It has a different id (as it must, because ids have to be unique in an XML document), so an id selector won't work either. But classes don't have to be unique, so we've given this circle

the same class as our earlier rectangle. Here's the result, two objects sharing a single style:



It's important to note that any styles you wish to set using a <style> block must not be present in the XML of the object itself. The inheritance rules of CSS dictate that styles set directly on elements usually take precedence over those set elsewhere. But this does give us the ability to override styles on individual elements. If we want a different fill color on the circle, we can simply set it in the style attribute, but still inherit the stroke width and color via the class:

```
<circle
  id="circle1"
  class="important-thing"
  style="fill: blue;"
  ...
```

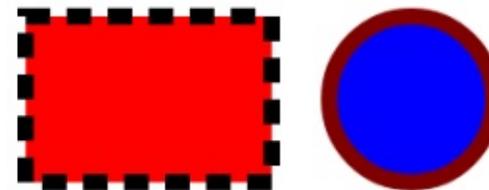


You can, of course, have multiple classes defined in the <style> section of a file – but you can also apply multiple classes to a single object, by listing them all in the 'class' attribute, separated by spaces (the reason why class names themselves can't contain spaces). Suppose we were to add another class, then modify the attribute for the rectangle:

```
<style>
  ...previous styles...

  .black-dashes {
    stroke: black;
    stroke-dasharray: 15,10;
  }
</style>

<svg ...>
  <rect
    id="rect1"
    class="important-thing
    black-dashes"
    ...
```



As you can see, the 'important-thing' class has been applied, giving the rectangle a red fill, but the 'black-dashes' class has overridden the stroke. It's vital to

understand that the 'black-dashes' overrides the other style because it's declared later in the <style> block, not because of the order in which they're put in the 'class' attribute. On the one hand, this is a limitation, in that you can't trivially change the order in which the classes apply by modifying the attribute – but on the other hand it does mean that you can programmatically alter the content of the class attribute more easily, as you don't have to worry about preserving the existing order.

Unfortunately, Inkscape doesn't have any native support for creating and modifying CSS classes. Any edits you make to an element will be applied directly to its own 'style' attribute, or to other attributes directly on the element. Such changes won't delete or change your <style> block, and won't alter the 'class' attribute on the element, so at least Inkscape doesn't completely destroy any manual edits you've applied. But, as we've seen, values set directly on an element will take priority over those applied via a class, so you can easily end up in a situation where your classes no longer appear to have any effect. For this reason, I recommend doing any

HOWTO - INKSCAPE

work with classes in a text editor, rather than Inkscape, and making those changes as late in the design process as possible. Ideally you won't have to re-open your document in Inkscape at all, but, if you do, take care not to change the styles of any elements that you expect to control using classes – or at least be prepared to re-edit the files in your text editor afterwards.

JavaScript offers a few ways to work with CSS classes, but by far the easiest is the 'classList' property. This has `add()`, `remove()`, `toggle()`, `replace()` and `contains()` methods that handle all the corner cases and error handling for you. You can `add()` a class without having to check if it's already there. You can `remove()` a class and the code won't throw an error if the class doesn't exist. The `toggle()` method will add the class if it's missing, or remove it if it's present, which can simplify the code for basic on/off styling. You can use `replace()`, as the name suggests, to swap one class for another, and `contains()` does a search of the class attribute to tell you whether or not the name you supply is already present.

Let's finish up by using some of

these methods in a new Inkscape drawing. First create a few objects whose classes you wish to alter: for this demo I'll have three buttons to demonstrate some different approaches to the problem of toggling between two states.



After saving, it's safest to close Inkscape before opening the SVG file in a text editor to make the CSS edits. In this case, we first want to add a couple of classes that will contain the styles we wish to switch between. For this demo, each one will contain only a fill color, and I'll add a third class for the stroke. Because the stroke won't be changing when we toggle, I don't really need to add a class for it at all, but it helps to demonstrate that the classList methods work even when there's more than one class applied. Here's

the code that gets added after the opening `<svg>` tag:

```
<svg ...>
  <style>
    .red { fill: #ff0000; }
    .blue { fill: #0000ff; }
    .black-stroke {
      stroke-width: 2;
      stroke: #000000;
    }
  </style>
  ...
```

Now we need to find each `<rect>` in the file and remove the fill, stroke and stroke-width properties from the 'style' attribute (or remove the corresponding attributes, if Inkscape has been configured to use presentation attributes rather than CSS styles). If you save the file at this point, and re-open it in Inkscape, you should see that the buttons now have an unset fill and stroke, with a default stroke width of 1. Quit Inkscape without making any changes.

Back in the text editor, add a 'class' attribute to each `<rect>` so that they use the classes defined above for one of the fill colors, and the stroke. Here's an abridged example of how one of them might look:

```
<rect
  style="display:inline; ..."
  id="rect10"
  class="red black-stroke"
  ...
/>
```

At this point, Inkscape still claims the rectangles have an unset fill and stroke. But we can preview our work by opening the file in a web browser, which honours the class and style work we've done, and displays our buttons with a red background and thick black border. We could add the script directly in the SVG file with a text editor but, since this is an Inkscape column, that's where we're going to add our JavaScript code. Just take care not to change any styles when you open the file.

With the file open in Inkscape, we'll need to add an onclick handler to each element. Our first example is going to be a simple one-liner that just toggles the 'blue' class on and off. Because of the inheritance model in CSS, this will have the effect of overriding the 'red' class, so toggling will switch from red to blue and back. Right-click on the first button, select 'Object Properties' and expand the 'Interactivity' section of the dialog. In the 'onclick' field,

HOWTO - INKSCAPE

type this:

```
this.classList.toggle('blue');
```

You can save the file, load it in a web browser, and confirm that it works, if you wish. For our second and third options we want more than just a single line of code, so we'll create a pair of functions as embedded scripts. We'll call them 'toggle1' and 'toggle2', and pass 'this' as a handle to the element that was clicked on. Add this line to the 'onclick' field in the object properties for the second button – and add an equivalent for 'toggle2' to the third button:

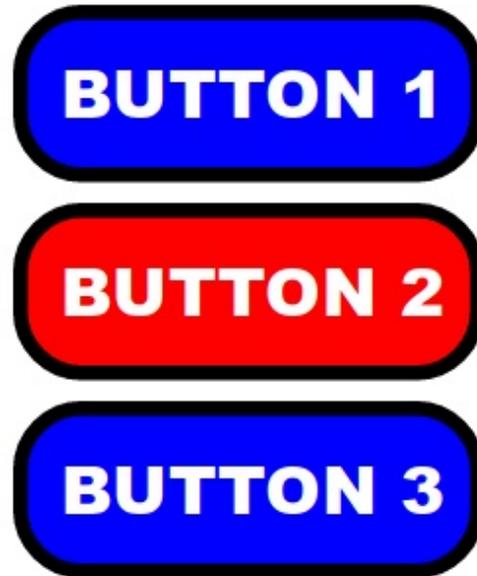
```
toggle1(this);
```

That's the code to call the functions when the buttons are clicked, but now we need the functions themselves. Open the Document Properties and select the Scripting > Embedded Scripts tab. Click the '+' button to add a new script, select it from the list, and put the toggle1 function in the Content area (top right).

Here (bottom right) is the code for toggle2. You can either add this function after toggle1, or put it

into a separate script section by clicking the '+' and selecting the new entry.

Save the file, open it in your browser, and you should be able to click each button to toggle it from red to blue.



Look back over the code, and try to understand the differences between these three approaches. The first is the simplest, and will work in most cases where you just have to turn a class on or off from a single location in the code. The second is more useful if there are other bits of code that could interfere with the content of the class attribute, as the extra check

```
function toggle1(elem) {
  if (elem.classList.contains("blue")) {
    elem.classList.remove("blue");
  } else {
    elem.classList.add("blue");
  }
}
```

```
function toggle2(elem) {
  if (elem.classList.contains("blue")) {
    elem.classList.replace("blue", "red");
  } else {
    elem.classList.replace("red", "blue");
  }
}
```

to confirm if it currently contains the class or not makes it more robust. The third method is rarely used, but might be handy if you need to replace an entire class to avoid inheriting any properties from it. Usually I'd recommend reorganising your classes to avoid this problem, but the replace() method is worth knowing about in case that's not an option.

You may notice that clicking on the text, rather than the background, of the button does not cause the class toggle to occur. Furthermore the text is still selectable, which is not something you would usually want in a button. Next time we'll take a look at these

issues to see how we can make a click on one object affect a completely different one.



Mark uses Inkscape to create three webcomics, 'The Greys', 'Monsters, Inked' and 'Elvie', which can all be found at <http://www.peppertop.com/>

**Socially awkward
penguins never
break the ice....**



THE DAILY WADDLE
by: ErikTheUnready





I wiped Centos 7.0 off my HP laptop. I knew from previous experiences that a BSD-variant OS are difficult to install. I opted using a GhostBSD live media USB thumb drive. The ISO image is GhostBSD 18.12. I followed the instructions burning the image to my laptop.

To write an ISO to a USB stick:

On BSD

```
dd if=GhostBSD18.12.iso  
of=/dev/da0 bs=4m
```

On Linux

```
dd if=GhostBSD18.12.iso  
of=/dev/sdc bs=4M
```

On Mac

```
dd if=GhostBSD18.12.iso  
of=/dev/disk2 bs=10240
```

I burned the image, plugged in the thumb drive, and booted the computer. After booting, the live image populated the screen. I found the installer icon, and went all in on the re-imaging a BSD back on to this little laptop. It is a humble 4GB RAM, 500 GB HD with the standard AMD, Radeon, and Realtek integrated circuits. The

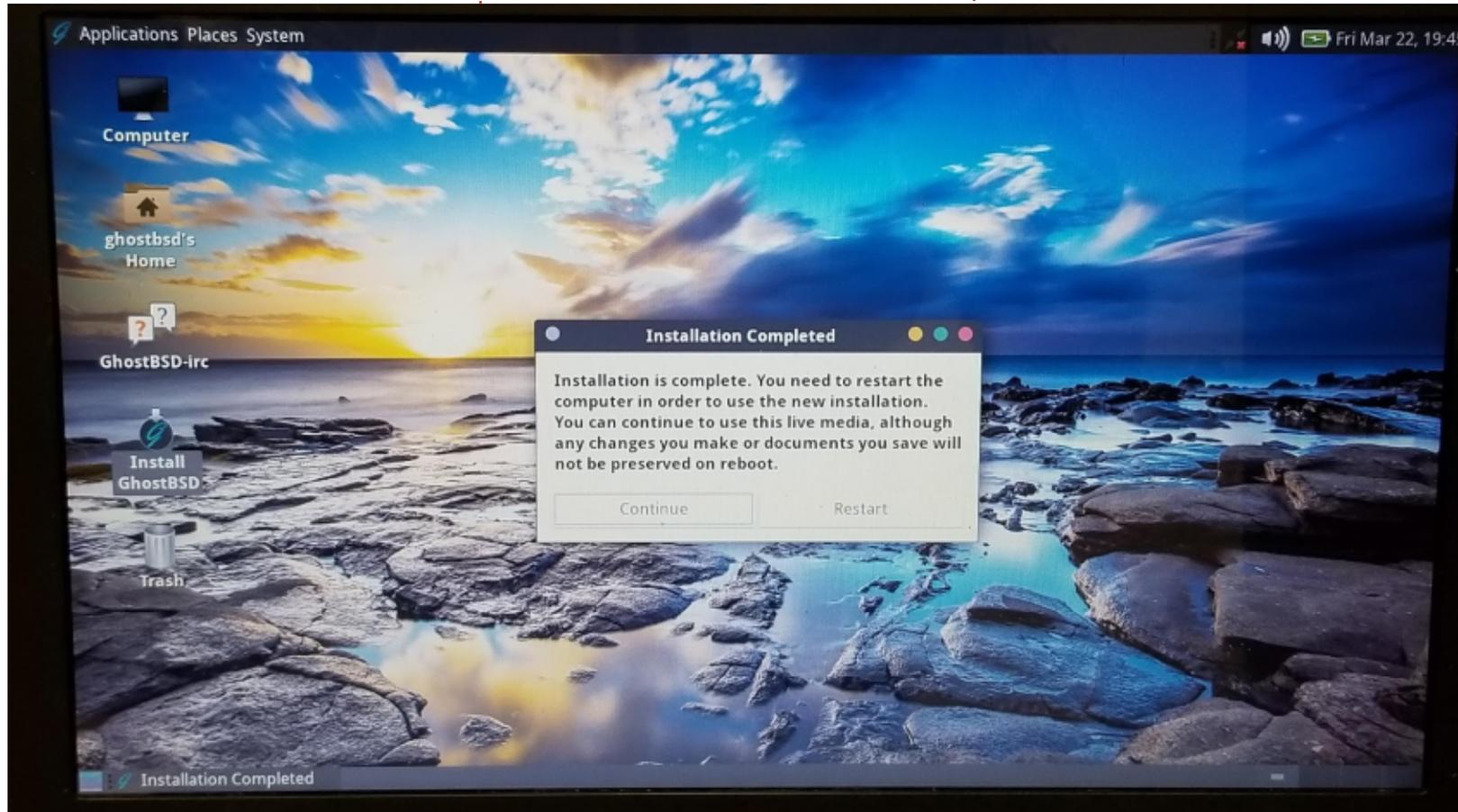
process was finished within 30 minutes. I plugged my ethernet cable directly into the laptop, so I can begin the package update process.

The pkg updater had over 300 file updates. After a 45 minute process, my system was up to date.

The usual mix of programs are installed: LibreOffice, Xine, and the standard Firefox. I started installing kdenlive and gimp. The software center is slow, it replaces octopkg in a previous iteration of GhostBSD. Yet it does offer the ability to find software on graphical side. The only option for

GhostBSD 18.12 is the MATE DE. Under the 19.03 iso XFCE is an additional DE option.

I personally found the command line with fish to be a more reliable source for installing, removing, and upgrading the software. I found the command



LINUX LOOPBACK - BSD

line software tool is called pkg. It predates dnf and apt. I found it was easier to use. Fish is the terminal that runs with the ZFS file system. The system is incredibly solid and no panic kernels within the first few days. BSD overall is little bit slow to load from the PXE screen, however it is extremely solid.

Yet I spent 3 weeks trying to get my Wifi connection working. I

knew BSD was selective on hardware support. I spent a lot of time reviewing the FreeBSD 12.0 manual on trying to resolve the problem. And after a lot of reviewing and help from the GhostBSD staff I came to the conclusion my Realtek network card was not recognized. I installed 4 or 5 different kernel modules with no change in my wireless connectivity. Using a Panda Wireless Paug4 I

reestablished my wireless capability. The Paug4 uses a Ralink chip. Luckily this Ralink chip is supported in the BSD kernel. I am now happy with the rig.

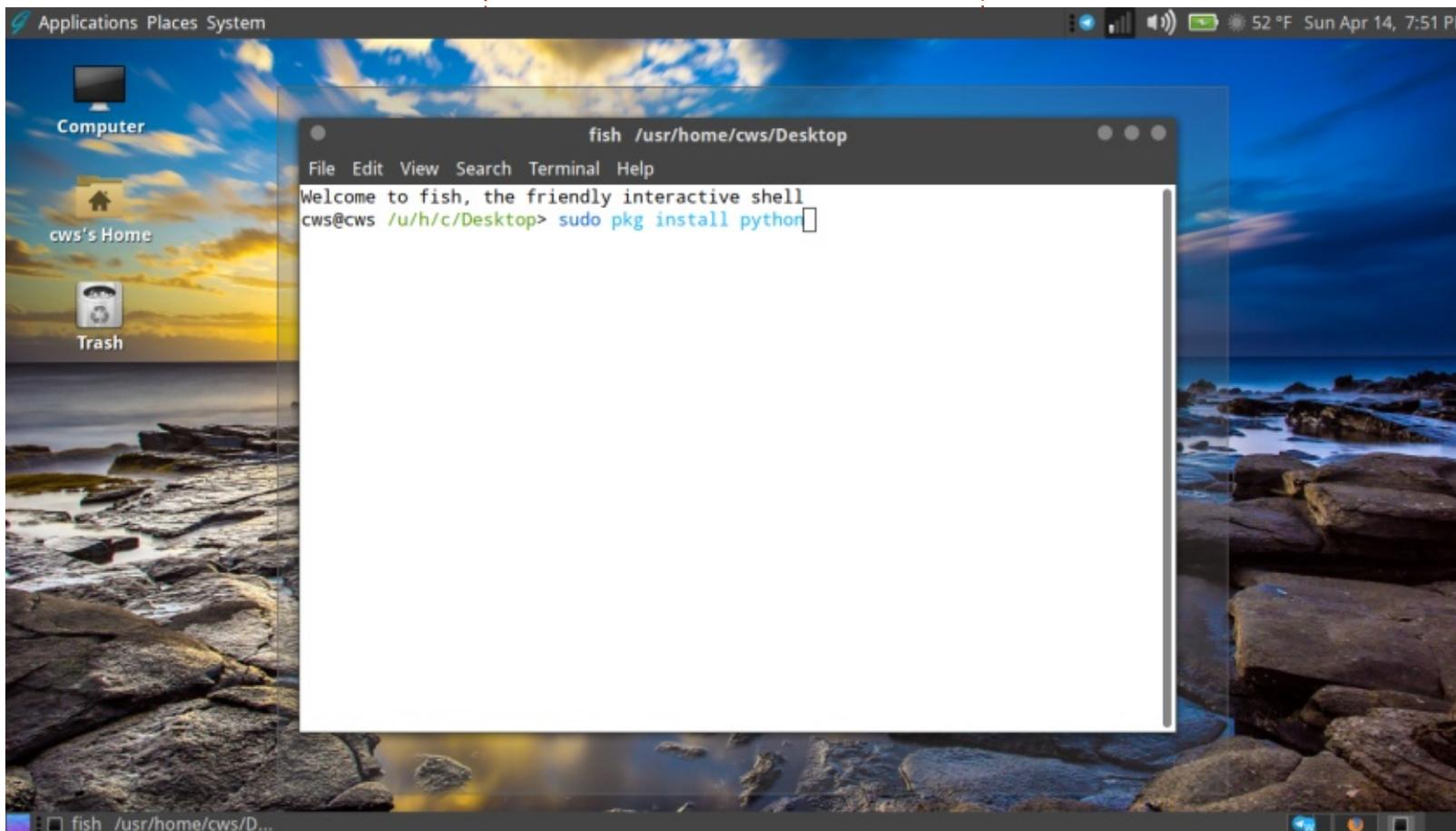
The GhostBSD Project has numerous avenues of support: IRC, forums, and Telegram. Using Telegram I contacted Eric, the lead developer of GhostBSD. Eric suggested that I install Telegram. This is where the fastest support

occurs.

Telegram is not installed by default. I find the community on Telegram to be kind and charitable to new users. The community has French, German, and English speakers users available for help. I find new users there everyday. However I would discourage new GhostBSD users from contacting FreeBSD centric sources to fixing the laptop.

Apparently a new iso is now available, GhostBSD 19.03. Under the project guidelines, there are enough changes that I should backup the laptop and reinstall. I will be doing this soon with a bit of anxiety following the directions.

Next month I will report on that upgrade process.



SJ Webb is a researcher coordinator. When he is not working, he enjoys time with his wife and kids. He thanks Mike Ferarri for his mentorship.



Sometimes it's easy to forget – when Linux is such a great development environment – that modern distributions have tools to make it a great desktop environment for everyday computing, as well. This month, we'll take a brief look at practical use of Linux tools to complete tasks outside of development or other high-end IT tasks. A good example is the use of Linux desktop applications to assemble this magazine column every month.

LIBREOFFICE WRITER

Each month, the job begins in Libreoffice Writer. Libreoffice Writer has a high degree of compatibility with Microsoft Office file formats, which facilitates file sharing with traditional Windows/Office clients, and means you can learn one Office suite and use it on Windows or Linux without learning another suite. Libreoffice is a fork of the original OpenOffice, and seems to have surpassed its (still extant) forebear

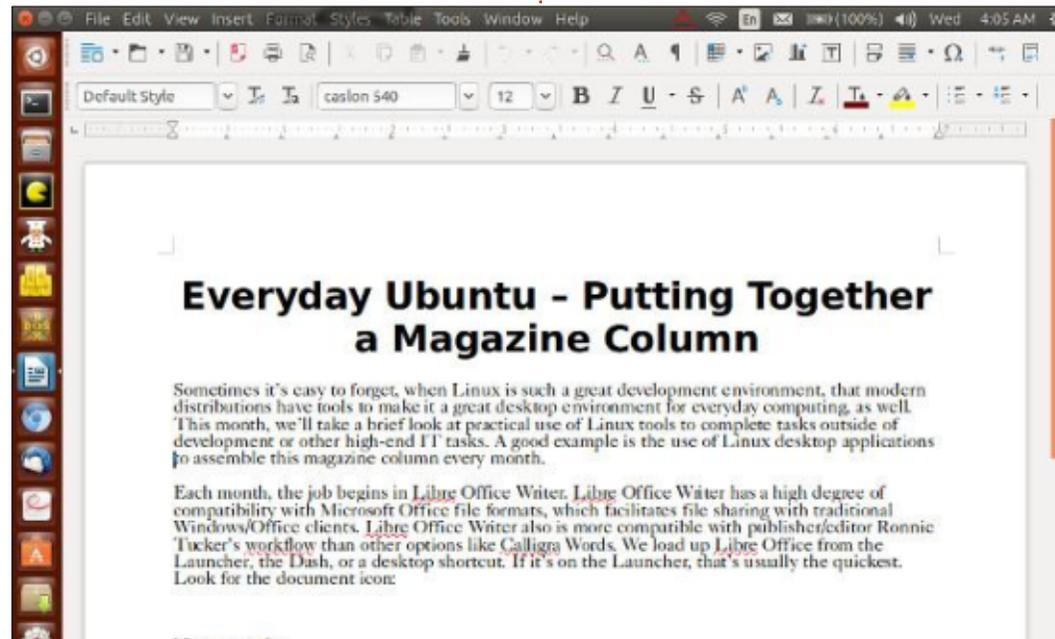
in popularity, although either office suite is outstanding, and free to download and use. Libreoffice Writer also is more compatible with publisher/editor Ronnie Tucker's workflow than other options like Calligra Words. We load up Libreoffice from the Launcher, the Dash, or a desktop shortcut. If it's on the Launcher, that's usually the quickest. Look for the document icon (eighth from the top).

Launch by clicking the Writer icon and you will get a blank page.

For this magazine column, I put the heading into Bold 24-point text using the default sans serif font. Sans serif fonts are ones that do not have the 'tails' on the letters, they are plain. A capital letter 'T' in a sans serif font is just a straight vertical line with a straight horizontal line across the top. In most serif fonts, the capital 'T' will have two small horizontal points ('serifs') coming to left and right at the bottom of the vertical shaft, and two downward pointing serifs at each end of the crossbar. Font selection is an important part of

putting together documents and can easily fill an entire book, but suffice it for now to say that headings in any document are frequently done in sans serif fonts because they scale to large sizes well, and are easy to read at any size. Click the bold letter 'B' at the top to make the heading text bold. The 'B'old button will highlight to show it is active. It can be invoked at the beginning of your typing to make ensuing text bold, or you can highlight existing text and hit the button to Bold the text.

TIP FROM THE EDITOR: Put your name at the top of the article. You'd be amazed at the amount of people who don't do this.



Now, you may have noticed in the screenshot above that, despite my reference to the heading font being bold sans serif, the menu at the top of Writer shows non-bolded Caslon 540 in 12-point size. This is because the body text was active when the screenshot was taken, and it is not bold and is in a serif font. A commonly repeated guiding maxim for font choice for

many years has been, “When in doubt, use Caslon”. The Caslon font is a very readable serif font with classic lines that go well with almost any page design, and works well in combination with most other fonts. The serifs are actually helpful in guiding the eye from letter to letter while reading, making serif fonts more readable in smaller font sizes and for longer passages.

The next thing we’ve done for this month’s column is, of course, to put in the screenshot above showing the Writer window and the Launcher. There are two ways that I capture screenshots for the column: Use the ‘Prt Sc’ key on your keyboard to capture the entire screen, as done above in order to include the Launcher. More often in these columns, I want to capture only the active

window, which can be accomplished by using the key combination of ‘Alt’ (hold the key down), then ‘Prt Sc’. Either way will invoke Linux’s screen capture utility (below).

Click the ‘Save in folder:’ option to choose where you save the file, or use the default location of ‘Pictures’. I have an individual folder for each month’s column, including all screenshots.

As you can see above, the default format is PNG. This will not work for a final screenshot, as Big Chief Ronnie Tucker, publisher non-pareil, needs the screenshots in JPEG format. Once the original screenshot is saved, we’ll have to edit and export it.

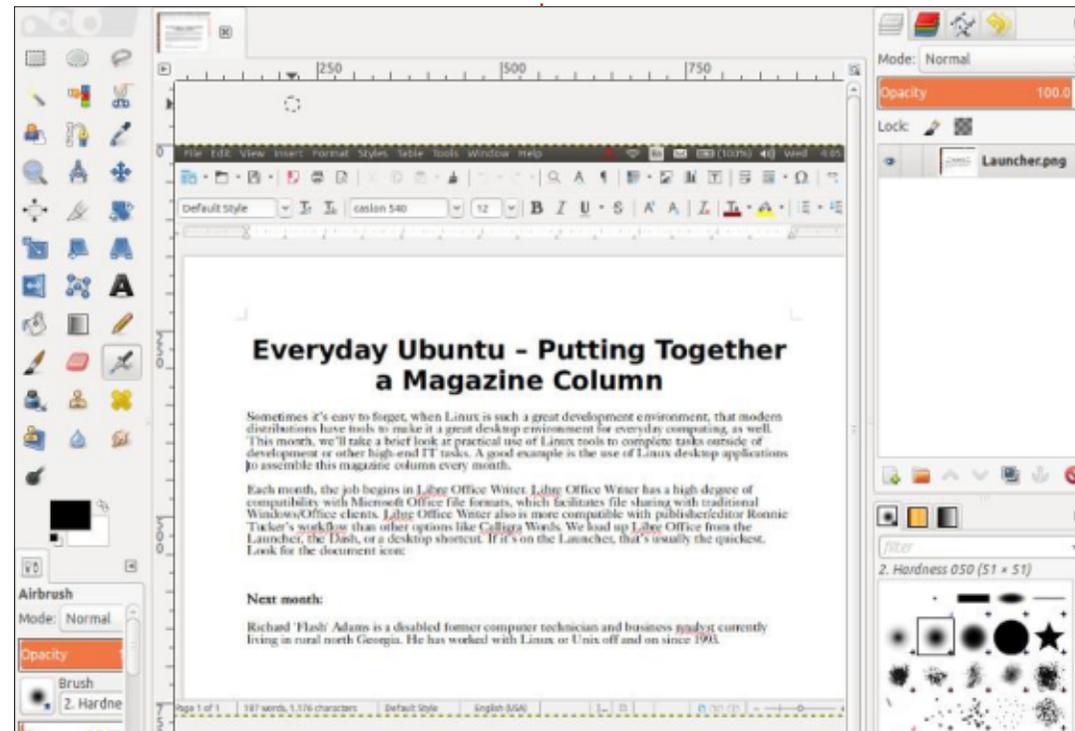
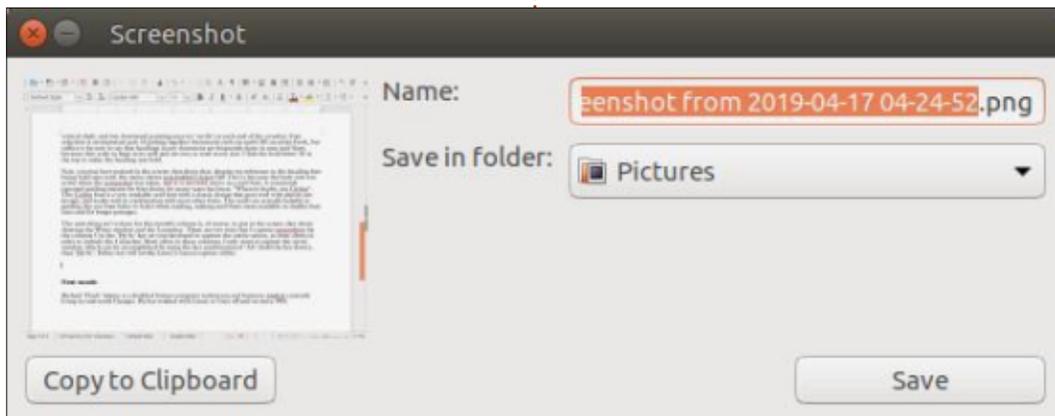
In the first screenshot of Writer, the default screen size on my

system is 1024x768. This size will not work for the final document, as Full Circle’s writers’ style guide specifies that file sizes for images need to be no wider than 800 pixels, so it’s time to invoke one of Linux’s better known and more venerable applications, the GIMP or Gnu Image Manipulation Program.

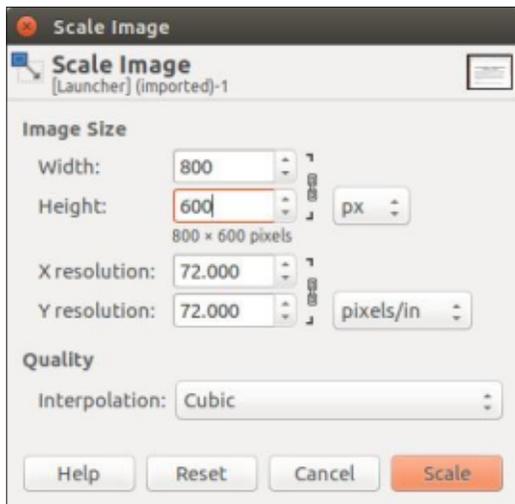
THE GIMP

The GIMP is an outstanding (and FREE) raster graphics and image editor that has been around since 1996. It is available on Linux, Mac,

and Windows, so if you learn how to use it, you can then use it, and its now familiar interface, on other machines, a great thing about many of Linux’s applications. Open the GIMP and navigate to the save location for the screenshot, then open it. In my case, I always have the file manager open to the save location where I just put the screenshot, so I invoke the GIMP by right-clicking the PNG file and select ‘Open with Other Application’, as my system defaults to the built-in viewer for PNG files, but not the GIMP. Select the GIMP and it will open the PNG:



Now go to the Image menu and select Scale Image, then set the



width to 800 pixels. The default behavior is to scale horizontally and vertically in proportion, and this works fine for our purposes:

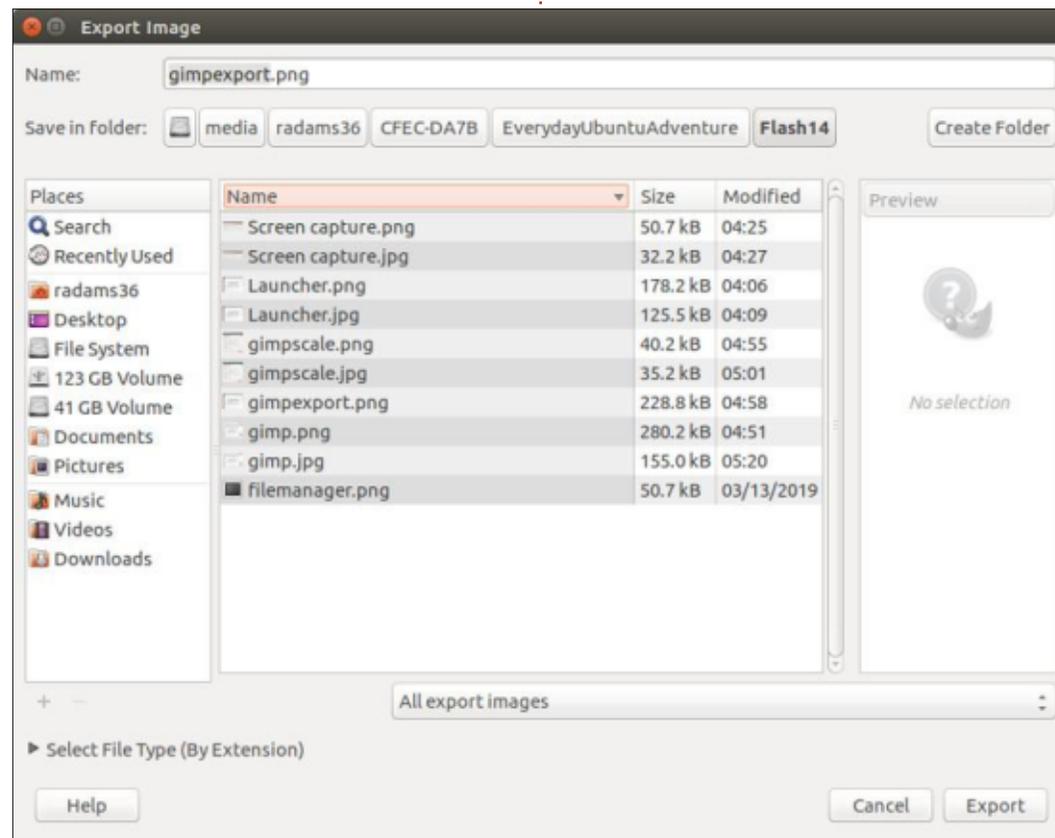
Once the image is scaled, we need to convert it to JPEG format. Go to the File Menu and select Export As. At the bottom where it says 'All Export Images', select the JPEG format from the down-arrow menu. The filename will remain 'filename.png', so change the 'pn' to 'jp' to save as a JPEG file with the JPG extension:

Click Export, then click Export in the dialogue box that comes up. Save the file to the desired location using the 'Save in Folder' option at the top. Now, once you

need to insert the screenshot, position the cursor at the desired text location in Writer and select the Insert menu and select Image. Navigate to the image's location and double-click it to insert it. You can reposition the image by clicking and dragging, and you will probably need to use carriage returns to get your text just where you want it. Now, write a brief bio at the bottom of the document and Presto! You've completed a Full Circle magazine column. I use Thunderbird to email it to Ronnie

as an attachment (we'll visit email applications in some detail in a later column).

Next month: Getting Help in Linux.



Richard 'Flash' Adams spent about 20 years in corporate IT. He lives in rural northwest Georgia, USA, with his adopted 'son', a cockatiel named Baby.



UBPORTS DEVICES

Written by UBports Team

MAYBE WE'LL HAVE OTA-9 NEXT MONTH?





Rock , Paper Scissors



**paper does not
beat paper, tie!**

**We need a new
game man!**





Over the years, I have heard frequent frustrations from Linux users over the lack of good video editors for professional and home use. It is often cited as a reason people stick with Windows and Macs. I have never tried to do professional editing, but I did start making home movies for YouTube in 2008 and I can attest it has been a challenge to find an editor that is useful for making home movies, but I have found one that really works!

It was in 2008 I first started putting together some videos, from 10 frames per second (fps) low-resolution .mov video, shot from a simple point-and-shoot Panasonic camera I had then. I had a relative recommend Avid Free DV (Digital Video), the free version of Avid's professional software, that would run only on Windows. I downloaded the last version of it before it was discontinued. It proved to be incredibly complex and hard to use, consumed a lot of RAM and CPU power, and produced really poor finished results. No matter, it was

discontinued in 2007, and I had moved away from using Windows to Ubuntu, anyway.

My next stop was a Linux video editor, Open Movie Editor, but it proved problematic and never worked right. It looked quite promising, but development was abandoned in 2009 and it never reached its potential.

It was about this time that I discovered JumpCut, an online video editor. This was a different concept; you just uploaded your raw video clips to the website, then edited them online, and JumpCut hosted the final product as well. It worked really well, pretty much flawlessly. The company had been founded in 2005, but it was bought by Yahoo! in October 2006 as a "hot property". Yahoo! fell into tough times and, as part of restructuring the company, they shut JumpCut down in June 2009. So much for that.

My next video editor was Avidemux, a very simple

application found in the Ubuntu repositories. It proved very precise, used very low RAM and CPU resources, rendered videos quite fast, and produced "okay" results. The documentation is poor, but there is a good flossmanuals.net manual that makes up for it. Avidemux also lacks a "drag and drop" timeline, which makes editing videos an exercise in careful planning. I had audio codec compatibility issues, too, but the main drawback was jumpy transitions between video clips. Development of Avidemux was still ongoing in mid-2018, but the last version in the Ubuntu repositories was for Ubuntu 14.04 LTS Trusty Tahr, and there has been nothing since.

By 2010 I was testing out a new video editor, Pitivi, which uses the GStreamer backend. It was even included in the Ubuntu ISO as the default video editor starting with Ubuntu 10.04 LTS. It has a very good interface, good documentation, and is very easy to use. I quickly discovered that it suffered from using up all the RAM

and CPU and also from stability issues. The endless crashes made it unusable. It was removed from the Ubuntu ISO file starting with Ubuntu 11.10, due to the "poor reception" from users as well as "lack of fit with the default user-case for Ubuntu", as well as "lack of 'polish' and maturity".

Next was Cinelerra, a professional-style video Linux editor project started in 2002 and still in development in 2019. There were no packages available on Ubuntu in 2010 or since, and so I tried it out on another distro, Puppy Linux, and discovered it was very complex to use. Cinelerra has many forks and branches, including Cinelerra-HV, Cinelerra-CV and Cinelerra-GG Infinity, none of which have packages in the Ubuntu repositories. It can be compiled and run, but the website warns, "There are many dependencies. Don't be surprised if the source code requires some tweaks and the binary doesn't work. Downloads have no support or warranty."

MY OPINION

I moved onto Kino, a good, solid, simple, Linux video editor that was in the Ubuntu repositories. Kino was a breath of fresh air in the video editing world. It worked, was simple to use and had really nice smooth transitions. It worked on only .dv files, but converted just about any other video format to .dv first, automatically. The only drawback was that Kino development ended in 2009 and the project abandoned. I used it from 2010-2013, though. Over time, I found

that it couldn't deal with newer formats, and even though the last version, 1.3.4, remains in the newest Ubuntu release repositories, it no longer works all that well on modern video formats and doesn't output in modern free video formats.

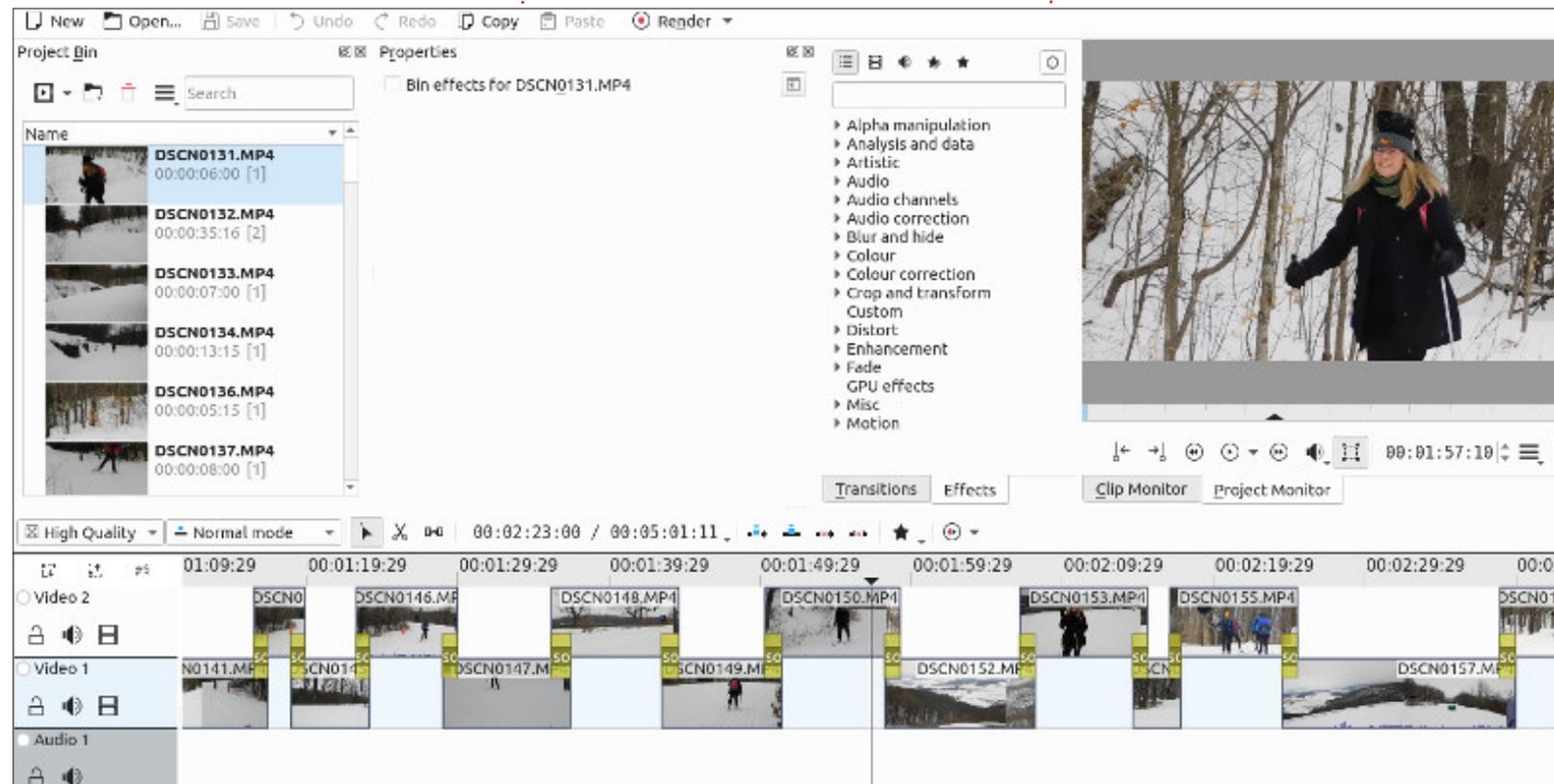
Between 2013 and 2016 I tried various new versions of Pitivi once again, including through flatpack downloads, but it still proved too unstable, slow and resource intensive to use. Some versions

almost worked, some just crashed on opening.

In December 2016, I tried out Kdenlive (KDE Non-Linear Video Editor), a project that was started in 2002 and has been part of the KDE desktop since 2015. It uses the Media Lovin' Toolkit (MLT) and libraries such as FFmpeg. The interface uses the Qt toolkit, so it integrates nicely into Kubuntu and now Lubuntu, which has used Qt since 17.10. It runs well on the other Ubuntu flavors, as well.

Kdenlive has an excellent on-line manual, is easy to use, and has a wide variety of input and output video formats, including modern free formats such as .webm and Thera. It renders videos quite quickly, has really nice, smooth, transitions, and doesn't eat up all of my desktop's RAM or CPU, either. Best of all is its stability; I have yet to see a single crash. Kdenlive is under active development and each new Ubuntu release includes a newer version in the repositories.

I have now been using Kdenlive for more than two years and find it hard to fault. It took me eight years of trial and error, but I finally found a Linux video editor that really works for making home movies.



Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.



GUIDELINES

The single rule for an article is that **it must somehow be linked to Ubuntu or one of the many derivatives of Ubuntu (Kubuntu, Xubuntu, Lubuntu, etc).**

RULES

• There is no word limit for articles, but be advised that long articles may be split across several issues.

• For advice, please refer to the **Official Full Circle Style Guide:** <http://bit.ly/fcmwriting>

• Write your article in whichever software you choose, I would recommend LibreOffice, but most importantly - **PLEASE SPELL AND GRAMMAR CHECK IT!**

• In your article, please indicate where you would like a particular image to be placed by indicating the image name in a new paragraph or by embedding the image in the ODT (Open Office) document.

• Images should be JPG, no wider than 800 pixels, and use low compression.

• Do not use tables or any type of **bold** or *italic* formatting.

If you are writing a review, please follow these guidelines :

When you are ready to submit your article please email it to: articles@fullcirclemagazine.org

TRANSLATIONS

If you would like to translate Full Circle into your native language please send an email to ronnie@fullcirclemagazine.org and we will either put you in touch with an existing team, or give you access to the raw text to translate from. With a completed PDF, you will be able to upload your file to the main Full Circle site.

REVIEWS

GAMES/APPLICATIONS

When reviewing games/applications please state clearly:

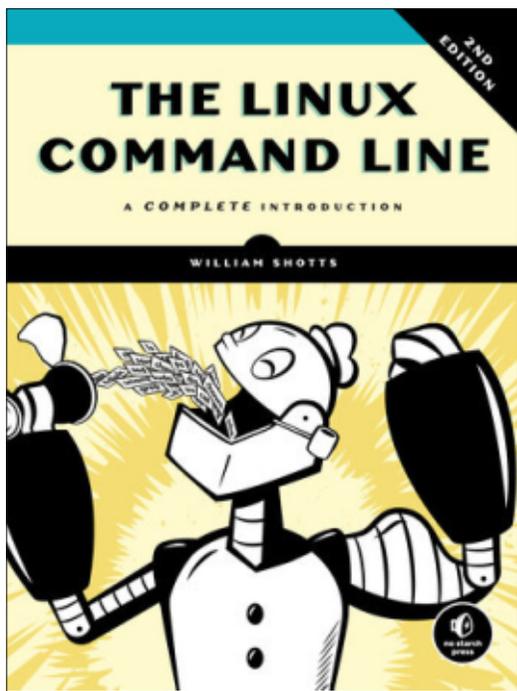
- title of the game
- who makes the game
- is it free, or a paid download?
- where to get it from (give download/homepage URL)
- is it Linux native, or did you use Wine?
- your marks out of five
- a summary with positive and negative points

HARDWARE

When reviewing hardware please state clearly:

- make and model of the hardware
- what category would you put this hardware into?
- any glitches that you may have had while using the hardware?
- easy to get the hardware working in Linux?
- did you have to use Windows drivers?
- marks out of five
- a summary with positive and negative points

You don't need to be an expert to write an article - write about the games, applications and hardware that you use every day.



The Linux Command Line 2nd Edition: A Complete Introduction

William Shotts

Published March 7, 2019

504 Pages

No Starch Press

ISBN-13: 978-1593279523

I have to admit, I purchased this when the first edition came out back in 2012. As with the first edition, the second edition is a must-have for anyone's computer book library. While many of us

would quickly thumb through many of the day-to-day topics, anxious to get to the better stuff, we would be doing ourselves an injustice by doing this. The author has a very good style of taking the things that we might already know (and at least in my case, takes a while to remember how to do it) and use often, and keeping it interesting and up-to-date.

The author points out that this book is for the new Linux user. It's true that is the base target reader for the book. However, as I said before, anyone who uses Linux should have this book in their library, if not on their desk within easy reach.

If I had to pick just one 'best' chapter, that would be very difficult, but if you put my feet to the fire, I would have to say it would be Chapter 19: Regular Expressions. I always thought that I could pretty well handle Regular Expressions, but re-reading this chapter brought home just how much I've forgotten.

One important thing in this second edition, is that it now covers bash version 4.x, and there are many scripts to help the new Linux user to get a good grasp of the shell scripting process.

For me, my battered, torn, highlighted, annotated and dog-eared copy of the first edition may now respectably rest in peace in my bookshelf – as I now move it from my desk only to be replaced by its more mature successor.

I am happy to say that I give this book 5 out of 5 stars.



There are four sections (parts), and a total of 36 chapters, so I won't enumerate each and every chapter, but I will point out some of the chapters that might be of interest to newer Linux users. You can see that the chapters will cover all the basics, and will go into detail when needed to fully explain the subject at hand.

Part 1: Learning The Shell

- Chapter 6: Redirection
- Chapter 7: Seeing the World as the Shell Sees It
- Chapter 9: Permissions
- Chapter 10: Processes

Part 2: Configuration And The Environment

- Chapter 12: A Gentle Introduction to vi
- Chapter 13: Customizing the Prompt

Part 3: Common Tasks And Essential Tools

- Chapter 17: Searching for Files
- Chapter 19: Regular Expressions
- Chapter 21: Formatting Output

Part 4: Writing Shell Scripts

- Chapter 27: Flow Control: Branching with if
- Chapter 29: Flow Control: Looping with while/until
- Chapter 32: Positional Parameters
- Chapter 35: Arrays



REVIEW

Written by Erik

Musikcube

Website:

<https://github.com/clangen/musikcube>

Version: 0.60.2

Most of you know MOC, music on console, an n-curses music player for the terminal. What if I told you that you could connect your android device to a console music player? Too good to be true? Enter Musikcube.

ABOUT

Musikcube is free, cross platform, terminal-based music player, audio engine, metadata indexer, and server, in c++ . It is so flexible you can even configure your own shortcut keys! Most popular audio codecs are supported. You can store your playlists, and playlists are dynamic. Under the hood, this is done via a SQLite database.

The application to run on your Android device is called musicdroid. It is supplied as an .apk-file on the releases page. It is

not in the Google play store. At the moment, the streaming server and the application are insecure and should be used only on your local network, but it shows promise! On the other hand, you do not have to use the musicdroid application, you can build your own! Yes, there is a full API available to you; <https://github.com/clangen/musikcube/wiki/remote-api-documentation>

ube/wiki/remote-api-documentation

The layout is quite intuitive – with a nice “command bar” at the bottom. This lists all your hotkeys. You can get to the bar by pressing the escape key, this shifts the focus and the colour change on to the bar. When you press escape

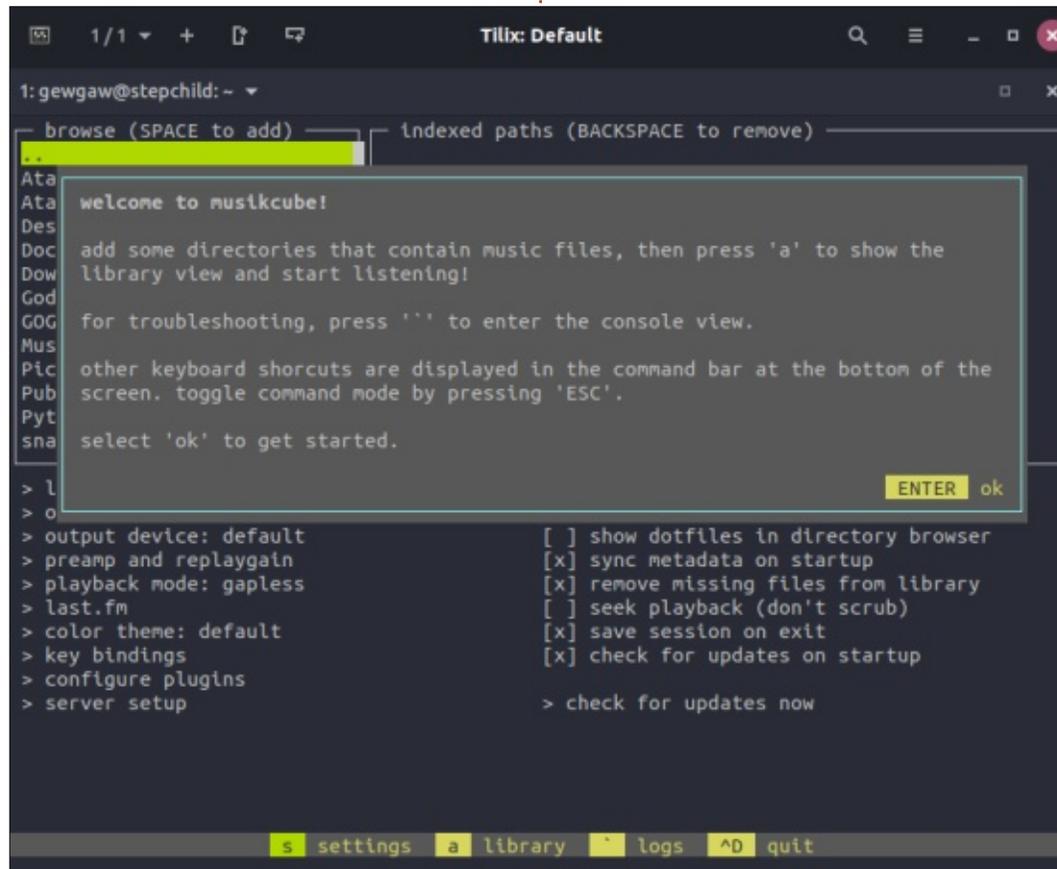
again, your focus will move away. Speaking of shortcut keys, they are stored in a simple .json file so editing it is very easy.

INSTALLATION

For Ubuntu, the installation is as simple as downloading the .deb file and installing via your favourite installer. On the first run, you will be asked to enter your music folder and Musikcube will begin indexing. Musikcube supports lastFM scrobbling out of the box, and you just have to tab to ‘lastfm’ and put in your details. You can tab to server and set that up too, if you plan on using musicdroid.

PLAYING

To play a file from your library, simply press enter, stop and start is the space-bar. Should you at any time press enter instead of the space-bar, your song will play from the beginning. The playing window looks slightly different from the main window, and navigation is via the tab key. The user guide is



REVIEW - MUSIKCUBE

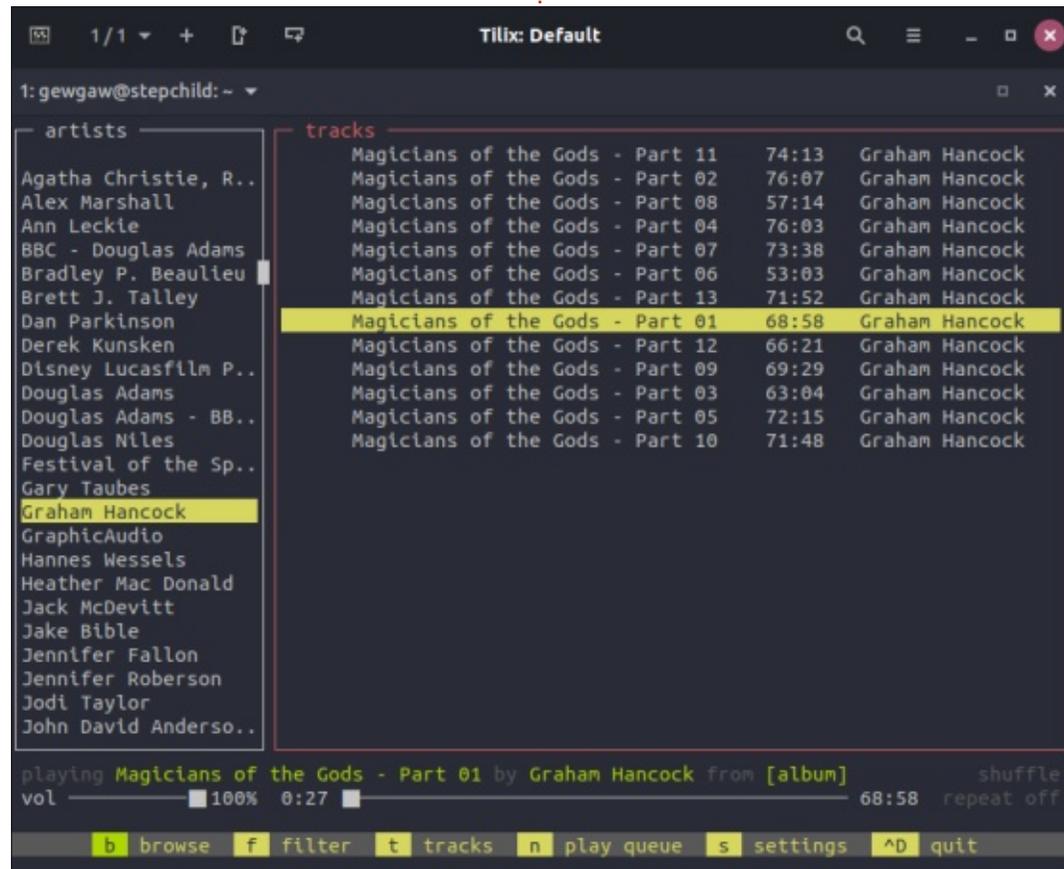
online at:
<https://github.com/clangen/musikcube/wiki/user-guide>

TAIL

Though this is a console player, mouse input is accepted, so if you get stuck, use the mouse. Musikcube uses a little more memory than MOC, but it definitely is more feature-rich. The development is active and even

though it is pre-version one, I would not be able to tell, as it works flawlessly.

Why don't you give Musikcube a try?





LETTERS

If you would like to submit a letter for publication, compliment or complaint, please email it to: letters@fullcirclemagazine.org. PLEASE NOTE: some letters may be edited for space.

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ubuntuforums.org/forumdisplay.php?f=270

FULL CIRCLE NEEDS You!



Without reader input **Full Circle** would be an empty PDF file (which I don't think many people would find particularly interesting). We are always looking for articles, reviews, anything! Even small things like letters and desktop screens help fill the magazine.

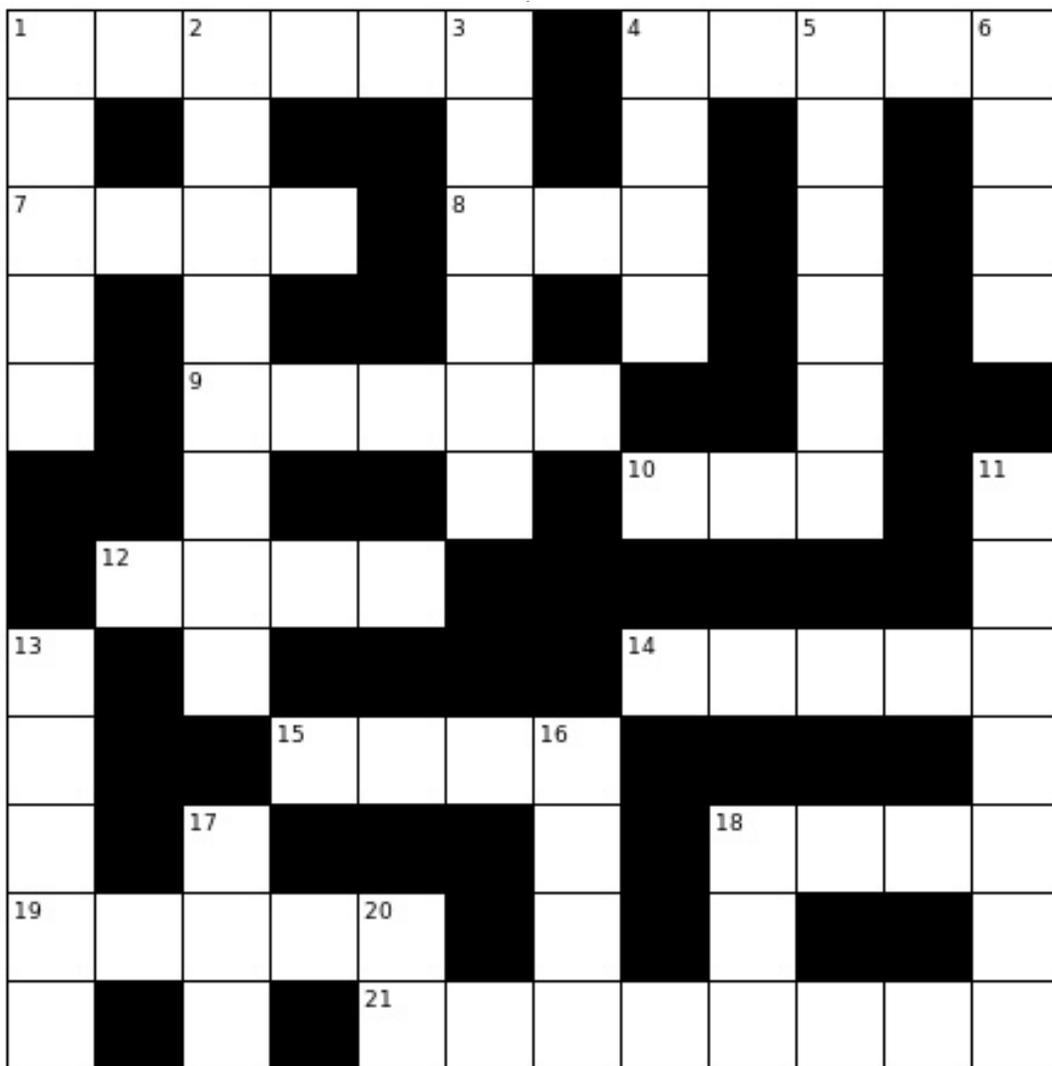
See the article **Writing for Full Circle** in this issue to read our basic guidelines.

Have a look at the last page of any issue to get the details of where to send your contributions.



DistroWatch.com

Put the fun back into computing. *Use Linux, BSD.*



ACROSS

- 1A: Italian security distribution as seen on Mr. Robot.
- 4A: A Distro that wanted you to pay when installing it, but is now free.
- 7A: A Turkish distribution based on Pardus, named after the package manager.
- 8A: Raspberry Pi only distro for image and video files, for kiosk displays mainly.
- 9A: PABX telephony system based on Gentoo.
- 10A: A UK distro that ships with the Trinity desktop.
- 12A: Based on KDE neon, this continues Netrunner's desktop edition.
- 14A: Based on Mint, this has many flashy desktops.
- 15A: The developer absconded recently. Distro from Spain.
- 18A: One of the distro's who were blackmailed by Microsoft to buy certificates.
- 19A: Based on Devuan, with only free software.
- 21A: Cinnarch...

DOWN

- 1D: Barry Krauler's distro.
- 2D: OS for single-board computers.
- 3D: Distro for non-PAE computers from Australia.
- 5D: Distro - its package manager is called pakfire.
- 6D: A UK distro that believes in 'greener computing'.
- 11D: An Italian distro based off Arch with 9 editions.
- 13D: Features its own Moksha desktop.
- 16D: Another Italian security distribution based on Ubuntu.
- 17D: Created by DEC in 1977. Became open in 1991.
- 20D: This is actually a command, not a distro, runs hand-in-hand with acct.

Compiled by Erik

Answers are elsewhere this issue.



Q&A

Compiled by EriktheUnready

If you have a Linux question, email it to: questions@fullcirclemagazine.org, and Erik will answer them in a future issue. Please include as much information as you can about your query.

Welcome back to another edition of Questions and Answers! In this section, we will endeavour to answer your Ubuntu questions. Be sure to add details of the version of your operating system and your hardware. I will try to remove any personally identifiable strings from questions, but it is best not to include things like serial numbers, UUID's or IP addresses.

In days gone by, I used to be a Technical manager at an OEM. We supplied not only Computers and computer equipment, but also TVs. A TV came back from a client under warranty, and I had one of my repair technicians open it. However, before opening it, it had that roach faeces smell, so we all gathered around the TV with bug-spray in hand. The technician opened the lid slightly and they (roaches) started scattering and we started spraying. We immediately closed the TV, wrapped it in plastic and I had to tell the customer that warranty was void. As per our warranty

statement. The customer was a furniture store, so I had to call the end-user. However, the end-user exploded with: "Are you saying my house is dirty!?!?" Part of me wanted to say "yes", but I could not say that to a customer. We returned the unit promptly to avoid infesting our workshop. Electronics that are plugged in create heat. This attracts things like roaches. When these bugs excrete all over your PCBs, it eats into some softer parts, until one of these bugs closes a circuit and pops your appliance. Prevention is better than cure. When you go on holiday, turn off your electronics at the plug and save a poor technician.

Q: I installed a minimal install of lubuntu, with thunderbird for email. it is a brand-new installation, and my inbox looks like this: Screenshot from 2019-01-02 09-07-38.png trucks, bombs, plants, etc. I have updated and restarted, but it is still there. It seems that my inbox is corrupted? How do I fix it?

A: The minimal install of Lubuntu needs a font to fix that. Just type:

```
sudo apt-get install fonts-symbola
```

Reboot and you should be good. If you still have issues, the other missing one is noto-emoji. Look here: <https://support.mozilla.org/en-US/questions/1178430>

Q: How can I sandbox my applications, specially my browser (Firefox) in Ubuntu? It's not that I am paranoid, I used Sandboxie in windows 7 and wanted something similar for Ubuntu.

A: Your Linux counterpart is Firejail. Here are the instructions: <https://www.tecmint.com/firejail-run-untrusted-applications-in-linux/>

Q: I have heard about Rainloop - <https://www.rainloop.net/> as an alternative to Geary. The screenshots look well wicked and I would like to get it. Can you tell me more?

A: I have not used it before, but what I understand from the web page is that it is some sort of caching server you can set up to pick up your email from your email provider, that in turn offers you web access to your email. It is not just an IMAP client like Geary. The install (<https://www.youtube.com/watch?v=ffMJVjBnZso>) seems to need Apache and Mariadb. That said, I see Nextcloud also offers it as an app: <https://apps.nextcloud.com/apps/rainloop>. More I cannot tell you that you cannot read for yourself.

Q: Linux newbie here. I can't seem to get wifi signal on my PC. My wireless card is a D-link make. I have read the documentation that comes with the card, but it does not really tell



me anything. Wireless is working, as my phone picks up the signal in my room. The Router is a Netgear in the roof. My Ubuntu is 18.04.01.

A: I have a suspicion that your card is somehow off, as the D-link cards do support Linux. You need to open a terminal with CTRL+ALT+T, then type: rfkill list all - Then, under the wireless adapter, look to see if 'soft blocked' or 'hard blocked' says 'yes'. If this is the case, you need to turn the card on. The other option is that the WiFi card is not seated properly in the slot. Turn off the PC, remove the WiFi card and insert it into another slot. (Slots can also become damaged, though very rarely)

Q: Hallo, I have a problem and tried to google it but can't find an answer. I use Ubuntu 18.04. I went to the FreeCad website and installed it with the Terminal as shown. I opened 'show applications' but there is no icon for FreeCad. I then installed FreeCad via Ubuntu Software center. In 'Show applications' there is still no icon for FreeCad. On the web it said to type 'FreeCad' in the

terminal to run it – but nothing. Please can you help

A: Ah, the broken software centre. Freecad indeed does not show up in the installed section of the software centre. Installation is as simple: 'sudo apt install freecad', even if it does not show up in software centre. I tested the installation on Ubuntu Budgie, and it installed with an icon in my menu, as well as running from the command-line, without issue. You can look at software boutique:

<https://snapcraft.io/software-boutique>, or you can install the synaptic package manager and manage the install / uninstall from there. You can also look at the freecad-daily: <https://itsfoss.com/cad-software-linux/>

ADDENDUM:

I found a long way around to run FreeCad.

I open Ubuntu Settings. I click on All. Then type in FreeCad. It then Shows the FreeCad icon and says Installed. I click on this and get 3 options and click on launch. The

program then loads and runs. If I click on installed (instead of All), there is no FreeCad in the list of installed programs.

Pieter

Q: This is my error <error.gif> Something went wrong during the update. My dmesg output is filled with "i2c_hid i2c-ELAN501:01: i2c_hid_get_input incomplete report (14/65535)". I am at a loss as to what is going on. Could you help me?

A: You have provided me with too little information, but let's see if we can get you on the right track. "I2C" is the protocol (if you will) that is used to connect to simple devices. ELAN is your touchpad (usually) which means the kernel is not talking to your touchpad. However, this is only an indication that something else went wrong with the kernel update. My suggestion is to roll back to the previous kernel. Wait a while and see; there may be an issue with that kernel, or one of your kernel modules. You do not always need the latest bleeding-edge kernel, sometimes it is okay to wait.

Q: Can I add rpm-fusion, then use alien to get packages? It seems some things are better maintained there.

A: Oh wow. I suppose you could, but then you would just be setting yourself up for so much headache you would make 7 billion people cry. Though I do not like PPAs, you could get the same functionality there with updates. You could even build the software that you are looking for and maybe even have a later version than they have at 'rpm-fusion'. Packages you used alien on, do not receive updates and fixes, and are not guaranteed to work.

Q: How come Ubuntu Studio is not supported for so long as Ubuntu Mate?

A: As per one of the developers, they do not have the manpower at the moment, but things are looking up, a new developer has joined. Don't disregard it because it says 9 months support.

Q: Hi. How do I get Thunderbird to work offline like Outlook does with the click of a button. How do I get a calendar again?

A: With Thunderbird, it is unfortunately not a button. You can find it by clicking the hamburger menu button (three horizontal stripes), then 'file>', then 'offline>', then tick 'work offline'. You can customize your menus if you want to also. The calendar option is via 'add-ons>' and clicking extensions on the left. When it is minimized, you should see an icon in the top right with '17' in it. Clicking that will show the side panel, which you can double click.

Q: I had my touchpad disabled when I installed ubuntu. I hate it when my palms touch the pad when typing and I lose work, so I use a mouse. I left my mouse at home and wanted to enable the touchpad. It does not work. What can I do to fix it? I have Ubuntu 18.4.

A: There are different types of touchpads (makes), but the most common one is synaptics.

Since you did not provide enough information, I am going to make a guess and help you with a synaptics device. Type the following, then reboot and test. Make sure the touchpad is enabled: `sudo apt-get install xserver-xorg-input-synaptics` - If this does not work, please send me the output of: `xinput list`

Q: Can you help me install wine on a minimal install of Ubuntu please? I tried from the terminal with `apt install wine`. My error is: `E: Package 'wine' has no installation candidate`.

A: Next time you type `apt install wine`, press the tab key twice, the auto completion works there too. The full command is: `sudo apt install wine-stable` - there are other versions too, but I suspect you would need the stable version.

Q: My SMB shares to my Windows7 PC and has stopped working. Even though I have no password set, I get an authentication error when trying to connect. This arrangement has been working for years and I am

not sure if the last update broke it. How do I make it work again? My old Windows7 PC is just storage. My Ubuntu version is 16.04, updated.

A: The problem is an update, but not on Ubuntu side. It is a Windows 7 update that broke it. Currently (at the time of writing) there is no fix as even a restore to December 2018 does not fix it. Some have reported success with creating another account on the Windows 7 PCs, and creating new shares, and some with uninstalling the updates and using password shares. Keep your eye on Reddit for a fix. You can also try enabling the administrator account on windows 7, give it a password, and connect to your shares with the administrator account. Rolling back to December 2018 and Admin account worked for me with printers scanning to shares. Some have reported success by using IP addresses instead of names.

Q: My themes from gnome-look.org will not install. I follow the instructions to the letter, but I can't get it to work. Does it have something to do with the index.theme file? Even Using

Gnome-tweak tools does not work for me. The Icons I copy to the folder work. It's the GTK stuff I have an issue with.

A: Firstly, there is a difference between the different versions of GTK themes, not to mention the rest. If the theme does not work, it is probably the wrong kind. Gnome shell is newer and is not always compatible with the older themes. The differences are laid out visually on this site: <https://www.makeuseof.com/tag/install-change-ubuntu-theme/>



Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.



Website: <https://www.lpi.org>

Price: about \$250 per exam (2 exams), and about \$70 for the book.

Back in the sixties, that is issue numbers, not the hippie era, Richard Philip Witt started a few articles on LPI certification. At the time, I was not aware that the certification existed and decided to join him in getting LPI certified. I did not need the LPI certification, as I had attained my Sinix certification from Siemens back in the nineties (the year, not issue number), and was teaching Linux introductory courses after-hours for a local trainer, but it was a welcome refresher. (The LPI exam is aimed at corporates, but it will serve you well in other areas too.) Then, Richard did his vanishing act a couple of issues later, and I was like KC & the sunshine band - please don't go! This month, I had hoped to revive the series and maybe inspire others to get LPI certified. Coincidentally, I was

contacted by the Linux Professional Institute to say my LPI Certification was going to expire and I needed to write again. This would be fine and dandy, but with the local currency dwindling fast against the US Dollar, and a few other misfortunes, the writing of the certification is almost out of reach. With the high cost of writing the exam, I would like to assist budding exam takers in reaching their goal, even if I may not be able to afford it.

Let us take a look at what you will need to pass the exam:

- The book. Yes, there is an official study guide.
- A computer running Virtualbox so you can load operating systems to practice on.
- A good tool is Anki - installed from the software centre. (Flashcards).
- You also need to learn to read the questions without cruft, and identify the real question.

(I am speaking from a previous exam perspective and the new exams are now out, so some things

may have changed)

There is also a website you will want to **avoid**, Andrew Mallet's urbanpenguin.com. He pretends to give exam questions, but they are so far removed from the real exam, he may be living in his own little bubble. It also does not help that he now does video tutorials for training establishments and people stream to his website. The LPI website has practice exams that will prepare you much better for the type of exam question you will get.

All that said, there is no substitute for experience. Do! Set up your own servers if you do not work with them on a daily basis.

The LPI website will give you insights into the exam, so do not fear the exam. Unlike Microsoft exams (again, things have changed since I wrote), there is no effort to mislead you (and waste your exam time) by telling you about how Contoso had gone bankrupt, and how they had to sell their kidneys for an exchange license, and you

have to say brown cow twenty times before springing the 'how many computing cores are needed to run exchange?' on you. We will look at real exam questions from the past, and analyse them to help you understand the questions you are answering. If you know your work, the understanding of the question is all that lies in your path to success!

Richard Philip Witt covered LPI level one with you, and I will cover LPI level two. If there are any requests to cover LPI level one or Linux+ in my style, I will do that too. We definitely need more people LPI certified!

FIRST THINGS FIRST.

You will need an account on the Person Vue website so you can find an exam location and book a time. You can register an account so long, and registration is free, and you do not need to book your exam now. A good tip is to take down the names of exam centres in your area and visit them. You do not want to show up and have to

sit in a one-by-one meter glass room and die of claustrophobia. (Yes, I found one like that!). Some exam centres provide coffee and biscuits, some provide comfy chairs, and others provide nothing at all other than a plastic seat and a computer. Look at parking if you plan on driving there - is the area safe? Do your homework first. Just go about it gently! I went to an exam centre with a colleague, and when we asked to see the exam centre and walked closer, the woman thought we were about to rob them! - as the door to the exam centre was behind the counter and she became hysterical. You can, of course, buy a voucher on the LPI website too, but then you will miss out on the fun, wink-wink.

To start us off, let us look at the 201 exam in detail:

We have - capacity planning, the Kernel, System startup, File systems and Devices, Advanced storage, Networking and System Maintenance – that is not much. There are “weights” to sections, but my advice is to know everything about each one; that way, you cannot be blindsided by a

question from a “low weight” section.

In our next issue, we will tackle the exam objectives one-by-one, and once we are done with all of them, we will work through old exam questions so you understand.

RESOURCES:

<https://www.lpi.org/how-to-get-certified/free-training-materials>

Feel free to contact us with any queries, and, as always, you can find me on the FCM telegram group.



Erik has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.

Crossword answers:

P	A	R	R	O	T		E	L	I	V	E
U		A			O		N		P		N
P	I	S	I			R	S	S		F	S
P		P				I		O		I	O
Y		B	I	C	O	M				R	
		I				S		E	X	E	
		M	A	U	I						O
B			N					F	E	R	E
O				V	O	I	D				
D		V					E		S	U	S
H	E	A	D	S			F		H		
I		X			A	N	T	E	R	G	O



Website: <https://www.wesnoth.org>

System Requirements: (minimum)

OS: Ubuntu 14.04 or compatible

Processor: Dual-core 2.0 GHz or better

Memory: 2 GB RAM

Storage: 800 MB available space

Before we start, this is not a game review. This is a way YOU can contribute to open source software.

Most of you know Battle for Wesnoth. (If you do not, where have you been?) Most of you know that it is a free game in the Ubuntu software centre. What a lot of people do not know, is that it (the software centre version) is outdated. Those of you who have installed the game via Steam know we are on 1.14.5, and the version we are presented with is version 1.12. The reason is because the Debian version is 1.12.

<https://wiki.wesnoth.org/WesnothBinariesLinux>.

Now there have been a lot of

improvements since, look here: <https://www.wesnoth.org/start/1.14/> The focus has been on AI improvements, and there are a boatload of bug fixes. Every version in between has had a lot of work. To get this shiny new version, you would have to wait for Debian, but why? There are a lot of people who do not use Steam, so for those we will show you how to get the latest version set up. You could try the flatpak version, which is large in size, or you can download the source code from the official website and compile it yourself. There is, of course, an alternative, via PPA. Vincent Cheng has done the hard work for you. <https://launchpad.net/~vincent-c/+archive/ubuntu/wesnoth>

All you need to do is open a terminal and type:

```
sudo add-apt-repository
ppa:vincent-c/wesnoth
```

```
sudo apt update
```

```
sudo apt install wesnoth-1.14
```

This will get you the latest version without Steam.

Now that you have installed it and had a look around - those who did not know Battle for Wesnoth - you will notice how amazing it looks. Though you would think it complete, there is room for more, enter you awesome creative types. Animations, terrains, portraits and more are needed.

<https://forums.wesnoth.org/viewtopic.php?f=9&t=2014&sid=4db202c4a2e4c1d29b04f1d070b05536>

But it does not end there! Music and sounds are also needed:

<https://forums.wesnoth.org/viewforum.php?f=14>

With Battle for Wesnoth, what you see is not all that you get; the game can be extended with addons.

<https://www.wesnoth.org/addons/1.14/> <- as you can see there is no shortage!

If you are not a digital artist or a music maker, Battle for Wesnoth has a built-in map editor, with which you can create and share, and have fun doing so. If none of

this appeals to your creative side, how about writing a campaign for the game? You can write fan fiction if you wish! The possibilities are numerous.

Open source projects like these deserve your support . Why not donate some of your time and effort to this great project? The community is friendly and helpful, and you can be a rock star contributor! I hope to see YOUR name in the credit list!

<https://wiki.wesnoth.org/Credits>



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The current site was created thanks to **Lucas Westermann** (Mr. Command & Conquer) who took on the task of completely rebuilding the site, and scripts, from scratch, in his own time.

The Patreon page is to help pay the domain and hosting fees. The yearly target was quickly reached thanks to those listed on this page. The money also helps with the new mailing list that I set up.

Several people have asked for a PayPal (single donation) option, so I've added a button to the right side of the website

A big thank you to all those who've used Patreon and the PayPal button. It's a HUGE help.



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