



Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #147 - July 2019



Trash



File System



Home



Install Xubuntu
19.04

XUBUNTU 19.04 REVIEWED

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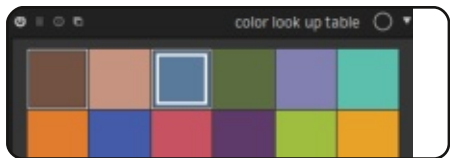
HowTo



Python p.23



Freeplane p.26



Darktable p.30



p.XX



Inkscape p.33

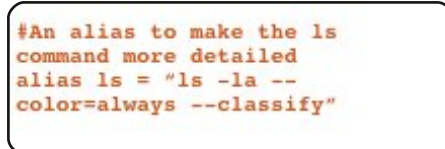


Graphics



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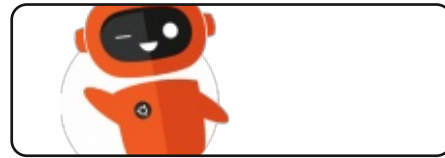
THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY



Command & Conquer p.21



Linux Loopback p.XX



Ubuntu Devices p.XX



The Daily Waddle p.41



Review p.46



Letters p.45



Q&A p.52



Linux Certified p.55



Linux News p.04



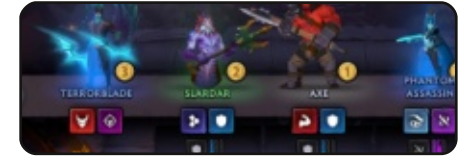
Everyday Ubuntu p.38



My Opinion p.42



Review p.47



Ubuntu Games p.56



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WELCOME TO ANOTHER ISSUE OF FULL CIRCLE!

We have the full quota of Python, Freeplane, Darktable and Inkscape for you this month. Erik continues with his Linux Certified series, and Everyday Ubuntu makes a slight detour to take a quick look at retro gaming again.

Continuing our look at 19.04 we put Xubuntu under the microscope, a reader gives his opinion on the Lubuntu desktop switch, and veer off to have a quick look at the Basilisk Browser.

Sorry for the brief editorial, and slight lateness of the issue. A family medical issue caught me off guard and had my mind elsewhere.

All the best, and keep in touch!

Ronnie

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PURISM'S SECURITY KEY WILL GENERATE KEYS DIRECTLY ON THE DEVICE, MADE IN THE USA

Launched last year in September, Librem Key is the first and only OpenPGP-based security key designed to offer a Heads-firmware-integrated tamper-evident boot process for laptops. It has the ultimate goal of protecting users' digital lives by storing security keys on the devices, encrypted with the highest cryptographic algorithms.

Next month, Purism wants to launch the second generation of Librem Key, which promises even more protection for users by securely generating security keys directly on the device, while being able to store up to 4096-bit RSA keys and up to 512-bit ECC keys. Best of all, Purism has moved the production of the Librem Key to the U.S..

By moving the production of Librem Key to the United States of

America, Purism hopes to avoid any type of supply chain security risks, including cyber-espionage, malware concerns, security hacks, or even copyright theft. Also, the company said that this move will help them beef up the production volume to meet the growing sales demands.

Source: <https://news.softpedia.com/news/purism-s-security-key-will-generate-keys-directly-on-the-device-made-in-the-usa-526570.shtml>

OPENSUSE LEAP 42.3 LINUX OS REACHED END OF LIFE, UPGRADE TO OPENSUSE LEAP 15.1

Released two years ago, on July 26th, 2017, the OpenSuSE Leap 42.3 operating system was the third maintenance update to the openSUSE Leap 42 series, which is also the last to be based on the SUSE Linux Enterprise (SLE)

12 operating system series.

openSUSE Leap 42.3 was based on the packages from SUSE Linux Enterprise 12 Service Pack 3 and was powered by the long-term supported Linux 4.4 kernel series. It was initially supposed to be supported until January 2019, but the openSUSE and SUSE projects decided to give users more time to upgrade to the major openSUSE Leap 15 series.

Today, six months later, that upgrade window is over and openSUSE Leap 42.3 officially reached end of life, meaning that the openSUSE Project will stop releasing software updates and security patches for it. This is also means that users are now urged to upgrade to the latest openSUSE Leap 15.1 release.

If you are using the openSUSE Leap 42.3 release or a previous one in the openSUSE Leap 42 operating system series, you are urged to upgrade to the latest openSUSE Leap 15.1 release as soon as possible, which is based on SUSE Linux Enterprise 15 Service Pack 1

(SP1) and will be supported for many months to come.

The upgrade path from openSUSE Leap 42.3 to openSUSE Leap 15.1 is done gradually through the openSUSE Leap 15.0 release first, and then from openSUSE Leap 15.0 to openSUSE Leap 15.1.

Source: <https://news.softpedia.com/news/opensuse-leap-42-3-linux-os-reaches-end-of-life-upgrade-to-opensuse-leap-15-now-526565.shtml>

MAGEIA 7 LINUX DISTRO AVAILABLE FOR DOWNLOAD

Today is the first day of the seventh month -- July. This month is special to Americans, as we celebrate our independence from the treacherous British on July the fourth.

With that said, it is quite appropriate that Mageia 7 -- a high-



quality Linux distribution -- is released today. You see, it is interesting to have the seventh major version of the operating system become available for download on 7/1. But also, it is significant because, just like America declared its independence, so too can Windows users by switching to this excellent Linux distro.

"Everyone at Mageia is very happy to announce the release of Mageia 7. We all hope that the release works as well for you as it has during our testing and development. There are lots of new features, exciting updates, and new versions of your favorite programs, as well as support for very recent hardware. There are classical installer images for both 32-bit and 64-bit architectures, as well as live DVD's for 64-bit Plasma, GNOME, Xfce, and 32-bit Xfce," says Donald Stewart, Mageia developer.

Stewart further says, "With Mageia 6, we introduced the DNF package manager, dnfdragora, as well as AppStream and the desktop software centers, along with support for building third-party packages in Fedora COPR

and the openSUSE Build Service. We're pleased to note that this will continue with Mageia 7! In addition, we've added Zchunk-compressed metadata for DNF and PackageKit, to enable fetching repository metadata updates so as to conserve bandwidth usage."

Source: <https://betanews.com/2019/07/01/mageia-7-linux-seven-mageia7/>

ALL THE BEST - FREEDOS TURNS 25

FreeDOS was launched on June 29, 1994 by James Hall as an alternative to MS-DOS after Microsoft announced its intention to discontinue the distribution and product support of MS-DOS. While MS-DOS is no longer supported, FreeDOS, founded twenty-five years ago, is still in demand in some areas. For example, FreeDOS can be used in bootable floppy disks or in minimal systems that require full hardware access. For example, some hardware manufacturers use the system because of its simplicity and robustness for diagnostic tools or critical applications that start in a

secure, simple environment.

The project is being developed in the course of various individual projects, which originally aimed at replacing or supplementing components of the original system with alternatives. FreeDOS therefore includes its own drivers for XMS and EMS, although EMM386 also supports VCPI and thus gets along with DOS extenders and DPMS programs. In addition, FreeDOS also offers advantages over the original. Among other things, the operating system uses Logical Block Addressing (LBA) to support access to volumes up to 2 TB in size and FAT32 file system partitions. At the same time, FreeDOS dramatically speeds up access to media by bringing an Ultra DMA driver.

Many MS-DOS-written applications or graphical user interfaces should always work under FreeDOS. A prerequisite for this, however, is the use of documented APIs. For example, once an application uses undocumented features of MS-DOS, problems or bugs can no longer be ruled out. For example, Windows 95 can not be used at all, and older versions of Windows can

only be used to a limited extent because Microsoft used the programming of the systems mainly in newer versions of very extensive undocumented DOS APIs.

Source: <https://www.pro-linux.de/news/1/27204/alles-gute-freedos-wird-25.html>

LINUX MINT 20 AND FUTURE RELEASES WILL DROP SUPPORT FOR 32-BIT INSTALLATIONS

As you might know, Canonical announced last month that they plan to drop support for 32-bit systems all together, not only for new installations, but they ended up realizing that some major projects like Wine and Steam still need 32-bit libraries, so starting with Ubuntu 19.10 (Eoan Ermine) they'll only build select 32-bit packages.

Many users were asking if Ubuntu-based distributions will be affected by this major change, which shouldn't be a surprize to anyone in 2019, so it looks like

Linux Mint, one of the most popular Ubuntu-based operating systems out there will follow on Ubuntu's steps to drop support for 32-bit systems in future releases, starting with Linux Mint 20.

Clement Lefebvre also confirmed that certain 32-bit apps will run on future Linux Mint releases, just like they will run on future Ubuntu releases. These include Wine, Steam for Linux, as well as other popular applications and games that require 32-bit libraries to be present in the operating system or in the main software repositories.

Source: <https://news.softpedia.com/news/linux-mint-20-and-future-releases-will-drop-support-for-32-bit-installations-526601.shtml>

GNU RUSH 2.0 INTRODUCED

GNU Rush a "Restricted User Shell" is a shell of the GNU project, which specializes mainly in separation of user rights. Like other shell environments, rush also provides a working environment

where users can log in and execute commands. One strength of the environment is the configuration that allows administrators to cover many aspects of rights management. Administrators are thus able to control all the commands of a user and, if necessary, to prevent unwanted actions in the run-up to execution.

The environment is particularly suitable for controlling remote access to a system. In particular, GNU Rush allows you to run remote programs in a chroot environment and control the resources used. Another important feature of GNU Rush is the communication with the system, which takes place via INET or UNIX sockets and provides data exchange with other systems. All accesses via Rush are also monitored and also visualized on request.

The now released version 2.0 of the environment focuses on the revision of the configuration system. The syntax has been standardized and partly simplified considerably. However, as the developers write, the new version still supports the old style and comes with old configuration files. This should allow users to easily

update their systems to the latest version without running the risk of their environment being damaged or unsafe.

Source: <https://www.pro-linux.de/news/1/27209/gnu-rush-20-vorgestellt.html>

UBUNTU 19.10 (EOAN ERMINE) WALLPAPER COMPETITION IS NOW OPEN FOR SUBMISSIONS

With every new Ubuntu release, Canonical puts together a wallpaper contest where artists and designers from all over the world are invited to submit their artwork with the ultimate prize of it being shipped with the next major release of the Ubuntu operating system.

This year's wallpaper contest is for Ubuntu 19.10, dubbed Eoan Ermine, a release that will see the light of day this fall on October 17th. The contest is open to anyone and starts today, July 2nd, until the beginning of September, a few weeks before the launch of the beta release on September

26th.

To enter the Ubuntu 19.10 wallpaper competition, all you have to do is simply upload your images to the dedicated Ubuntu Community Hub thread. All the images you upload must be yours and without watermarks, names, or logos on them. Also, ensure your images have a resolution of at least 3840x2160.

For submission, you can prepare scaled images, but if your artwork is selected, you must have a 3840x2160 image ready. Also, keep in mind that you must agree to license all submitted images under the CC BY-SA 4.06 or CC BY 4.03 license. More details are available at <https://wiki.ubuntu.com/UbuntuFreeCultureShowcase118>.

Apart from your images being shipped with the Ubuntu 19.10 (Eoan Ermine) release and displayed in the eyes of millions of users, Canonical said that they will do a "best of" collection of the winner images for the next LTS release, Ubuntu 20.04 LTS, along with the winners from Ubuntu 19.04 and Ubuntu 19.10.

Source:

<https://news.softpedia.com/news/ubuntu-19-10-eoan-ermine-wallpaper-competition-is-now-open-for-submissions-526599.shtml>

LINUX BECOMES THE MOST USED OPERATING SYSTEM ON AZURE CLOUD-BASED ENTERPRISE SOLUTIONS

Linux is now the most used Operating System (OS) on Microsoft Azure. The cloud-based enterprise solutions service belongs to Microsoft, a maker of Windows OS. Linux's meteoric rise in usage against Microsoft's own operating system is surprisingly seen as an exceptionally good thing by senior executives in Microsoft. In other words, the rising use of Linux on Microsoft Azure is expected to benefit not only developers and system administrators, but it will also help Microsoft as a company. Incidentally, Microsoft has shown increasing affinity towards Linux in the recent past and has been actively supporting the open-source operating system. Hence,

could the latest development be merely an important statistic or could it be considered as a pivotal yardstick?

What the numbers essentially mean is that Azure now experiences or processes more requests that are initiated using Linux. This does not mean Windows machines are failing. The numbers merely indicate that Azure is actively processing higher instances of processes that are run on Linux. Interestingly, it's not just Microsoft's Azure customers who are actively switching to Linux. Native Azure services are often running on Linux. For example, Azure's Software Defined Network (SDN) is based on Linux. In simple words, several internal software components of Microsoft Azure are being run natively on Linux. What this means is Microsoft itself is opting for Linux over its own Windows Server in quite a few scenarios.

Source:

<https://appuals.com/linux-becomes-the-most-used-operating-system-on-azure-cloud-based-enterprise-solutions-but-microsoft-isnt-worried/>

IPFIRE OPEN-SOURCE LINUX FIREWALL NOW PATCHED AGAINST SACK PANIC VULNERABILITIES

IPFire 2.23 Core Update 134 is here to address the recently discovered SACK Panic (CVE-2019-11477 and CVE-2019-11478) security vulnerabilities, affecting Linux kernel's networking subsystem processed TCP Selective Acknowledgment (SACK) segments. These are serious flaws and could allow remote attackers to cause a so-called SACK Panic attack (denial of service).

Among other changes include in this update, we can mention that the Captive Portal has been improved to show up after IPFire is restarted, the GCM cipher is now preferred over CBC for TLS connections, underscores are now supported for email addresses entered in the Web UI, and the French translation has been updated, as well as translates for various strings.

Besides patching the latest security vulnerabilities and fixing bugs, this maintenance release

also updates various components to their latest versions. These include Bind 9.11.8, Unbound 1.9.2, and Vim 8.1. You can download IPFire 2.23 Core Update 134 right now through our website for new deployments, but existing users should update their installations using the built-in package management system.

Source:

<https://news.softpedia.com/news/ipfire-open-source-linux-firewall-now-patched-against-sack-panic-vulnerabilities-526628.shtml>

SYSTEM76'S USA-MADE AND UBUNTU LINUX-POWERED THELIO DESKTOP NOW AVAILABLE WITH 3RD GEN AMD RYZEN PROCESSORS

Fans of Linux have long coveted System76 computers, as they come with Ubuntu pre-installed rather than Windows. After all, buying one of these computers is a great way to support the Linux community. Nowadays, in addition to Ubuntu, the company also offers

its own Ubuntu-based operating system called Pop!_OS.

With the System76 "Thelio" desktop PC, even more people became interested in the company -- beyond Linux enthusiasts. Why? Because it is made right here in the good ol' USA. People that take pride in being an American often look for USA-made products (something that is getting increasingly harder to find), and System76 began filling that need.

Today, Thelio gets even more attractive, as System76 is now offering 3rd generation AMD Ryzen processors. The base model, which is priced at \$999, still comes with a 2nd gen Ryzen 5 2400G (quad-core). This is still a very capable chip, but not the latest and greatest.

For only about \$200 more, however, you can opt for a super-new 3rd gen Ryzen 5 3600X (hexa-core). For even more money, you can also choose a Ryzen 7 3800X (octa-core) or the insanely powerful 12-core Ryzen 9 3900X. That 3900X is notable for rivaling Intel's much pricier Core i9 chips.

Source:

<https://betanews.com/2019/07/07/system76-linux-thelio-amd-ryzen3/>

DEBIAN 10 'BUSTER' LINUX-BASED OPERATING SYSTEM FINALLY AVAILABLE FOR DOWNLOAD

Debian is one of the most important operating systems, as so many other Linux distributions (such as Ubuntu) are based on it. In other words, it is part of the foundation that holds up many distros. With that said, it is a great operating system in its own right -- many folks depend on it daily.

Today, Debian reaches a significant milestone -- version 10. Yes, Debian is finally in the double digits. Believe it or not, development of Debian 10 (code-named "Buster") took more than two years! In fact, more than 60 percent of all packages have been updated since its predecessor. Probably the most significant update, however, is Wayland finally being the new default display

server for the GNOME desktop environment.

"For those in security-sensitive environments AppArmor, a mandatory access control framework for restricting programs' capabilities, is installed and enabled by default. Furthermore, all methods provided by APT (except cdrom, gpgv, and rsh) can optionally make use of seccomp-BPF sandboxing. The https method for APT is included in the apt package and does not need to be installed separately," says The Debian Team.

The team further says, "The UEFI (Unified Extensible Firmware Interface) support first introduced in Debian 7 (code name wheezy) continues to be greatly improved in Debian 10 buster. Secure Boot support is included in this release for amd64, i386 and arm64 architectures and should work out of the box on most Secure Boot-enabled machines. This means users should no longer need to disable Secure Boot support in the firmware configuration."

As previously mentioned, a lot of packages have been updated for Buster, and the team also brags

that there are nearly 60,000 more packages available.

Source:

<https://betanews.com/2019/07/07/debian-ten-buster-linux/>

PYOXIDIZER CAN TURN PYTHON CODE INTO APPS FOR WINDOWS, MACOS, LINUX

Python programming language has quickly gained popularity in recent years; however, it has a limitation when it comes to its app distribution. Developers can't just share Python apps with a user who doesn't know anything about the language.

So, Mozilla developer, Gregory Szorc, has created a tool called PyOxidizer that will make it easier for programmers to create applications in Python. And the best part is that it can be used by non-programmers too. The tool supports Windows, Mac, and Linux systems.

For a very long time, a potential "existential threat" has been

looming over Python due to its inability to run without supporting libraries. The presence of third-party libraries made computers a "toxic waste site."

Meanwhile, JavaScript continues to rule over desktop and mobile web browser applications and has already replaced Python on the server. Hence PyOxidizer became the answer to eliminating this threat.

PyOxidizer is a free utility that can turn Python code into a single executable file to be run on different operating systems like Windows, Mac, and Linux.

Szorc says that an average computer user will be able to run the application without having to download the correct software libraries. This is because PyOxidizer produces binaries that embed Python. Hence users don't need to install or know the language.

PyOxidizer can generate an executable file containing a fully featured Python interpreter, extensions, standard library, and the application's modules and resources. Since the tool loads

everything from memory and no explicit I/O is performed, it makes the executables faster to start and import.

Source:

<https://fossbytes.com/pyoxidizer-can-turn-python-code-apps-for-windows-macos-linux/>

MOZILLA NOMINATED AS INTERNET ROGUE IN 2019

Once a year, the ISPA awards a person or organization the Internet Hero or Internet Villain of the Year. After the nomination phase is over, the association has now nominated the nominees for the awards. In each case three candidates for the Internet hero or Internet villain of the year came in the preselection. The advisory board of ISPA will determine among these the "winners" by a vote. The result will be announced on July 11th.

Mozilla was instrumental in developing the DNS over HTTPS (DoH) protocol, which is now standardized as RFC8484. It will continue to be tested in Firefox by users who joined the testing

program. But the protocol is despite some advantages in the criticism. This is based on the one hand on the complexity of the protocol, on the other hand, that as a DNS provider so far only Cloudflare occurs and many users do not trust this company.

But ISPA has a very different aspect: DNS over HTTPS makes it easier to circumvent state censorship and parental control applications. This censorship, as The Register states, is the result of a law enacted in 2017 that is still not in force. Because DNS over HTTPS by design makes invisible to the providers which Internet names are requested, name-based filters are no longer available; however, those filtering IP addresses are unaffected. According to the register, Mozilla was irritated by the nomination, which put a necessary improvement in the Internet infrastructure in a bad light. In addition, Mozilla does not plan to use DoH in the UK by default. Mozilla is currently looking for partners in Europe who offer the DoH service.

However, Mozilla will not find it easy to win the award as an

internet villain in 2019, because the competitors are overwhelmingly overpowering. In addition to Mozilla, Article 13 of the new EU Copyright Directive and US President Donald Trump have been nominated. Article 13 is a threat to freedom of expression, according to British Internet service providers, by requiring upload filters everywhere. Trump, on the other hand, was nominated because, from the provider's point of view, it has created a great deal of uncertainty across the global telecom industry with its attempts to protect US national security.

Source: <https://www.pro-linux.de/news/1/27232/mozilla-als-internet-schurke-2019-nominiert.html>

SCULPT OS 19.07 RELEASED

Genode does not describe an entire operating system, but an architecture of how to build processes based on a microkernel to collaborate in a secure way. The developers have developed a hierarchical model for this and ensure that the individual

components can only communicate within the hierarchy in a predefined area called "trusted computing base". Among other things, Genode can use Linux as a kernel, various variants of the microkernel L4 or even a further development of the micro-hypervisor NOVA. Sculpt OS is a self-contained operating system based on Genode.

Six weeks ago, Genode's new version 19.05 focused on platform support improvements. Thus, a port was made to the 64-bit ARM architecture. In the course of this porting, the platform code was standardized. The compiler was updated to GCC 8.3 for all platforms, which enabled C++ 17 to be turned on as standard C++ syntax. A further result of the unification was a kernel-independent virtualization interface, with which a single implementation of a virtual machine monitor (VMM) with the kernels NOVA, seL4 and Fiasco.OC can be used.

Due to the many enhancements to the platform, fewer changes than planned were made to Sculpt OS. These are now being released with a new version of Sculpt OS.

The biggest change in Sculpt OS 19.07 is copying and pasting between terminals, graphical applications and virtual machines. Because using the clipboard between otherwise isolated applications can pose a security risk, novel measures have been implemented to eliminate the risk. Among other things, the measures are intended to prevent two malicious programs from using the clipboard for secret data exchange.

Source: <https://www.pro-linux.de/news/1/27240/sculpt-os-1907-erschienenen.html>

ONAP 4.0.0 »DUBLIN« RELEASED

The configuration of large networks is associated with a lot of effort and the effort continues to increase, since the requirements are greater to be able to adapt the configuration flexible. With manual work, as has been predominantly practiced so far, these requirements can no longer be met. The result was the vision of fully automated networks that found expression in the ONAP project, which came under the

umbrella of the Linux Foundation. ONAP is not just one of the larger Linux Foundation collaborative projects, but one that defines the future of networks. Moreover, it is completely free software, in line with the observed transformation of telecommunications from proprietary to fully open solutions, which is currently in its final phase.

Open Network Automation Platform (ONAP), created in February 2017 from the union of ECOMP and OPEN-O, automates services and virtual networking capabilities. It consists of 10 million lines of code and has nearly 500 employees from more than 30 companies. ONAP can be used with Open Platform for Network Virtual Functions (OPNFV), another Linux Foundation project. OPNFV provides software networking functionality that eliminates proprietary stacks and makes networking much more flexible. For its part, it is based on cloud technologies with Kubernetes support, software-defined networks (SDN) and modern methods of software distribution.

The new version 4.0.0 »Dublin« by ONAP brings a new case study (Blueprint). Blueprints define and

clarify the interplay of modules. The new »Broadband Service« blueprint defines network connectivity in residential areas with speeds of several Gbit / s. The 5G blueprint for 5G networks as well as the CCVPN blueprint have been extended.

Other recent additions to Dublin include a new version of Controller Design Studio (CDS) for model-driven configuration and lifecycle management of VNFs, internationalization and localization of the portal framework, basic PNF packet validation, cloud native networking (CNF) orchestration, enhancements in the policy project, initial support for distributed Kubernetes clusters, the MUSIC project for reliable replication of ONAP projects, code reduction, security enhancements, additional log output, and advanced documentation.

In addition, Dublin can now include functions for integrating the extended OPNFV verification program (OVP). Six new members joined the project, and an increasing number of manufacturers offer ONAP in a pure or modified form to an

increasing number of users. In addition, ONAP works with several standardization organizations and provides reference architectures for them.

Source: <https://www.pro-linux.de/news/1/27241/onap-400-dublin-freigegeben.html>

GNU LINUX-LIBRE 5.2 RELEASED

Linux-libre is a variant of Linux from which all proprietary firmware and microcode files have been removed. The project was directed by Alexandre Oliva in response to the binary files that are increasingly entering the kernel, which, according to the FSF, make the kernel unfree. Oliva and his helpers therefore maintain an alternative version of the kernel that dispenses with all components that are not available in the source code and completely addresses the idea of free availability. To do this, developers adapt the sources of the kernel, eliminating dependencies and straightening calls.

The lack of proprietary

firmware does not necessarily mean that a hardware is unusable. Sometimes, however, the functionality is also limited. Users should therefore inform themselves beforehand whether removing the binary extensions eliminates the functionality they need and that you may not be able to use your components anymore.

Linux-libre 5.2 comes just one day after the release of Linux 5.2 and is based on the official release. In addition to the official changes, the current "libre" kernel cleans a bunch of drivers and eliminates blobs from mt7615, rtw88, rtw8822b, rtw8822c, btmtksdio, iqs5xx, ishtp and ucsi_ccg. In addition, the cleanup for various other drivers has been improved. Probably the biggest innovation of the kernel is the reactivation of the Sound Open firmware. The architecture presented by Intel last year should ensure that more free software is created. However, Linux-libre accidentally removed the component and now realized that this was a mistake.

Source: <https://betanews.com/2019/07/07/system76-linux-thelio-amd-ryzen3/>

TAILS 3.15 FIXES CRITICAL BUGS

Tails stands for "The Amnesic Incognito Live System" and is used to anonymize the Tor network, through whose node computer the network traffic is routed. It is designed as a live system for use on USB sticks or DVDs and specializes in anonymity and maintaining the privacy of its users. The basis is Debian »Stretch« 9.9.

Tails 3.15 fixes some critical security vulnerabilities, so developers in the announcement urgently recommend a timely update to Tails 3.15. These include important components such as the Tor Browser, Thunderbird and OpenSSL. In addition, gaps were closed in Vim and Expat. As part of this, Tor Browser has been updated to version 8.5.4 and Thunderbird to 60.7.2.

A problem already known since Tails 3.12 when booting from USB sticks could be corrected in the new edition of the distribution. Some USB sticks were not able to

reboot after the first boot in USB Legacy mode. An even older problem involved a missing error message when closing a VeraCrypt volume failed because it was still in use. In addition, Tails can now be started with the security firmware Heads even read-only SD cards.

Automatic updates are from Tails 3.13, 3.13.1, 3.13.2, 3.14, 3.14.1 and 3.14.2 available. Older versions require a manual update. The release of Tails 3.16 is scheduled for September 3rd. For the foreseeable future, the project's roadmap includes support for Secure Boot, the move to Wayland, the improvement of the technical infrastructure, and Tails 4 based on Debian 10 Buster.

Source: <https://www.pro-linux.de/news/1/27243/tails-315-behebt-kritische-fehler.html>

STARTING SIGNAL FOR DEBCONF19

Debian's annual developer conference held in changing locations DebConf returns to South America after 11 years. After Mar del Plata in Argentina in 2008,

the contract was awarded to 2019 Curitiba in Brazil. The venue is the Federal University of Technology in the heart of the city. Traditionally, since 2003, the conference has been DebCamp, which hosts the event on site as a developer meeting, and the actual DebConf.

The DebCamp for the twentieth edition of DebConf started yesterday, on 14.7. and goes until 19.7. The 20.7. is reserved for the Open Day, which is aimed at the public, which will be introduced to Debian and free software on this day. The actual conference will start on 21.7. and goes until 28.7.

Preparations in Curitiba have been made by, among others, the Debian User Group Paraná and the Association Curitiba Livre. After initial calculations, DebConf19 is expected to cost around \$ 100,000 for assumed 300 subscribers. The conference website lists 35 sponsors who contribute to the costs. In addition to many lectures, the program also includes working meetings and brief BoF (Birds of Feather) called informal meetings. Many of the 20 or 45 minute lectures will be broadcast live and archived later.

At DebConf, hundreds of Debian developers and members of the community meet each year to give lectures and hear, discuss future developments of the operating system, and push ahead with the next release. It is also an important social event where developers can interact in person who otherwise work together on mailing lists and IRCs throughout the year.

Source: <https://www.pro-linux.de/news/1/27252/startschuss-f%C3%BCr-debconf19-gefallen.html>

MOZILLA PUBLISHES DETAILED ANALYSIS OF THE EXPANSION GLITCH

Mozilla has published a detailed analysis just over two months after the expansion mishap. The incident occurred on the first weekend of May and affected users of Firefox on the desktop, on Android or in the form of the Tor browser. Firefox reported that the installed extensions did not have a valid signature. As a consequence, Firefox disabled all (or all but the

locally installed) user extensions. This was at the same time the protection against JavaScript, advertising and much more, which is ensured by extensions such as NoScript, UBlock and the like. Gate users were particularly hard hit, their security depends crucially on the supplied extensions of the Tor browser. The incident was quickly referred to as armagadd-on-2.0. The cause of the problem was that the certificate with which Mozilla centrally signed all Firefox extensions had expired. It should have been renewed several weeks ago.

Eric Rescorla, CTO of Mozilla, is now presenting, several weeks later than originally intended, the results of the promised detailed analysis of the incident in a new post. Simplified, one could say that Mozilla overslept the expiration of the certificate. In fact, this was known to the staff of the team that created the signatures, but they falsely assumed that Firefox would not look at the expiration date for this certificate. Firefox's testers did not notice the problem because there were no tests for it. The consequences of this are, on the one hand, better communication between the teams

and better documentation and, on the other hand, extended tests.

Because the time was spent fixing the problem and creating a new version of the browser was a long one, as Rescorla once again explained, the way through the study system was first chosen to quickly install a "hotfix" in the browsers, Since this was only possible in conjunction with telemetry, Mozilla received telemetry data from users who supposedly did not want it. These data were subsequently removed by Mozilla. In the future there should be a separate mechanism for such "panic updates". He is already in work, but should cause many users to resent again.

In the days following the incident, it turned out that the first correction delivered was flawed. And not just once, but eight times, which resulted in six browser updates in a short time. Obviously, the quality check was heavily neglected here, partly because only developers, operators and managers, but no testers, were involved in the critical phase at the weekend. Mozilla also wants to handle this better in the future.

Source: <https://www.pro-linux.de/news/1/27254/mozilla-ver%C3%B6ffentlicht-ausf%C3%BChrliche-analyse-der-erweiterungs-panne.html>

RANSOMWARE USES BRUTE-FORCE SSH ATTACKS TO INFECT LINUX-BASED NAS SERVERS

Ransomware that uses SSH brute force attacks to gain access to Linux-based network-attached storage systems has been spotted by the security firm Intezer. One victim who was tracked down by the company confessed that he/she had not bothered to even set a password for the server in question. The company said it had named the ransomware QNAPCrypt as this appeared to be the name given to it by the authors. QNAP sells NAS servers. Intezer's Ignacio Sanmillan said the detection rate of the ransomware was quite low, adding that there were both ARM and x86 variants.

A message from a user whose NAS server was infected, indicating

the laxity in password policy.

Additionally, once a server was compromised, QNAPCrypt sought a wallet address and a public RSA key from its command and control server before encrypting files.

Sanmillan said Intezer simulated a denial of service attack on the infrastructure used by the malware.

"After simulating the infections of hundreds of virtual "victims", we discovered two major design flaws in the ransomware infrastructure which led us to seize the operation," he wrote.

One was that the list of bitcoin wallets was created in advance and it was static. "Therefore, it does not create a new wallet for each new victim in real time, but rather it pulls a wallet address from a fixed, predetermined list."

The second characteristic was that once all of the wallets were allocated (or sent), the ransomware would not be able to continue its malicious operation in the victim's machine.

After simulating the infection

of more than 1091 victims, Sanmillan said the number of bitcoin wallet addresses ran out. "As a result, any future infection will be unsuccessful and the authors behind this malware were forced to update their implants in order to circumvent this design flaw in their infrastructure to continue with their malicious operations," he wrote. He said the ransom note was included as a text file and contained no message. Every victim whom Intezer had tracked down was given a unique bitcoinaddressstopaytheransom.

Source:

<https://www.itwire.com/security/ransomware-uses-brute-force-ssh-attacks-to-infect-linux-based-nas-servers.html>

Q4OS 3.8 »CENTAURUS« RELIES ON DEBIAN 10

Q4OS is a Linux distribution that is especially aimed at beginners and changers. Shortly after the release of Debian 10 »Buster«, the developers of Q4OS are introducing a new version of the distribution based on Debian

10. Q4OS 3.8 »Centaurus« is designed for long-term publishing and receives at least five years of support in the form of software and security updates. Since stability is the primary goal of distribution for both home and business users, new functionality is added only in exceptional cases and after thorough preparation.

Q4OS offers with Plasma 5.14 and Trinity 14.0.6 two desktops based on the Qt framework. One of the goals of Q4OS is the ability to install Plasma and Trinity desktops side-by-side without interfering with each other.

Q4OS brings its own tools and functions beyond the Debian software. One of them is the "Desktop Profiler", which should make it easy to set up the installed minimum desktop for different requirements. Furthermore, the welcome screen is supposed to facilitate, among other things, the installation of LXQt, Xfce and LXDE, while the "Setup Utility" is responsible for the installation of third-party software.

Q4OS is also suitable for users who still need support for older computers with 32-bit

architecture. In addition to the 64-bit version, an image for 32-bit / 686 with and without PAE extension is also available in the download portal. In addition to an installer that installs Q4OS from Windows as a dual-boot, there are also images for Raspberry Pi, Pine and other ARM boards offered. However, these are currently not updated to the new version.

Source: <https://www.pro-linux.de/news/1/27258/q4os-38-centaurus-setzt-auf-debian-10.html>

UBUNTU-BASED LINUX MINT 19.2 'TINA' BETA IS HERE WITH CINNAMON, MATE, AND XFCE

Linux Mint is an operating system based on the wildly

popular Ubuntu. It comes with some interesting tweaks that many users appreciate, making it a popular choice in the Linux community for both beginners and experts alike. It is stable, easy to use, and has a well-designed Update Manager that puts many other distros to shame.

Today, Linux Mint 19.2 BETA is finally released. Codenamed "Tina," it will be supported until 2023 -- long after Windows 7 support ends in January of 2020. In other words, when it achieves stable status, Linux Mint 19.2 should make a great replacement for Windows 7. Linux Mint 19.2 BETA can be had in your choice of three desktop environments -- Cinnamon (4.2), MATE (1.22), and Xfce (4.12). While Cinnamon is the star of the trio, the other two are solid choices too -- especially for

those with meager hardware. Best of all, the three DEs should all feel familiar for someone transitioning from Windows 7's classic user interface.

The newest version of Linux Mint will be based on Ubuntu 18.04 and not the newer 19.04. Is that a bad thing? No. The older Ubuntu 18.04 is a long term support version -- ideal from a stability and support standpoint. Also, the Linux kernel is 4.15 and not 5.x. Again, that isn't necessarily a bad thing. As you can see, if you prefer your Linux-based OS to be bleeding edge, Mint really isn't for you -- go with something like Fedora instead.

Linux Mint 19.2 BETA has many changes, but one of the most significant is the Update Manager. This is one of the best features of

Mint, and it is getting even better. You can now blacklist certain kernel updates if need be -- maybe you know it will be problematic with your hardware. Users should appreciate the new warning in Update Manager when your version Mint is with 90 days of reaching end of life.

Source: <https://betanews.com/2019/07/16/linux-mint-192-tina-beta-ubuntu/>

NEW EVILGNOME BACKDOOR SPIES ON LINUX USERS, STEALS THEIR FILES

A new Linux malware masquerading as a Gnome shell extension and designed to spy on unsuspecting Linux desktop users was discovered by Intezer Labs' researchers in early July.

The backdoor implant dubbed EvilGnome is currently not detected by any of the anti-malware engines on VirusTotal and comes with several capabilities very rarely seen in Linux malware strains.

EvilGnome is delivered with the



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help of self-extractable archive created using the makeself shell script, with all the metadata generated when creating the malicious payload archive bundled within its headers, possibly by mistake.

The infection is automated with the help of an autorun argument left in the headers of the self-executable payload which instructs it to launch a setup.sh that will add the malware's spy agent to the ~/.cache/gnome-software/gnome-shell-extensions/ folder, attempting to sneak onto the victim's system camouflaged as a Gnome shell extension.

EvilGnome will also add a gnome-shell-ext.sh shell script to the compromised Linux machine's crontab, a script designed to check every minute if the spyware agent is still running.

The gnome-shell-ext.sh is executed during the final stage of the infection process, leading to the gnome-shell-ext spyware agent also being launched.

EvilGnome's configuration is stored within the rtp.dat file also bundled within the self-extractable

payload archive and it allows the backdoor to get its command and control (C2) server's IP address.

EvilGnome also seems to be connected with the Russian threat group known as Gamaredon Group, an advanced persistent threat (APT) group known to have been active since at least 2013 as per Palo Alto Networks' Unit 42 threat researchers.

While in the beginning Gamaredon Group mostly relied on off-the-shelf tools, it has slowly moved into developing custom malware implants after increasing their technical expertise.

Source: <https://www.bleepingcomputer.com/news/security/new-evilgnome-backdoor-spies-on-linux-users-steals-their-files/>

UBUNTU 18.10 'COSMIC CUTTLEFISH' REACHES END OF LIFE

CANONICAL HAS confirmed that Ubuntu 18.10 (aka Cosmic Cuttlefish) has reached end of life (EoL).

Just as with Windows, each build of Ubuntu, one of the biggest Linux distros on the market, has a finite level of support. In this case, as it isn't an LTS release, 18.10 had nine months of support, but all good things must come to an end.

From this point, users of 18.10 will no longer receive security updates to their operating system, which could leave it open to attacks from external nasties.

In a statement, the company confirmed: "Ubuntu announced its 18.10 (Cosmic Cuttlefish) release almost 9 months ago, on October 18, 2018. As a non-LTS release, 18.10 has a nine-month support cycle and, as such, the support period is now nearing its end and Ubuntu 18.10 will reach end of life on Thursday, July 18th."

Users can either start again with a whole new installation, or they can choose to upgrade "in-place" using tools found in the Ubuntu UI.

The next version of Ubuntu won't appear till October, under the name Ubuntu 19.10 Eoan Ermine, but for right now, you're

looking at Ubuntu 19.04 Disco Dingo, complete with the (then) latest Linux kernel 4.18 and redesigned GNOME desktop with Yaru theme.

When you're considering your next move, it's wise to allow for the fact that, starting with 19.10, Ubuntu won't officially support 32-bit builds. There's been pushback on the move, which is why Canonical has agreed to a limited release in 32-bit for architectures where there is demand.

Source: <https://www.theinquirer.net/inquirer/news/3079174/ubuntu-1810-end-of-life>

FIREWALL SYSTEM OPNSENSE 19.7 RELEASED

OPNsense is an open firewall and routing platform based on FreeBSD that wants to convince users with its functionality and simplicity. The system was launched in 2014 as a fork of pfSense, which in turn was a spin-off of m0n0wall, and released in 2015 in a first stable release. The functionality of OPNsense includes

not only the basic features of a firewall system but also the possibility of restriction and prioritization. The authentication can be extended by various security mechanisms and includes, inter alia, a two-factor authentication. Furthermore, OPNsense supports the establishment of VPN networks and failover scenarios and can be used as a caching service. Suricata's Inline Intrusion Prevention System also detects intrusion attempts.

Barely six months after the last version, OPNsense 19.7 "Jazzy Jaguar" is scheduled to release a new version of the system. The current edition contains many changes and focuses on improving the overall usability. The statistics output and display of firewall rules has been further expanded. In addition, the developers have improved the logging of the system, which is based inter alia on syslog-ng and offers the possibility of remote access. In addition, Netmap has undergone an update. Other innovations include adaptations to plug-ins and better internationalization, including Spanish.

Source: <https://www.pro-linux.de/news/1/27267/firewall-system-opnsense-197-freigegeben.html>

MOZILLA FIREFOX COULD SOON GET A "TOR MODE" ADD-ON

Firefox browser could soon receive a Tor mode add-on that would significantly enhance privacy by connecting to the Tor network.

While the final goal is to implement a fully-featured TOR mode in the browser natively, such a project takes time, and members of Mozilla and the Tor team discussed the challenges at a recent meeting.

Their proposal was to develop a browser add-on that would enable this Tor mode in Firefox, as this approach could give the two organizations enough time to plan on the engineering work that is needed for this new feature.

The extension wouldn't be installed by default in Firefox, so users would have to download it

manually from Mozilla's website in order to enable the Tor mode.

A decision on this add-on hasn't been made just yet, but developers working for Mozilla and The Tor Project have already discussed several technical details.

"The add-on would configure the browser to use tor as a proxy, as well as setting various prefs to prevent proxy bypasses and resist fingerprinting, much like those set by Tor Browser," they explain.

Right now, the devs believe the best way to go is for the add-on to allow for a dedicated Tor mode button to launch a dedicated profile in a new window.

Source: <https://news.softpedia.com/news/mozilla-firefox-could-soon-get-a-tor-mode-add-on-526774.shtml>

CRITICAL FLAW IN VLC MEDIA PLAYER DISCOVERED BY GERMAN CYBERSECURITY AGENCY

A critical security flaw in VLC Media Player has recently been discovered by German cybersecurity watchdog CERT-Bund, who warns that a successful attack would allow for remote code execution.

The vulnerability exists in VLC Media Player version 3.0.7.1, according to the official CVE-2019-13615, which is the latest stable release of the application.

According to the document, a successful exploit of the vulnerability allows for unauthorized disclosure of information, unauthorized modification of files, and disruption of service.

Parent company VideoLAN has already started the development of a patch approximately four weeks ago, according to a bug report. The fix is already 60 percent complete, as per the work status indicator on this page.

At the time of writing this article, there are no details as to whether the vulnerability has been used in the wild for any attacks. However, now that the security

flaw is public, there's a chance the number of attacks could grow, especially against high-profile victims.

VLC Media Player is one of the best, and at the same time, one of the most popular applications of its kind, being able to play nearly every single multimedia format out there. It is available cross-platform and is offered at absolutely no cost, which makes it a must-have for a substantial number of users, regardless of the operating system or device.

Source:

<https://news.softpedia.com/news/critical-flaw-in-vlc-media-player-discovered-by-german-cybersecurity-agency-526768.shtml>

HACKERS EXPLOIT JIRA, EXIM LINUX SERVERS TO "KEEP THE INTERNET SAFE"

Hackers are exploiting vulnerable Jira and Exim servers with the end goal of infecting them with a new Watchbog Linux Trojan variant and using the resulting botnet as part

of a Monero cryptomining operation.

Watchbog is a malware strain used to infect Linux servers by exploiting vulnerable software such as Jenkins during a campaign from May, as well as Nexus Repository Manager 3, ThinkPHP, and Linux Supervisor as part of an operation from March as discovered by Alibaba Cloud Security researchers.

The newest variant spotted by Intezer Labs' researcher polarply on VirusTotal uses a malicious payload designed to exploit the 12-day old Jira template injection vulnerability tracked as CVE-2019-11581 that leads to remote code execution.

It will also abuse the Exim remote command execution flaw tracked as CVE-2019-10149 which enables attackers to execute commands as root following exploitation — this Exim flaw is known to have been exploited in the wild since at least June 9.

As per a Shodan search from today, there are more than 1,610,000 unpatched Exim servers that could be affected by this

attack, as well as over 54,000 vulnerable Atlassian JIRA servers as per BinaryEdge.

What makes it highly dangerous is that this variant is not detected by any of the scanning engines on VirusTotal seeing that the Watchbog sample spotted by polarply has an AV detection ratio of 0/55 — more info is available on Intezer Analyze.

Watchbog's infection process is quite straightforward as it drops a Monero coinminer after exploiting the vulnerabilities it targets and it gains persistence to fend off the users' attempts of removing it.

After getting a foothold on the vulnerable servers, Watchbog will download and execute malicious commands from pastebin that will eventually deploy and launch the final cryptocurrency miner payload on the compromised Linux boxes.

The malware will also achieve persistence by adding itself to multiple crontab files to make sure that it can come back and reinfect the system if the user will not find all of the altered crontabs.

Source:

<https://www.bleepingcomputer.com/news/security/hackers-exploit-jira-exim-linux-servers-to-keep-the-internet-safe/>

DROPBOX FOR LINUX MANEUVERS BACK AND FORTH

Dropbox, the online service that has been in place since 2007 to synchronize data across multiple machines, has recently been ridiculing a lot of Linux users. In August 2018, the users were informed via Dropbox forum that from November 2018 the synchronization of Dropbox on Linux machines will only work with the file system Ext4. This was true only for unencrypted systems. The somewhat flimsy reasoning at the time was that Dropbox needed a file system that supported Extended File Attributes (XATTR). Threadbare because almost all file systems under Linux XATTRs support, if they are enabled in the kernel configuration.

If you follow the beta builds in the forum of the service, you will find the one week ago there set client called Beta Build 77.3.127,

which announces, among other things, the support of ZFS, eCryptFS, XFS and Btrfs. The support for eCryptFS will be particularly pleasing to Dropbox customers on Ubuntu, because Ubuntu encrypts the home directory with it at the request of the user. Whether it can be recovered with this measure jumped users must show. Why you first block almost all file systems, and then release some again, remains a mystery. Dropbox also recently duped users who use Dropbox for free by limiting the number of syncing devices to three.

This move appears to be part of Dropbox's ongoing transformation to bring more paid customers to the service in the face of fierce competition. For example, the previously dumb client will soon be upgraded to an app that will allow, among other things, collaborative work on documents, communication via snap and video conferencing under one interface. Some perplexed users had already inadvertently been given a foretaste of the new app when it was automatically installed on them, later removed by Dropbox.

Source: <https://www.pro-linux.de/news/1/27276/dropbox-f%C3%83%C2%BCr-linux-man%C3%83%C2%B6vriert-hin-und-her.html>

ORACLE LINUX 8 RELEASED

Oracle Linux 8 appears about five years after the predecessor Oracle 7 and is based on Red Hat Enterprise Linux 8 (RHEL). Oracle, like CentOS or the recently discontinued Scientific Linux, uses the source packages from Red Hat's corporate distribution and offers it as a separate product with its own kernel. Accordingly, Oracle Linux 8 brings the innovations that are already known by RHEL 8.

These include prominently the application streams (AppStreams) developed by Fedora as part of the modularization project. According to the announcement of product manager Simon Coter in the Oracle blog, a combination of basic system and application streams is used.

The concept of AppStreams allows multiple versions of

software to be maintained and updated more frequently than the base system. AppStreams contain the necessary system components and a set of applications previously distributed in software collections and other products and programs in separate repositories. A list of the AppStreams supported on Oracle Linux 8 mainly includes development tools and web applications. The AppStreams are not covered by the Oracle Linux Extended Support.

The system administration also experienced some changes. Package management is handled by DNF, the successor to Yum. Cockpit is a new administration tool for Linux servers and allows monitoring and control via web browser and mouse. The installer now uses the LUKS2 format for encryption. OpenSSH is offered in version 7.8p1, Transport Layer Security (TLS) 1.3 is enabled by default. In the network tools iptables was replaced by nftables. Stratis was introduced in the field of storage systems. Containers can be created and managed using Podman, Buildah and Skopeo. The kernel will be 4.18.0-80.el8 of the Red Hat Compatible Kernel (RHCK), while the in-house

Unbreakable Enterprise Kernel (UEK), which is in a more recent version, is still under development.

Source: <https://www.pro-linux.de/news/1/27278/oracle-linux-8-ver%C3%83%C2%B6ffentlicht.html>

COREBOOT 4.10 SUPPORTS MORE NOTEBOOKS, CHROMEBOOKS, MOTHERBOARDS AND CHIPS

Coreboot was formerly called LinuxBIOS and is a project that replaces the mostly proprietary BIOS of a computer with a free implementation. Originally LinuxBIOS actually booted a complete kernel, but from Linux 2.6 did not fit into most flash ROMs on standard motherboards. The project was then renamed Coreboot in 2008 and has since been a minimal code that reloads other code such as GRUB2.

After Coreboot 4.9 in December 2018 now appeared the new version 4.10, which, as can be read in the Coreboot blog, provides

advanced hardware support for notebooks, motherboards and chips. The new version includes 2538 changes from 198 authors. Among them were 85 authors who made their first contribution to Coreboot. The code grew by about 11,000 lines, plus about 5,000 lines of comments added.

A total of 28 new motherboards are supported, 7 no longer relevant boards were removed. In addition to various Chromebooks, motherboards from Asrock, Asus, Foxconn and Gigabyte are also being supported. Also compatible for the first time is Coreboot 4.10 with Lenovo's Thinkpads R500 and X1 Carbon and Purisms Librem 13v4 and Librem 15v4.

For the newly supported chips, the announcement lists the "AMD Picasso" APU and the Qualcomm QCS405 SoC, with three older CPUs removed. The coreboot toolchain has been updated to GCC 8.3.0, Binutils 2.32, IASL 20190509, and Clang 8. As part of GSoC 2019, the code was cleaned up after an analysis by Covertly Scan identified a need for action. The results have to a large extent already flowed into 4.10. The next version of Coreboot 4.11 is scheduled for

October.

Source: <https://www.pro-linux.de/news/1/27280/coreboot-410-unterst%C3%83%C2%BCtz-mehr-notebooks-chromebooks-mainboards-und-chips.html>

CANONICAL OUTS NEW LINUX KERNEL SECURITY UPDATES FOR UBUNTU 19.04 AND 18.04 LTS

The new security updates are here to address a race condition (CVE-2019-11599) in Linux kernel when performing core dumps, and an integer overflow (CVE-2019-11487) when referencing counting pages. Both issues affect only Ubuntu 19.04 systems and could allow a local attacker to crash the system by causing a denial of service (DoS attack) or possibly execute arbitrary code. On Ubuntu 18.04 LTS systems, the new security patch fixes a flaw (CVE-2019-11085) discovered by Adam Zaborcki in Linux kernel's Intel i915 kernel mode graphics driver, which failed to correctly restrict mmap() ranges under certain situations,

allowing local attackers to either execute arbitrary code or cause a denial of service attack and crash the system. Moreover, Ubuntu 18.04 LTS systems were affected by a race condition (CVE-2019-11815) discovered in Linux kernel's RDS (Reliable Datagram Sockets) protocol implementation, which is blacklisted by default. If the RDS protocol was enabled, the flaw could allow a local attacker to cause crash the system or execute arbitrary code. These Linux kernel security updates also address an issue (CVE-2019-11833) discovered in the EXT4 file system, which failed to zero out memory under certain situations, and a problem (CVE-2019-11884) discovered in the Bluetooth Human Interface Device Protocol (HIDP) implementation, which improperly verified strings in certain situations. These two issues affect both Ubuntu 19.04 and Ubuntu 18.04 LTS systems, and they could allow local attackers to expose sensitive information (kernel memory). The updated Ubuntu 18.04 LTS kernel is also available for users of the Ubuntu 16.04.6 LTS (Xenial Xerus) operating system series using the HWE (Hardware Enablement) Linux kernel packages from Ubuntu 18.04 LTS.

Source:

<https://news.softpedia.com/news/canonical-outs-new-linux-kernel-security-updates-for-ubuntu-19-04-and-18-04-lts-526818.shtml>

CANONICAL'S UBUNTU OPENSTACK ARCHITECTURE TO EMPOWER BT'S NEXT-GEN 5G CLOUD CORE

BT's next-generation 5G Core network will be built on Canonical's Charmed OpenStack architecture on Ubuntu Linux. The company will also use all the open-source tools provided by Canonical, such as Charms, Juju, and MAAS, to automate the deployment and operations of their infrastructure, as well as for virtual network functions (VNFs) apps. Not only that Canonical's Charmed OpenStack on Ubuntu proves to be a key component for BT's next generation 5G Core network, but it looks like all these open-source tools and cloud-based approach will ensure the quick deployment of new services from BT, as well as to increase the capacity to stay ahead of customer demand, thanks to 5G and FTTP

technologies. "Canonical is providing us with the 'cloud-native' foundation that enables us to create a smart and fully converged network. Utilising open source and best-of-breed technologies will ensure we can deliver on our convergence vision, and enable a world-leading 5G and FTTP experience for our customers," said Neil J. McRae, BT Group's Chief Architect. On May 30th, 2019, BT's EE mobile network enabled 5G capabilities in six cities in the UK (United Kingdom), including Belfast, Birmingham, Cardiff, Edinburgh, London, and Manchester. The next-generation cloud-based full 5G Core network will be introduced by BT starting from 2022, thanks to the powerful Open Source technologies provided by Canonical and Ubuntu Linux.

Source:

<https://news.softpedia.com/news/canonical-s-ubuntu-openstack-architecture-to-empower-bt-s-next-gen-5g-cloud-core-526834.shtml>

VIRTUALBOX 6.0.10 ADDS UEFI SECURE BOOT DRIVER SIGNING SUPPORT ON UBUNTU, DEBIAN

VirtualBox 6.0.10 comes more than two months after the previous maintenance release with some notable changes for Linux-based operating systems, especially Ubuntu and Debian GNU/Linux hosts, which received support for UEFI Secure Boot driver signing. Additionally, Linux hosts got better support for various kernels on Debian GNU/Linux and Fedora systems. It also fixes focus grabbing issues reported by users when building VirtualBox from sources using recent versions of the Qt application framework. The Linux guests support was improved as well in this release with fixes for udev rules for guest kernel modules, which now take effect in time, and the ability to remember the guest screen size after a guest reboot. Other than that, Linux guests will no longer load old libcrypt versions on recent guests in the Guest Additions tools. VirtualBox 6.0.10 also improves the user interface by fixing issues with

inputting controller names and resize problems with recent Linux hosts. Several serial and USB problems were addressed as well in this maintenance release.

Source:

<https://news.softpedia.com/news/virtualbox-6-0-10-adds-uefi-secure-boot-driver-signing-support-on-ubuntu-debian-526817.shtml>



I recently replaced my aging MacBook Pro with a Dell XPS 15 (7590) with the intention of once again switching to one computer for both on-the-go and at my desk (via the use of an eGPU enclosure). Until now, my main computer was my Intel NUC with an i5 which was running ArchLinux and was on 90% of the time. It ran my local web apps, Plex installation, and acted as a Samba share for some files. For various reasons, I can't always assume my laptop will be up and running, or connected to a wired network connection. As such, hosting internal tools like that seems kind of silly. Instead, I dusted off my Raspberry Pi (periodically used as a printer server and a test environment), and have pressed it into service as my internal tools host. This month's article will run through some things I discovered in the new version of Raspbian, and a few tricks I've thought of along the way.

INITIAL SETUP

Setup is pretty easy - follow the instructions for Raspbian and copy it to an SD card. Then boot it.

CONFIGURATION

Ask yourself a few questions for this next step:

Where will you be using the RPi most frequently? Will it have access to:

- Wired internet?
- The same IP/network (i.e. will you be moving it around)?
- Keyboard/mouse/monitor?
- External storage?
- Airflow/cool environment?
- A direct power connection (versus battery)?

What will you want to do with the RPi?

Depending on the answers to some of these questions, it may impact your decision on what model of RPi you want. If you're worried about temperatures, you can find some small heatsinks to put on the RPi's chips. It's passive cooling, but will increase the

surface area to dissipate heat.

In my scenario, my answers are as follows:

- It'll run on both wired and wireless networks.
- The IP cannot be fixed (different interfaces, and I will use it in at least two separate networks with different IP ranges).
- It will have minimal access to input and output devices. It must have SSH and/or VNC services running.
- It will have access to external storage, but it will not always be the same drive.
- Airflow shouldn't be a problem (in both cases, it will run on a table, not tucked into a closet).
- It'll run directly from the A/C adapter.
- It'll run Plex, a ruby on rails app, an SSH service, a VNC service, and will most likely run more local web apps to be accessed on the local network.

THE PROBLEMS

There were two big problems I saw with the requirements. One

problem was the inconsistent external drive, and the other issue was the changing IP address.

One problem at a time - I set up my external drive using the UUID in my fstab file, and included the nofail flag. This will ensure that the RPi will boot even if the drive is unavailable. By default it will timeout after 90 seconds, which I deemed too long. Instead, I added "x-systemd.device-timeout=30" directly after the nofail flag. This sets the timeout to 30 seconds instead.

The other problem I still haven't found an ideal solution for. I set up and enabled the avahi-daemon to allow an mDNS broadcast on the RPi (which should make it available under raspberrypi.local on the network). Unfortunately, this seems to work only sporadically. On a wired connection it seems to fail only in Chrome and Opera, but on a wireless connection it doesn't work for anything. As long as I can manage to get ping to successfully find the local domain, I can at least ensure I'll be able to discover the



IP address it's running on.

I also tried to set up static IP addresses for the 2 different networks and 3 connections modes (location 1 wired, location 1 wireless, location 2 wireless). While this seems to work more readily than avahi, it's still not a guarantee. I've experienced the RPi still pulling in random IP addresses in both locations, or running on a static IP in the wrong network (causing a complete failure of connection, as an IP in one location is invalid in another). I've since then tweaked the settings, but haven't yet thoroughly checked the results. That will happen later this summer.

SETTING UP A RAILS APP

This part is pretty easy - just install ruby and ruby-devel. Then I cloned the git repository I stored my app in and run 'bundle install'. It took a little while as a few items were compiled from source for the ARM architecture.

I then used the trick I wrote about in FCM#145 and created a systemd service for running the rails app. I also ensured it would

bind to 0.0.0.0 so that I could access the site from other devices, regardless of what the IP address was.

SETTING UP PLEX

This was also pretty easy - I just installed the service, configured it, and started it. The media for the plex library is stored on the external drive. While the drives can change, the locations should remain the same. On the smaller external drive the selection of media will also change.

One note here: the RPi took a long time processing all the files and loading the metadata. During this time it was frequently unresponsive and laggy. I feared at first that this might be too much for the device. However, once the initial scans and metadata loading was done, it's been absolutely fine for streaming both on a wired and a wireless connection, as well as casting to a TV.

CONNECTING

I had to initially connect it to a monitor, keyboard and mouse - as I hadn't booted the device in some

time, and I couldn't connect to it using the information I had stored. In this case, the IP address it was supposed to be using had been occupied by another device, and so it received a random one.

I then took the time to use the direct input methods to run the dist-upgrade I needed, and then rebooted after tweaking the fstab file.

After I knew the IP address the device was running (and avahi-daemon was working), I connected instead using VNC and SSH (VNC when I was trying to test the rails app and had to check in a local web browser, and SSH whenever I needed to quickly change a file or run a service). The RealVNC service I'm running is surprisingly good. I remember my last experience using VNC frequently were weird colors, artifacts, and a laggy interface. On this new laptop I've had no such issues.

I also took the time to set up a samba share on the RPi to share the external drive location on my local network. This way I can quickly and easily add media files to Plex if I need to. I didn't need to do anything beyond the basic steps

- install it, run it, and create a Samba share and password for the pi user.

VERDICT

Is everything as fast and reliable as when it ran on my NUC? No. On the other hand, it's portable, small, quiet, and doesn't draw as much power. So far, I haven't run into any showstoppers, and once the large Plex scans finished up, subsequent small scans have been fine.

So for any readers who are hoping to use their Raspberry Pi for more than just tinkering - I say go for it! To any readers out there who have found a good solution to always knowing the device's IP address, please do let me know! As always, any questions, comments, or suggestions can be sent to 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.



As some of you may know, Python 3.8.0b2 was released on July the fourth. It is available for download at <https://www.python.org/download/release/python-380b2/>. For Linux, there are no binaries available, so you must compile it yourself.

There are a lot of changes in version 3.8.0, one of which we have already looked into back in April (FCM #144), Positional-only arguments. Many have to do with CPython and things that some of us won't ever need to worry about. Here is a list of a few of the other things that are new:

- Assignment Expressions - PEP 572 (see below)
- Pickle protocol 5 with out-of-band data - PEP 574
- Runtime audit hooks - PEP 587
- f-strings support handy = specifier for debugging (see below)
- LOAD_GLOBAL is now 40% faster
- pickle will now use Protocol 4 by default
- Typing-related:
 - PEP 591 (Final qualifier),

```
import json
locs = '{"locations": \
    [{"City": "San Marcos, Tx", "Lat": 29.88, "Lon": -97.95}, \
    {"City": "Oslo, 0026, Norge", "Lat": 59.91, "Lon": 10.73}, \
    {"City": "Odessa, Texas, USA", "Lat": 31.84, "Lon": -102.36}, \
    {"City": "Denver, Colorado, USA", "Lat": 39.73, "Lon": -104.98}, \
    {"City": "Beaumont, Texas, USA", "Lat": 30.08, "Lon": -94.10}, \
    {"City": "Atlanta, Georgia, USA", "Lat": 33.74, "Lon": -84.39}]}'
locations = json.loads(locs)
```

PEP 586 (Literal type)
PEP 589 (TypedDict)

I'm going to focus on two of the changes in this article. First, we'll take a look at the Assignment Expression change.

In this change, there is an additional operator for us. It's called the "walrus operator". It's coded as " := " (turn your head to the left and you'll see why it's called "walrus"). This allows us to assign a value to a variable as part of an expression. At first glance that sounds like what we already have. But wait! Here is how it works...

Assume we have a list. We'll call it "lst". It has 12 items. Let's further assume that we want to

check to see if the number of items is greater than, let's say 10. Easy enough, right? Here is the old way (pre 3.8.0)...

```
n = len(lst)

if n > 10 :
    print('List is too big.
    {0} items found, expected
    10.'.format(n))
```

Now, we'll use the new walrus operator. **Remember, you need to have Python 3.8.0 in order to run this code...**

```
if (n := len(lst)) > 10:
    print('List is too big.
    {0} items found, expected
    10.'.format(n))
```

You can see that it saves us a line of code.

Here (top) is another example, a

bit more "real world".

Here we import the json library and create a string compliant with json containing a number of city/state, latitude and longitude entries. We then use the json.loads load string method assigning it to a variable called locations. We then get the list of entries into the variable 'l'.

```
l = locations["locations"]
```

Next (next page, top right) we step through the list, one at a time, and use the new walrus operator to check to see if the "City" entry starts with the name "Odessa". If so, we print the new variable city, the latitude and longitude. Otherwise, we ignore the data.

HOWTO - PYTHON

The output from this short program would be...

```
Odessa, Texas, USA
31.84
-102.36
```

The other new item I wanted to discuss deals with the f-strings formatting addition. It's basically an aid for using print when debugging your code. F-strings were introduced in Python 3.6 and is the third formatting option for strings along with the "% formatting" option (which goes WAY back) and the "str.format()" option which goes back to Python 2.6.

I assume you all understand the % formatting option – I've dealt with it since my first few articles. I'm sure most of you have used the str.format() option as well, but just in case, here is a quick recap.

Let's say that you want to create a string for printing that includes the following data variables...

```
mag = "Full Circle Magazine"
issue = "147"
month = "July"
year = "2019"
```

In the % formatting methodology, you would use...

```
print("Written for %s issue
#%s %s, %s"
%(mag, issue, month, year))
```

Which would produce:

```
Written for Full Circle
Magazine issue #147 July,
2019
```

To use the str.format() method, you would code it like this:

```
print('Written for {} issue
#{} {}, {}'.format(mag,
issue, month, year))
```

Which provides the same output. Notice that the curly brackets act as place holders for the variables in the .format() portion of the statement. When using the curly brackets, you can either leave them empty (as above) or provide an "index" number which relates to the index within the format statement like this...

```
print('Written for {0} issue
#{1} {2}, {3}'.format(mag,
issue, month, year))
```

Again, this produces the same output as the others. Yet another way to do this is to do the following:

```
for d in l:
    if (city := d.get("City")).startswith("Odessa") :
        print(city)
        print(d.get("Lat"))
        print(d.get("Lon"))
```

```
print('Written for {mag}
issue #{issue} {month},
{year}'.format(mag=mag,
issue=issue, month=month,
year=year))
```

This, however, is somewhat clumsy and, as you can see, makes the statement long when multiple variable/replacements are used. In a case like this, it makes writing the debug code longer than it needs to be.

Now to using f-strings. The idea is similar to the str.format, but shortens it considerably. It also makes it much more readable.

```
print(f"Written for {mag}
issue #{issue} {month},
{year}")
```

As you can see, it is much shorter (and readable), since we simply place an "f" before the opening quote and use the variable names within the curly brackets, forgetting about the '.format()' porton.

Now for the new part. Python

3.8 gives us the ability of using an '=' sign. As I said above, this is mainly for debugging support. Assuming the variable assignments above, if we want to print the value of the mag variable, we could simply do it like this...

```
print(mag)
```

And as we all know, will print...

```
Full Circle Magazine
```

But if we use the new = option provided to us by Python 3.8, we can use the following...

```
print(f"{mag}")
```

This will display:

```
mag='Full Circle Magazine'
```

This is so much easier to read in the debugging output in the terminal than just the previous output.

There are so many new things that Python 3.8 offers us. While

compiling Python on your own can be a challenge, there are many websites that offer step-by-step instructions to do this. Remember, however, this is a beta product, so there are bound to be issues. You might want to wait a few months until one of the release candidates become available. It would also be a good idea to create yourself some sort of virtual environment to support your 3.8 work without risking breaking anything you currently have. Consider it a “sandbox”.

For a detailed list of the upcoming features in Python 3.8.0, see <https://docs.python.org/3.8/whatsnew/3.8.html><https://docs.python.org/3.8/whatsnew/3.8.html>

Python 3.8.0 is currently expected to be released on 10/21/19.

Until next time, happy coding!



Greg Walters is a retired programmer living in Central Texas, USA. He has been a programmer since 1972 and in his spare time, he is an author, amateur photographer, luthier, fair musician and a pretty darn good cook. He still is the owner of RainyDaySolutions a consulting company and he spends most of his time writing articles for FCM and tutorials. His website is www.thedesignatedgeek.xyz.



HOW-TO

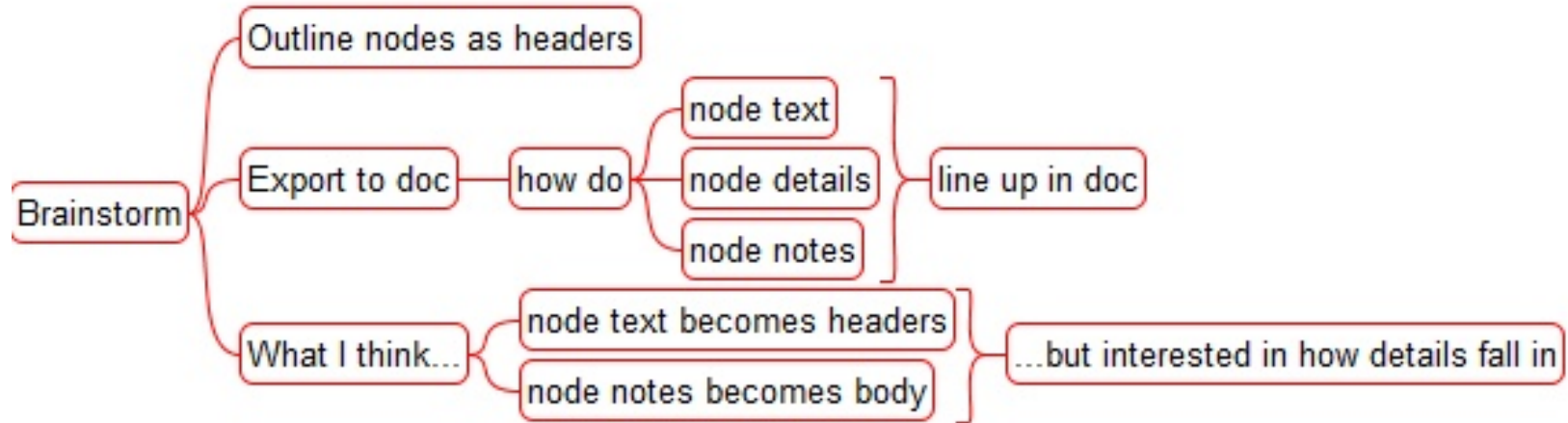
Written by Elmer Perry

Freeplane Pt15

With every article or story I write, I use Freeplane for my research and my outline. My last article on the Simple HTML editor prompted me to explore the possibility of creating the draft copy of a document in Freeplane. The node text becomes the header for each section, and the notes become the text body. I can then export the draft branch of the map to a document for editing. The advantage is having the Outline in front of me while I work. The draft of this article was written using this method, and in it, I'm sharing my experiment with you.

SETTING UP THE MAP

Everything started with setting up a mind map for my project. I wasn't overly concerned with the formatting of the map but concentrated more on the layout. I titled the root node the same as



the planned title for the article, Freeplane Part 15. I know, attention-getting stuff. Fancy titles are saved for the fiction side of writing. I created four branches from the root, Brainstorming, Research, Outline, and Draft. Let me explain to you how I used each of the branches.

BRAINSTORM

Brainstorming is where the whole process began. I start by creating nodes of my ideas about the article. What did I want to accomplish? How did I think it would work? What didn't I know? Brainstorming is best done without holding yourself back and noting all the ideas even if you think you will never use them. I was mostly interested in how all the different parts would show in the final document. I had a good idea that the node text would show as headers and the notes as each section body. What I didn't know is how the node details would fall into the mix. I didn't plan to use

node details, but going beyond can result in something useful and is the main idea behind the brainstorm session.

RESEARCH

Research is where I gathered data for the article. I did look on the web for what I wanted to do, but I didn't find anything. So I went with the experimental method. Under the research node, I created three experiments to test my theories. I found the node text and notes worked as I had expected: the node text as a header with the notes text below. I discovered a



HOWTO - FREEPLANE

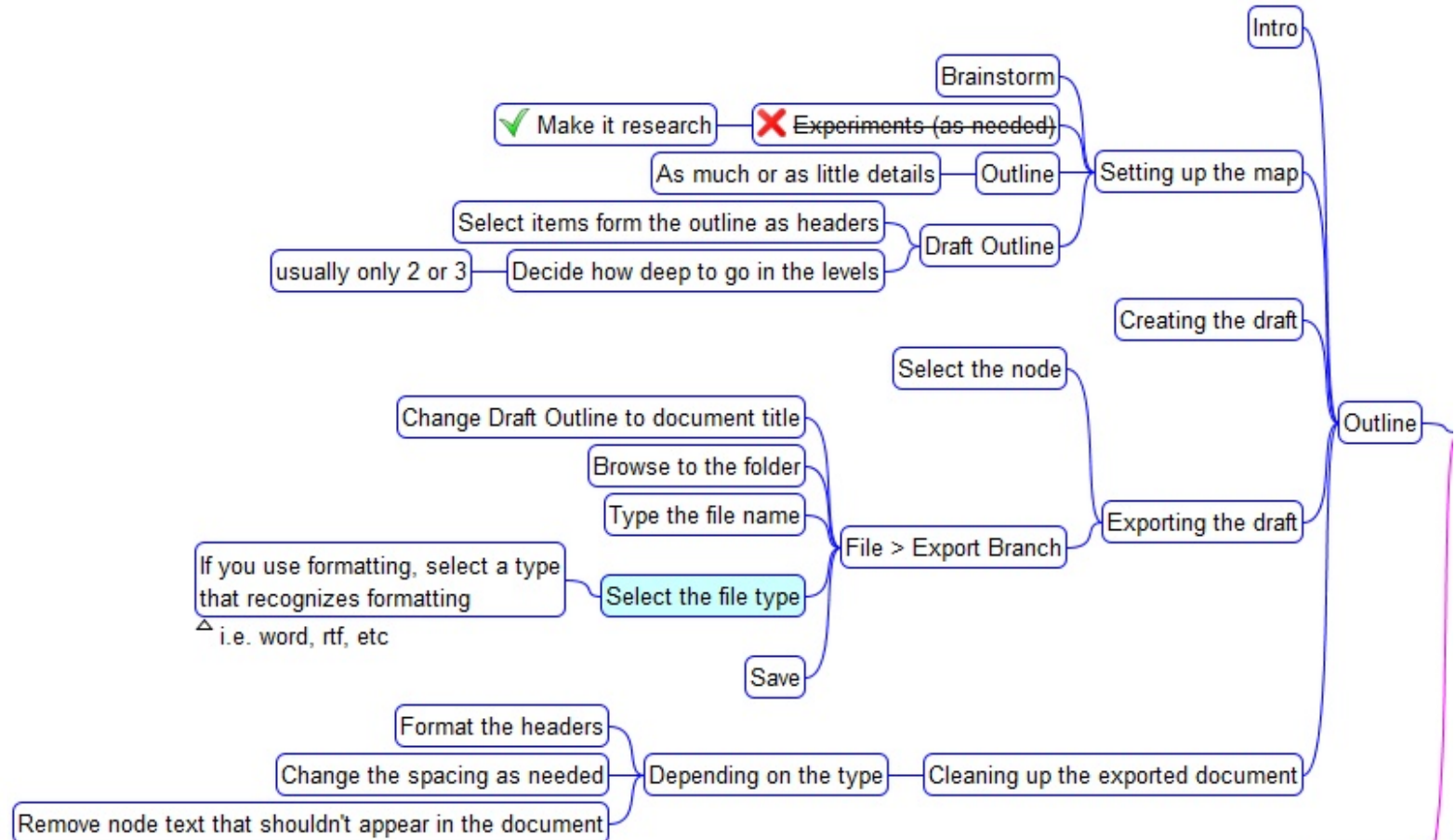
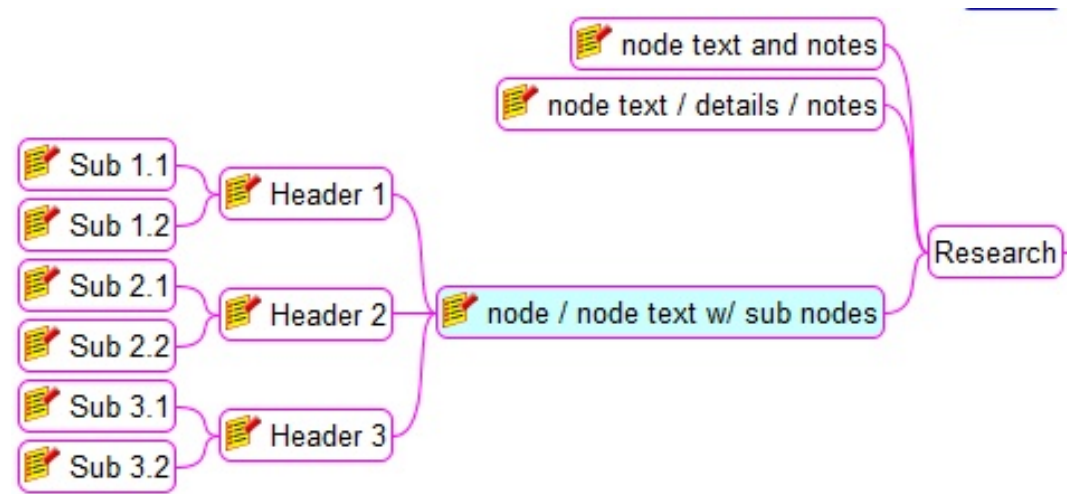
node with details gets the details sandwiched between the node text and notes. Any sub-nodes are placed in order under their parent's details and notes with their own details and notes. With my questions answered, I was ready to create an outline.

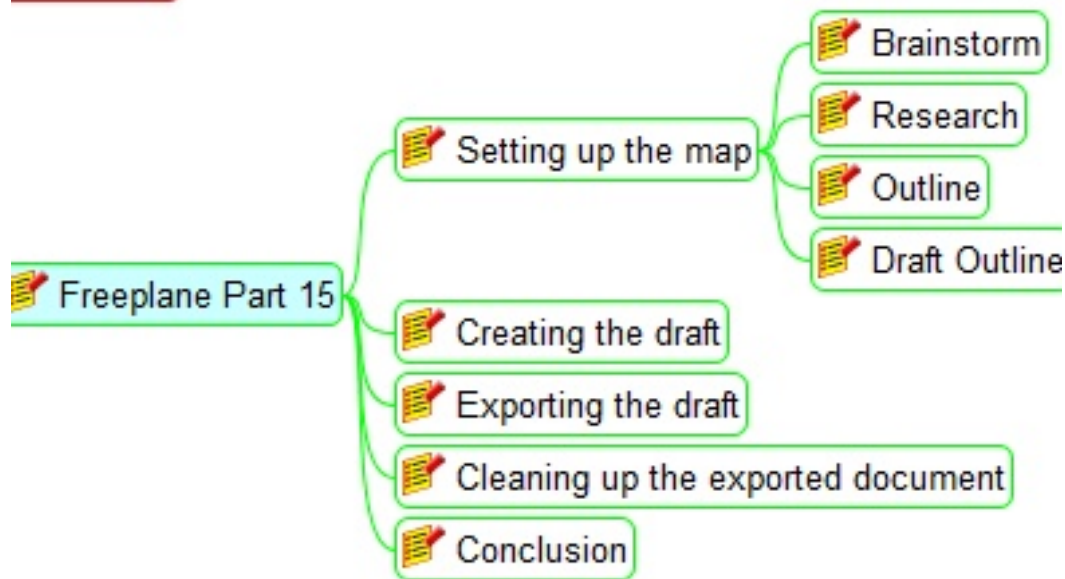
OUTLINE

The Outline (bottom right) is where I fleshed out the details of the information I want to use in the article. From this, I generated the draft nodes. I rarely remove things from a map. Instead, I will mark them out with an X icon or strikethrough font. I don't want to delete it should I decide to go back to it. The Outline grows and changes as I work on the draft. It's always in flux. If there are menus, shortcuts, or step-by-step instructions, they get detailed in the Outline. In some cases, the outline nodes have very little detail because not much is needed. I have a good idea of what needs saying, but I will always add nodes, details, and notes for things I don't want to forget.

DRAFT OUTLINE

I prepared the draft outline to write the article. Pulling from the Outline node, I selected the essential points and added them to the Draft branch. These become the headers, so I tried to not go too deep with the sublevels. Two or three levels should work in most cases. I rarely go beyond two levels because I feel anything beyond that creates excessive sectioning of the text. I want the article to become more than just an outline





and comments about the content to include.

Another nice thing about writing in this manner is not having to write sections in order. If I wanted, I could start at the end. It's easy to jump from one node to the other to add, change, or remove text from that section. I found myself having an idea about one of the different parts while I was working, and I'd simply click on the node and make the change. The Simple HTML editor doesn't

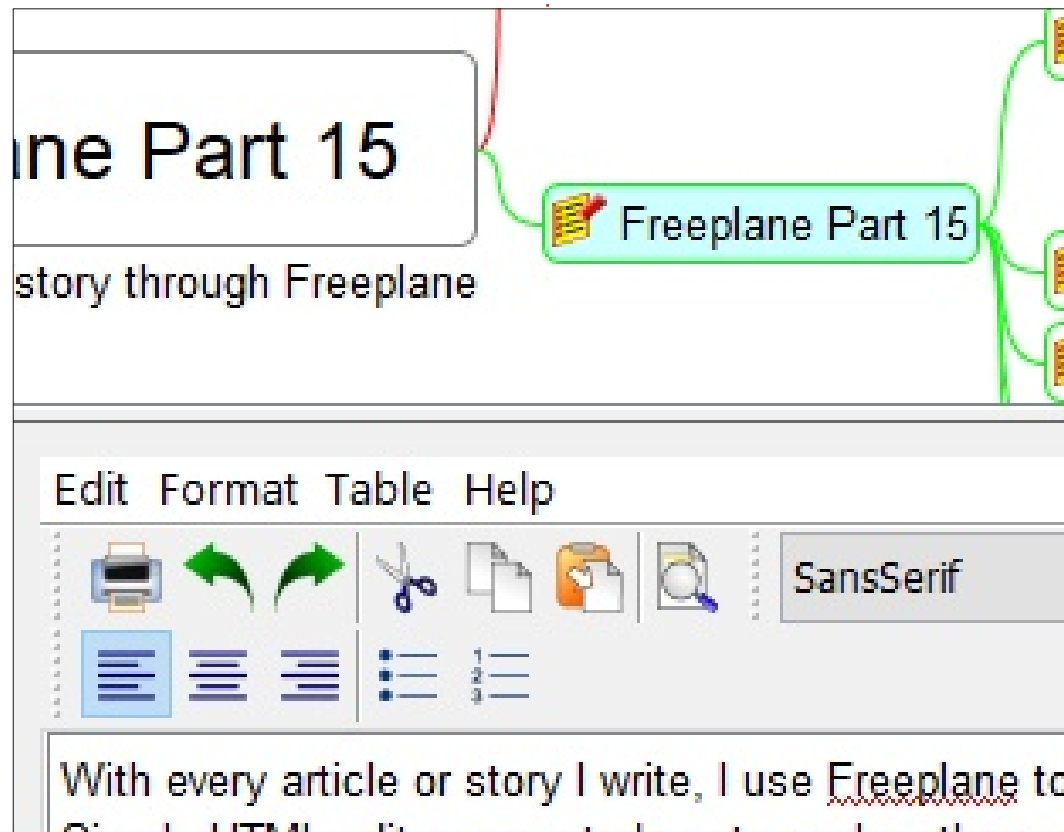
have many distractions, so I wrote with very few stops because a grammar checker caught something in my sentence structure. I saved that for the editing process. The process also made it easy to move things around. If I moved one section before another, the text for that section moved with the node. I found this quicker than the old standard cut and paste of a traditional text editor.

While working in the editor, you can format your text as well. I usually don't. Most of the formatting is up to the magazine editor anyway. It's pretty easy to over-format a document. I try not to. However, if you are creating a manuscript for work or school, then you can't go wrong by editing as prescribed by your work style sheet or teachers guidelines.

with an explanation for each point. It's an article, not a bulleted presentation. Presentations in Freeplane are a subject for another day.

CREATING THE DRAFT

Now, the writing can begin. I started by selecting the draft outline node and opening the notes editor with the shortcut CTRL + >. I typed the introduction to this article. I moved on to each node under the draft outline, and, in the Simple HTML editor, wrote the text for that section. I liked being able to reference the Outline where I had made notes



EXPORTING THE DRAFT

Once the writing is complete, I wanted to export the draft outline to a document. I changed the name of the Draft Outline node to the title I wanted for the article. I selected the draft outline node and used the menu File > Export

HOWTO - FREEPLANE

Branches. A Save File dialog popped up. I browsed to the folder where I wanted to save the document. By default, the root node text is used for the document name. You can type a new one in the name text box, but I decided the name was good enough. You will want to select the type of document you're exporting to. I used the plain text format so I could quickly move it from my editing software to Google Docs without too much fuss, but other types are available, including Microsoft Word and the Open Document Format.

CLEANING UP THE EXPORTED DOCUMENT

Depending on the format type you exported to, you might need to format the headers and change the spacing. When I did a text export to ODT, I found the 'before' spacing on the headers wasn't to my liking. I also removed the Conclusion node text as I find it a nuisance header, but it made sense for the draft outline. You might have other node text headers you want to remove. If I were writing a story rather than an article, I'd probably remove the node text

headers unless they somehow fit the story.

For my plain text format, the export put numeric outline tags on all the header. I removed these. Also, before each note, I had to remove the text "NOTE:." Otherwise, once I imported the document into my Grammar editor, I was ready to begin my editing process.

Overall, I enjoyed writing my article draft in this manner. Usually, I'm distracted by grammar alerts, word counts, and other bells and whistles related to a full function editor. This method was a nice change. I worried the word count would fall short of my usual work but discovered I actually wrote more. For drafting a document, I found this method surprisingly refreshing. Will I use it again? I'll have to try it a couple more times to see whether it actually grows on me, but the prospects are good.



Elmer Perry is a technical support rep for an international keyless access company. He enjoys writing, woodworking, and technology. He lives in Leicester, NC with his wife.



HOW-TO

Written by Erik

Darktable - Pt5

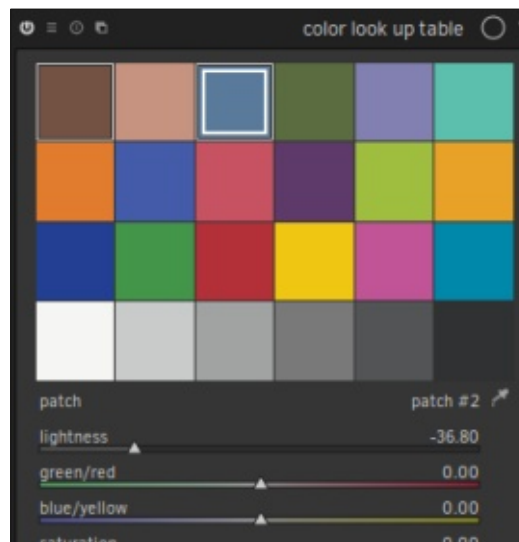
Our free picture we will be playing with with:

<https://www.goodfreephotos.com/united-states/california/other/shaffer-mountain-from-the-top-of-snowstorm-mountain.jpg.php>

Disclaimer: In no way am I an expert in photo manipulation, I just know a guy who had a dog that gave me some fleas. I thought it may help you scratch an itch also.

Right now it is winter. Very dry and dreary here. The grass has all yellowed. I would like to change that. Would you like to time-travel with me? Good. Open the above picture in Darktable and go to the 'darkroom' mode. In our modules on the right, I want you to choose 'color group' - the icon is the one with red, green and blue in it. Now we will add our module. If you have been following along in our series, you know how to do this. If you have just joined us, the darkroom layout is split into 3 vertical panes

by default. We are working in the rightmost pane. To add modules you click on 'more modules' at the bottom. Please add the 'color lookup table' module and you should see these coloured squares that pop up.



Below these blocks you will see a tiny colour picker (the eye-dropper icon). Click on it.

Now I need you to change focus to the leftmost panel. Unfold the 'color picker' tab and change the selection from 'point' to 'area'. Select a patch of grass. You should see a white square in your 'color

lookup table' appear inside one of the colours. In the above image, it is in the blue block, but yours should be in the first brown block (if you are using the free picture above). This is the power of the Darktable algorithms at work. It automatically picked the most compatible swath for you. Please feel free to hover over anything and read the tool tips. I have picked a spot on the centre left, then a spot in the centre, and it made no difference. Every time the algorithm picked the first preset. Hover your mouse over this preset

and you can see the RGB values right before the explanation starts.

We have not changed anything in the picture yet, but we have selected the 'colour area' in which we would like to work. Now I want to travel forwards (or backwards) in time to summer. However, in summer, this scene has a lot more "life". How do I insert "life" into the picture, you may ask? Well, with colour. In summer, greens are more prevalent, the sky may be deeper. Shall we experiment?



HOWTO - DARKTABLE

Back to the rightmost pane. We have four sliders: 1. lightness, 2. green/red, 3. blue/yellow, 4. saturation. The obvious choice is to start with green/red. Bring that down to anywhere between minus twenty (-20) and minus twenty five (-25). (It must look good / believable to you). Up the saturation to between one and five. Up blue/yellow to around ten to twelve. Adjust your 'lightness'

between one and five. Below the sliders, you will see 'blend', change that to 'uniformly'. I am not going to go into all the other settings here, as we have limited space, but don't let me stop you from experimenting. Undo is only a 'ctrl+z' away. If you remember from our previous tutorials, you can reset every edit you made in a module with the 'reset parameters' button, located above

the module you are in.

The values I am giving you are not cut in stone, rather they are a guide to get your picture more or less like mine, that you can see the results. Already your picture should be less 'winter'.

Again, I need you to select the eye-dropper icon and do the same with patch in the sky. We will now

add some drama to our dreary dry landscape. Pick the grey area to the left of the mountain. Add some blue, we do not need dirty winter skies. In the image, you will see that I left my selection rectangle in the spot that I selected. I changed my blue values between minus fifteen (-15) and minus twenty (-20). We are going to tweak everything today to get the most out of this picture! However, I am going to leave the sky above the clouds – the clouds and the mountain are up to you. This will be your homework, and if you are totally new to Darkroom, this will be your baptism of fire. We would love to see your edits. Remember it does not have to be like I did it, you can change this serene landscape into an alien one. The limits are your imagination!

Just remember baby steps! Small value changes at a time. The recipe is: pick your area, make changes to that area, stand back and look at it - and wash, rinse, repeat. The power in the Darktable algorithms will do the heavy lifting for you. You may be pleasantly surprised at what this powerful open source beast can do! Yes, Darktable is a beast. We haven't even scratched the surface of what



is possible.

Again, as per most things you do on a computer, this is not the only way to do it, but it is the easiest. Write to us and let us know if you would like to know about the alternative ways or would like a 'deep dive' on this subject.

I will edit my version a bit more and add the final result. After my

colour edits, I am going to go to my tone group and pick 'local contrast' (you know how to add modules if you don't see it) and sharpen the image by boosting the 'detail' to 200%. This should make your picture jump off the screen. (Try it and see!). Feel free to up the shadows quality, to deepen those recesses. Your image should now be a far cry from the original. Yes, that was a pun, but it is a gamer reference, sorry.

Shall we compare? Move to the very left pane again and choose 'snapshot' This should take a screen grab of what we have now. Right below the snapshot tab, you will see the 'history' tab. Expand this tab and click on the very last entry, which should be the original image. (It should be edit number zero). On your main editing window, you can now move your slider and see the differences.

Your image may not look like mine, but I do not want you to copy me 100%. It must look good to YOU.

Keep fiddling, it is the only way you will learn. You are welcome to read the manual at: https://www.darktable.org/usermanual/en/darkroom_chapter.html. That is were I 'stole' all this info from! As this is a short, beginner-friendly tutorial, I did not mention base curves, color lookup tables or artefacts. You can read more on that here: https://www.darktable.org/usermanual/en/color_group.html

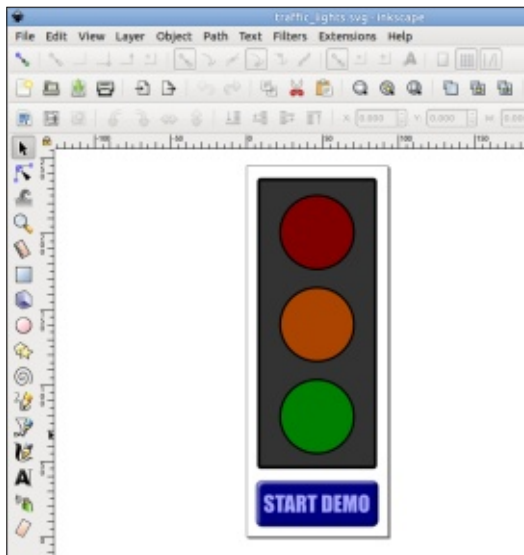
If you learned something today, great! If you did not, why not send us your article, and help thousands of FCM readers? Feel free to correct me on anything.

This is our final image and we have definitely travelled through 'time'. Time travel can be a horrendous 'time-sink', don't say I did not warn you. Happy editing!





Last time, we used a linked JavaScript file to create an SVG file containing a circle that changes color when a button is pressed, when loaded into a web browser. This time, we'll extend that simple example to show how the combination of SVG and JavaScript is ideal for animated demonstrations, by implementing a set of traffic lights. Our lights are the sort of thing that might appear on an educational site, or in a museum: they'll cycle through the sequence of colors (red, red and amber, green, amber, red) once when the button is clicked. But first, we need some traffic lights:



For simplicity, I've based this on the file I created for the previous instalment. That means the red light already has an ID ("redCircle"), and the JS file is already linked. I've duplicated the red circle to create the amber and green ones, giving them corresponding IDs of "amberCircle" and "greenCircle". Because the JS is linked, and the red circle has the same ID as last time, loading the file into a web browser draws the lights okay, and clicking the button toggles the red light to green and back. Clearly there's more work to be done, but at least the fundamentals are in place.

For this demo, we want the dull colored lights to turn bright at the correct times. Let's forget about the timing for now, and deal with the colors first. With a variation on our existing code, we could easily set each light to a specific color by targeting it using its ID, then setting the "style.fill" property directly. A better approach, in this case, is to use classes. We can set a class for each light onto some

ancestor object, and use CSS to apply the right fill. Since classes can be combined, we don't need a "red-and-amber" class; we can just set the "red" and "amber" classes at the same time.

But before we get too far ahead of ourselves, we need to set some default colors in CSS, so that we can override them later using classes. Open the file in a text editor, and find the <style> section (or add one, as a child of the <svg> element, if there isn't one already). Put in some ID selectors, with the base colors you want to use – something like this:

```
<style>
#redCircle {
  fill: #800000;
}

#amberCircle {
  fill: #aa4400;
}

#greenCircle {
  fill: #008000;
}
</style>
```

Don't worry if there's already content in your <style> block, such as the rules used to style the

button – just add the new code to the end. Don't forget that you also have to remove the "fill" properties from the style attributes on the <circle> elements, otherwise they'll just override anything set in the <style> block. A good test is to change all the colors in the CSS to "blue" and reload your page – if you still see red, amber or green then you have an override entry on the elements themselves.

Now, we need to add the colors that we want to use when each light is turned on. It's just another set of three styles added to the end of the <style> block, before the closing tag:

```
...

.red #redCircle {
  fill: ff0000;
}

.amber #amberCircle {
  fill: #ff6600;
}

.green #greenCircle {
  fill: #00dd00;
}
</style>
```



Each of these rules is similarly structured, and can be read as “set this fill color for the element with a specific ID, but only if one of its ancestors has a specific class”. With this method we can set classes of “red”, “amber” and “green” on some ancestor element of the lights, such as the parent layer, or even on the root <svg> element, in order to activate the lights. So let’s do that...

We’ve already seen how to use `document.querySelector()` with an ID to retrieve a particular element. To add our classes to the Inkscape layer would simply be a case of finding the right ID for the relevant <g> element. But to demonstrate a different approach, we’ll get a reference to the root <svg> element instead, then add a class to that. If you followed along last time you should already have a JavaScript file with a `buttonPressed()` function. Let’s replace the content of that function with this:

```
function buttonPressed() {  
  const svg =  
  document.documentElement;  
  
  svg.classList.toggle("red");  
}
```

The `document.documentElement` property returns the root element of an XML or XML-like document. In the case of an SVG file, it returns the <svg> element; for an HTML document, it returns the <html> element, and so on. So you can see that this simple two-line function will toggle the “red” class on the <svg> element, and our CSS is written such that this should alter the color of the red circle. Save the code, reload the image in your browser, and check that clicking the button does, indeed, toggle the shade of red for the first circle.

Replace the word “red” with “amber”, save the file, reload the web page, and click the button again. Then do the same with “green” as the class name. Make sure that each light works as expected before moving on.

Our traffic light sequence includes one step in which two lights must be illuminated at once – requiring us to set two classes. In an ideal world, the `classList.toggle()` method would be flexible enough to take a parameter of “red amber”, and toggle both classes. But we’re stuck in a less than ideal world –

one in which the `classList` methods all work with a single class at a time – so to toggle both classes requires the method to be called twice:

```
function buttonPressed() {  
  const svg =  
  document.documentElement;  
  
  svg.classList.toggle("red");  
  
  svg.classList.toggle("amber")  
  ;  
}
```

In our demo we don’t actually want to toggle lights on and off – we just want to set a fixed selection of lights for each step, without having to also turn off lights from the previous step, or call the same method multiple times. Using the `classList` interface actually makes life more difficult for us, when all we want to do is set the “class” attribute to a specific value. Luckily for us, browsers provide a function for setting the value of an attribute. It’s got the sensible name of `setAttribute()` and its arguments are the name of the attribute to set, and the value to set it to. Let’s use it to turn on both the red and amber lights:

```
svg.setAttribute("class",  
"red amber");
```

If you try this in your code you’ll find that you can turn the lights on, but as we’re no longer using a toggling function you can’t turn them off again without reloading the page. But we’re not really interested in toggling – we want a sequence of particular lights. For that, however, we need a little foray into the history of JavaScript...

Back in the early days of the web, JavaScript was executed as part of the same “thread” as the browser code itself. This meant that the browser would effectively hand over control to the script, and couldn’t update its UI, or respond to input, until the JS code relinquished that control. You might remember the bad old days when a rogue web page could hang the browser, preventing you from doing anything else with either the page itself or the browser UI. So, JavaScript doesn’t contain any instructions to pause execution of the script, as doing so would block the browser entirely. That means we can’t sequence our lights with something as simple as this pseudo-code:

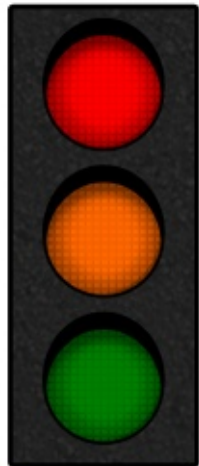
```
svg.setAttribute("class",  
"red");  
pause(3000);  
svg.setAttribute("class",  
"red amber");  
pause(3000);  
svg.setAttribute("class",  
"green");  
...
```

Instead JavaScript has a function called `setTimeout()`. This is a mechanism for queuing up a function call for later on. It doesn't pause execution of the current function, but asks the browser to run another function after at least a certain amount of time has passed. It takes two parameters: a function or reference to a function, and the minimum timeout in milliseconds. With this, we can write a series of functions that call each other in sequence, to create our demo:

```
function buttonPressed() {  
  const svg =  
  document.documentElement;  
  svg.setAttribute("class",  
"red");  
  setTimeout(redAmber, 3000);  
}  
  
function redAmber() {  
  const svg =  
  document.documentElement;  
  svg.setAttribute("class",  
"red amber");  
  setTimeout(green, 3000);  
}
```

```
function green() {  
  const svg =  
  document.documentElement;  
  svg.setAttribute("class",  
"green");  
}
```

That covers the first three steps of the sequence. I'll leave it as an exercise for the reader to extend it to the full five steps described at the start of the article.



START DEMO

With that, our traffic lights demo is almost complete. Clicking the button will begin the sequence, which will stop automatically at the end. All that's left is a little more work in Inkscape to make the lights look better. Provided

you don't change the CSS we added, or remove the link to the JS file, you're free to tweak the design as much as you like without fear of the interactivity being broken. Here's my result, partway through its cycle, after a little work in Inkscape with a few gradients and some lines.

Comparing this to the first image in this article shows just how much impact a little extra design work can achieve. But if I'd done all that design work first and only then started adding JavaScript, I would have had to deal with a much more complex SVG file for the few manual edits required. If you possibly can, it's usually better to focus on the core aspects of your animations or interactions, and get those working on a simple version of your file first.

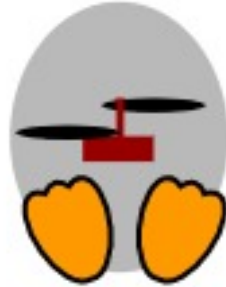
If you're careful, editing your file in Inkscape shouldn't break your code and interactions. But because work like this requires flitting back and forth between Inkscape and a text editor, both working on the same file and therefore able to interfere with each other's contributions, I strongly advise taking very frequent backups as you work.

Next time, we'll have a quick look at some other options for manipulating SVG using JavaScript, moving beyond a few changes of fill and stroke color into altering other aspects of your images.



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

You realize your son is never going to come out of his shell if he plays tux kart all the time?





LINUX LOOPBACK

Written by S. J. Webb

BACK NEXT MONTH



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.



We interrupt our regularly scheduled programming (Linux Help) this month, for a related topic, troubleshooting, as applied to a retrogaming issue. Help will be back in earnest next month.

THE ATARI 800

Back in the day (the 80's), I really wanted an Atari 800, but they were far more expensive than I could afford. The Atari 800 was a quite capable 8-bit computer, which was a huge draw, but it was also an excellent game console (an even bigger draw for me, personally). Atari had licensed

versions of most of the great arcade hits from the 8-bit arcade era, like Space Invaders, Galaxian, Pac-Man, Defender, Asteroids, Ms. Pac-Man, Missile Command, Joust, Dig Dug, Centipede, Donkey Kong, and Donkey Kong Jr. I don't think any other console or home computer had all of those.

I now have an Atari 65 XE, which is compatible with all those games, and I have all those cartridges for it. It's always had problems with the first joystick port, and they have steadily worsened until it is now unplayable. So I thought emulation might be a good choice to allow me to keep playing the

Atari 800 titles.

I downloaded a ROM image for Ms. Pac-Man, since I do own the cartridge, and went looking for an Atari 800 emulator for Linux. Lo and behold, there was one, 'Atari800', in Synaptic Package Manager, so I installed.

But after installation, there was nothing on Atari 800 in the Dash. Searching for 'atari800' turned up a Debian package. Running it took me to the Ubuntu store, where it appeared to not actually be installed, despite Synaptic Package Manager's success message, so I installed again.

What's the deal?

Then, it occurred to me, this software might have been old enough to have no GUI (Graphical User Interface), therefore having to be run from the command-line. I opened a Terminal, typed in atari800 and hit <Enter>. Sure enough, I was greeted by a small window with a command-line Atari operating system prompt. But, no

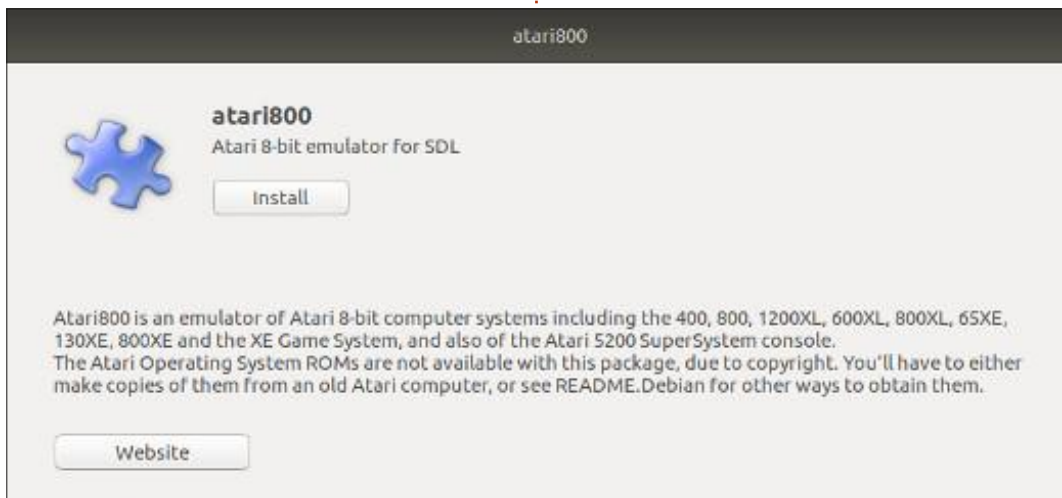
menus. How do we run a program, in this specific case, a game cartridge?

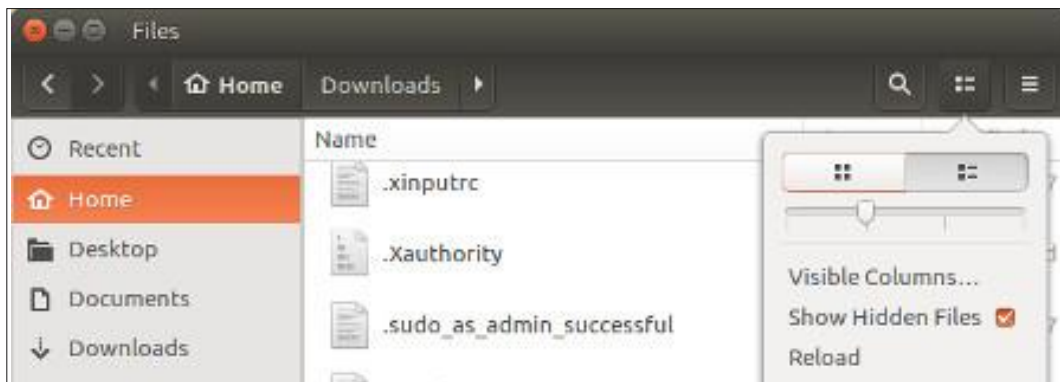
FUNCTION KEY ROULETTE

Many times, programs like this use function keys to control various operations. Without any GUI or menu options, I tried the function keys, hoping to get a response. Sure enough, F1 brings up a number of options for the emulator. Fortunately, it also lists most of the other function key commands (like F9 to exit – that should be handy to know).

HOW TO WRITE A CONFIGURATION FILE

After making a number of changes, particularly to screen resolution to run in Full Screen mode, I exited the program and restarted it. But it still started up in a small window. Looking in the Home directory via File Manager, I found a file called .atari800.cfg. The first period signifies to Linux that it is a hidden file, so you have





to turn on the option in the File Manager to show hidden files, in order to see it. Click the second button in the upper right corner of File Manager, between the magnifying glass and 'hamburger menu' icons, then click Show Hidden Files.

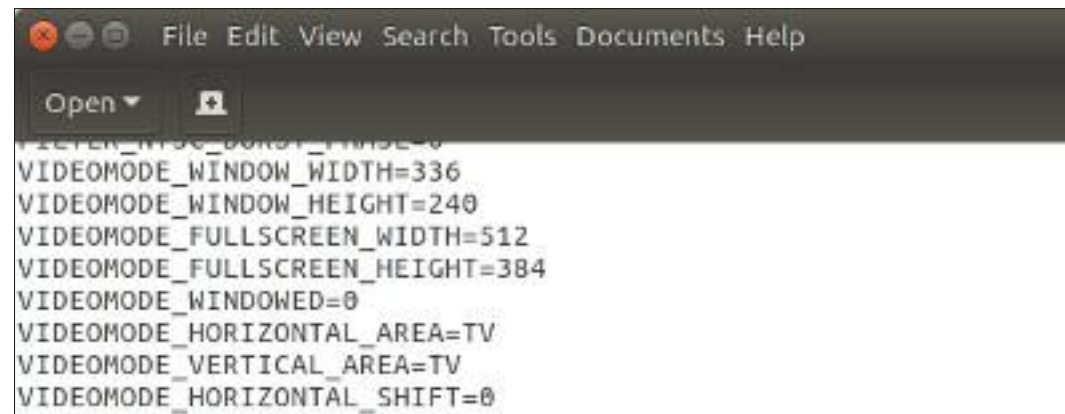
This is a very common situation for Linux application configuration files (that may or may not be named with a .cfg extension, it just depends), they are often hidden files in the Home directory, or in a hidden directory (also starting with a '.' character) for the application (for example, the .dosbox folder).

You can usually open a configuration file by right clicking it in File Manager and tell it to Open With Text Editor. You can then read the file's contents and try to figure out what changes to make.

Most configuration files have a number of non-executed comment lines, starting with a '#' character, providing details on what options are available and what each line means or does, but this one does not. Most of the lines, though, are pretty self-explanatory. I tried to save the manually made changes to the CFG file found in the Home directory, but could not. What was the problem? Eureka! An epiphany struck. The problem is I don't have permissions as a normal user to write to the CFG file in Home.

SUDO

The simple solution is to run a session of 'atari800' as SUDO, or 'Super User DO'. I also guessed, correctly as it turned out, that the command for atari800 needed an 'argument' at the end, specifying the location and file name for the



ROM I wanted it to load. I had already created an Atari800 directory in Home, with a 'roms' subdirectory containing the mspacman.bin file. So, this time, I ran the command-line:

```
sudo atari800
~/Atari800/roms/mspacman.bin
```

Remember from Everyday Ubuntu in FCM#137, the ~ character is an abbreviation for the Home directory. Now, after the password for the Super User has been entered, we can get into the configuration options inside 'atari800', rather than manually updating the CFG file, and tell it to save the configuration changes upon exiting the program. NOW it will save our updated video configuration options to give a full-sized screen instead of running in a tiny window, and will default to

that even if we don't use the 'sudo' option in future. Go to Display Settings, Video Mode Settings, and set Full Screen to Yes (use Enter to cycle through options). Also go to Emulator Configuration – Save Configuration on Exit, and change it to Yes. After you finish running the program (press F9 to exit), it will save that video setting automatically for future sessions. Problem solved!

Next month: Getting Even More Help in Linux (or Even More Getting Help in Linux, I suppose). This time, for real.



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

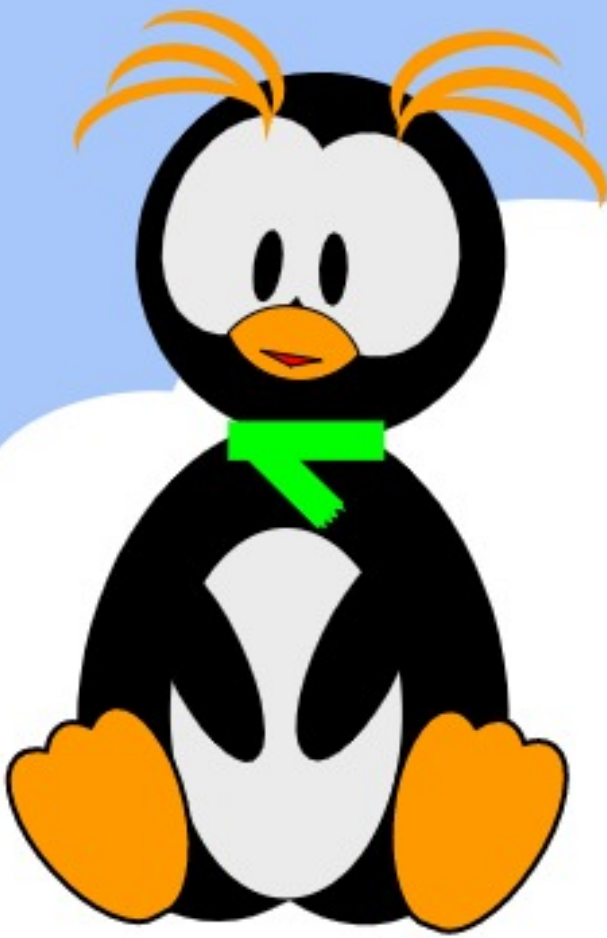
Written by UBports Team

OTA-10? Maybe?

My password was hacked again!

So what did you do?

Had to rename the dog again!





MY OPINION **Lubuntu Switches Desktop Environment**

Written by Adam Hunt

Lubuntu 18.10 was a landmark release for this Ubuntu flavor. Since its first release in 2010, Lubuntu has been a showcase for the LXDE desktop, but with the 18 October, 2018 release of 18.10, it moved to the new LXQt desktop.

HISTORY

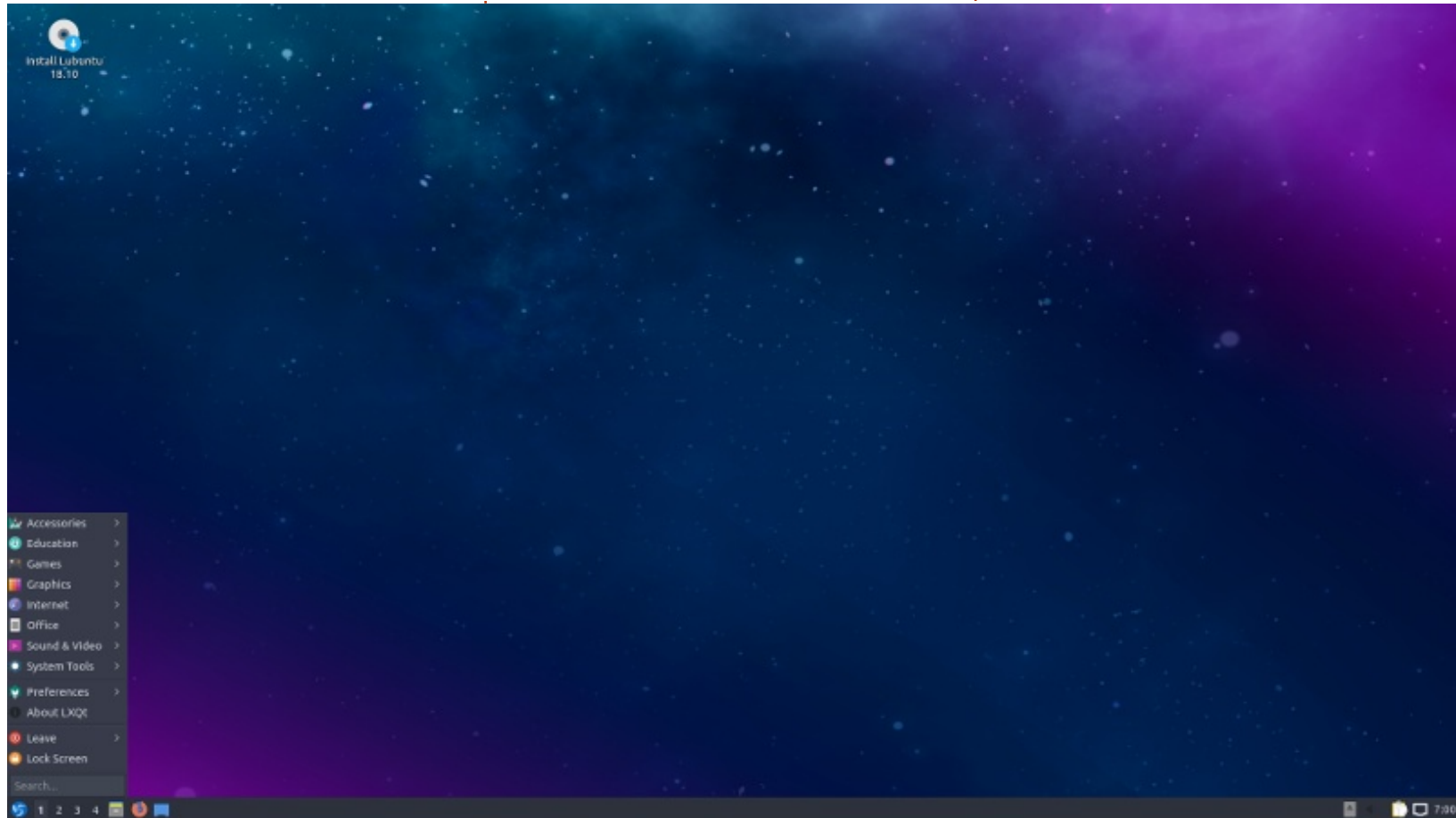
The LXDE desktop traces its origins back to 2006, when Taiwanese computer programmer Hong Jen Yee released a new file manager. Hong's user name is PCMan, so he named the new file manager, PCMan File Manager or PCManFM for short. The new file manager was well received and the idea quickly grew to build a new, lightweight Linux desktop around it. This became LXDE, the Lightweight X-11 Desktop Environment. LXDE is written in the C programming language, uses the GTK+ 2 toolkit, and sports a distinctive stylized swallow logo.

Lubuntu, featuring LXDE, first arrived in April 2010 as 10.04, and quickly gained a following among users. Its single menu was easy to

use and it had low RAM and CPU requirements, running well on older hardware and very fast on newer equipment. The LXDE desktop was incrementally refined over time and PCManFM was completely rewritten in 2010. Lubuntu became an official Ubuntu flavor on 11 May, 2011.

Hong was not happy when the GTK3 toolkit came along and he decided to experiment with rewriting PCManFM using the Qt toolkit in the C++ language instead in 2013. He wrote, "working with Qt/C++ is much more pleasant and productive than messing with C/Gobject/GTK+. Since GTK+ 3

breaks backward compatibility a lot and it becomes more memory hungry and slower, I don't see much advantage of GTK+ now. GTK+ 2 is lighter, but it's no longer true for GTK+ 3. Ironically, fixing all of the broken compatibility is even harder than porting to Qt in some cases (PCManFM IMO is one of



them).” He released his first version of PCManFM-Qt on 26 March, 2013.

Hong immediately got questions as to whether LXDE would switch to being Qt-based. He wrote in a blog post, “No, LXDE will NOT use Qt. Don’t panic!! It’s just one of my side projects and was an experiment to test how good libfm and Qt are.”

Instead of moving LXDE to the Qt toolkit on 3 July, 2013, Hong announced a new port of the LXDE desktop using Qt, instead, initially called LXDE-Qt. The only complication was that there already was a project working on producing a new lightweight Qt-based desktop, called Razor-qt, with a rotary “pizza” cutter as its logo. The two communities of developers found common ground and decided to merge their efforts. The new combined project was named LXQt and got a new hummingbird logo.

One of the stated aims of LXQt is to eventually replace LXDE and so LXDE went into “maintenance status”, getting bugs fixed, but not adding new features.

LXQT IN LUBUNTU

It was originally intended to introduce LXQt into Lubuntu with the 14.10 release, but more work was needed. Lubuntu releases through 2015-2018 all were initially announced as hoping to move to LXQt, but the implementation was consistently delayed to get all the parts working right. During this period the Lubuntu users had many solid LXDE-based releases, all offering great stability and no new learning curve. These included two Long

Term Support (LTS) releases, 16.04 and 18.04. Finally LXQt landed in Lubuntu 18.10.

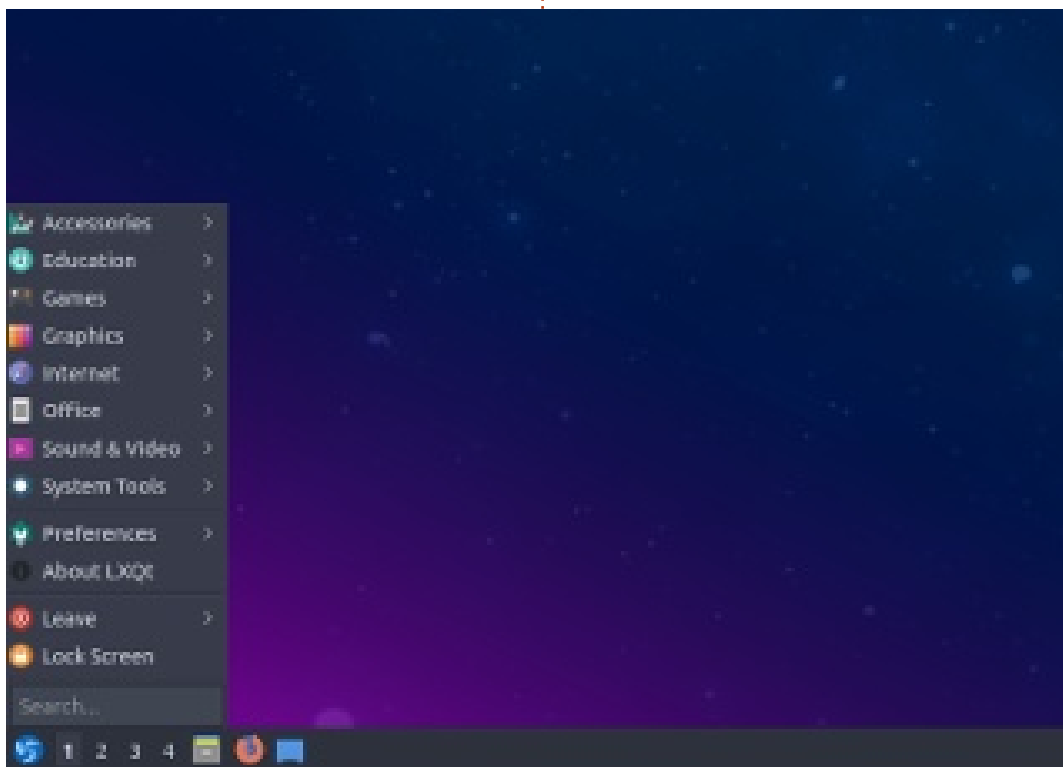
The Lubuntu developers’ aims changed with the new desktop’s introduction, too, as developer Simon Quigley explained on 27 July, 2018, “Lubuntu will stay light, and for users with old systems, should still be usable. But we will no longer provide minimum system requirements and we will no longer primarily focus on older hardware.”

LXQT ARRIVES IN LUBUNTU

With four years of lead-up to the introduction of LXQt, there was a great deal of anticipation in the Lubuntu community. Of course this was not the first time that an Ubuntu flavor had changed its user interface. Kubuntu had made the move from the K Desktop Environment 3 to the KDE Plasma Desktop in 8.04. Ubuntu itself changed from GNOME 2 and its three menu system, to Unity and its desktop launcher in 10.10/11.04 and then to GNOME 3 (GNOME Shell) with 17.10.

Booting up Lubuntu 18.10 and touring through it shows a lot of careful work done. The new user experience is smooth and feels quite slick. Much of LXQt works just like LXDE, all from a single menu on the bottom panel (which can be moved). The menus are now more complex, though, but offer a high degree of customization to give Lubuntu the look and feel you want.

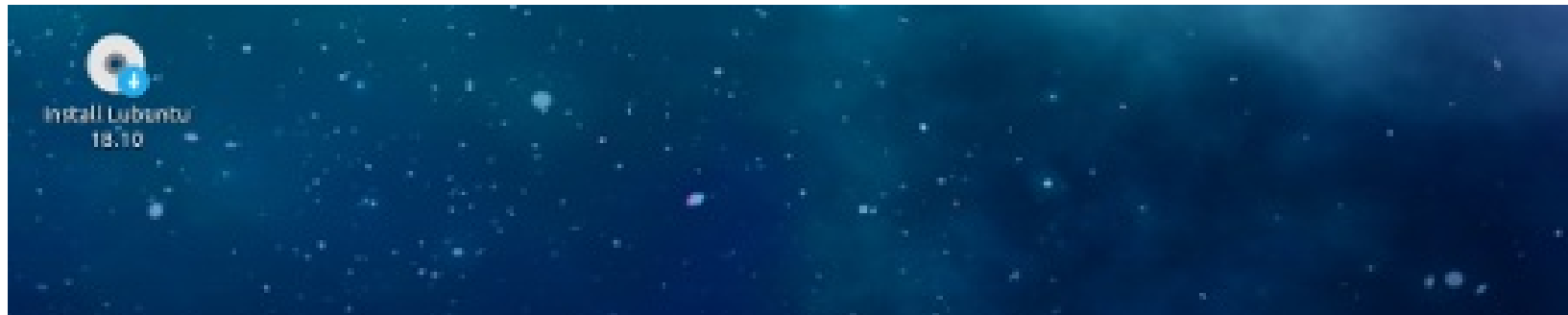
The file manager, PCManFM-Qt, is where this all started. Opening it shows that it looks a bit different under Qt. It works differently too,



with different menus and preferences. Mostly it gives equivalent functionality, although some previous specific features are missing. For instance there are no keyboard shortcuts for views, although these can be selected from the “view” menu.

It isn't just the core components that have been re-written using Qt, either. You would expect the menus, panel, customization interfaces, and, of course, the file manager, to look new and they all do, but the Ubuntu developers have done their best to provide a full suite of Qt-based default applications as well and that means the whole user experience has changed. Some of the newly-introduced applications come from KDE, which is also Qt-based.

New Qt applications to Ubuntu include the VLC media player, Quassel internet relay chat, FeatherPad text editor, Skanlite scanning application, Trojita email client, and the K3B CD/DVD burning application, which comes from KDE. LibreOffice replaces the former AbiWord and Gnumeric office applications, although this is the Qt-based LibreOffice port,



rather than the more commonly seen GTK version.

There are still some GTK-based applications. The developers had hoped to have a Qt web browser and Falkon looked very promising, but didn't quite make the cut. Falkon, formerly QupZilla, is an excellent browser, with lots of potential, but, for now, the GTK-based Firefox remains the default browser in an otherwise Qt environment. It is worth noting that GTK-based applications can still be run alongside Qt applications in Ubuntu, they just look a bit different than Qt applications, with things like menu font renderings the most noticeable.

In testing Ubuntu 18.10 on my eight-year old System76 laptop I did find a few bugs, such as “tap to click” not working on my touchpad and a lack of spell checking

available in LibreOffice. There were also some networking and screen-locking issues that seem to be common in several 18.10 Ubuntu flavors and thus probably not Ubuntu or LXQt-specific.

Overall LXQt, as seen in Ubuntu 18.10, is ready for day-to-day use, while there is also still room for ongoing refinement. Introducing LXQt in Ubuntu 18.10 was a careful choice by the Ubuntu developers. Coming right after Ubuntu 18.04 LTS, the final LXDE release, it gives developers three “standard” releases to continue to polish LXQt before the first LTS release, which will be 20.04 LTS, due out in April 2020. Until then, many of us will continue to use Ubuntu 18.04 LTS and test the new LXQt versions as they come out.



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.





From the web: Basilisk is a free and Open Source XUL-based web browser, featuring the well-known Firefox-style interface and operation. It is based on the Goanna layout and rendering engine (a fork of Gecko), and builds on the Unified XUL Platform (UXP), which, in turn, is a fork of the Mozilla code base without Servo or Rust.

Considering Rust and Servo give Firefox it's speed boost, should you consider a browser without them? Let's see what Basilisk has to offer...

Basilisk is a browser made by the same people that produce the Palemoon browser. If you have ever used it, you will know how slow, clunky and dated it feels. It also doesn't support plug-ins. Basilisk supports your old plug-ins and is faster than Palemoon. Both browsers are based on the Goanna-engine, a fork of Mozilla's Gecko engine. However, Goanna runs in a single process. See: <http://www.moonchildproductions.info/goanna.shtml>

This puts Basilisk in the same space as Waterfox browser. Testing Basilisk and Waterfox, Basilisk is actually faster than Waterfox. Basilisk boasts that it has removed all the Mozilla spying code from their browser, which may be why it is a tad faster than Waterfox. The latest release of Basilisk, however has removed the support for web extensions. There are a lot of reasons given, however the main reason is manpower. It seems that if you upgrade to the latest version, your add-ons will be removed or disabled.

If you need your add-on / cannot do without it - and it is not supported on the new Firefox, we turn to Waterfox or Basilisk. This is not ideal as howtogeek explains here: <https://www.howtogeek.com/335712/update-why-you-shouldnt-use-waterfox-pale-moon-or-basilisk/> - However, if Basilisk is going to remove this, it leaves only the proprietary blobs as a reason to use this browser. Nothing in particular stands out as a

compelling reason to use it. The Goanna-engine is also used by the K-Melon browser, and there seems to be active development with regular feedback: <https://www.basilisk-browser.org/releasesnotes.shtml>. This at least shows us the developer is taking this product seriously, though a lot of work seems to be going into the Windows version, not Linux. Linux is served by only a tarball download and no binaries as of yet.

In testing this browser, I found it to be unstable with some VPN's and proxies. The downside to having your browser run in a single process, is that, if one tab crashes, your whole browser crashes. This is to be expected as the developer has stressed that Basilisk should be considered BETA. That said, it is actually a very capable browser overall. I have not tested Basilisk with the TOR network, as I do not have it set up at the moment. They have, at the time of writing this, not published a list of add-ons affected by the removal of web extensions. How it will work or

affect users is anyone's guess.

Those of you who would like to help out or test, now is your chance.

Would you like to tell us something about Basilisk we should know? Send us an email.

Website: <https://www.basilisk-browser.org/>



Basilisk



REVIEW

Written by Adam Hunt

Xubuntu 19.04

Xubuntu 19.04 was released on 18 April, 2019. As a standard release it will be supported for nine months, until January, 2020.

This is the 27th release since Xubuntu's first foray, 6.06 LTS, back in October 2006. This new version was not intended to bring any major changes, just steady and incremental development of the Xfce desktop.

For the uninitiated, Xubuntu is a Linux operating system (OS), based on the Ubuntu back-end, but which uses the Xfce desktop in place of Ubuntu's GNOME desktop. This gives it a different look and some different default applications, although any desired applications can be installed from the Ubuntu repositories.

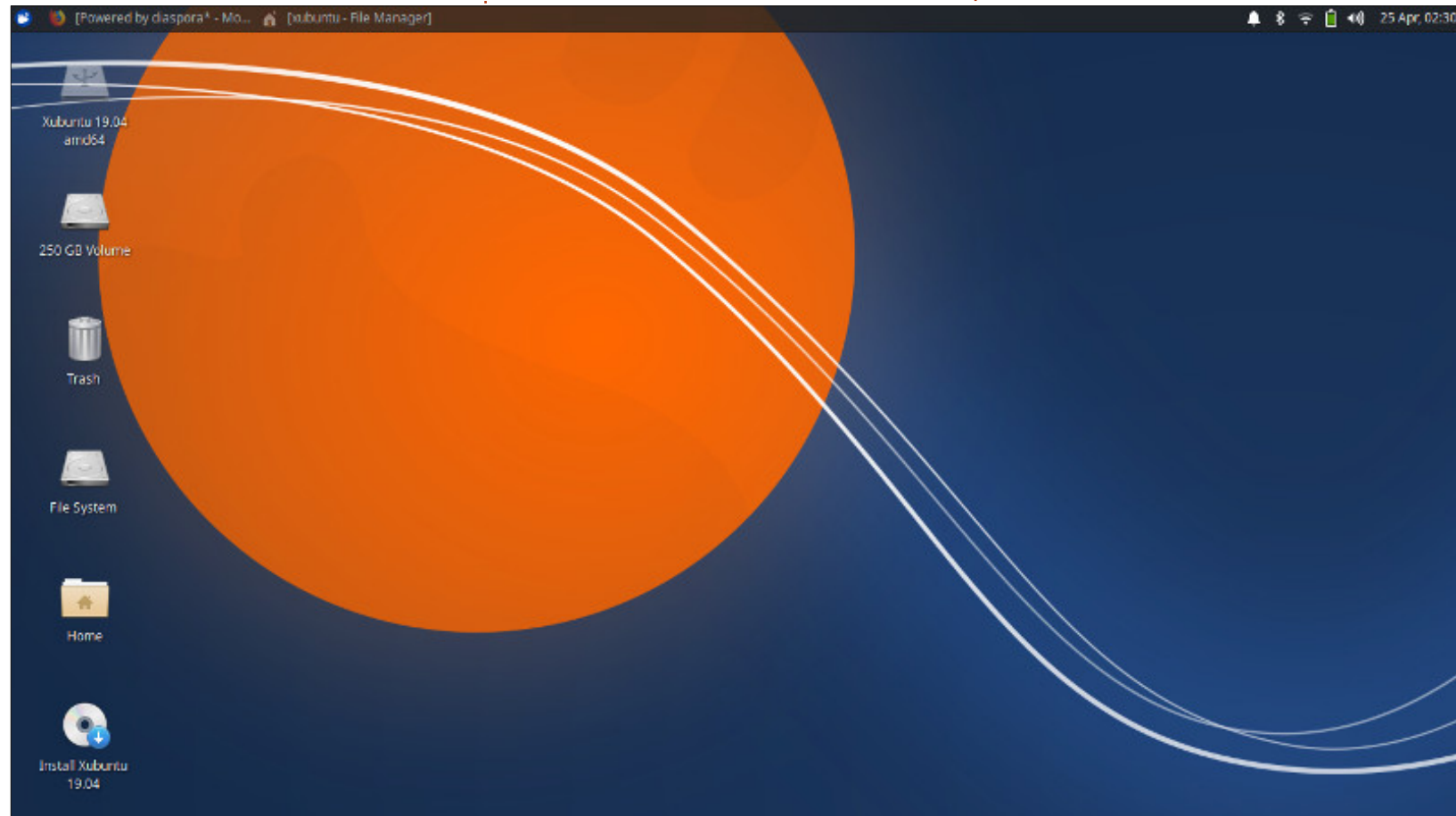
It is notable that, of the first four Ubuntu flavors introduced, Xubuntu is the only one to still sport its original desktop. Ubuntu is on its third (GNOME 2 to Unity to GNOME Shell), Kubuntu is on its second (KDE 3 to Plasma), and Lubuntu is on its second as well

(LXDE to LXQt). To be fair, Xubuntu started with a two-menu system, went to a single menu with a bottom screen launcher in 11.04, and then to the present single Whisker Menu five years ago, starting with Xubuntu 14.04 LTS. The Whisker Menu imposed a minimal learning curve and has

proven popular among the Xubuntu user community. Many Xubuntu users already had installed Whisker before 14.04, as it was a commonly used optional package, before it became a standard Xubuntu feature.

CHANGES

This release brings only a few small refinements, plus the usual bug fixes. It uses Xfce version 4.13, but includes some advances backported from the next release, 4.14. This provides some of 4.14's new features, with 4.13's stability.



Xubuntu 19.04 also newly includes a few new applications: AptURL, a graphical mini-program for installing packages, the well-known graphics editor GIMP, LibreOffice Impress slide show application, and LibreOffice Draw vector graphics editor. Some LibreOffice components were previously included but not Impress or Draw. LibreOffice is now complete in Xubuntu except for the database application, LibreOffice Base, which is easily installed if needed.

The Orage calendar application was replaced with a simpler display calendar in Xubuntu 19.04.

32-BIT DROPPED

Xubuntu 19.04 is the first release that no longer offers a 32-bit release for i386 architecture. The newest 32-bit machines are about 13 years old now and lack the RAM and CPU to run a modern OS. Other distros have followed suit, with Lubuntu also dropping 32-bit support with 19.04, and Ubuntu with 17.10.

32-bit users can still run Xubuntu 18.04 LTS which is

supported until April 2021.

WALLPAPER

The Xubuntu 19.04 wallpaper is a slightly different color version of the same wallpaper design used for the last few releases. It is a bit uninspired, but there is a choice of 17 wallpapers included with 19.04, including the last four Xubuntu releases' default wallpapers, so it is easy to replace, or you can use your own.

INCLUDED APPLICATIONS

Some of the applications included with Xubuntu 18.10 are:

- CUPS 2.2.10 printing system
- Evince 3.32.0 PDF viewer
- Catfish 1.4.7 desktop search
- Firefox 66.0.3 web browser
- GIMP 2.10.8 graphics editor
- Gnome Software 3.30.6 package management system
- Gparted 0.32.0 partition editor
- Mousepad 0.4.1-2 text editor
- LibreOffice 6.2.2 office suite
- Parole 1.0.2 media player
- Ristretto 0.8.4 image viewer
- Simple Scan 3.32.0 scanning
- Software Updater 19.04.5 (update-manager) software update

manager

- Startup Disk Creator 0.3.5 (usb-creator) USB ISO writer*
- Thunar 1.8.4 file manager
- Thunderbird 60.6.1 email client
- Transmission 2.94-2 bit torrent client
- Wget 1.20.1 command-line webpage downloader
- Xfburn 0.5.5-2 CD/DVD burner
- Xfce4 Panel 4.13.4 desktop taskbar
- Xfce4 Power Manager 1.6.1 system power manager*
- Xchat 2.8.8-17 IRC client

* indicates same application version as used in Xubuntu 18.10.

Oddly, by default there is no webcam application, although Gvvcview and Cheese are both available in the repositories and easily installed, if required.

SYSTEM REQUIREMENTS

The developers recommend at least 1 GB of RAM to run Xubuntu smoothly. I would add that more RAM is always better!

FEATURES

One reviewer, Igor Ljubuncic

from Dedoimedo, recently described Xubuntu as “a pretty standard, run-of-the-mill distro, without any superb features or amazing wow effect”, and “somewhat boring”. I disagree that it is lacking in any way. I think the best thing an OS can do for a user is to provide a solid, stable and reliable environment to get work done. Most users want an OS that will not get in their way and that is easy to use. Eye candy, wow and bling is not good; boring is actually a good thing. Xubuntu is a great example of exactly what an OS should be: simple, where everything works in an intuitive way that enhances the user’s creativity and productivity. In most ways Xubuntu is an ideal desktop.

The Whisker Menu continues to be an outstanding and unique feature of Xfce and Xubuntu. It is highly configurable compared to other menu systems. I find it far superior to the Mac-style launchers that have been popular on desktops in recent years, such as found in GNOME Shell, and that used to be a feature of Xubuntu between 11.04 and 14.04. The Whisker Menu puts everything you need in one place very logically, and, when you aren’t using it, it is

REVIEW - XUBUNTU 19.04

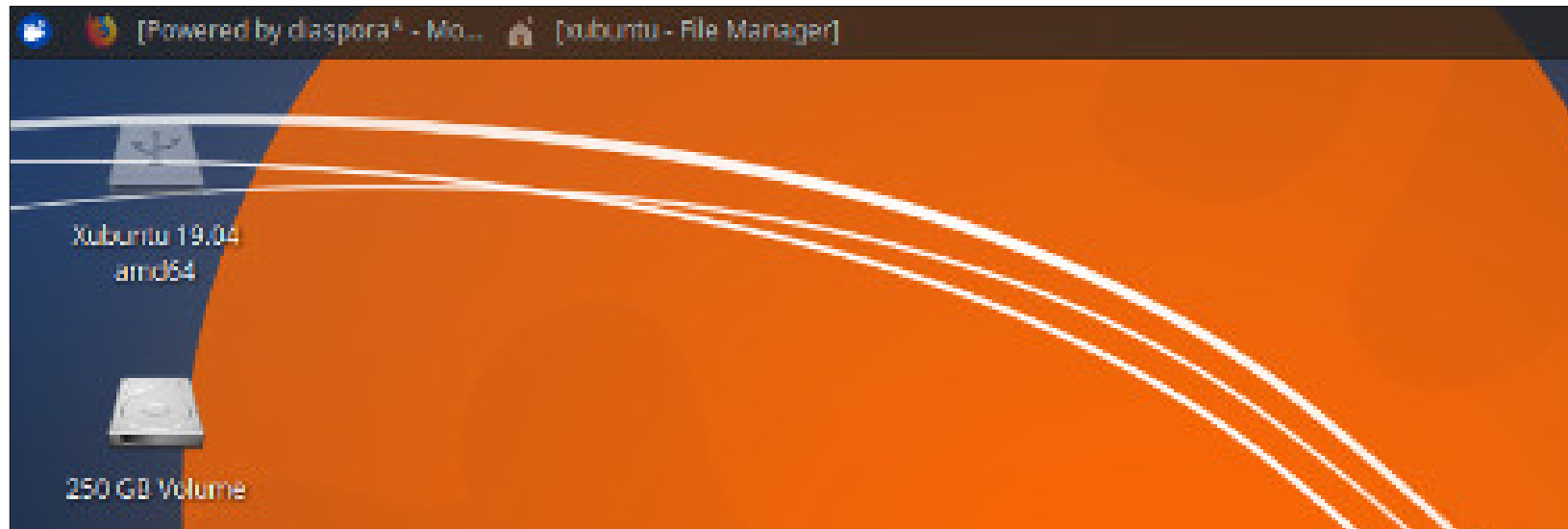
hidden away by default not taking up valuable screen space.

The Xfce file manager, Thunar, has some useful capabilities like bulk file renaming and image Exif metadata. Catfish provides desktop file searching. It works well and integrates with Thunar, being easily called up with a new keyboard shortcut: Ctrl+Shift+F.

Mousepad, the Xfce text editor, is worth mentioning. Mousepad was originally a fork of Leafpad, but has since been completely rewritten. It includes syntax highlighting for coding and writing web pages, and even allows a wide choice of syntax highlighting color schemes, something very few text editors offer. All it lacks is spell checking to be a complete text editor.

THEMES

In testing Xubuntu 19.04, the only gripe I had was about window themes. Xubuntu 19.04 comes with six installed themes. All are very arty and modern-looking, and none are very good. I want a window theme that clearly shows active and inactive windows. The default



Greybird theme doesn't do this, with active windows gray, and inactive windows gray too, but with a slightly shaded title bar. It is far too subtle. Whatever happened to Kokodi, which was offered as recently as Xubuntu 18.10, where active windows were blue themed and inactive ones gray? None of the other five themes offered are any better than Greybird.

INSTALLING ON OTHER UBUNTU FLAVORS

Xubuntu can also be installed on top of any other 'buntu flavor, as an alternative desktop with:

```
sudo apt install xubuntu-desktop
```

or for a minimal installation:

```
sudo apt install xubuntu-core
```

and then chosen at log-in.

CONCLUSIONS

Xubuntu 19.04 is a strong release. It is pretty much flawless as a desktop OS, which really is to be expected for a 27th release. It provides a simple and elegant experience for users that allows them to get work done. No flash or splash, just a very mature distribution that gets incrementally better with each release. Lacking nothing of consequence, Xubuntu 19.04 is good enough in quality to have

been a long term support release. This bodes well for the next actual LTS, which will be 20.04, due out in April 2020.



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

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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.

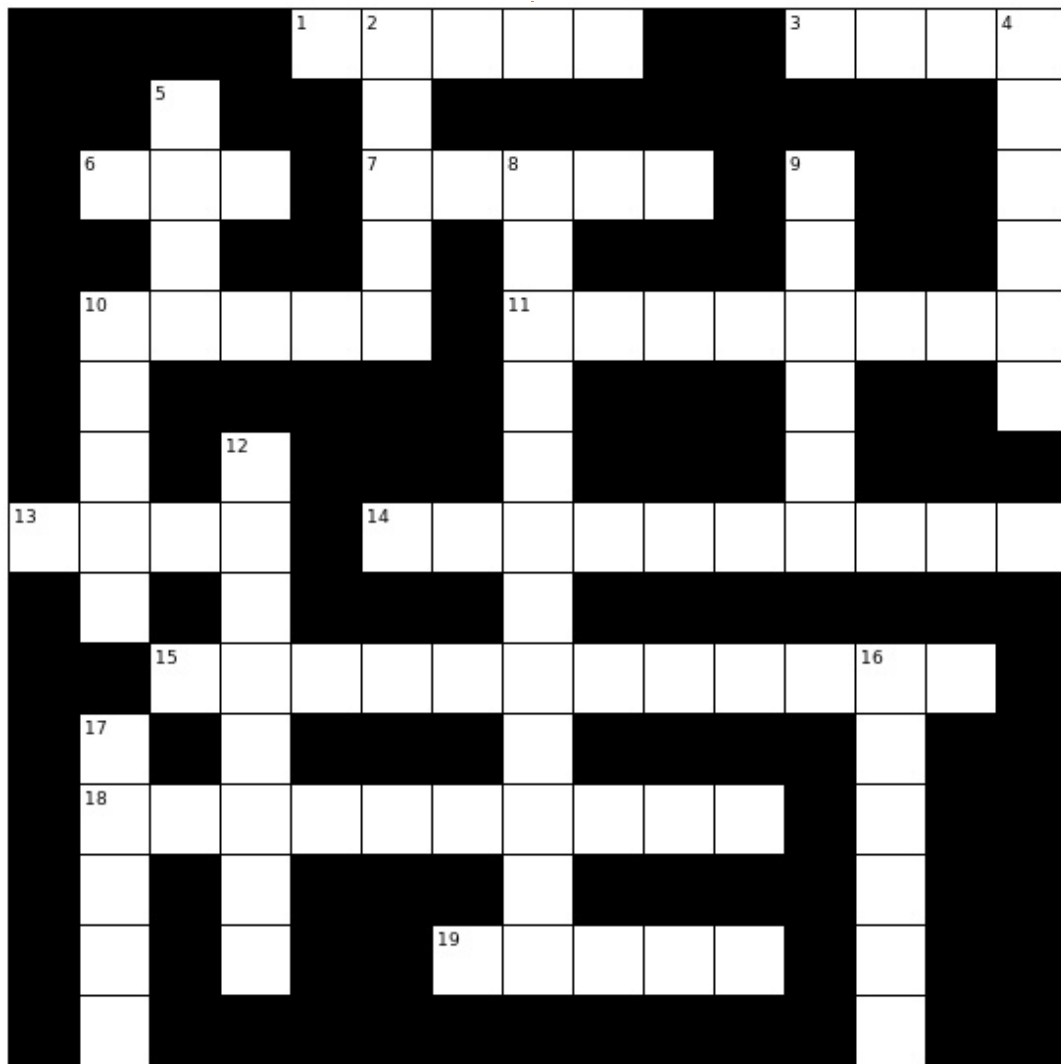
See the article **Writing for Full Circle** in this issue to read our basic guidelines.

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: Russian distro that “protects state secrets”.
- 3A: The main (only?) developer went AWOL last year.
- 6A: Made in Madrid, not Australia as you may think.
- 7A: Code named AKI, this Italian distro is highly themed.
- 10A: BSD with a green beastie.
- 11A: From Latvia, it’s all badges and crests and insignia.
- 13A: This distro redefined the directory structure.
- 14A: This distro moved from Vector Linux to Ubuntu base for Steam n GOG.
- 15A: This Kiosk distro hails from Singapore.
- 18A: All the way from Iceland, just to play your music (based on Arch).
- 19A: Continuation of Arch-OpenRC in a rolling distro.

DOWN

- 2D: The Stamus networks distro.
- 4D: Very good looking desktop from China.
- 5D: Not made to be installed, yet many do.
- 8D: This distro is from Hungary, not Wakanda.
- 9D: CentOS based enterprise Linux from South Africa.
- 12D: GIS, Seafloor mapping and bathymetry all on Ubuntu.
- 16D: Puppy in containers straight from Australia.
- 17D: Amnesic by design.

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.

A long time ago, in a Galaxy far, far away – my mother used to work for a company who had a room with a Burroughs accounting / bookkeeping machine. It was no longer used, as far as I know; and it was just too big to get out through the door to go to the scrap heap. It was fastened to a steel cradle - if you will, that probably weighed over 100kg. It was 100 percent mechanical, no electricity needed (I think). You punched in a number and pulled a lever and repeated the action until the column of numbers you were adding was complete. The amount of buttons was dizzying, like having four

typewriter keyboards on one platform. If you were quick at maths, you could outperform this monstrosity. Today, basic accounting software can do everything that machine did in a day - in a split second. Yet, accounting still takes the whole month to do. (Ask any accountant). Are we working faster, smarter or harder? Each update of the accounting programs require faster machines, with more memory. There is a trend to get software out the door faster, and on Linux we see more Electron applications every day. There are more Java frameworks than people working in your office. In our quest for development speed, have we become penny-wise and pound-foolish? ##(Google SymbOS – and realise it is running on an 8-bit CPU at 4MHz (NOT GHz) with 128K of memory. To get an idea of how little that is, times that by a hundred and see how Linux runs on a 400MHz CPU with 12MB of memory...)

Q: I've thrown caution to the wind and done a fresh install of Ubuntu Disco Dingo. Quite a few things suddenly don't work any more. Chief among these is my Sunflower twin-pane file manager. I can get along without it, but it makes life so much simpler. Any idea as to how I can get it working again?

A: Answer to the first part is: Python. Answer to the second part: You can not. Python 2.7 is no longer supported in 19.04. (And soon, 2020, basically obsolete). There are other alternatives you can look at in dual-pane file managers. You can ask the developers when they will port it to Python 3 if you do not want to change.

Q: Guys: I have installed a new SSHD and Ubuntu 18.04.2 on my Laptop. If I leave it for a long time and get back to it, the screen blanks and all I can do is turn it off. What is at fault here?

A: You have given so little info here I can not even begin to say what is wrong. I can however point you to fault finding. Start with, say, caffeine; leave the laptop, if it stays on, but hangs, you may have another problem, if it just stays working, you may have an issue with a screensaver or such. Start at one end and work toward the other. (Have you replaced say, lightDM?).

Q: I am running Xubuntu 18.04.2 and I have screen tearing on my Haswell i5 which I did not have on 14.04. I suspect it may be due to my screen size, 1600 x 900 – not 1920 x 1080. I have Googled and found the Intel settings for screen tearing, but it does not work on i915. None of those janky configs work. Can YOU help me?

A: Yes. Get rid of all those changes you have made and disable composting in your: settings>>window manager tweaks. Now install Compton: sudo apt install compton



Q&A

Go to settings>session and start up and create a launcher with the following: /usr/bin/compton --backend glx --paint-on-overlay --vsync opengl-swc

Reboot and you should be good. Another option is Compiz.

Q: OK. So I have started learning Japanese. The course videos are on a MAC, where the instructor switches between the different writing styles in his notepad. I have tried leafpad, featherpad, mousepad, etc. I have even messed around with ibus preferences, as google says. I just want to be able to type it out like the instructor on Linux. Reading and writing is a necessary part in my language journey, but I can't figure it out on my Ubuntu 18.04 install.

A: You will be needing mozc and fcitx. The discussion is too long for a Q&A session. There are youtube videos on it now that you know what to search for. Alternatively, look here: <https://theguyjin.com/kana-input-linux-guide/>

Q: I am new to Ubuntu and I really like conky. I have gotten me some rc files from conkyporn and have been trying them out. My problem is that I get transparent blocks around mine, which the screenshots of the users don't have. I don't have a graphics card, I am just using the built in one, which I suspect is not powerful enough to do the job. Do I need an Nvidia card to make the magic happen?

A: The short answer is no. You will have to change your conkyrc script slightly. The own_window_type should read desktop, not normal. "Desktop windows are special windows that have no window decorations; are always visible on your desktop; do not appear in your panel or taskbar; and are sticky across all workspaces." - conky man page.

Q: I run Ubuntu 16.04 on my Apple MBP. How does the right to repair affect me if I don't use apple OS?

A: There seems to be a lot of confusion surrounding this and a lot of misinformation. From

what I have gathered, the Canadian Parliament has put the motion forward, but it was rejected. This is just another reason to stick to open source and open products, where other people don't have a say in the things you own. I assume you are Canadian. Like everyone else, in other countries, Apple are saying they don't allow you to repair your own stuff. (Regardless of OS) See:

<https://media.libreplanet.org/u/libreplanet/m/right-to-repair-and-the-dmca/>

Q: I need to upgrade my Ubuntu 15.10 to 19.04. Long story short, it doesn't want to. So do I need to upgrade to each version in between, because again, it won't. 15.10 has now become a pain in the *** and I am at wit's end.

A: First of all, 15.10 is a release meant for people to test features, not to keep. The same with 19.04. I know I sound like a broken record, but Ubuntu is not Windows, the release of 19.04 does not make 18.04 obsolete or hackable. If you want to keep your stuff, stick to the long term releases! The reason 15.04 will not upgrade is because packages

needed to upgrade have since been upgraded and so have the upgrade methods. (Can I fit the word upgrade in here one more time?) Quickest and dirtiest is to copy your home folder to another drive and install 18.04.2, then copy it back and install your software. Otherwise you need to update apt, apt-transport, apt-utils, libapt-pkg and libapt-inst manually.

Q: Man, I need your help, can't boot. Kernel panic, not syncing: VFS: Unable to mount root fs on unknown.... This after updating my 16.04 to 18.04.

A: My first reaction is usually fsck. There is usually more before and after that error, but here are a few suggestions that solved that: <https://groups.google.com/forum/#!topic/qubes-users/e56-LZbKrZU> or <https://askubuntu.com/questions/1081850/error-at-startup-on-linux-after-computer-shutdown-during-ubuntu-18-update>

Q&A

Q: I am trying to install Leafpad in Disco Dingo but it says no candidate? What's up with that?

A: Now I sound like my providers... It's an upstream issue. You have alternatives, mousepad, featherpad, etc. Otherwise, you can build it yourself.

Q: My question is about a USB thumb drive. I have made a bootable image to my thumb drive with dd. It is a 16GB thumb drive, but now only shows up as 1.6GB.?

A: That is the way dd works, if you have 1GB, to dd the output will be 1GB. In the old days, we said dd stood for disk duplicate as it makes a 100% clone. Your drive still has the full 16GB. it's just 'pretending' to be the same as the image you used. See: <http://www.gnu.org/software/coreutils/dd>

Q: How can I see what a package installs?

A: There are several ways, one, use Gdebi, it will list the

packages and dependencies in your GUI. If you are using the terminal, just simulate it with `apt -s install <package name>` command. There are more, but this should get you started.

Q: Wait, something is screwy with Ubuntu 18.04 desktop and 18.04 server. They are not the same. Server does not give me any network info in the GUI.

A: It's usually not a good idea to install a GUI on server. That said, it's probably the way netplan is configured. See here: <https://www.raytechnote.com/wired-unmanaged-after-install-ubuntu-desktop-gui-on-ubuntu-server/>

Q: Snaps are making my life miserable. Whenever I list my drives, etc, I now have like 100 loop devices. Can I not hide them permanently?

A: There is probably some way, but for now grep and egrep is your friend. You can also alias your commands, for example:

```
df -h grep -v '^loop' or df -h egrep -v /dev/loop
```

or

```
alias df=df -exclude=squashfs.
```

(Just using the df command as an example).



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:





Where we are:

<https://www.lpi.org/our-certifications/exam-201-objectives>
(Measure and troubleshoot resource usage).

Welcome back learners, and a nod to those “just interested”. We are continuing from last issue with the very first topic, capacity planning. We are still busy with resource availability and troubleshooting. Last issue, we covered lsof and how you can use it to troubleshoot. Linux has lots of built-in tools and I think it’s time we looked at those.

Before we start: look at the manpages for ps and pstree please.

Okay, now press `ctrl + alt + f6` login in there. Type `w` You should see `tty6 & tty7`. Type `ps` and watch it scroll by. Type `ps` and see only an entry for `pts/0...` Press `ctrl + alt + f7` and repeat the exercise in a terminal. What have you learned?

I am going to assume that you read the man pages and know that there is a lot of “doubling up”. (-A and -e are the same, etc).

Now let’s do with ps what we did with lsof. Open a terminal and type ‘ps -ef’ and look at the column headings. We now not only have a PID, but a PPID too. Again, you can sort it into smaller chunks for easier processing, type: ‘ps -ef | grep kworker’ and see what you get. Do you see how this could be useful? There is a lot more to ps than just ‘ps -aux’! To see if a user is the problem, use the -u switch followed by the user name. (Do you see why I say – it is hard to hide what you are doing on a Linux machine from your Administrator?)

When you switched to tty6, did you run a pstree? If it looked funny, (it should not have if you were using a desktop OS, try running it with the -A option. Do it anyway to see what changes). This is what you had to do in the old dumb terminals, but not really used these days any more.

In your terminal – be it gnome terminal or xfce term or whatever – run `ps -h` and look for YOUR terminal. Found it? **In bold?** Want to know its PID? Run `ps -hp` and now each entry will be followed by its PID. Would you like to dig the rabbit hole deeper? You would? Type `ps -hpa` – this will include arguments passed to processes. Like the ‘-hpa’ you just passed to pstree will show up, helping you to visually troubleshoot. Another way to visualise what is happening is the top command – most of you know his fancy cousin, htop. But where ps and pstree is static, top is constantly refreshing. Top is covered by LPIC level one, so I won’t go into lots of detail here. Just a reminder that you can customise top. While it is running, press the ‘f’ key. Learn those shortcut keys!

LPI exam is about more than Ubuntu; may I suggest running CentOS in VirtualBox and trying the same commands there.

Now let us look at some exam

questions!

Which of the following commands will provide the PIDs of the processes sorted by which are using the most CPU cycles on the Linux system?

- A. top
- B. uptime
- C. ps aux
- D. vmstat
- E. freemem

If you said A, well done! Top always opens with CPU cycles as default sorting, unless you change it.

If you would like to jump ahead, or test your skills at an LPI exam, do a test paper here: <https://www.itexams.com/exam/17-201>. (These were once valid LPI questions and will ease you into the format).

- * The new exam number is 201-400, 117-201 was the old one.
- * The site does require signing up, but sign up with a temporary email (not your real email).



To continue on from last month's developing story: What was briefly known as Dota Auto-Chess is now known as Dota Underlords. It appears that the Valve v Dmodo Studios fight turned into a two-part resolution. One version is called Auto-Chess which is basically a Dmodo Studios & Origin collaboration. Auto-Chess is NOT available on Linux as it's being released by Origin which has traditionally not been very Linux friendly. The other version, and the one we're reviewing this month, is called Dota Underlords. Currently, Dota Underlords is available on Windows PC, Mac OS X, Linux, Android, and iOS. Dota Underlords is being released by Valve Corporation, the company behind Steam, the popular digital distribution gaming platform.

Dota Underlords is an 8-player strategy video game which was originally developed as a mod for Dota 2. On Ubuntu Linux, you can play the game by downloading it for free from Steam. Last month, I reviewed the original mod version of the game. This month, we'll be

looking at the Valve version of the game. There are quite a few differences between the original Dota Auto-Chess and the official Dota Underlords, which is the Valve version. For the most part, the game is exactly the same, but, with the full backing from Valve, the new updated version is much

more polished and a lot easier to play and understand. This is a very fun game to play, easy to learn, but extremely hard to master.

To begin with, Dota Underlords actually has a few options available that the original didn't have. For example, Dota Underlords has a

very well-put-together tutorial which makes learning the game a lot easier than it was with the original version. The tutorial makes a great effort in explaining to the novice how the game is played in its most basic form. In addition to this tutorial, there is also the opportunity to play against bots if



UBUNTU GAMES - DOTA UNDERLORDS

you feel inclined to do so before jumping into an online 8v8 battle. Once you actually begin playing online against other players, the real fun begins, as there are different strategies that people have put together. There are already a whole bunch of video tutorials and guides available on both youtube.com as well as twitch.tv which can help you master the game.

The basic rundown goes as follows: The first 10 rounds of each game are played against the computer, then you begin fighting other players chosen randomly from the pool of 8 players that you started with. As you progress through the rounds, the players with the worst scores begin to get eliminated until there are only three players left who are then ranked from first to third. It usually takes about an hour to get to this

point – which is the one downside to this game. Unless you’re doing the tutorial or playing against bots, you’re pretty much forced to spend a minimum of about an hour playing the game. The game is seen as basically having three phases: early, mid & late phase.

The game is very fun to play and it has become Valve’s surprise savior. A couple of years ago, Valve released Artifact which was to

become Valve’s boardgame hit, but, instead, it fell flat and went down from there. Enter Dota Underlords, a chess-like game which has been very favorably received by the community. All of the things that Valve wanted but failed to get with Artifact miraculously landed right onto our consoles in the form of Dota Underlords. The graphics are quite exquisite and the game-play is superb. If interested in a rundown of how to play the game, please refer to last month’s video game article which explained the basics of the original mod which is almost exactly the same in this official version.

I give Dota Underlords 4½ out of 5 stars – with half of a star being deducted for not having a shorter game option available for the online battles, something similar to Dota 2’s Turbo mode which turns an otherwise hour-long game into about an average of 15 minutes for Dota 2 games. Other than that, the game is awesome and very fun to play. I strongly recommend you check it out, most definitely if you’re into board-games.





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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

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