



Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #146 - June 2019



ubuntu



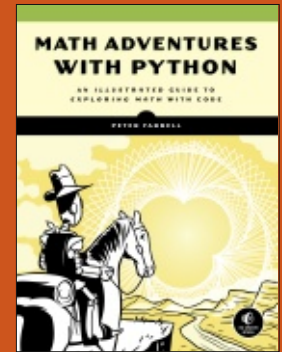
Network



Trash (One Item)



BOOK REVIEW



LUBUNTU 19.04 READY FOR PRIME TIME?

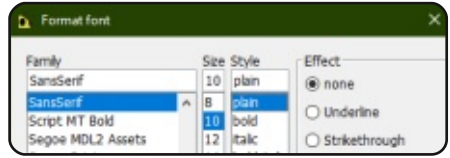
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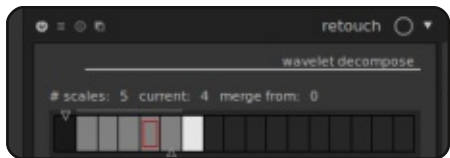
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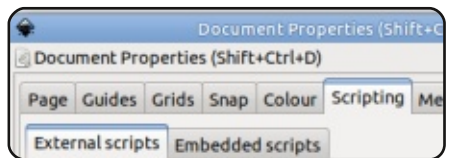
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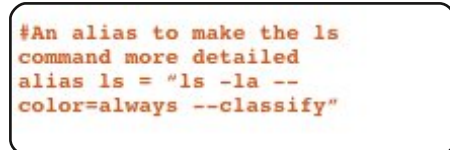


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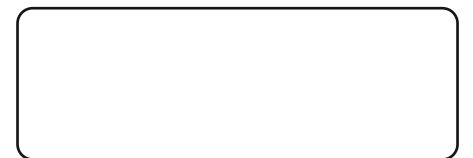
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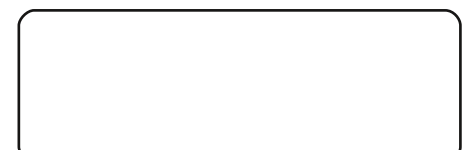
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WELCOME TO ANOTHER ISSUE OF FULL CIRCLE!

We have the usual Python, Freeplane and Inkscape for you this month, but returning for a fourth part we have Darktable.

As you can see from the cover, we have a review of Lubuntu 19.04. This is quite a step up for Lubuntu as rather than using the old LXDE (desktop) it's now using the new LXQt desktop. While LXQt first showed up in Lubuntu 18.10 (but apparently in the pipeline since 14.10!), this new version of Lubuntu seems to have ironed out some of the roughness that LXQt showed on it's first outing. Anyway, enough from me. Read the review and see for yourself if it's time to give it another try.

Erik has supplied us with an interesting My Story about what he does after installing the bog standard Ubuntu. What do you do after doing a fresh install? Software? Tweaks? Let us know. It'd be interesting to see what everyone does after that first boot.

That's it from me for this month. Short and sweet.

All the best, and keep in touch!

Ronnie

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OPENSUSE LEAP 15.1 IS HERE: OFFERS FULL LINUX EXPERIENCE ON RASPBERRY PI

The open source company SUSE is known for its commercial SUSE Linux Enterprise offerings for desktop and server users. The company also sponsors a free and open source community distribution known as openSUSE, which is widely popular across the world.

openSUSE further offers two releases: Leap follows the fixed release model and Tumbleweed follows the rolling release model. In this article, I'm going to tell you about the latest openSUSE Leap 15.1 stable release that's based on SUSE Linux Enterprise 15 Service Pack 1.

The official announcement blog post mentions that Leap 15.1 comes with many new innovations that benefit the overall performance, security, and basic usage.

Starting with the desktop environment, Leap 15.1 lets you choose multiple desktop environments like KDE, GNOME, and Xfce. The specific options available with Leap 15.1 are KDE Plasma 15.2 and GNOME 3.26.

The distro also ships with an entirely new graphics stack. However, the new release is still powered by Linux kernel 4.12 but it contains the much-needed backporting from 4.19. You also get better support for AMD Vega CPUs and other hardware.

The blog post also mentions that openSUSE Leap 15.1 for ARM64 is the first multi-purpose OS that lets you enjoy a complete standard Linux desktop experience on Raspberry Pi. So what does it mean? It means that the standard Leap ISO image can be directly installed on the Pi.

Source: <https://fossbytes.com/opensuse-leap-15-1-linux-distro-raspberry-pi/>

ONLYOFFICE 10.0 RELEASED

OnlyOffice is a comprehensive, free, web-based platform for enterprise collaboration, as well as office suite, project and document management. In addition, it contains a CRM and a mail aggregator. Collaboration platform functionality includes projects, milestones, tasks, reports, events, blogs, forums, bookmarks, wiki, instant messaging, and more. There is also a paid version with support.

The new version 10.0 of OnlyOffice contains numerous improvements in all modules. New two-factor authentication through an authenticator app (such as Google Authenticator or Authy) allows for a more secure login process. New access rights to documents allow other users to write comments or fill in certain fields of forms. An integrated media player enables the playback of audio and video files directly in the cloud, supporting all major formats. The LDAP settings have

been improved to allow automatic synchronization of users according to schedule and extended attribute mapping.

The e-mail module has been completely updated. The management of folders, filters, transmission and read receipts has been improved and the mail server has been extended. The Projects module got intuitive tools for creating reports on Docbuilder, a tool for creating documents, and a separate page with the list of generated reports. The redesigned calendar also received new additional features, including synchronization via the CalDAV protocol and a "to-do" feature. Improvements in portal administration include a bulk import wizard and the optimization of user lists.

Source: <https://www.pro-linux.de/news/1/27098/onlyoffice-100-erschienen.html>

LINUX KERNEL SUPPORTS HDR METADATA FOR DISPLAYS

Some important features for displaying content in High Dynamic Range (HDR) have been added to the graphics branch of the Linux kernel. The now available patches ensure a correct handling of the meta data in the communication between the hardware of the computer and the display.

In the branch now being used, the changes will be collected for future versions of the Linux kernel, so the changes are expected to be released with Linux 5.3 in mid-September. The work of the participating Intel developers was first publicly presented about two years ago. The team is also working on an HDR implementation in the Wayland protocol and a Compositor. As early as autumn 2016, Nvidia employee Andy Ritger described what changes to the Linux graphics stack would be necessary in order to display HDR under Linux with the free drivers.

Specifically implemented with

the now patched patches are the parsing of the HDR metadata of the monitors via EDID. Similarly, the patches are used to build the so-called HDR info frame for the transmission of the actual image via HDMI. The patches also ensure that different parts of the Linux kernel can handle and interpret the HDR metadata.

Source:

<https://www.golem.de/news/intel-linux-kernel-unterstuetzt-hdr-metadaten-fuer-displays-1905-141527.html>

CHINESE MILITARY TO REPLACE WINDOWS OS AMID FEARS OF US HACKING

Amidst an escalating trade war and political tensions with the US, Beijing officials have decided to develop a custom operating system that will replace the Windows OS on computers used by the Chinese military.

The decision, while not made official through the government's normal press channels, was reported earlier this month by Canada-based military magazine

Kanwa Asian Defence.

Per the magazine, Chinese military officials won't be jumping ship from Windows to Linux but will develop a custom OS.

Thanks to the Snowden, Shadow Brokers, and Vault7 leaks, Beijing officials are well aware of the US' hefty arsenal of hacking tools, available for anything from smart TVs to Linux servers, and from routers to common desktop operating systems, such as Windows and Mac.

Since these leaks have revealed that the US can hack into almost anything, the Chinese government's plan is to adopt a "security by obscurity" approach and run a custom operating system that will make it harder for foreign threat actors -- mainly the US -- to spy on Chinese military operations.

The task of developing the new OS and replacing Windows will fall to a new "Internet Security Information Leadership Group," as first reported by the Epoch Times, citing the May issue of the Kanwa Asian Defence magazine.

Per the magazine, this new

group answers directly to the Central Committee of the Chinese Communist Party (CCP), being separate from the rest of the military and intelligence apparatus.

Source:

<https://www.zdnet.com/article/chinese-military-to-replace-windows-os-amid-fears-of-us-hacking/>

BLACKARCH LINUX 2019.06.01 RELEASED

BlackArch Linux is a lightweight, Arch Linux-based distribution for ethical hacking, penetration testing and security researchers. BlackArch also follows the rolling release principle through its direct connection to Arch Linux repositories. Unlike similar distributions such as Kali Linux or Parrot OS BlackArch brings however no desktop environment, but relies on several lightweight window managers. The more than 2,200 tools that BlackArch offers can be installed individually or in groups.

With the release of BlackArch Linux 2019.06.01, the developers provide fresh installation media,

which in addition to Kernel 5.1.4 and updated packages, among other things offer around 150 new tools. The BlackArch installer has been upgraded to version 1.1.1. The Vim plugins have been updated and the jedi-vim plugin added to Vim's Jedi autocomplete library. The arch configuration files Xresources and Xdefaults have been renewed and added support for the terminal emulator rxvt-unicode. In addition, the menus of the window manager Awesome, Fluxbox and Openbox have been revised. All packages on the image have been run-time tested and the image cleaned up.

BlackArch Linux can be used as a live distribution or permanently installed. A complete image including all tools with a size of 12 GB is available. Alternatively, a Netinstall image with 650 MByte is offered, which allows an individual compilation of the distribution. In addition, the developers offer a OVA image with 30 GB, which can be used with VirtualBox, VMware or Qemu.

Source: <https://www.pro-linux.de/news/1/27106/blackarch-linux-20190601-ver%C3%B6ffentlicht.html>

MAGEIA 7 LINUX DISTRIBUTION REACHES RELEASE CANDIDATE (RC) STATUS

We recently learned that most Windows 10 users aren't even keeping the operating system up to date, choosing to forgo the often buggy feature releases. Yes, the majority of Windows 10 users are ruining a version that is over a year old! That is shocking stuff folks, and it truly speaks volumes about the negative public perception of Microsoft's operating system. When you factor in the people still on Windows 7 (and Vista and XP), things aren't looking too good for Windows.

Thankfully, Linux is picking up the slack, offering an alternative to the much-maligned Windows 10. Amongst Ubuntu, Fedora, Chrome OS, and other distributions, computer users have no shortage of great operating systems these days. One very good, albeit less popular, Linux-based operating system is Mageia. It has a very strong community of knowledgeable users, making it a

good choice for both Linux expert and beginners. Today, Mageia 7, the upcoming version of the OS, reaches a major milestone -- release candidate status.

tewart shares the significant updated packages below.

kernel 5.1.5
rpm 4.14.2
dnf 4.2.6
Mesa 19.1
Plasma 5.15.4
GNOME 3.32
Xfce 4.12
Firefox 67
Chromium 73
LibreOffice 6.2.3

Source: <https://betanews.com/2019/06/02/mageia-7-linux-rc-download/>

SYSTEM76 UBUNTU LINUX-POWERED 'GAZELLE' LAPTOP REBORN! GETS 9TH GEN INTEL CORE I7 AND NVIDIA GTX 16-SERIES GRAPHICS

System76 is a computer maker and seller that has long been

selling laptops, desktops, and servers running a Linux-based operating system. For years, it only offered Ubuntu, but more recently, it began also offering its own Ubuntu-based operating system called "Pop!_OS." This distribution has proven to be quite popular in the Linux community, as it builds upon the greatness of Ubuntu while also making it better.

As great as Pop!_OS is, today, System76 makes a big announcement regarding hardware rather than software. To the delight of many consumers, the company is refreshing its popular "Gazelle" laptop. To be honest, calling it a refresh is a bit of an understatement. Actually, Gazelle has been reborn as an entirely new powerful beast. It comes with a 9th Gen Intel Core i7 by default, and you can choose between an NVIDIA GeForce GTX 1650 or 1660 Ti for graphics. There are two screen sizes available -- 15.3-inch and 17.3-inch. Regardless of the display you opt for, the resolution will be 1080p.

While pricing is unknown for now, we do have a good idea about availability. System76 promises it will go on sale in June 2019, and

guess what? Tomorrow is the first day of June! In other words, we may only be waiting days or weeks for this bad-ass Linux laptop -- not months.

Source:

<https://betanews.com/2019/05/31/system76-gazelle-linux-laptop-14/>

GOODBYE WINDOWS: RUSSIAN MILITARY'S ASTRA LINUX ADOPTION MOVES FORWARD

Just earlier this week, we reported regarding the Chinese Military's plan to ditch the Windows operating system and adopt a new operating system. At the moment, there are no reports of a Linux-based or Unix-like OS being adopted to ditch the proprietary software.

As per various reports, it seems that Russia is also acting swiftly to replace Windows with homegrown Astra Linux. It's a Debian-based distribution that was originally launched by a company named RusBITech in 2008. Initially, RusBITech focused on the private

sector but later on expanded to the local government bodies.

To make sure that more Russian bodies adopt the operating system, Astra Linux also got certifications to handle "secret" information of the government.

Coming back to the recent development, Astra Linux got the security clearance from the Russian Federal Service for Technical and Export Control (FSTEC) on April 17, 2019. As a result, the OS has got a "special importance" clearance to be used government information of the highest degree of secrecy.

This step will reduce the time and financial costs of verifying the system integrity and security of the computer systems being used by the military, according to Astra Linux's Roman Mylitsyn.

Source:

<https://fossbytes.com/russian-military-astra-linux-adoption/>

HIDDENWASP: NEW MALWARE TARGETS LINUX MACHINES TO CONTROL THEM REMOTELY

Unlike the Windows cybersecurity ecosystem, the threats concerning the Linux systems aren't often discussed in much detail. The attacks either go undetected by the security mechanisms laid out by enterprises or they aren't too severe to be reported widely by the security researchers.

However, as pointed out by cybersecurity firm Intezer, malware with sophisticated evasion techniques, which often utilize the already available open source code, do appear on the horizon from time to time. One such recent malware discovered by the firm is HiddenWasp. What makes HiddenWasp pretty dangerous at the moment is the fact that it has a zero detection rate in all popular malware protection systems.

The rootkit involved in the malware shares lots of similarities with the open source rootkit Azazel. It also shares parts of

strings with ChinaZ malware, Adore-ng rootkit, and Mirai malware. Talking about the capabilities of this stealthy Linux malware, it can run commands on the terminal, execute files, download more scripts, etc.

However, security researchers still don't know the actual infection vector; they suspect that the malware was spread in systems already controlled by the hackers. So, it could be said that HiddenWasp is being used as a secondary payload.

Source:

<https://fossbytes.com/linux-systems-hiddenwasp-malware-trojan/>

SUPPORT FOR OPENSUSE LEAP 42.3 ENDS IN JUNE

OpenSUSE Leap 42.3 was released on July 27, 2017, after a long development and discovery phase less than two years ago, and has received a number of security updates so far. However, users of the old version should consider migrating their systems to the new version of the

product by the end of the month. As Markus Meissner announced on the mailing list, there are likely to be no more security updates and updates for OpenSuse Leap 42.3 from next month.

The cessation of support is far behind the original plan. The latest update of the Leap 42 series should receive support by January 2019. This changed at the beginning of the year, as the parent company has committed itself to additional maintenance and security updates. Leap 42.3 is based on Suse Linux Enterprise Server 12 Service Pack 3, and Suse has agreed to release updates for Leap 42.3 through June 2019. Thus, the life cycle of the series has been extended to a total of 44 months.

OpenSuse Leap 42.3 can also be upgraded to the latest version 15.1 of the distribution. All you have to do is just use the distribution-internal tools, such as "zypper dup". Although the concept of the Leap series provides that the basis of the distribution between the individual sub-versions remains the same and only the desktop undergoes major changes in an update, but also a transition

between two generations usually works fine with OpenSuse.

Source: <https://www.pro-linux.de/news/1/27122/support-f%C3%83%C2%BCr-opensuse-leap-423-endet-im-juni.html>

UNITY 3D: EDITOR FOR LINUX OFFICIALLY ANNOUNCED

Already since 2015 there is the Unity Editor in a version for Linux. However, this was never officially supported and was considered experimental. With the release of Unity 2019.1 on April 16, the announcement in the blog casually mentioned an official pre-release version of the editor for Linux. A few days ago, the announcement of the Linux version appeared in the developer's blog.

It is still a preview version, which is offered for download via Unity Hub. The setup application downloaded there comes as AppImage on the hard disk. With full support, the developers expect the release of Unity 2019.3 in late fall. Until then, the experience of the users should be collected in

the forum for the Linux version of the editor.

The pre-release requires Unity 2019.1 and is available for free and paid licenses for the Ubuntu LTS editions 16.04 and 18.04 and for CentOS 7 for the x86-64 architecture. Developer support will be focussed on Gnome on X11 applications, Nvidia cards with proprietary drivers, and AMD GPUs with desktop mesa drivers without virtualization.

The increasing use of the experimental Linux version by developers and the continued adoption of Unity 3d in non-gaming environments such as the film, automotive, transportation, and manufacturing industries prompted the company to launch the Linux version of the Unity Editor officially support. Unity 2018.4 LTS will also be available for release in the coming weeks, but does not support the preview version of the editor for Linux.

Source: <https://www.pro-linux.de/news/1/27120/unity-3d-editor-f%C3%BCr-linux-offiziell-angek%C3%BCndigt.html>

CANONICAL OUTS LINUX KERNEL SECURITY UPDATES FOR ALL SUPPORTED UBUNTU RELEASES

Available for Ubuntu 19.04 (Disco Dingo), Ubuntu 18.10 (Cosmic Cuttlefish), Ubuntu 18.04 LTS (Bionic Beaver), and Ubuntu 16.04 LTS (Xenial Xerus), the new security patches are here to fix several issues affecting the Linux kernels of these releases, especially a security vulnerability (CVE-2019-11191) that only affects the i386 (32-bit) kernels of Ubuntu 18.10, Ubuntu 18.04 LTS, and Ubuntu 16.04 LTS, as Ubuntu 19.10 and Ubuntu 19.04 are not affected.

For Ubuntu 19.04 and Ubuntu 16.04 LTS, the new security update also fixes a null pointer dereference flaw (CVE-2019-11810) in Linux kernel's LSI Logic MegaRAID driver, which could let a local attacker to crash the system, as well as a race condition (CVE-2019-11815) discovered in Linux kernel's Reliable Datagram Sockets (RDS) protocol implementation, which could allow a local attacker to crash the system or execute arbitrary code.

If you're using Ubuntu, you must update the kernel as soon as possible to patch these security issues. The new Linux kernel versions are linux-image 5.0.0-16.17 for Ubuntu 19.04, linux-image 4.18.0-21.22 for Ubuntu 18.10, linux-image 4.15.0-51.55 for Ubuntu 18.04 LTS, linux-image 4.4.0-150.176 for Ubuntu 16.04 LTS, linux-image 4.18.0-21.22~18.04.1 for Ubuntu 18.04.2 LTS, and linux-image 4.15.0-51.55~16.04.1 for Ubuntu 16.04.6 LTS.

Source:

<https://news.softpedia.com/news/canonical-opts-linux-kernel-security-updates-for-all-supported-ubuntu-releases-526308.shtml>

ZORIN OS 15 LINUX DISTRO OFFICIALLY RELEASED, BASED ON UBUNTU 18.04.2 LTS

Derived from the software repositories of Ubuntu 18.04.2 LTS (Bionic Beaver) with the HWE (Hardware Enablement) kernel and graphics stack from Ubuntu 18.10 (Cosmic Cuttlefish),

Zorin OS 15 is now available to celebrate almost 10 years since the first Zorin OS release hit the streets.

Highlights of Zorin OS 15 include Zorin Connect, a new app that lets Android users sync their device's notifications with their personal computer, browse the photos from their phone or tablet, share files and URLs, reply to text messages, control media playback on their PCs, or even use it as a remote control.

A new and refreshed look was given to Zorin OS 15 with a beautiful and welcoming desktop theme that adapts throughout the day, switching automatically between the Light and Dark modes, while also offering users no less than six color variants. The new desktop theme also comes with new animations for a complete experience.

Zorin OS 15 also features support for touchscreens, Night Light to protect your eyes when you're working at night, the latest LibreOffice 6.2 office suite, support for Flatpak universal apps and the Flathub repository, a Do not disturb mode, and a totally

revamped Settings app to make configuring Zorin OS a breeze.

Among other noteworthy changes, we can mention Nvidia proprietary graphics drivers bundled in the live ISO image, support for color emoji, Mozilla Firefox as default web browser, new system font, support for Thunderbolt 3 devices, network captive portal detection, and experimental Wayland support.

Source:

<https://news.softpedia.com/news/zorin-os-15-linux-distro-officially-released-based-on-ubuntu-18-04-2-lts-526309.shtml>

PINEPHONE \$149 LINUX SMARTPHONE COULD SUPPORT UBUNTU, SAILFISH, MAEMO, LUNEOS AND MORE

The PinePhone is a cheap, Linux-ready smartphone that's expected to ship in limited quantities later this year. It's not exactly a high-power device by modern smartphone standards, but with an expected starting price

of \$149, it will be a lot more affordable than some of the other Linux phones on the horizon.

It's also starting to look like the PinePhone could be a very versatile device.

Pine64 has been sending out development kits for a while, and it looks like developers are porting a number of GNU/Linux-based operating systems to the platform.

Here are a few of the latest examples:

PostmarketOS is , LuneOS an open source operating system based on weBOS, SailfishOS, Nemo Mobile with the Glacier UI, Sway, Maemo Leste

In other words, there's a good chance that by the time this phone ships to customers, you may have a variety of open source operating systems to choose from. While it's unlikely that any of them will have as robust an ecosystem of mobile apps as Android or iOS at launch, this isn't a device designed for people that just want a cheap Android phone.

It's a phone for open source

enthusiasts who would prefer a mobile device that comes with free and open source software that can be customized, modified, or replaced. I'd be surprised if the experience wasn't a bit buggy at launch, but after years of stops and starts, it looks like this could be the year we start to see smartphones ship that are truly designed to run GNU/Linux distributions.

Source:

<https://liliputing.com/2019/06/pin-ephone-149-linux-smartphone-could-support-ubuntu-sailfish-maemo-luneos-and-more.html>

OPENSUSE ASPIRES TO OWN ORGANIZATION

It has long been clear that the Linux distribution Opensuse suffers from lack of active participation. Without the strong support of Suse, who sees Opensuse as the testing ground for the enterprise distribution Suse Enterprise Linux, the free Opensuse might not exist anymore. For the most part, Opensuse consists of the kernel and packages of Suse Enterprise

Linux.

But this dependence on Suse goes too far for some members of the community. At this year's Opensuse conference, Opensuse's board discussed how to create a structure independent of Suse. This was preceded by meetings of the board, as explained by a report on LWN. The discussion of the Opensuse conference is now available as a video recording. It's certainly not about becoming completely independent of Suse, because at the moment this is not possible. Rather, regardless of the financial benefits of Suse, parts of the board want to be in a position to accept donations and to use the revenue in the sense of distribution.

Members of the community fear that Suse may give up his previous commitments to Opensuse, for example if the company is once again sold or floated. The previous relationship with Suse, however, is considered positive and should not be terminated by the community. The organization to be established, possibly as a foundation under German law, should nevertheless ensure a lower dependence on

Suse and thus more future-proof.

Which form the organization will ultimately adopt is still open. However, there are many supporters for their founding, and their voices are barely audible. However, Rich Brown, chair of the Opensuse board, says he is in no hurry and they can take their time to find the optimal solution.

Source: <https://www.pro-linux.de/news/1/27135/opensuse-strebt-eigene-organisation-an.html>

LINUX COMMAND-LINE EDITORS VULNERABLE TO HIGH-SEVERITY BUG

A high-severity bug impacting two popular command-line text editing applications, Vim and Neovim, allow remote attackers to execute arbitrary OS commands. Security researcher Armin Razmjou warned that exploiting the bug is as easy as tricking a target into clicking on a specially crafted text file in either editor.

Razmjou outlined his research and created a proof-of-concept (PoC) attack demonstrating how an

adversary can compromise a Linux system via Vim or Neovim. He said Vim versions before 8.1.1365 and Neovim before 0.3.6 are vulnerable to arbitrary code execution.

"[Outlined is] a real-life attack approach in which a reverse shell is launched once the user opens the file. To conceal the attack, the file will be immediately rewritten when opened. Also, the PoC uses terminal escape sequences to hide the modeline when the content is printed with cat. (cat -v reveals the actual content)," wrote Razmjou in a technical analysis of his research.

Vim is a popular modal (insert, visual or command) text editor based on the vi editor, a screen-oriented text editor originally created for the Unix operating system. A modeline is a configuration line that shares settings data to a display server and communicates display settings data.

Razmjou's PoC is able to bypass modeline mitigations, which execute value expressions in a sandbox. That's to prevent somebody from creating a trojan horse text file in modelines, the researcher said.

Source:

<https://threatpost.com/linux-command-line-editors-high-severity-bug/145569/>

KDE PLASMA 5.16 DESKTOP IS NOW AVAILABLE FOR KUBUNTU AND UBUNTU 19.04 USERS

KDE Plasma 5.16 launched earlier today as the latest and most advanced version of the acclaimed graphical desktop environment for Linux-based operating systems, adding several new features and enhancements like a totally revamped notifications system, improved System Settings pages, and revamped login, logout, and lock screens.

The KDE Plasma 5.16 release also brings better support for Wayland when using the Nvidia proprietary graphics drivers, improved networking, a much easier to use Plasma Discover graphical software manager, and a much-improved overall desktop experience with lots of polishing for themes, color schemes,

widgets, and the panel.

Users of the Kubuntu/Ubuntu 19.04 (Disco Dingo) operating system can now install the latest KDE Plasma 5.16 desktop environment from the Kubuntu Backports PPA repository. All you have to do is install the PPA repository and update your installation using the commands listed below in a terminal app, then reboot the system to complete the update.

```
sudo add-apt-repository
ppa:kubuntu-ppa/backports
sudo apt update && sudo apt
full-upgrade
```

Please note that after installing the Kubuntu Backports PPA repository, you will continue to receive updates for the KDE Plasma 5.16 desktop environment as they are available upstream. Therefore, there won't be necessary to reinstall the backports PPA repository, just make sure you keep your system up to date.

Source:

<https://news.softpedia.com/news/kde-plasma-5-16-desktop-is-now-available-for-kubuntu-and-ubuntu-19-04-users-526369.shtml>

DEBIAN 10 BUSTER-BASED ENDLESS OS 3.6.0 LINUX DISTRIBUTION NOW AVAILABLE

When it comes to Linux, I prefer my distributions to be no-nonsense -- Fedora is my favorite distro, for instance. Is Fedora boring? Yes, I suppose. But that is sort of why I like it. Look, I just want the damn operating system to take a backseat to my actual work. Fedora with GNOME allows me to focus on my tasks without getting in the way.

Understandably though, some Linux users like to "distro hop" where they are constantly moving between distributions, always wondering if the grass is greener on the other side. And yeah, I get that -- new is fun. People want excitement.

Well, one distro called "Endless OS" has been causing quite the stir in the Linux community thanks to its Debian base and beautifully tweaked GNOME desktop environment. It truly feels like an operating system designed for

those who grew up in the smartphone era. It's not radical, but it definitely has sort of a mobile feel without losing focus on functioning as a desktop OS.

Today, Endless OS 3.6.0 sees release, and many Linux users are sure to be excited. It is based on the upcoming Debian 10, which is code-named "Buster." In other words, the included packages are rather bleeding edge.

Source:

<https://betanews.com/2019/06/12/debian-10-buster-endless-os-linux/>

MATRIX 1.0 AND THE MATRIX.ORG FOUNDATION

The project for the communication protocol Matrix was started in 2014, now the developers report version 1.0. Matrix is an open protocol and distributed communication network based on an open standard. The makers themselves see Matrix as a decentralized conversation memory rather than a messaging protocol.

A message sent in Matrix will be replicated on all servers whose users participate in a particular conversation, similar to replicating commits between git repositories. There is no node in the chain of multiple servers involved in a conversation that allows control, or in the event of failure, the failure of the entire system and thus terminates the conversation. Recently, KDE Matrix has been the preferred communication platform for IRC and proprietary platforms such as Slack or Discord.

According to the developers, with Matrix 1.0, the first fully stable version of the Matrix protocol and specification across all APIs is available - as is the reference implementation Synapse, which also achieves version 1.0 with the mapping of the full Matrix APIs. Matrix 1.0 is a consistent, self-contained, and secure version of the standard that should enable anyone to independently deploy production-ready matrix clients, servers, bots, and bridges.

One of the highlights of Matrix 1.0 is the use of X.509 certificates to simplify and improve server-side trust. According to the developers,

Matrix 1.0 does not mean that all planned or possible features in Matrix are now specified and implemented. Also, the reference server Synapse is by no means finished. Among other things, work is still needed here to reduce the RAM requirement. Matrix currently has features like editable news in development.

Coinciding with the release of the stable version of Matrix, the Matrix.org Foundation has also been officially launched. Its creation is intended to ensure that Matrix's future is guided by a neutral, not-for-profit entity for the benefit of all in the Matrix ecosystem.

Source: <https://www.pro-linux.de/news/1/27145/matrix-10-und-die-matrixorg-foundation-vorgestellt.html>

SYSTEM76'S SUPERCHARGED LINUX-POWERED GAZELLE LAPTOP IS FINALLY AVAILABLE

Today is Thursday, which is one of the worst days of the week.

I mean, I suppose it is better than Monday, Tuesday, and Wednesday, but it can't hold a candle to Friday, Saturday, or Sunday -- otherwise known as the weekend. So, yeah, Thursday is typically not something to get excited about.

With all of that said, today is a pretty special Thursday for the Linux community. Why? Well, the System76 Gazelle laptop is finally available! This is a laptop we reported on last month, and at the time, System76 only promised it would be available in June 2019. Well, June 13 of 2019 is apparently the exact day it goes on sale, as you can get it now.

What makes this laptop so special (besides its pre-installed Linux-based operating system), is its impressive specifications. You see, System76 has supercharged it with a 9th generation Intel Core i7 Processor (9750H) and NVIDIA GTX 16-Series Graphics. It even has something the pricey MacBook Pro doesn't -- the ability to be configured with up to 64GB. Yeah, Apple's laptop can only have a maximum of 32GB. Sad. The Gazelle can be configured with additional top specs, such as an NVMe SSD up to 2TB. Actually, it can

accommodate two such drives, so you can theoretically have 4TB of speedy storage! You can opt for either a 15 or 17-inch display, both of which have a 1080p resolution. Regardless of screen size, you get a full keyboard too, meaning it has a number pad on the right. And yes, that keyboard is backlit -- multi-color, even.

Ready to buy your own Gazelle and support the Linux community? You can configure your own with either Ubuntu or Pop!_OS pre-installed. Pricing starts at \$1099, but of course, the cost will increase as you improve specs.

Source:

<https://betanews.com/2019/06/13/system76-linux-gazelle-laptop/>

ATARI VCS LINUX-POWERED GAMING CONSOLE IS NOW AVAILABLE FOR PRE-ORDER FOR \$249

Atari issued a press release on Tuesday to announce that after many trials and tribulations it finally has a release date for the official launch of its Atari VCS retro

gaming console, along with a release date for those who backed the project during its early days, as well as information about the first key retail partnerships that will have the console ready for pre-order starting today.

Therefore, the first retailers to offer the upcoming Atari VCS for pre-order will be Walmart and GameStop, but customers will also be able to pre-order the retro gaming console directly from Atari's online shop. While there will be several bundles available for pre-order, the console will cost \$249.99 USD for the Atari VCS 400 Onyx (4GB) model, and the price can go up to \$389.99 USD for one of the Atari VCS 800 (8GB) variants.

There are also good news for early backers who pre-ordered the Atari VCS gaming console last year during the Indiegogo crowdfunding campaign, as Atari said that they will receive the device as soon as this December. For anyone else that will be pre-ordering the console starting today until its official launch next year, shipping will be kicking off in March 2020.

The Atari VCS retro gaming console will feature more than 100 of all-time favorite arcade titles, such as Asteroids, Breakout, Centipede, Gravitar, Missile Command, and Yars' Revenge, as well as a bunch of other new Atari games like Tempest 4000. It comes with the Atari VCS Store as well to allow gamers to buy even more titles and other content that will be available.

Source: <https://news.softpedia.com/news/atari-vcs-linux-powered-gaming-console-is-now-available-for-pre-order-for-249-526387.shtml>

LENOVO SHIPPING UBUNTU LINUX ON 2019 THINKPAD P-SERIES MODELS

Lenovo's newly-announced 2019 ThinkPad P-series mobile workstations can be purchased with Ubuntu, according to the ordering page on Lenovo's website. ThinkPads have often been the laptop of choice for Linux users, as Lenovo historically does certify ThinkPad models for Linux use, though prior to this change, buyers were stuck paying the

Windows tax for the unwanted bundled license of Windows.

Applicable models can be configured with Ubuntu 18.04 LTS, and will be available this month. Though not offered as a pre-loadable option, the P-series is also certified for Red Hat Enterprise Linux.

Lenovo announced 2019 models of the ThinkPad P73, ThinkPad P53, ThinkPad P53s, and P43s, as well as the ThinkPad P1 Gen 2 last week, powered by 9th Generation Intel Core CPUs. The new models introduce OLED displays on certain units, as well as X-Rite Pantone factory color calibration, which is a substantive benefit for content creators.

The P-series ThinkPads are closer to a desktop replacement than anything else, as these units come with more expandability options than the T or X-series, and higher-performance NVIDIA graphics. Buyers can also upgrade to Intel Xeon Mobile CPUs on the P-series.

It is yet to be seen if this option will be extended to other ThinkPad models. Jerry Paradise, Lenovo's

vice president of global commercial portfolio and product management, told TechRepublic in May that having Linux installed from the factory "comes up over and over with some of our very important customers, and it is taken very seriously," Paradise noted, adding that Lenovo "provides drivers and a BIOS that is compatible," reiterating that "we get that request a lot."

Source: <https://www.techrepublic.com/article/lenovo-shipping-ubuntu-linux-on-2019-thinkpad-p-series-models/>

OPENMANDRIVA Lx 4.0 LINUX DISTRO IS HERE, AND THERE IS A SPECIAL AMD-ONLY VERSION

Today, there is some great news for the Linux community -- OpenMandriva Lx 4.0 is now available! This KDE-focused distribution should have you very excited.

The default web browser has been changed in 4.0 -- it is now the Chromium-based

Falkon, which promises better KDE integration. Don't worry, you can install Firefox or Chrome if needed.

Most interestingly, there is a build that is optimized for modern AMD processors only -- it will not work with Intel chips. If you do have an AMD CPU, The OpenMandriva Team claims you will see improved performance by using this version.

The team shares several of the important package updates below.

DigiKam 6.0
Calamares 3.2.7
Firefox Quantum 66.0.5
Java 12
KDE Applications: 19.04.2
KDE Frameworks: 5.58.0
KDE Plasma: 5.15.5
Kernel 5.1.9
Krita 4.2.1

LibreOffice 6.2.4
LLVM/clang 8.0.1
Mesa 19.1.0
Qt Framework 5.12.3
Systemd 242
Xorg 1.20.4

Ready to download OpenMandriva Lx 4.0? Those using Intel processors or older AMD chips should opt for the x86_64 ISO. If you have a modern AMD EPYC, Ryzen, or ThreadRipper CPU, it is highly recommended to get the znver1 ISO.

Source:
<https://betanews.com/2019/06/16/openmandriva-lx4-linux-amd/>

CANONICAL OUTS IMPORTANT LINUX KERNEL SECURITY UPDATE FOR ALL

UBUNTU RELEASES

In a recent security advisory, Canonical details two recently discovered security vulnerabilities (CVE-2019-11477 and CVE-2019-11478) affecting Linux kernel's TCP retransmission queue implementation when handling some specific TCP Selective Acknowledgment (SACKs).

Both security vulnerabilities were discovered by Jonathan Looney and could allow a remote attacker to crash the affected system by causing a denial of service. Known as SACK Panic, they affect all supported Ubuntu Linux releases, including Ubuntu 19.04, Ubuntu 18.10, Ubuntu 18.04 LTS, and Ubuntu 16.04 LTS.

Canonical urges all users of the Ubuntu 19.04 (Disco Dingo),

Ubuntu 18.10 (Cosmic Cuttlefish), Ubuntu 18.04 LTS (Bionic Beaver), and Ubuntu 16.04 LTS (Xenial Xerus) operating system series to update their installations immediately to the new kernel versions available in the official repositories.

Patched Linux kernel versions were made available for 32-bit and 64-bit systems, as well as Raspberry Pi 2, OEM processors, Snapdragon processors, cloud environments, Amazon Web Services (AWS-HWE) systems, Amazon Web Services (AWS) systems, Google Cloud Platform (GCP) systems, Oracle Cloud systems, and Microsoft Azure Cloud systems.

Linux hardware enablement (HWE) kernels are also available for Ubuntu 18.04.2 LTS systems using Ubuntu 18.10's kernel and Ubuntu 16.04.6 LTS systems using Ubuntu 18.04 LTS' kernel.

Source:
<https://news.softpedia.com/news/canonical-outs-important-linux-kernel-security-update-for-all-ubuntu-releases-526440.shtml>



DistroWatch.com

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

CANONICAL WILL DROP SUPPORT FOR 32-BIT ARCHITECTURES IN FUTURE UBUNTU RELEASES

Last year, during the development cycle of the Ubuntu 18.04 LTS (Bionic Beaver) operating system series, Canonical announced that they won't offer 32-bit installation images (ISOs), a trend that was shortly followed by all official Ubuntu Linux flavors with the Ubuntu 18.10 (Cosmic Cuttlefish) release. However, Ubuntu's 32-bit repositories were still available.

As Ubuntu 18.04 LTS (Bionic Beaver) will be supported for the next five years, Canonical disabled upgrades from Ubuntu 18.04 LTS to Ubuntu 18.10 for 32-bit systems to avoid leaving users on a short-lived release, and now, they announced that starting with the upcoming Ubuntu 19.10 (Eoan Ermine) release, support for 32-bit system will no longer be provided.

While Canonical will no longer offer 32-bit programs for its upcoming Ubuntu releases, the company said that it will still be

possible to run 32-bit applications on the Linux-based operating system if users want to use certain apps. These can be made available to users by application developers through a supported file format, probably Snap, Flatpak or AppImage.

Canonical also said that they will provide more details about the removal of 32-bit support in Ubuntu Linux in the coming months as Ubuntu 19.10 gets closer to the beta and final release later this fall to instruct existing users on how to proceed if they still have 32-bit programs installed. Ubuntu 19.10 (Eoan Ermine) will be released on October 17th, 2019.

Source:

<https://news.softpedia.com/news/canonical-will-drop-support-for-32-bit-architectures-in-future-ubuntu-releases-526439.shtml>



This last month I've been looking at the hugo-reveal theme more and more often as a method to create quick and functional slide decks using Reveal.js. Google Slides and Powerpoint/LibreOffice Impress (or Keynote on macOS) are functional, and what people generally think of when you say presentation or keynote. However, if you're planning to present something to do with code, and want to use something like carbon.now.sh to make nicely formatted screenshots of your code, I highly recommend you take a look at this article before you make your final decision.

PROJECT FILES

All project files are on github. <https://github.com/lswest/fcm-146-hugo-reveal>

If you prefer to download the files first, and simply follow along with the article, that's fine.

SETUP

The first few steps to getting up and running are pretty simple:

- Install git
- Install hugo (odds are you can find a version in your local repositories - otherwise check gohugo.io).
- Run: `hugo new site presentation-name`
- Then you can do one of the following options:
 - run: **git init** in the folder created above, followed by: **git submodule add <https://github.com/dzello/reveal-hugo.git> themes/reveal-hugo**
 - Just download a zip archive from their github page (see further reading).

STARTING YOUR PRESENTATION

There are a few things I usually do before writing any of the slides. I'll be covering them in the next few headings. If you're completely satisfied with the default appearance, just do the steps in the first heading.

CONFIGURE HUGO

You'll need to actually define the output type and the theme to use. This is the same information as you'd find on the reveal-hugo project page. I've placed the code on GitHub, so instead of pasting lines of code, I will refer to the following link and the corresponding line numbers.

File:
<https://github.com/lswest/fcm-146-hugo-reveal/blob/master/config.toml>
lines: 5-10

I also highly recommend adjusting the archetypes file so you don't need to constantly update the preamble for your files if you decide to split the slideshow up into multiple content files.

File:
<https://raw.githubusercontent.com/lswest/fcm-146-hugo-reveal/master/archetypes/default.md?raw=True>

What I do in this file is swap out

the "----" with "+++" (to switch to TOML frontmatter), and then remove the `draft = true`, and set the output format.

With the above two steps done, you can now create your first file:

```
hugo new _index.md
```

This will create a file under `content/_index.md`. In most cases, this file will contain your entire slideshow. If you prefer to split it up, you'll want to check the project's documentation for details.

IMAGE SHORTCODE

I prefer to scale my images in the Markdown itself, instead of resizing it by hand. To do this, I edited an official example from the hugo Image Processing page for slideshows.

File:
<https://github.com/lswest/fcm-146-hugo-reveal/blob/master/layouts/shortcodes/image.html>

Usage: `{{<image file Resize 400x >}}` (note the lack of extension).

The picture file should be in the same content folder level where the markdown file is – you’re calling the shortcode from.

SYNTAX

Hugo-reveal puts a few of the Reveal.JS features behind shortcodes, and they are as follows:

{{% fragment %>}}Markdown goes here**{{% /fragment %}}** - Allows you to step through the fragments (i.e. reveal one bullet point at a time)

{{% note %}}Text goes here**{{% /note %}}** - Creates a note for the speaker view.

{{% section %}}Slides go here**{{% section %}}** - Creates a series of vertical slides.

--- - Start new slide

~~~ - Start/end code fragment. You can supply a programming language on the same line as your opening “~~~” (example:

“~~~python”)

For anyone wondering what the difference between “`{{%}}`” and “`{{<>}}`” is - the percentage signs mean that markdown contained in the shortcode will be compiled, and the less than/greater than indicates that any inner text is just text.

## RUNNING THE SLIDESHOW

Just open a console, cd to the directory your hugo project is in, and run hugo serve. This will run the hugo site on <http://localhost:1313> (by default at least). You can also build straight up HTML with hugo build if you want to host the files somewhere. Bear in mind that building the HTML and just opening it in the browser will disable some features (such as speaker notes).

## SPEAKER NOTES

Sometimes you want to make little notes for yourself on a slide, that aren’t visible to the audience. You can do this here as well, by using the note shortcode (see Syntax section). To open the speaker view, simply press the “s”

key on your keyboard once the slideshow has started. It will open a new window and give you a presenter view. I would recommend you do this at the start of the presentation and move it to your monitor, leaving the normal slideshow on the projector.

You can control the slideshow from the presenter view as well, and it will be synchronized between the two views.

## SHARING YOUR PRESENTATION

After you’ve presented, you may want to put the slides up for anyone to look at, or to send it to your audience. While you can share the source code, it’s never going to be quite as convenient as a PDF. To create a PDF of the slides, you can visit <http://localhost:1313/?print-pdf> - this enables a special print stylesheet. After that, just print the page from your browser, and choose a PDF printer (or save to PDF). An example can be found here: <https://github.com/lswest/fcm-146-hugo-reveal/blob/master/FCM%20146%20Example%20Slide%20Deck.pdf>

## CONCLUSION

Hopefully this article has adequately shown why Reveal.JS should be a valid consideration when creating code-heavy slideshows. If you have already used it, feel free to let me know about any bugs or issues you’ve run into. Also, if you have any questions or requests for new articles, feel free to reach out to me at [lswest34+fcm@gmail.com](mailto:lswest34+fcm@gmail.com).

## FURTHER READING

<https://github.com/dzello/reveal-hugo> - reveal-hugo GitHub project.

<https://github.com/lswest/fcm-146-hugo-reveal> - The project demo I set up for this article.



**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](mailto:lswest34@gmail.com).



Many regular readers of this column might have wondered why I haven't dealt with JSON files in any of my articles to date. Well, that's a good question.

Partially, the reason that I haven't is that it didn't really fit into any of the subjects that I was trying to explain. Now, however, I will open the topic so we can explore it.

## So, WHAT EXACTLY IS JSON?

JSON stands for JavaScript Object Notation. It's a way to read, write and exchange data using an industry standard. Python has a library that deals with JSON data.

Here (top right) is a short sample of some JSON data (I borrowed this example from <https://developer.rhino3d.com/guides/rhinopython/python-xml-json/>)

Does this look somewhat familiar? It obviously has a

key:value structure to it. Something like a dictionary in Python? Hmmmmm.

I was going to give you an example of getting and working with some JSON data by using Weather Underground, but they have removed the free access. So, I've decided to try the Dark SKY API. In order to use their service, you need to sign up for a free account. This account will give you up to 1000 free API requests per day. This should be enough for you to do some testing on your own. When I was trying out the code for this month, I used way less than 40 requests. You can sign up at <https://darksky.net/dev/docs> and click on the "SIGN UP" button in the upper-right corner of the page. They will send you an email requesting you to confirm your email address with a link. Once you do that, they will provide you with your own secret key.

Now, one of the requirements of the service is that you keep your secret key, well, secret, so I won't disclose my key. I'll use

"{secretkey}" wherever it's required. What I'll do to make it easy is to create a variable and assign the value to it. That way, you can use your secret key by simply plugging it into the code I will provide.

Let's try it out. In addition to the API Key, you'll need to know the Latitude and Longitude of the area you are interested in. If you don't know your latitude and longitude off the top of your head, you can get to <https://www.latlong.net/> and enter your city and country. I'll use that lat and lon for Austin, Texas...

```
latlon = 30.2672° N,
-97.7431° W
```

So, our call will be...

```
https://api.darksky.net/forecast/{secretkey}/30.2672,-97.7431
```

(The additional calls can get somewhat complex, so we'll start with the full report).

We'll start out by testing it in a

```
{ "office":
  { "medical": [
    { "room-number": 100,
      "use": "reception",
      "sq-ft": 50,
      "price": 75
    },
    { "room-number": 101,
      "use": "waiting",
      "sq-ft": 250,
      "price": 75
    },
    ...
  ]
  "parking": {
    "location": "premium",
    "style": "covered",
    "price": 750
  }
}
```

browser. Put the above address into the browser address box. What you'll get back is quite a bit of data. If you are using Google Chrome, be sure to either add or enable JSONview extension. Firefox shows the JSON pretty print by default.

Here (next page, top right) is an abbreviated version of the output data, I purposely have edited it so that it contains only the header and the 'currently' section.



Even though I limited it to the header and 'currently' sections, that's a lot of data. Some of it might be important to you and some might not be so important.

Before going any further, please save a copy of the data. For Chrome, right-click in the window and select "Save as..". In Firefox, you can simply click the save button. Then save the file as "sampledata.json" somewhere easy to get to. This way, we can use it instead of a "live" feed while we are developing our program without costing "live" calls. Remember, 1000 calls per day sounds like a bunch, but during learning and development, it can go quickly.

Now we can look at the information presented. We have some header information, then a series of sections called "currently", "minutely", "hourly", "daily", "flags" and there might be one called "alerts". When you make a "full" call as we did above, you get everything. You can use the "exclude" option to filter out the items you don't want or need to see (more on that in a bit). However, right now, let's just concentrate on the "currently"

section.

As you can see, there is a time field that is a UNIX timestamp, fields for summary, storm information (if there is a storm around), temperature, dewpoint, humidity, pressure, wind, and much more. For the most part, these same data are available in the "daily" and "hourly" sections as well. Some of the fields may not be available when you call for data. Mainly things like the storm information are – only if there is a storm nearby.

Now let's start talking Python code. Create a new python file called 'DarkskyJSON.py' and put it in the same folder that you put the sample data download earlier.

Let's start with the import section:

```
import json
import requests
from datetime import datetime
```

You might be thinking that it makes sense to import the json library, but why requests and datetime libraries? The json library is obvious. The requests library is

```
{
  "latitude": 30.2672,
  "longitude": -97.7431,
  "timezone": "America/Chicago",
  "currently": {
    "time": 1558437217,
    "summary": "Overcast",
    "icon": "cloudy",
    "nearestStormDistance": 4,
    "nearestStormBearing": 320,
    "precipIntensity": 0,
    "precipProbability": 0,
    "temperature": 80.88,
    "apparentTemperature": 84.95,
    "dewPoint": 71.48,
    "humidity": 0.73,
    "pressure": 1001.21,
    "windSpeed": 9.78,
    "windGust": 23.08,
    "windBearing": 169,
    "cloudCover": 0.97,
    "uvIndex": 0,
    "visibility": 10,
    "ozone": 293.86
  },
  ...
}
```

so we can make a http request directly from our program. And datetime is so we can convert the unix timestamp to a value that normal humans can understand at a glance. By the way, you might want to do a "pip3 list" in a terminal to see if requests is already installed.

```
localfile = 'sampledata.json'
with open(localfile) as f:
    response = json.load(f)
print(response)
```

Ok. Moving on. The first task is to work with the local file (below), so we'll write some code to load that JSON data. I made a copy of my local file – to keep it safe – and named it 'sampledata.json'.

This should mainly look familiar to you. We've done it many times over the years. The only difference

is that we are telling the JSON library to load the file and return it as a Python dictionary called 'response'. When we print it to the terminal, it should look something like this...

```
{ 'latitude': 30.2672,
  'longitude': -97.7431,
  'timezone':
  'America/Chicago',

# 'currently': { 'time':
1558447441, 'summary': 'Light
Rain', 'icon': 'rain',
'nearestStormDistance': 0,
'precipIntensity': 0.0206,
'precipIntensityError':
0.0203, 'precipProbability':
0.73, 'precipType': 'rain',
'temperature': 79.43,
'apparentTemperature': 82.99,
'dewPoint': 72.49,
'humidity': 0.79, 'pressure':
1004.58, 'windSpeed': 6.51,
'windGust': 12.42,
'windBearing': 275,
'cloudCover': 0.72,
'uvIndex': 2, 'visibility':
6.7, 'ozone': 299.33},
'offset': -5}
```

Again, things like 'nearestStormDistance' and 'precipType' might not be available when you make your requests. We'll deal with those in a few moments.

Now, we'll deal with the current time. That shows up in the 'currently' section as 'time'. Since I

```
print('    Temperature: {0}'.format(response['currently']['temperature']))
print('    Feels like: {0}'.format(response['currently']['apparentTemperature']))
print('    Dew point: {0}'.format(response['currently']['dewPoint']))
print('    Humidity: {0}%'.format((response['currently']['humidity']*100)))
```

live in the U.S., I'll use a datetime format that makes it easy for me. I'm sure you know by now how to do it for yourself. But just in case, here's a quick memory aid reminder link:

<https://www.programiz.com/python-programming/datetime/strftime>

```
tim =
response['currently']['time']

print(datetime.fromtimestamp(
tim).strftime("%a %m/%d/%Y
%H:%M:%S"))
```

Assuming that the value for 'time' is 1558447441, the output would be:

```
Thu 05/23/2019 19:30:20
```

And that makes perfect sense to me. Now, to help break down the first line of the above code, 'response' is the full data packet we got from the JSON library read, 'currently' is the section we want to deal with, and 'time' is the key that we want. It's just that simple.

Now, we can play some

simplifying games with the data so we don't have to type so much. For example...

```
currents =
response['currently']
summary = currents['summary']
```

If we print the summary variable, we will get:

```
'Light Rain'
```

Again, to carry on with the key:value dictionary analogy, 'currents' is the section of the data, 'summary' is the key and 'Light Rain' is the value. We also assigned (in the first line of the two) the entire 'currently' section of the returned data dictionary to a dictionary named currents. So now, when we want any value within the currents dictionary, we just put the key for that value in square brackets. Here (top) are a few more examples set as print statements.

And our output would look, using the above response data, something like this:

```
Temperature: 84.43
Feels like: 90.54
Dew point: 72.43
Humidity: 67.0%
```

It's not as bad as it seemed when we started this article, now was it? Now, how to handle a field so that:

- if it is available, show it,
- if not, don't encounter an error?

We'll use the precipType key as an example. If it's raining or snowing, it will be available, but if it's sunny, it won't be in the data structure. Here's how:

```
if 'precipType' in
response['currently']:

    print("    Precip Type:
{0}".format(response['current
ly']['precipType']))
```

So, if the data structure response['currently'] has a key of 'precipType', we'll print it, otherwise we'll just go on without any problems. That's the 'key in dictionary' part of the if clause. Again, to many of you, we've done this kind of thing before so it's old



hat. To others, this is new information.

Now we'll look at the way to get the live data. We start with defining a number of variables so we can just "plug and play" into a string. Here's the code (top right).

Note that the requests call takes no consideration of timeout settings. This is easy to change, if it is a concern to you. Simply add one line and replace the last two lines of the above code:

```
timeout = 10 # 10 second
timeout

session = requests.Session()

response = session.get(url,
timeout=timeout).json()
```

Now we have the JSON data structure in our dictionary, just like we read it from the local file earlier. So now, you can comment our four lines that read the local file, and add the lines above. This way, if you want to play some more, you can still work with the local file by commenting out the "live" request code and uncommenting the local file-read code.

```
host = 'https://api.darksky.net/forecast'
api_key = '{SECRETKEY}' # YOUR secret key here...
# Austin Lat/Lon
lat = '30.2672'
lon = '-97.7431'
# excludes holds the sections that we are not interested in this time...
excludes = 'exclude=minutely,hourly,flags'
url = ('{host}/{api_key}/{lat},{lon}?{excludes}'.format(
    host=host,
    api_key=api_key,
    lat=lat,
    lon=lon,
    excludes=excludes)
# print(url) # if you want to see it before we actually send it...
# Now start a session using requests and send a .get request to obtain the response data
session = requests.Session()
response = session.get(url).json()
```

I've got a fully functioning demonstration program that I've created (without my secret key of course, but you can put yours in) and I've put it up on pastebin. The address is

<https://pastebin.com/yJ7dJGis>.

For those of you who don't live in the US, and/or don't use English as your primary language, there are various options for you that keep you from having to write Fahrenheit to Celsius conversion

functions, and will present the display text in a language that you want. For example, if you want to see the output in Norwegian, you can pass "nb" within the URL as language and "si" as the units. Below is a modified URL string creation statement that you can use to set things up correctly. Set 'unitstouse' as "si" and 'langtouse' to 'nb'. If you want Spanish, use "es". If you want German, use "de", and so on. It's all in the API docs.

Where to go from here? Well, if you go back to the DarkSky API Documentation page I directed you to before, they have a full list of all the keys that are available. They include daily forecasts for the current day plus seven days, hourly forecasts, changing the output language and units of measurements, minute by minute forecasts for the next hour, alerts for severe weather information, and even a "time machine mode" that allows you to include a date in

```
url = '{host}/{api_key}/{lat},{lon}?{excludes}&{unit}&{lang}'.format(host=host,
api_key=api_key,
lat=lat,
lon=lon,
excludes=excludes,
unit=unittouse,
lang=langtouse)
```

# HOWTO - PYTHON

the past or in the future and get the observed (past) or forecasted (future) data. I haven't played with these two options yet, so I don't know how far backwards or forwards you can go.

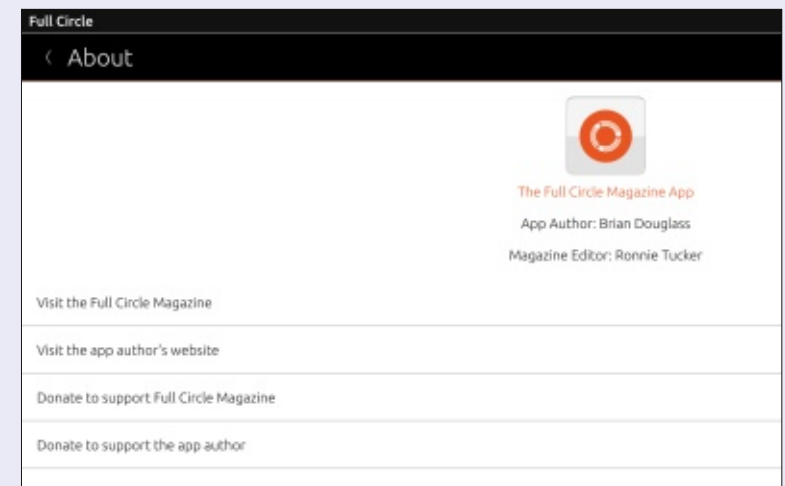
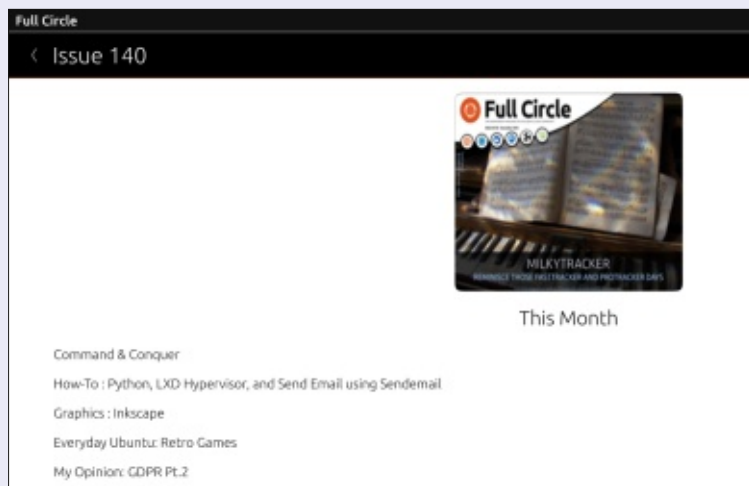
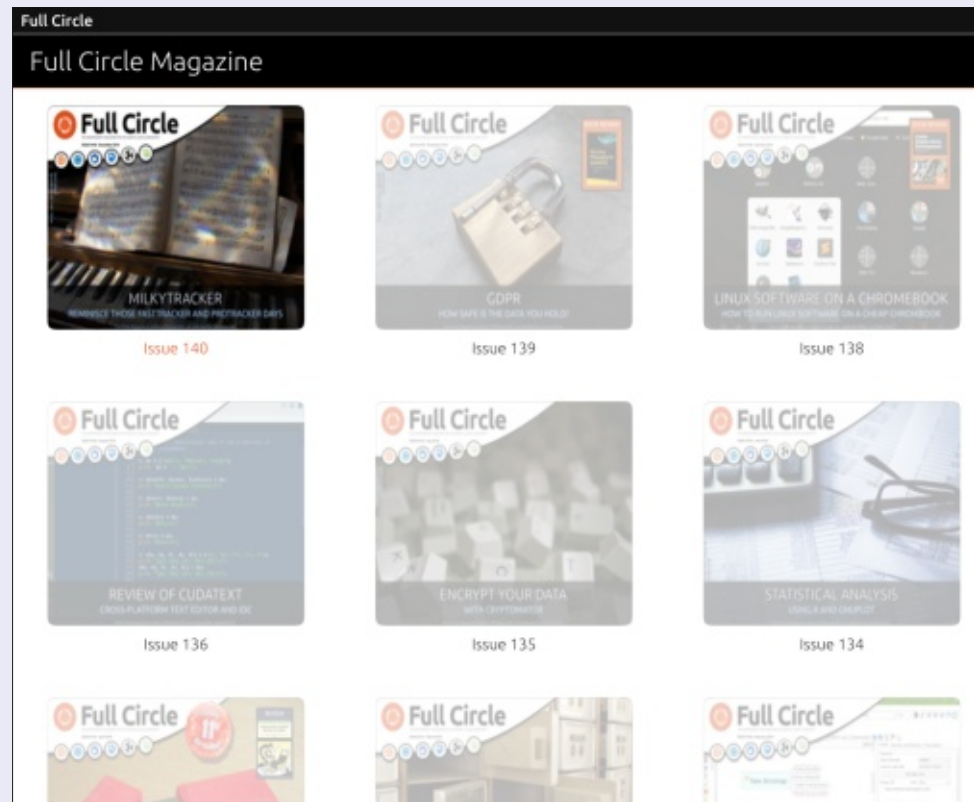
If you are a "weather geek" like me, this can be a very fun project. It would be pretty easy to put this code into a GUI. We might do that sometime in the future.

Start up the Time Machine!



**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.thedesignedgeek.xyz](http://www.thedesignedgeek.xyz).

## THE OFFICIAL FULL CIRCLE APP FOR UBUNTU TOUCH - UPDATED!



**Brian Douglass** has updated his FCM app for Ubports Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

### INSTALL

Either search for 'full circle' in the Open Store and click install, or view the URL below on your device and click install to be taken to the store page:

<https://uappexplorer.com/app/fullcircle.bhdouglass>

**HUGE thanks to Brian for this.**



So far, I have demonstrated how Freeplane works as everything from a simple brainstorming tool to a project management tool. The software takes you beyond the basic idea of mind mapping and expands into a tool for many jobs.

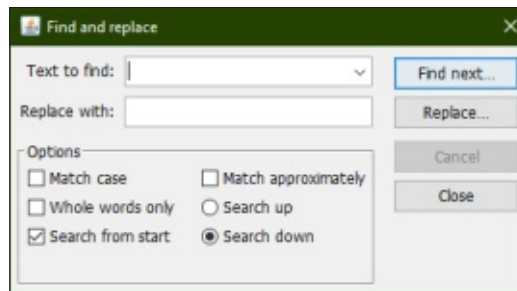
Today, we will expand Freeplane a little further. Packaged with Freeplane is the note editing utility Simple HTML Editor. The developers Ulrich Hilger and Dimitry Polivaev designed the editor, and they made an editor that's easy to use. You can use the editor to change and create node text, node details, and node notes. The node notes seem the natural place to use the editor, but, sometimes, you will want to format your node text and node details more extensively.

To open the editor to edit the node text, you use the key combination ALT + ENTER. For the node details, use the combination CTRL + F3, and when using the editor for node notes, CTRL + >, which requires you to hold the shift key.

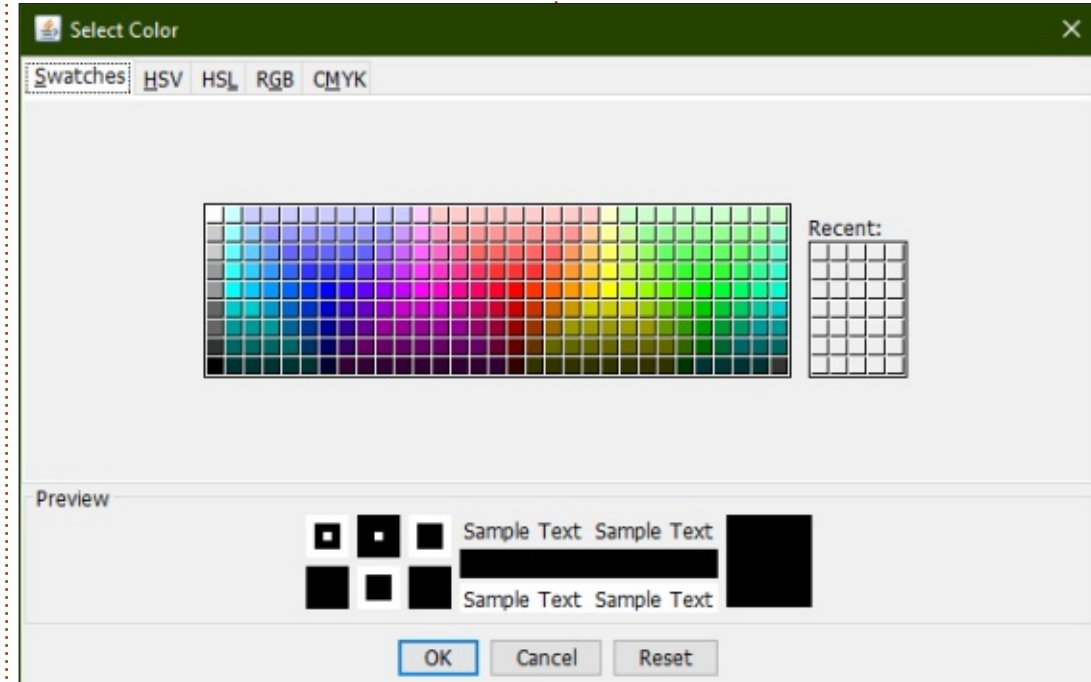


## THE TOOLBAR

The toolbar for the Simple HTML Editor looks like many you'd see in any text editor. You have buttons for printing, undo and redo, cut, copy, paste, and search. You have dropdown boxes for the font and font size. You can change the format of the text with bold, italic, underline, and text color buttons, or remove all formatting with the click of a button. Format your paragraphs as left, right, or center aligned, and create bulleted or numbered lists. Most of what you need to do in the editor you can do from the toolbar.



Two of the toolbar icons generate option dialogs, search,



and text color. The search dialog allows you to search, or search and replace. The options let you match case, words, search from the start, and search up or down. The text color dialog enables you to select a color using swatches, HSV, HSL, RGB, or CMYK.

## THE MENUS

## EDIT MENU

The Edit menu has the usual copy, paste, print, and find and replace options. The dialog for find and replace is the same as the one on the toolbar.

The menu includes the ability to create underlined links like the ones you find on web pages. To



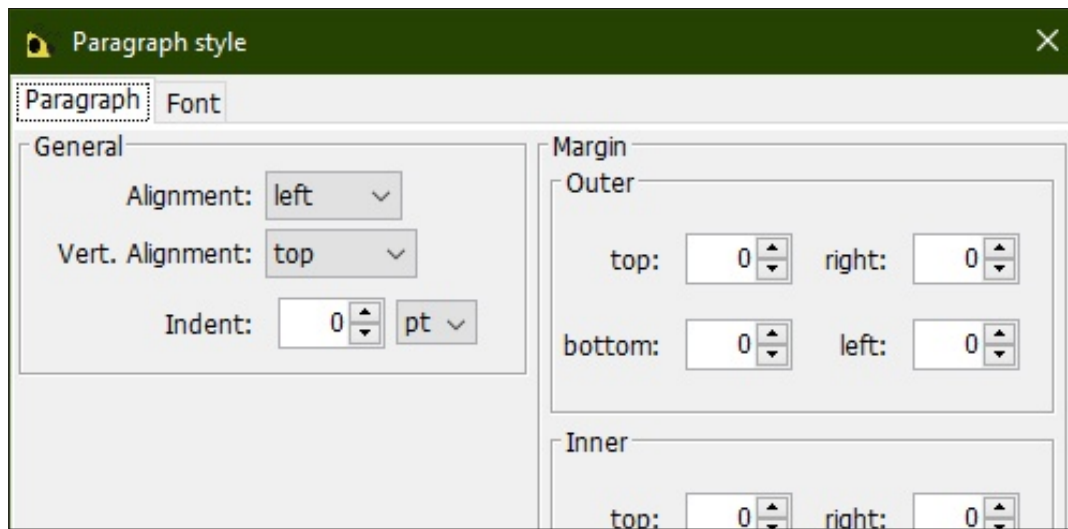
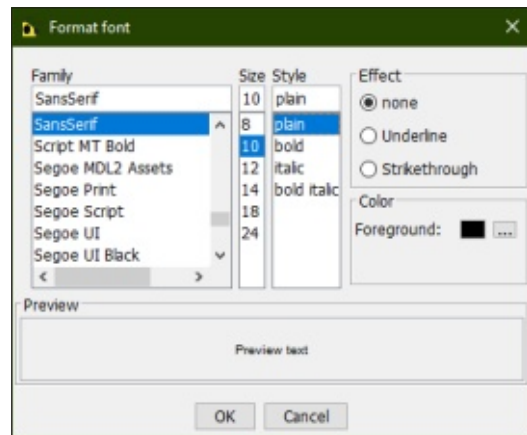


# HOWTO - FREEPLANE

create an underlined link, highlight the text you want to turn into a hyperlink. From the menus, select Edit > Add or modify hyperlink (type). In the dialog, enter or paste the URL for the link and click OK. To link to a file on your PC's hard drive, use the Add hyperlink (choose) menu option, browse to the document, and click Open.

## FORMAT MENU

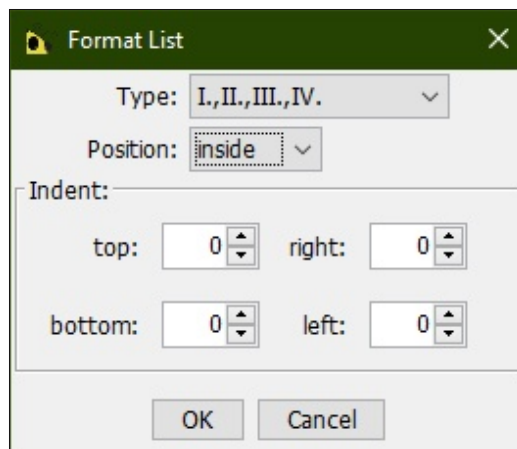
The Format menu has options for styling the text you highlight in the editor. You will find all the standard character and paragraph style selections, but a few of the choices generate dialogs which allow you to fine-tune the look of your text.



The Font option opens the Format Font dialog. You can select the font family you want to use, the size, the style, the effects, and the color. The preview text shows you how your selection will look. The dialog is your one-stop shop for character formatting.

The Paragraph option lets you format how paragraphs display. You can control the alignment, vertical alignment, and indentation. The indentation applies only to the first line. The paragraph has two sets of margins, inner and outer. Think about a rectangle surrounding the text of a paragraph. The outer margin is padding outside the box, and the inner margin is padding inside the

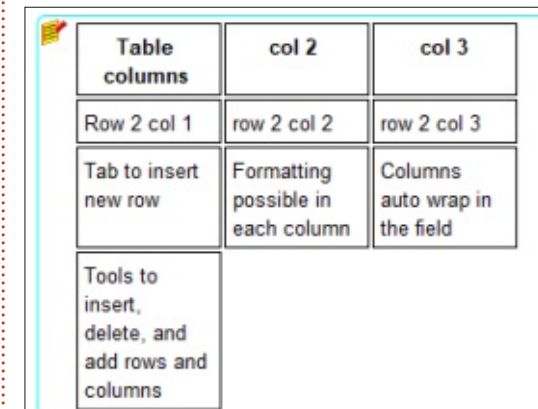
box. If you select a background color for the paragraph, you can see the edges of the rectangle, and the effect of the inner and outer margins. The Font tab of the Paragraph style dialog is the same as the font dialog with the addition of the background color.



The Color options display the same dialog discussed in the toolbar section and gives you some default color choices, too. You can choose from red, green, blue, and black. The 'remove color' removes the color selection.

The List option lets you customize the display of lists. From the Type dropdown, you can select the numbering style or bullet type. You can position the numbers and bullets so that they are on the inside or outside of the paragraph margins. You can control the indentation of all four sides of the list item.

## TABLE MENU



The table menu helps you create tables in your node text, details, or notes. When you click on



## HOWTO - FREEPLANE

the Table item, you get prompted for the number of columns. Enter how many columns you want and click the OK button. You can edit and format each cell individually, moving between the cells using the tab key. If you press tab while in the last column, the editor creates a new row. The columns will autowrap as you type the text. In the menu, you have tools to insert, delete, and add rows and columns. All the formatting options work inside the table cells, allowing you to create a visually pleasing table.

### HELP MENU

The Help menu has an About simple HTML item that displays the GNU license for the utility.

### VIEW TABS

At the bottom of the Simply HTML window are two tabs. The tabs give you a different view of the text in the editor, and depending on your knowledge of HTML, you can customize the information even further.

At its roots, the text in the editor is HTML. You can view the

actual HTML using the HTML Code view. The editor uses an embedded stylesheet and inline styles to markup the text. Switching back and forth between the views, I got a sense for how it all worked. I did add some HTML to see that directly editing the HTML works. In HTML Code view, many of the formatting tools are disabled.

Most users will want to stick with the Layout view, which shows you the formatted text. In this view, you can use all the tools to format your text. You will work here most of the time. Save the HTML Code view for when you need to tweak something.

### THE BUTTONS

When you open the editor to write a node note, the Simple HTML opens docked to the bottom of the program window. However, when you edit node text or details, the editor opens in a window. You will see buttons at the bottom of the window. For the node details you see OK and Cancel buttons, but with the node text you also get a Split button.

The OK button saves the text as

formatted and returns to the map. The Cancel button ignores any changes and returns to the map. The Split button divides the node into two nodes at the location of the cursor. With a node of "One Two," if you place the cursor between the two words and click on Split, Freeplane will create two nodes, "One" and "Two."

The Simple HTML Editor is a tool built into Freeplane for editing the text of node text, details, and notes. At its roots, the layout is HTML, but you don't have to know HTML to use it as the Layout view works like a mini word processor.



**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 - Pt4

Welcome back to another quick insight into the very powerful and highly underrated Darktable. We are working with version 2.6, NOT the version that ships with Ubuntu. There are features in 2.6 that you will not find in previous versions. These are the features we are looking at. Darktable 2.6 (or higher) can be obtained via snap/flatpack/appimage or PPA. (If you are attempting this, you know how to install software on your Ubuntu system).

We are working with a noisy picture from the Pentax forums. If you are just joining us, the picture was stolen from here: <https://www.pentaxforums.com/gallery/photo-bgirl-grainy-8596/> (Clicking on the photo will enlarge it, for you to save).

Working with one picture keeps everyone on the same page, however you are very welcome to use your own noisy picture!

I hope everyone has been experimenting with the various

options to correct the noise. This is the only way to learn, and practice makes perfect.

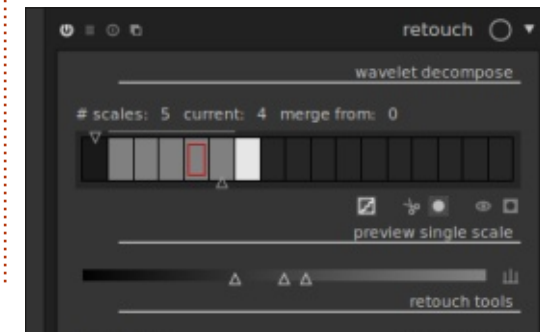
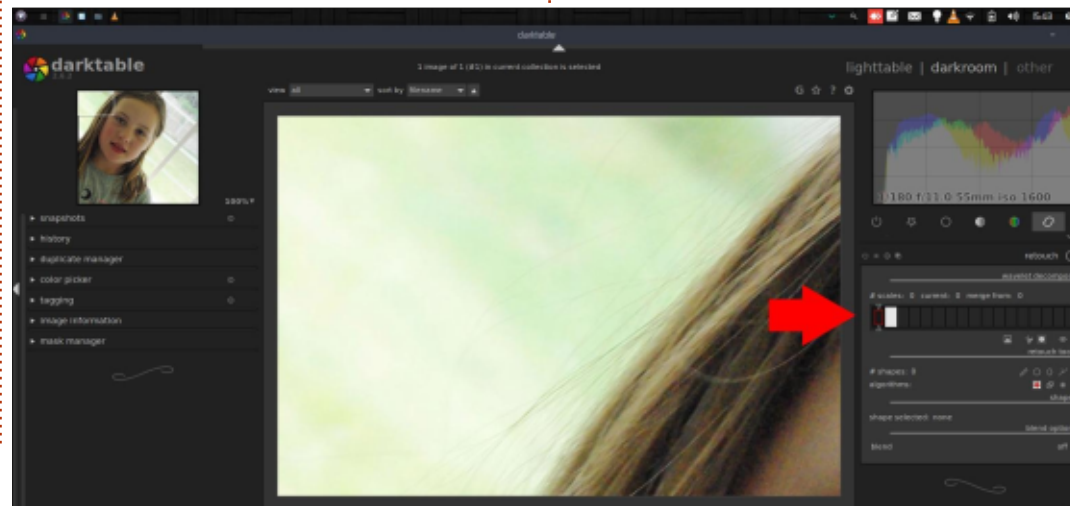
Darktable 2.6 sports two new features called 'filmic' and 'retouch'. See: <https://www.darktable.org/2018/12/darktable-26/> - You can find them in "more modules" on the right. Filmic does just what it says on the box, it mimics shooting on film. (We will get to it soon). Retouch, on the other hand, makes spot removal look like a freeware toy. I don't even know why they kept spot removal in there. Load up retouch now.

You may wonder about these blocks. They are scales. Feel free to mouse over them to read the tool tips. Adding scales, is like adding layers of granularity. If you add two, you will have a rough / coarse and a smooth / fine layer. Add two more and you break each of those into the same. Get the idea? You can think of it like music scales. We will play later, for now, I would just like to give you an overview and brief explanation. If you look below the blocks, you will see retouch tools, with shapes in the top row and algorithms in the bottom. Mouse over each to identify them. It will tell you what they are, but not what they do.

This is where your friendly Full Circle Magazine steps in and explains what each one does. (Just not right now, keep reading).

I like taking pictures at air shows, but I often find that at maximum zoom, I see spots or dust or lint when I review my pictures afterwards. Spot removal is basically copy and paste, and you can usually see it. (Why is the sky not uniformly blue?). The new heal tool is that plus blending into the surrounding pixels. So you will probably love it too.

Before we go using all these tools, or perhaps you have already – I am going to bring your attention back to the scales. You will notice a red box inside the very first rectangle. This is where you are currently editing. Moving up



# HOWTO - DARKTABLE

the scale to the right is a lot like 'onion skinning' - adding another "layer" through which the picture appears more grainy. To get a feel for this, add five scales (by dragging the bottom triangle right) and look just below the blocks, the very first icon 'display wavelet scale', click on it. Now click on the first block, then the second, and so on, to see the image change as your red block moves within the rectangles, which has now turned grey. You can go past your level of scale (past the white rectangle), but this is pointless. Whilst clicking through your scales again, look at the histogram in the top right. See how the angle widens between the first and fifth block. You will also have noticed a new slider with three triangles on it where it says, 'preview single scale'. You are

welcome to play with those, and to the right of that you will see what looks like a trident. This is the 'auto levels', which will adjust your histogram to the 'best' settings, defined by the algorithm. Only on that one layer you are on.

Do you understand the power at your fingertips yet? Yes, dear reader, this is power editing!

Okay I hope you have the picture of the girl loaded and ready to be edited. Centre it on her nose and look for the two freckles. I am going to treat the freckles as blemishes, though they are not, just so you can see this in action. Add eight scales. At scale four you should just start to see the freckles. Now we get to the shapes. The first one, that looks

like a pencil, is add brush. We will skip it for now. The second is the circle, click on it and bring your cursor on to the face. You will see something like this:

Now scroll your mouse wheel forward to tighten the circle and then hold down shift and repeat the action to tighten the feathering. Click on the 'blemish', then drag nearby in any direction that looks like it could be a good match. Repeat for both. You will now see a green line inside the scale you are editing in. This indicates you have done something here. Now move another layer up and repeat. You do not have to drag to the same area, which is the beauty of this. In fact if you drag to other areas, you can make it look more natural.

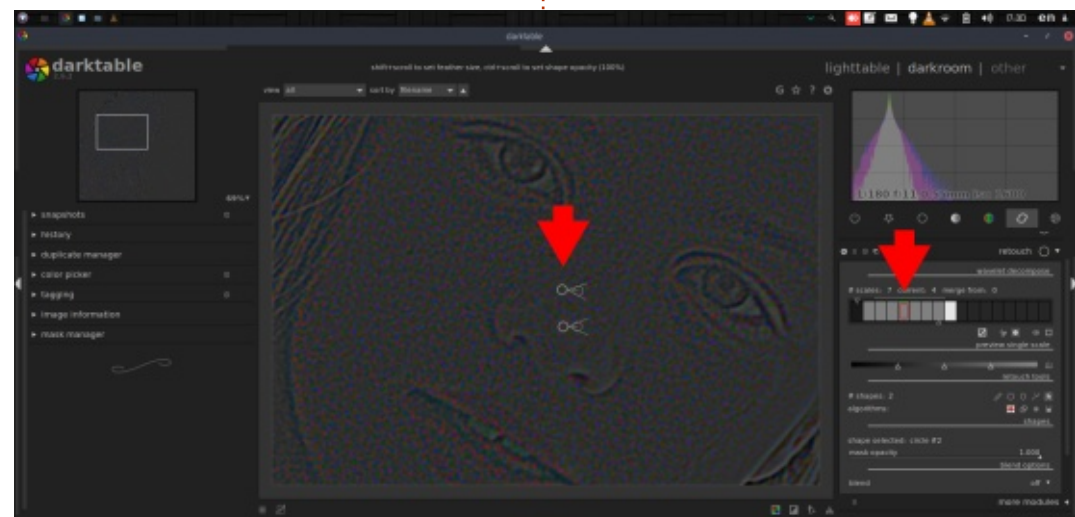
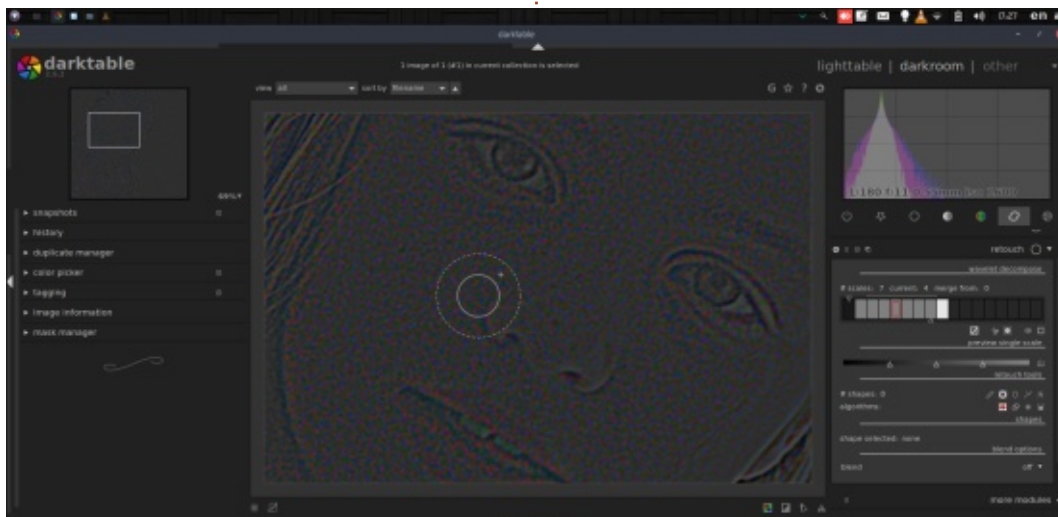
When you are done, click back on the very first scale and be amazed at your elite editing skills. The kind Vogue magazine pays someone six figures for!

I will leave you here to play, and, in the next issue, we will continue with more of the tools.

Happy editing.

If you have any queries, you can contact me on the FCM Telegram group:

<https://t.me/joinchat/BqDEzj7o5FQkPzHjvccQnw>





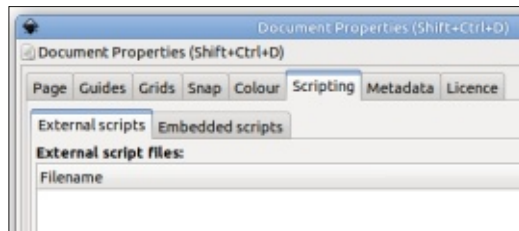


If you followed last month's tutorial, you should now have a styled button that toggles between two classes when you click on it. This month, we're going to extend the code behind that button to control other objects on the screen, so if you didn't play along with the previous article, now is the time to go back and give it a try.

We've previously looked at two ways to put JavaScript into an Inkscape file: directly in the fields within the "Interactivity" section of the Object Properties dialog; and via the "Embedded scripts" tab in the "Scripting" section of the Document Properties dialog. You may recall that the latter location also includes a second tab, labelled "External scripts". This month we'll take a look at that tab, and discuss the pros and cons of this approach.

First, load the SVG file for the button that you created last time into Inkscape. Then open the File > Document Properties dialog, and select the "Scripting" tab. Within that section make sure the

"External scripts" tab is active.



As with the "Embedded scripts" tab, the UI here is sparse and slightly misleading. At the top is an excessively short area that lists any external script files linked to from your document – it should be empty at the moment. Below that is an unlabelled line, with Plus (+) and Minus (-) buttons after it, the latter being disabled at this point. As the name of the tab suggests, this UI is used to link external scripts – i.e. JavaScript code stored in a separate file – to your SVG file. You have probably also guessed that the Plus button adds a file to the list above, whilst the minus button removes it. What isn't so clear is that the Plus button actually works in three different ways, depending on the content of the unlabelled field, and whether or not your JS file exists yet.

**Method 1:** If you just click on the Plus button, you'll be presented with a file selector dialog. You can then navigate to the directory of your choice and enter a new filename into the file selector. When you accept the content of the file selector (e.g. by clicking the "Open" button), the full path and name of your file will appear in the list at the top of the dialog. NOTE: This does not actually create the file on-disk, so you'll need to do that manually, opening up the possibility of typos.

**Method 2:** This is the same as the previous method, except this time you use the file selector to choose a file that already exists. Once again, the full path to the file is put into the list at the top. This has the advantage over the previous method that you can't make a typo with the filename.

**Method 3:** Type something into the unlabelled box, then click the Plus button. Whatever you typed will be added to the list of files at the top of the dialog. Of course, it only really makes sense to type the

name (and possibly path) of a JavaScript file, but this field does no error checking so typos and bad paths are all too easy to introduce.

You might think that the third method is to be avoided – the possibility of making a typo is too high. But, in practice, this is the only method of the three that I recommend using! In just about every case, you will want to keep the JavaScript file close to your SVG file: if not in the same directory, then usually just one level away in a "scripts" or "resources" folder. The third method lets you supply just the filename, or a relative path and filename (eg. 'scripts/button.js'), which will still be valid if you move your SVG and JS files to another machine, or a different location on your hard drive.

The first two methods, on the other hand, produce absolute paths which will break as soon as the files are moved. And you can't edit the paths within this dialog – you have to modify them via the XML editor. So not only is there a

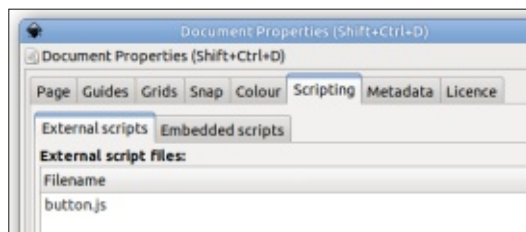


chance of introducing typos as you edit them, but you have to be comfortable with using the XML editor to do so. Better, I think, to use method 3 and just be careful with what you type.

To keep things simple, let's create a new JavaScript file in the same directory as the main SVG file. Using a text editor, create a new file containing the following line:

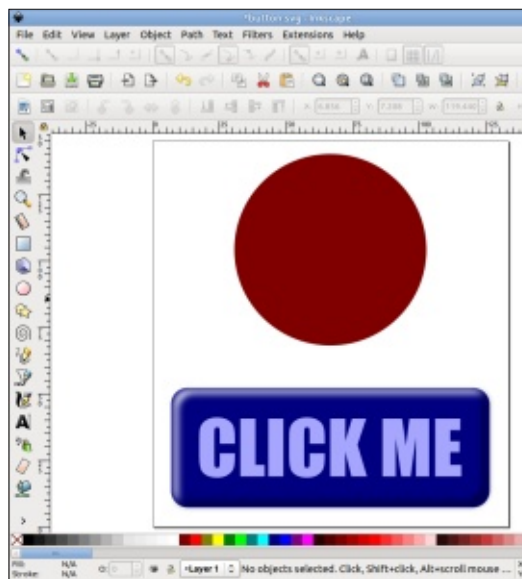
```
alert("Loaded");
```

Save the file to the same directory as your SVG image, with a ".js" extension. In my case the Inkscape file is called "button.svg", so I'll give the JavaScript file the name of "button.js" for clarity, though it's not a requirement for them to share the same name. Back in the Document Properties dialog, I can now type the filename (with no path) into the unlabelled text field, then click the Plus button to add it to the list at the top, so the dialog looks like this:



If everything has been done correctly, loading the SVG file into a browser should result in an alert being shown containing the word "Loaded". That, at least, tells us that the link from SVG to JS files is working. It's better to do a lightweight test like this first, before fleshing out your JavaScript code, to make sure the basics are in place.

We want our button to control another object when it's clicked – which will be a lot easier if we actually have another object to control! In Inkscape, alter the file to add a simple filled circle, making sure to give it a sensible ID via the Object Properties dialog (I called mine "redCircle").



Right-click on the button, and bring up the Object Properties dialog. Within the "Interactivity" section at the bottom, remove any existing code then, in the "onclick" field, add the following JavaScript function call:

```
buttonPressed();
```

This function doesn't actually exist yet: we need to add it to our JS file. Using a text editor, remove the existing alert() and replace it with this:

```
function buttonPressed() {  
    alert("Button pressed");  
}
```

Save both files, then reload the SVG file in a web browser, confirming that both elements are visible, and that a click on the button shows the new alert() dialog.

Now that we've got a function that runs when the button is clicked, we want to populate it with some code to change the fill color of the circle. Previously, we've changed the fill color of the object being clicked, either by explicitly setting "this.style.fill", or by modifying the classes of the

clicked object using "this.classList.toggle()" and similar functions. Altering the style of a different object is essentially the same, except that we no longer use "this" to identify the target for our changes. Instead we need to get a reference to the target object in a different way.

Depending on exactly what you are trying to do, there are various approaches that could be used. But the simplest, at least conceptually, are a pair of methods on the "document" object (which exists implicitly on all XML and HTML documents): `querySelector()` and `querySelectorAll()`. The difference between them is that the former returns a single XML node, whereas the latter returns a collection of nodes. A collection is similar in some respects to an array in JS, but doesn't have all the standard array methods, so needs to be treated a little differently. For this example, however, we want to change the style of only a single element, so `document.querySelector()` will do the job.

Both methods take a single parameter: a string containing a CSS selector. If the selector

## HOWTO - INKSCAPE

matches more than one element then `querySelector()` just returns the first one. If it matches no elements, the method returns “null”. In JavaScript terms, “null” is what’s referred to as a “falsey” value – that is, one that evaluates to “false” when you use it in an “if” statement. That makes it pretty simple to write defensive code that won’t fall over if your CSS selector doesn’t match anything. Let’s take a look at an example, by replacing the `alert()` in your `buttonPressed()` function (top right).

Save the JS file, then reload the SVG in the browser. With the developer tools open (press F12, if necessary), and the console tab selected, click on the button in your file. You should see the `<circle>` element logged out – or the string “No circle found!” otherwise. If you saw the latter, it suggests that the CSS query doesn’t suit the structure of your file. Here are a few things you can

look at to help troubleshoot this:

- Did you remember to put the # in front of the ID in the CSS?
- Does the ID match the one you put on the circle in Inkscape?
- Try changing the selector to match an element (eg. “circle”) instead of an ID.
- Open your SVG file in a text editor and search for your ID. Is it definitely present in an ID attribute on the element you expected?

Now that we’ve got a reference to the circle, it’s a pretty simple task to set the style explicitly, or modify its class list. Here’s the `buttonPressed()` function (below) rewritten to directly set the fill color on the circle. Note that I’ve removed the “else”, as we just want the code to fail silently with no side-effects if the CSS selector fails to match anything.

Despite what I said earlier, the `querySelector()` method doesn’t actually return the SVG node, as such, but rather a JavaScript object

```
function buttonPressed() {
  const circle = document.querySelector("#redCircle");
  if (circle) {
    circle.style.fill = "#008000";
  }
}
```

```
function buttonPressed() {
  const circle = document.querySelector("#redCircle");
  if (circle) {
    console.log(circle);
  } else {
    console.log("No circle found!");
  }
}
```

that references the element in the browser’s internal document structure. Usually you can ignore this subtle distinction, but it does mean that we have a JS object in hand, which offers us a few advantages when writing our code. The object has a variety of properties and methods attached to it but we can also attach our own. This can be a useful way to keep track of data that needs to persist outside our function.

Consider trying to toggle the color in response to the button presses. You could use a CSS class, and call the `circle.classList.toggle()` method to alternately add and remove it. This is similar to the approach we took last time, except we’re referencing our object variable rather than “this”. But what if you want to set the fill color on the circle directly, rather than via a class? You could read the value of `circle.style.fill` back, and test to see what it’s currently set

to. But there are various ways to define colors in CSS, so you might not get back the format you expect.

A better approach is to create a property on the object that you can refer to each time the function is called. You can test its current value, then set it to something else before your function finishes. You don’t need to do anything fancy to create a property like this – the browser will create it as soon as you try to use it – so the code ends up looking like that shown next page, bottom left.

The first time you click the button the “isOn” property doesn’t exist. That means the test in the “if” statement fails, and the code in the “else” runs – setting the color to green, and creating the “isOn” property, with a value of “true”. The next time you click the button the “if” succeeds, the fill is set to red and the property is set to

## HOWTO - INKSCAPE

“false”. Thereafter the color and property will continue to toggle each time you click the button.

One important thing to note as we've been editing this code is that you haven't had to go anywhere near Inkscape since the initial setup. This is one big advantage of using external, linked scripts, as there's less chance of accidentally making changes to your SVG file. You also get all the benefits of using a proper text editor: with any half-decent editor you should get syntax highlighting and other aids, which can help to indicate problems in your code. Plus, being able to work in a proper sized window, rather than the single line of the Object Properties dialog or the letterbox of Inkscape's Embedded Scripts tab, is a huge advantage.

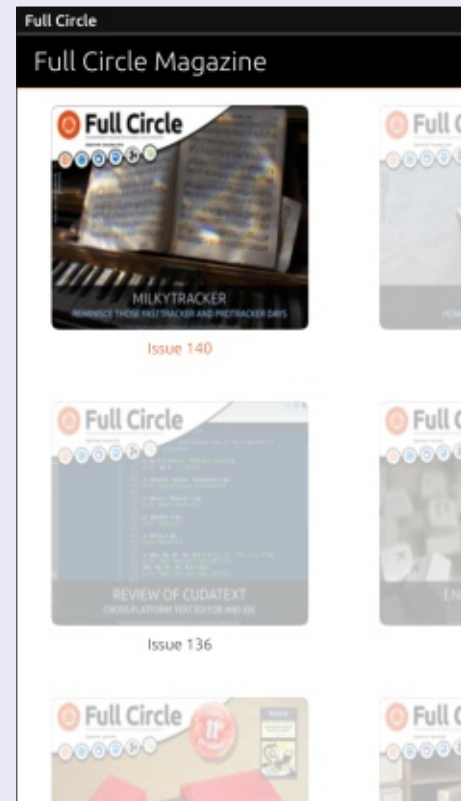
When deploying an SVG file with a linked script, you need to make sure that the script is still accessible to the SVG file once it's on to your web server – typically by ensuring you use a relative path as outlined at the top of this article. You have to make sure you remember to keep your JS file in sync with any changes to your SVG file or its location. But this additional housekeeping is usually more than worth it. Generally, unless you really are writing only a single line of code, or perhaps a single, short function, linking is the way to go.



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

```
function buttonPressed() {
  const circle = document.querySelector("#redCircle");
  if (circle) {
    if (circle.isOn === true) {
      circle.style.fill = "#800000";
      circle.isOn = false;
    } else {
      circle.style.fill = "#008000";
      circle.isOn = true;
    }
  }
}
```

## THE FULL CIRCLE APP FOR UBUNTU TOUCH - UPDATED!



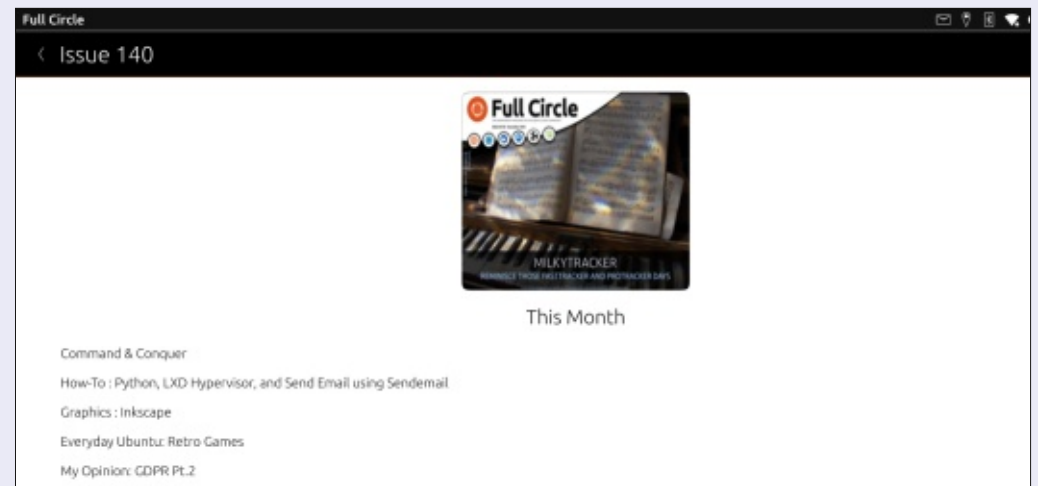
**Brian Douglass** has updated his FCM app for Ubports Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

### INSTALL

Either search for 'full circle' in the Open Store and click install, or view the URL below on your device and click install to be taken to the store page:

<https://uappexplorer.com/app/fullcircle.bhdouglass>

**HUGE thanks to Brian for this.**





**It's my latest invention,  
called PENG-SHUI**







# 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.



To reiterate from last month's Everyday Ubuntu, one of the truly great things about Linux in general, and Ubuntu in particular, is the community that has evolved around it. Most online Linux resources are helpful to Linux rookies and veterans alike. This month's column will continue with presenting online resources for Linux, for both general tutorial information and for specific help, which can help give you 'the keys to the kingdom'. We'll continue with a discussion of downloadable books and other online resources.

### TRADITIONAL BOOKS

There are a lot of downloadable books available online that are written to help the Linux 'noob', or the seasoned Linux vet who needs help in an area outside their existing expertise. We mentioned the Unix Hater's Handbook last month, but there are a lot of other downloadable books out there.

The 'It's FOSS' website has Linux tutorial books ready to be

downloaded, and other online resources, here:

<https://itsfoss.com/learn-linux-for-free/>

Ubuntupit has twenty-seven Linux beginner books available for download here;

<https://www.ubuntupit.com/27-best-linux-tutorial-books-need-download-now/>

And Makeuseof has a further supposed five here:

<https://www.makeuseof.com/tag/5-downloadable-books-to-teach-yourself-linux/>

(There are actually more than five, but some of the links are obsolete/dead, so six of one....)

There are a number of online and downloadable books at The Linux Documentation Project:

<http://www.tldp.org/index.html>

Finally, the official Ubuntu manual can be found online here:

<http://ubuntu-manual.org/>

### FORUMS

Linux Questions is a self-proclaimed friendly online forum you can find here:

<https://www.linuxquestions.org/>

They have historically been very accepting to new Linux users and you're not that likely to get shamed or scorned for asking basic questions here, something that intimidates a lot of Linux beginners. I have always found Linux Questions to be, as they claim, friendly and welcoming.

Ubuntu's main forums, a great place to ask questions and look for help if you're having a specific issue or problem, are located here:

<http://ubuntuforums.org/>

Ubuntu Forums also has a beginner team specifically to help Ubuntu newbies, located here:

<https://ubuntuforums.org/forumdisplay.php?f=215>

### ONLINE TUTORIALS

Linux.org has a series of online tutorials for beginners here:

<https://www.linux.org/forums/linux-beginner-tutorials.123/>

Makeuseof also has a nice online tutorial here:

<https://www.makeuseof.com/tag/linux-beginners-guide/>

Edx offers a Linux Foundation introduction to Linux tutorial course here:

<https://www.edx.org/course/introduction-to-linux>

And the unofficial guide to Ubuntu is here:

<http://ubuntuguide.org/wiki/>

### ONLINE COMMUNITIES

Ubuntu Linux has an online community for beginners and experts, including forums and other online resources, here:

<http://www.ubuntu.org/>

There is also a helpful community

at Ask Ubuntu, located here:  
<http://askubuntu.com/>

And Ubuntu has an online Wiki, a user-curated online resource, located here:  
<https://wiki.ubuntu.com>

If you've solved a problem for yourself in Ubuntu, you can always write up a description and contribute it to the Wiki. It's a great way to give back to the Ubuntu community.

## FAQ'S (FREQUENTLY ASKED QUESTIONS)

Ubuntu's official website has an online set of Frequently Asked Questions, with answers, located here:  
<https://help.ubuntu.com/community/Beginners/FAQ>

## SUBREDDITS

For those unfamiliar with it, Reddit is a social news aggregation and general discussion website. You will have to sign up for a Reddit account, but it is pretty painless and quick, and definitely worthwhile for tutorial purposes and specific help with issues or

questions.

There are a fair number of Subreddits, user-created Reddit boards, aimed at Linux beginners. The main Ubuntu Subreddit is here:  
<https://www.reddit.com/r/Ubuntu/>

There is a Linux Subreddit here:  
<https://www.reddit.com/r/linux/>

Ask Ubuntu, mentioned in the Online Communities section previously, also has a Subreddit account, located here:  
<https://www.reddit.com/r/AskUbuntu/>

Linux Questions, the friendly online forum referenced earlier, has a Subreddit here:  
<https://www.reddit.com/r/linuxquestions/>

There is a Linux 'newbie' Subreddit as well, located here:  
<https://www.reddit.com/r/linux4noobs/>

## MORE YOUTUBE!

Last month, we mentioned a couple of YouTube tutorials on Linux, and we're back with more suggestions this month:

<https://www.youtube.com/watch?v=P23TXzlQ4K4>

<https://www.youtube.com/watch?v=V1y-mbWM3B8>

<https://www.youtube.com/watch?v=HjuHHI60s44>

<https://www.youtube.com/watch?v=IVquJh3DXUA>

<https://www.youtube.com/watch?v=wBp0Rb-ZJak>

[https://www.youtube.com/watch?v=9t\\_qJWC32zk](https://www.youtube.com/watch?v=9t_qJWC32zk)

Now, once you've thoroughly and completely explored all these resources and the ones mentioned in last month's column, please write in to Full Circle and advise us of your progress. We won't hold our breaths, because even though this is a small sample of what is available online, it would take quite a long time just to exhaust what we've summarized here in the latest two columns. Nothing but time and motivation stands between anyone and the achievement of real Linux mastery with all the free online resources available (and consider this a heartfelt hat-tip to the tireless

administrators, authors, and other contributors, who have selflessly made these resources available to you and all).

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



**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?



**It says here she likes long waddles in the snow and seafood! What are the chances?**

**Dude, It's destiny!**





This title may sound like a tutorial, but it is not...

I want to investigate what goes into installing Ubuntu in 2019 and how long it takes you to get it working. Someone recently told me it takes them three hours to set up an Ubuntu desktop machine. (I thought if only!).

After doing a clean install of Ubuntu, before I even connect to the internet to do updates, it takes me some time to get where I want to be.

- Since I have been getting SSD's, I change vmswappiness to 10 or lower.
- I remove things I do not use from start-up, like bluetooth.
- I start tweaking FireFox, Turn off geolocation, put my cache into RAM, etc.
- I tweak my network, turn off IPv6, etc, and import my hosts file.
- I remove extra locale's and software I do not use.
- I usually import my user RC, and tweak Grub.
- I pimp my termina,, mouse, and

keyboard.

- I may start making my desktop nicer, but usually I leave this until I do updates. Maybe create a RAMdisk.
- I keep a lot of DEB files around, as I used to have very limited internet, and install some base apps, like Sayonara, so I can listen to music / podcasts while I work.

It is at this point I connect to the internet.

- I remove snap core, do updates.
- I run my install script and add my PPA's and additional architecture if needed.
- I download my browser add-ons for each browser and tweak the new ones.
- I create an encrypted container and set up Veracrypt for a container within (Inception stuff!).
- I tweak things like conky and start-up sounds and whisker menu.
- I build all my software not in the repo's, like fsearch, etc.
- I install additional drivers, like Wi-Fi and any toys I may have gained.
- I pimp my additional terminals, and firewall, and printers /

scanners.

- I start theming my applications, like Zerobrane, etc.

Now my computer is ready to accept my data. (I keep my data on an encrypted external, so Veracrypt needs to be installed first).

- I copy my data across – on a new install I do not like to keep my old home folder as software has as a way of leaving traces all over your home folder.
- I start importing my fonts. (I have not found a quick way to do this). While I do this, I usually scan my machine with ClamAV – just in case.
- I add Appimages and Flatpak and OCS store.
- I set up my different email accounts on Geary / Sylpheed, etc. and import my Thunderbird mail. (I rather use different clients for different accounts, than have all in one).
- I start setting up software that install via script, like JDownloader2.
- If it is a music PC, I start fiddling with Synths, sound settings and

different kernels.

- Since my graphics cards are old – I start wrangling Nvidia 3.04 driver and replacing the composting with Compton. (Anything is better than Intel snail graphics).
- Now I start fiddling with newly installed apps whose defaults I change, like Smplayer, etc.
- Now I do an IDS scan and take a backup of the fresh install in case something goes horribly wrong.

This can take anywhere from a few hours to a few days, depending on what I am doing in between.

What do YOU do when you reload your Ubuntu machine?

Let us know – [misc@fullcirclemagazine.org](mailto:misc@fullcirclemagazine.org).



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



## GUIDELINES

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

## RULES

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

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

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

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

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

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

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

When you are ready to submit your article please email it to: [articles@fullcirclemagazine.org](mailto:articles@fullcirclemagazine.org)

## TRANSLATIONS

If you would like to translate Full Circle into your native language please send an email to [ronnie@fullcirclemagazine.org](mailto: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.**

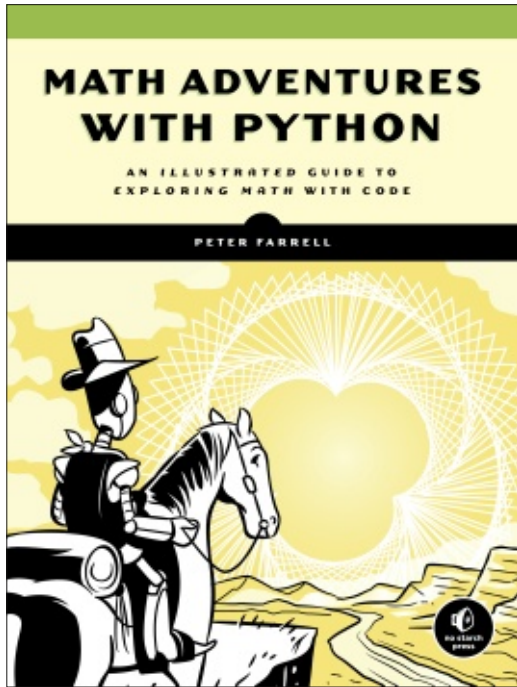




# BOOK REVIEW

Written by Erik

# Math Adventures With Python



## Math Adevntures With Python

Webpage: <https://nostarch.com/mathadventures>

Author: Peter Farrell

Price: \$29.95

ISBN: 978-1-59327-867-0

On the eighth of January, opensource.com had an interview with an author, and it sounded interesting, so I decided to get the book:

<https://opensource.com/article/19/1/hacking-math>

Right off the bat, I liked the author, as in the introduction he already explains why people find maths boring, no outcome! How true, then goes on to explain more. Since python is included with Ubuntu, there is only one download, "processing 3":

<https://processing.org/download/>

*"Processing is a flexible software sketchbook and a language for learning how to code within the context of the visual arts."*

As someone who grew up with logo, the turtle is very familiar, just a pity the 'turtle' is now a triangle. Do not let this put you off, you are shown straight away how to change it! Once Peter teaches you how to 'drive' your turtle, the exercises start – to make beautiful art with simple maths.

The going feels slow in the first three chapters, but you have to realise you are learning multiple things at once and how they slot

together. Chapter four, we enter algebra territory and solving equations graphically. Most exciting stuff. It just ramps up from there as we are taught to move the shapes we create. I do not know if I should use the word animation here, I do not want people to get the wrong idea or misrepresent the book, but if you stick to it, this is a most rewarding chapter. I also do not want to give anything away, but there are some cool designs waiting for you. Everything is put out in detail - not just code, but drawings too - and explained, and you are given practical advice at every turn. With "Processing 3" you get immediate results and it feels good to see what was just explained in action. I have recently watched three blue one brown video on sound waves and can now see the maths behind the popular videos. +

If you are a fan of that channel, ([https://www.youtube.com/channel/UCYO\\_jab\\_esuFRV4b17AJtAw/videos](https://www.youtube.com/channel/UCYO_jab_esuFRV4b17AJtAw/videos)) this book is for you.

Every chapter is just another

step up from the previous one and before you realise it, you have reached the Mandelbrot function in chapter 7, mentioned in the introduction. Beautiful fractals await those with patience. Trust me, you will be problem-solving in no time! There are 12 Chapters to look forward to. There is no shortage of information in this book, and at no point are you left frowning at anything. I wish Peter was my teacher at school!

You can find Peter at: <https://twitter.com/hackingmath> - If you have read the interview on opensource.com you will have a good understanding of who the author is.

This is one of those books that deserve a place on your bookshelf and some bookmarks. The book deserves all the praise it can get for its great explanation and non-serious tone to actually convey some rather serious information.







Lubuntu 19.04 was released on 18 April, 2019 and is worth checking out, as it offers some substantial refinements over Lubuntu 18.10. Lubuntu 19.04 is a standard release and so it includes support for nine months, until January 2020.

The code name for this release, Disco Dingo, sounds like it should have a theme song written by the Bee Gees and played on the didgeridoo! Unlike previous release names, Ubuntu founder, Mark Shuttleworth, did not make one of his usual alliterative blog posts explaining this name choice.

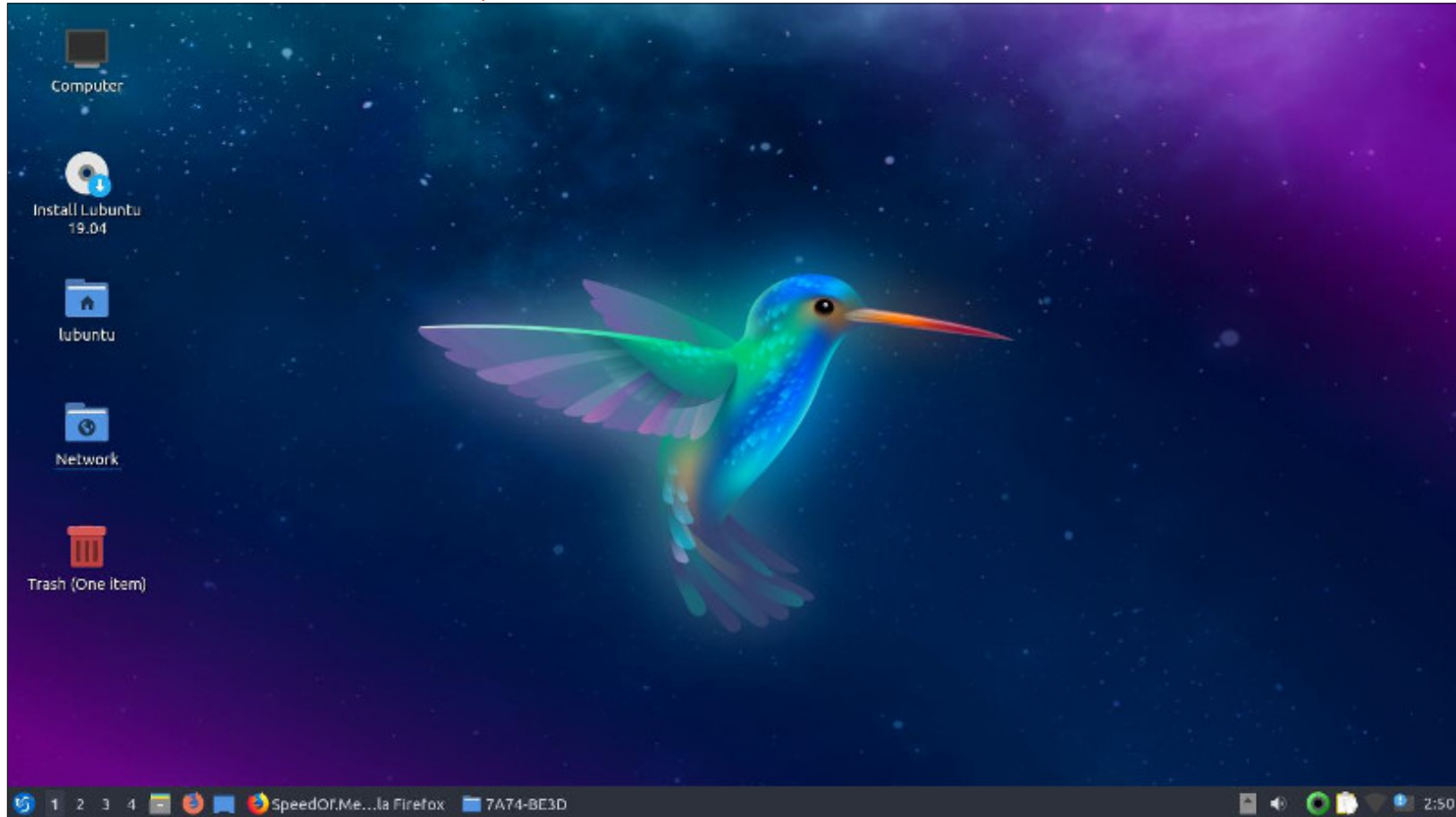
Lubuntu 19.04 is the 19th release of this distro and the second Lubuntu release to feature the new LXQt desktop, which replaced LXDE starting with 18.10. LXQt had been planned as the new desktop since Lubuntu 14.10, so it has been a long wait for its release. As implemented in 18.10, it had some rough edges, but these have all been fixed in 19.04 and the new desktop has now hit its stride.

## LXQT DESKTOP

The LXQt desktop took a long time coming, four years after being initially planned. During those years, the old LXDE desktop went into “maintenance” as the developers worked on the new desktop. This had the curious

effect of leaving Lubuntu users with a really stable and predictable LXDE experience where everything worked and nothing was changed from release to release, including two very solid LTS releases. It left the users with high standards for the new desktop. Beta-level software wasn’t going to cut it.

The first LXQt release, Lubuntu 18.10 was not a strong release. It had some bugs and other issues and was a bit rough. There were trackpad configuration problems, lack of spell checking in LibreOffice, and networking issues with both WiFi and Ethernet. The networking issue also affected



## REVIEW - LUBUNTU 19.04

other distros beyond Ubuntu and was seen on Xubuntu as well. It may have affected only specific hardware, however. At least one reviewer noted it and some users had similar complaints on the Ubuntu Forums.

Lubuntu 19.04 is mostly an iterative development of LXQt, working towards the first Lubuntu LXQt Long Term Support (LTS) version which will be 20.04 LTS, due out in April 2020. The new LXQt desktop was introduced right after the last LTS release to give three “standard” releases to tune it before the first LTS version, a wise approach to introducing something this new. Many Lubuntu users will continue using 18.04 LTS, with its older LXDE desktop, though, until 20.04 LTS comes out with the hopefully perfected LXQt desktop.

### INSTALLATION

I initially tested Lubuntu 19.04 in a series of live DVD sessions before installing it on my System76 laptop. Total installation time was 15 minutes, which is a couple of minutes faster than previous Lubuntu LXDE

installations. The new Calamares installer works well and is fairly easy to follow, even though it is somewhat different from the old Ubiquity installer.

In testing after a fresh boot, the idle RAM is 376 MB, compared to 258 MB for Lubuntu 18.04 LTS. LXQt is not as lightweight as LXDE was. The boot up time on my hardware is 1:36, which is slower than any previous version of Lubuntu. In comparison, Lubuntu 18.04 LTS booted up in 51 seconds.

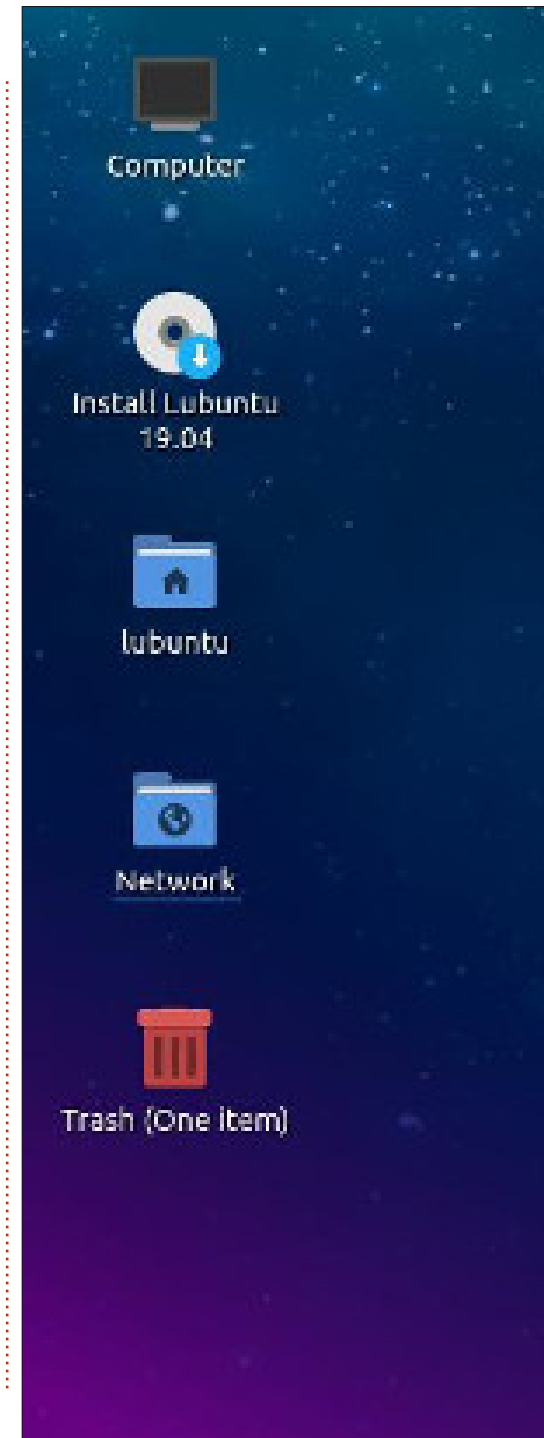
The first thing of note when booting up Lubuntu 19.04 is the new wallpaper, or at least semi-new wallpaper. 19.04 features the same star field wallpaper seen in 18.04 LTS and 18.10, but with a striking new hummingbird added. The hummingbird is the emblem of LXQt, of course, and thus shows up in many places, including on the menu button. While the new wallpaper highlights the introduction of something new, it is odd that it was not introduced with 18.10, when LXQt was first introduced. Likely new artwork wasn't at the top of the developers' list.

Perhaps the first thing to do

after an installation is to install any software updates that have accrued since the release. Lubuntu has moved away from the Software Updater (package name: update-manager), which provides automatic checking, notification and then manual installation of updates for most Ubuntu flavors. Instead Lubuntu now uses Muon, which offers a lot more user control of updates, although no automatic notifications. To get updates, open Muon, click "check for updates", and then "apply changes". It is a bit geeky, but I like Muon a lot, as it is easier to see which updates are recommended, but the lack of notifications may be an issue for less technical users who don't run it and check for updates often.

### CHANGES

So what is new in 19.04 besides the wallpaper? The main change over 18.10 is a new version of LXQt, 0.14.1, based upon the Qt toolkit, version 5.12.2, which includes many refinements and fixes. There are lots of small improvements throughout, that make Lubuntu 19.04 much more functional than 18.10.



# REVIEW - LUBUNTU 19.04

Improvements include the image viewer, LXImage-Qt, that now shows image Exif metadata, fixing LibreOffice spell checking, and a new configuration page that allows some very welcome touchpad options for laptops. Full disk encryption is also now properly supported. The latest version of the file manager, PCManFM-Qt, also includes many improvements and new features. For instance, it now includes a “root” file manager that allows modifying system files, when needed, and a split view capability. The file search keyboard shortcut is now F3, instead of the previous Ctrl+Alt+F.

When Ubuntu shifted from the GTK 2 toolkit-based LXDE desktop to the Qt-based LXQt desktop, most of the included applications were changed. Ubuntu 19.04 will run both GTK and Qt-based applications just as well, but since Qt applications have a different look, the developers wanted to provide a default Qt experience. The suite of applications included

are almost all Qt-based and mostly different from the ones included with the previous LXDE desktop. This creates a bit of a learning curve for users upgrading. Of course, users can still install any of the old GTK-based applications they know and love.

The one exception on the Qt applications list is Firefox, the default web browser, which remains a GTK-based application. The Ubuntu developers had hoped to move to the Qt-based Falkon browser in Ubuntu 18.10. It has excellent potential, but it wasn't totally ready for daily use yet.

## INCLUDED APPLICATIONS

Some of the applications included with Ubuntu 19.04 are:

- 2048-qt 0.1.6 - simple lightweight game\*
- Ark 18.12.3 - archive manager
- Bluedevil 5.15.4 - bluetooth connector
- Discover Software Center 5.15.4 -

- package management system
- FeatherPad 0.9.3 - text editor
- Firefox 66.0.3 - web browser
- K3b 18.12.3 - CD/DVD burner
- Kcalc 18.12.3 - calculator
- KDE partition manager 3.3.1-5
- LibreOffice 6.2.2 - office suite, Qt interface version
- LXimage-qt 0.14.1 - image viewer and screenshot tool
- MPV 0.29.1 – video player
- Muon 5.8.0 - package manager\*
- Noblenote1.0.8 - note taker\*
- PCManFM-Qt 0.14.1 - file manager
- Qlipper 5.1.2 - clipboard manager
- qPDFview 0.4.17 - PDF viewer\*
- PulseAudio 12.2-2 - audio controller
- Qtransmission 2.9.4-2 - bit torrent client
- Quassel 0.13.1 - IRC client
- Skanlite 2.1.0.1 - scanning\*
- Trojita 0.7 - email client\*
- VLC 3.0.6 - media player

\* indicates the same application version as used in Ubuntu 18.10.

Oddly, Ubuntu no longer comes with a webcam application,

although Gvvcview and Cheese are available in the repositories. Not having webcam software installed by default may make some users feel more secure about the risk of unauthorized camera access, although this doesn't seem to have been an issue with Linux in the past.

## 32-BIT DROPPED

Ubuntu 19.04 is the first release that does not have a 32-bit version for i386 architecture. The last 32-bit computers produced are 13 years old now and today they really don't have the RAM and CPU power to run a modern operating system. Ubuntu will continue to offer 18.04 LTS for 32-bit until its end of life in April 2021. Ubuntu itself dropped 32-bit support with the 17.10 release, and Xubuntu also dropped 32-bit with 19.04.

## TESTING 19.04

The new configuration system is quite different from LXDE, but works well, once you find out





where everything is located. Configuration is found on the main menu at Preferences > LXQt settings.

All the frustrations and other problems I found in Ubuntu 18.10 have been fixed, and the result is a very smooth experience, where everything “just works”. Laptop touchpads can now be configured to work in several different ways. LibreOffice is included by default, in its Qt interface version, and this time the spell checking works out of the box! The previous internet connectivity problems seen in 18.10 have been fixed as well.

Configuring is easy and very flexible, with new themes, infinite colors, and good configuration interfaces. It is actually fun personalizing the new desktop. I am not a fan of dark themes, and Ubuntu’s LXQt desktop comes with a default black “Ubuntu Arc” panel (task bar) and window theme, but it is quick and easy to change that. Even the panel can be positioned at the top, right, or left side of the screen, if you don’t like the default bottom position.

For users moving from Ubuntu LXDE, the LXQt desktop will take a

bit of adapting, with the new suite of Qt applications and new settings. That said, Ubuntu still works the same basic way, running everything from a single menu that will seem very familiar to LXDE users. It retains LXDE’s simplicity and elegance, with a more updated, modern look.

Ubuntu remains a good choice for Windows refugees, too, as its task bar, menu system and ease of use enables an easy transition. It just won’t run your favorite malware and doesn’t produce BSODs.

It is worth noting that starting with Ubuntu 18.10, the developers no longer make recommendations for minimum system requirements, although it needs a bare minimum of 500 MB of RAM for the installation process. In my experience, any 64-bit SATA hardware computer with at least dual-core processor and 2 GB of RAM should be sufficient. More is always better, of course.

### INSTALLING LUBUNTU ON OTHER FLAVORS

While available as a separate

installation, Ubuntu can also be installed on top of any other ‘ubuntu flavor, as an alternative desktop with:

```
sudo apt install lubuntu-  
desktop
```

or for a minimal installation:

```
sudo apt install lubuntu-core
```

and then chosen at log-in.

### CONCLUSIONS

Ubuntu 18.10 wasn’t ready for prime time, but 19.04 is. LXQt looks fresh, and new, and everything works right from the installation; it even runs fine from a DVD live session. I didn’t find anything that needs fixing in 19.04. If not for the nine month support period for this regular release, it could have been a long term support release, at least for the quality of the user experience and the lack of bugs.





# LETTERS

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



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[linkedin.com/company/full-circle-magazine](https://linkedin.com/company/full-circle-magazine)



[ubuntuforums.org/forum-display.php?f=270](https://ubuntuforums.org/forum-display.php?f=270)

## PYTHON LINKS

Regarding Program In Python, Part 17, page 83, the link to the code for server version 2 doesn't work (<http://fullcirclemagazine.pastebin.com/Az8vNUv7>)

Is the Python code available for server version 2 elsewhere?

**Bill Overstreet**

Greg says: For future information, when you have a link such as:

<http://fullcirclemagazine.pastebin.com/Az8vNUv7>

*and for some reason it won't work, strip the "fullcirclemagazine." from the link changing it to:*

<http://pastebin.com/Az8vNUv7>

*You should be able to see the code and download it.*

*Thanks for the catch Bill.*

## FULL CIRCLE NEEDS YOU!



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

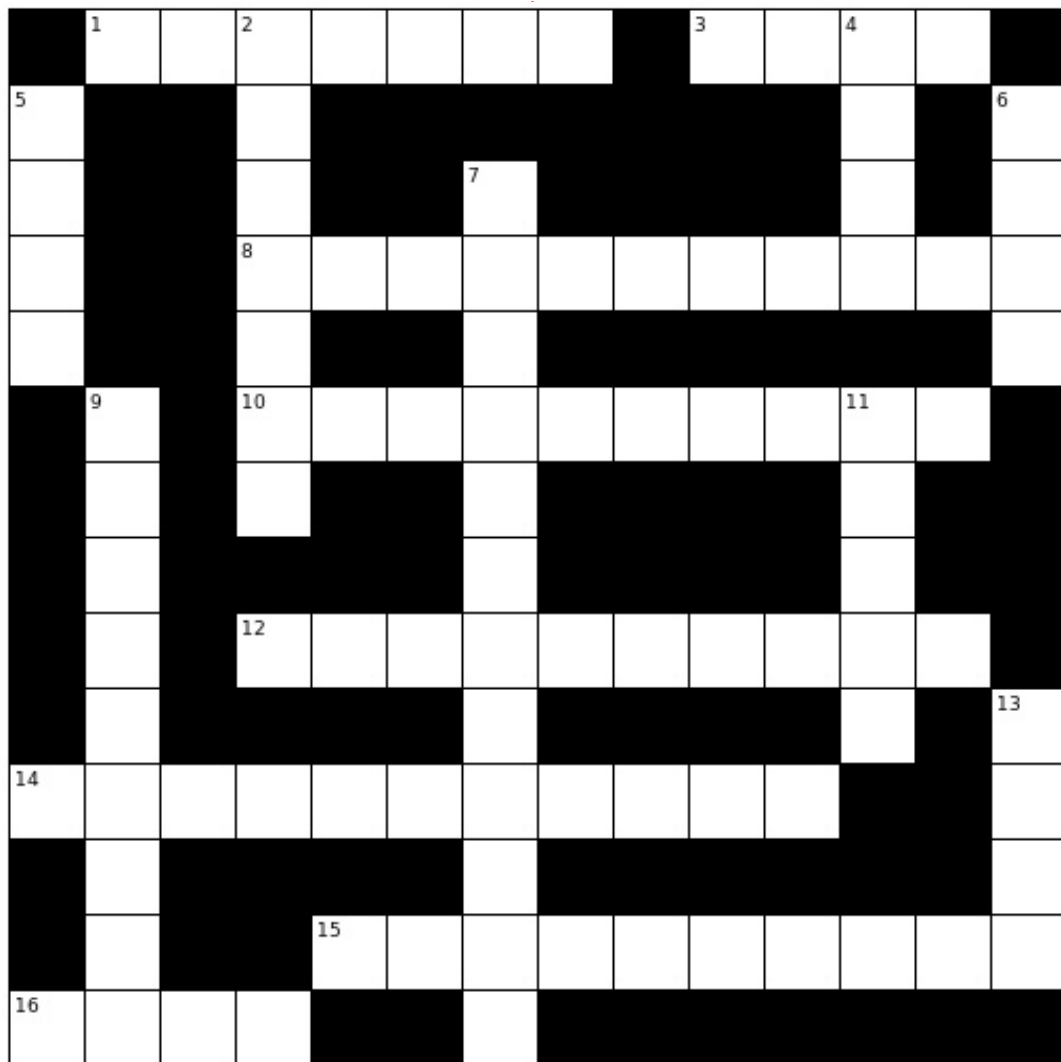
See the article **Writing for Full Circle** in this issue to read our basic guidelines.

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



# DistroWatch.com

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



## ACROSS

- 1A: The Spanish distro formerly known as e-box.
- 3A: The Nagios Enterprise Monitoring Server for Single Board Computers.
- 8A: While this is based on Linux, users may actually never see Linux at all.
- 10A: CentOS-based server from Italy.
- 12A: CERN thinks it's cool.
- 14A: This OS has more of the features and apps that consumers need, and less of the shiny nerdy stuff that they don't.
- 15A: From Taiwan to make block backups.
- 16A: Like a Vegan, you will know who uses it.

## DOWN

- 2D: Three-man distro with a squiggle for a logo.
- 4D: A continuation of Netrunner's Kubuntu-based "Desktop" edition (supposedly).
- 5D: It's a four leafed clover...
- 6D: An Irish distro that also likes green?
- 7D: The main Dev's apartment was destroyed by the weather...
- 9D: The codename this year was Blackbird OS.
- 11D: From the Swedish Linux Society and in line for ugliest distro website.
- 13D: Indian Distro based on LFS.

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](mailto: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.

Is there anything preventing you from switching to Linux full time? Microsoft Office is sometimes touted as an "unmissable" application, and it is available for Linux. However there was a time when the same was said for Lotus. If your business did not have Lotus, you were considered a Philistine! Lotus, however had its own problems. Emails sent from windows had the winmail.dat attachment, etc. Today, Lotus notes prices itself out of the market and is almost not relevant any more. So how "unmissable" could it really have been? Back in the day, the airlines were all about

unmissable applications when switching to OS/2 WARP – I just wish they were so concerned with missing luggage! If you have an "unmissable" application, let us know and tell us why.

**Q**: Gentlemen, I have an issue where my budgie panel goes missing completely or some of the icons go missing every time there is a big-ish update. My Ubuntu Budgie 18.04 just updated again and I can't access my menu or even turn it off. I don't want to keep turning it off by the power button, as I am afraid of disk corruption. What am I to do?

**A**: You \*should be able to simply replace it with a command from the terminal: `nohup budgie-panel --replace&` Here is a link: <https://github.com/solus-project/budgie-desktop/issues/289>

**Q**: My laptop is a Lenovo that I got secondhand. I have just installed Xubuntu 18.04 that I have downloaded at the library at the beginning of last year. I run the software updater and get an error that I cannot update as there is an error with the repositories. The iso image is about a year old; have things changed that much since I downloaded it? I installed offline as I do not have internet connection at home. My previous install was online at my friend's house, and worked fine on a Dell Optiplex with a Core2Duo, so I know the iso is fine.

**A**: The problem I think you are getting can be fixed with:  
`sudo apt --fix-broken install`  
There has been an apt update since the image was released. However, run the update from the command-line to make sure:  
`sudo apt update and peruse the output.`

**Q**: I would like to watch IPL on my laptop. The screen size is 1366 x 768. I have ubuntu 18.04.

**A**: I am not sure what the question is here. 1366 x768 is a non-HD screen on a laptop. It also basically just widens a 1024 x 768 screen. However the aspect ratio is correct. 1366 divided by 768 and 1920 divided by 1080 should both give you about 1.777. So if your question is about scaling, it should not look out of place.

**Q**: Hi Guys, is there a way I can reset my Ubuntu without losing my data? At the moment I create a new user for this, but it is a tedious process. I don't use 'Ubuntu' Ubuntu, but Makulu Linux, and it's great with all its configuration options. Sometimes I get lost messing with it and would like to go back to the way it was.

**A**: I cannot really speak for Makulu Linux (I do not have a copy on hand), but in Ubuntu you

can use:

```
dconf reset -f /
```

**Q**: Somehow I went and deleted two documents that I thought I could get again. The saying that 'nothing ever goes missing from the internet' is not true. I need to recover these documents, but I have deleted them from my trash a while ago. What recovery software is there for Ubuntu and how can one un-delete one's deleted files?

**A**: I will not go into data recovery in a questions and answers, but If you would like an article on it, drop us another line. I will point you to a website that you can read up on it: <https://itsfoss.com/recover-deleted-files-linux/> Just remember that if you have physically overwritten the sectors the files were in, the chances of recovery are slim, no matter what recovery software you use.

**Q**: I have upgraded from Ubuntu 16.04 to 18.04, but somehow Kabikaboo is missing. I have tried `sudo apt install kabikaboo`, but it

says that the package is not found.

**A**: Not that I had any idea what Kabikaboo was before your email, but it seems there are unmet python dependencies in Ubuntu 18.04. I fear your package has fallen by the wayside. (I do not see any files on the sourceforge page.) See: <https://launchpad.net/kabikaboo>

I can try to help by suggesting alternatives: Writetype is awesome (<http://www.bernsteinforpresident.com>) or <https://itsfoss.com/open-source-tools-writers/> or <https://www.linuxlinks.com/novelists/> or you could ask on the snap / flatpack / appimage forums for someone to package it for you into a snap / flatpack / appimage.

**Q**: I want to make a web page in Ubuntu and I have reserved a domain name. How do I paste pictures and text into my web page? My machine is an i3 with 4GB of memory and Ubuntu 18.04.

**A**: I am afraid it is not as simple as that. Web sites are not

quite WYSIWYG (there are some site providers that have simple designs). Behind the scenes, it's all html and CSS. Youtube has great tutorials on html and CSS. I can recommend Geany to write your html code in, which is available from the Ubuntu store.

**Q**: Good day, team. I am writing about something weird, but not life threatening. Sometimes when I use LibreOffice - it is updated - on Ubuntu 18.04, I get the waiting mouse cursor. Nothing is waiting and I can continue as normal. I did not have this on Ubuntu 14.04. I skipped 16.04 so I can't comment on that. Still, the spinning ball is very distracting when I am busy. I have tried searching for answers on duckduckgo and searx, but came up empty-handed. What can I do about it?

**A**: Team? No team, it is only little old me. Thank goodness it is not life threatening! My advice to you is, change your mouse theme. If that does not work, switch to OnlyOffice ([www.onlyoffice.com](http://www.onlyoffice.com)) or WPS office and see if the problem

follows. Off the bat, it is hard to say what the cause could be. Have you checked "dmesg" output?

**Q**: I uninstalled programs in ubuntu software. Mistake; I click uninstall ubuntu software. Afraid reboot. Ubuntu software will be gone. Sorry bad English. How to fix?

**A**: I am going to assume you uninstalled your Ubuntu software centre, and you do not want to reboot as you will lose your software? First go get a beer, this is serious. Next press control + alt+ t to open a terminal or click on your terminal icon to open it. Now enter:

```
sudo apt install gnome-software
```

and let it complete. The hard work is done. You can now safely reboot.

**Q**: Hello. I am confused. I have bought a Crucial 512 SSD for my Lenovo i3 laptop. It's supposed to be fast now. Windows booting went down from like a minute to a 20 seconds. Ubuntu is still like 30



seconds to boot. What is going on? I am dual-booting Windows 8.1 and Ubuntu. I have 8GB of memory.

**A**: All I can tell you is: it depends. Check the boot log. Usually it is waiting for network or bluetooth. Main culprits! The Linux support from vendors on those are usually bad. You can try booting with network and bluetooth disabled and see. Do you perhaps have readahead set up? Also Windows does a slight-of-hand, where it drops you to the desktop, but it is still booting in the background, whereas Linux finishes booting first. Boot into Linux and immediately open a terminal and type `dmesg`. Do not bother piping it to a pager, what you need is at the end. The time things take to initialize is on the left. If there is a big jump anywhere near the end, that is your problem. (Lets say at 4.55s the network is up then you have a jump to 28s for bluetooth, you know what the issue is).

**Q**: Xubuntu n00b here. I want to know about the menu. Why is it that when I click the settings icon in the bottom of the menu

and then go to a section, I have the option to go back to all settings. Yet, when I click on settings in the menu and select an option, like desktop, I can't return to all settings? I am sure it's not me. Also if I resize the menu, I can't resize the panes inside?

**A**: The Xubuntu menu is the whisker menu if I am remembering correctly. If you open settings, it is assumed you are tweaking multiple settings, and if you use the menu to go to an option directly, it is assumed you were aiming just for that. As for resizing, I cannot tell you as I am on Budgie at the moment and away from home. Feel free to ask on the Xubuntu or Xfce forums regarding. I will take a stab and say the ratio may be hard coded.

**Q**: I live in an apartment building in the old part of town, the rent is cheap, but I can't afford internet other than what I get on my mobile. I took my craptop – a pre-core2 pentium - to the library and installed 'remember the milk'. It just gave me a blank page when I tried to use it at home. I tethered my phone and it seemed to work,

but, when untethered, it stopped working again. What else do I need to download to get it working at home? Google is useless

**A**: Don't quote me, but I am sure 'Remember the Milk' is an electron application, ie. a front end for a web page. So no web page means no application. You can try an alternative like Wunderlist maybe?



**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.



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 memory. Memory forms only one leg of the CPU, RAM and DISK triangle. Ready? Disks are next on the menu. Just like with memory, let’s start simple.

Many of you will know lsof. If you do not, head over to the man page. I can see frowns appearing - how can a command that lists open files tell us anything about availability and troubleshooting a disk? I will tell you, lsof is like second tier support, once you have identified you actually have an issue. We are starting with something really easy, then easing you into more complex commands. Let’s assume you used something like sar or iostat to identify that something is amiss. Remember Linux treats everything like a file. When you are troubleshooting, you will be running this command

as root and you will see lots of things you will not see as a user. (This means you will even be able to use lsof to look at things like network sockets!).

Okay we identified an issue, and we use lsof to see which files are using the disk. As you know lsof run as root gives you information overload, so we have to filter that. You can use “-u” to specify a user, so, if it is a web server, you can see which files Apache has open, for instance. If you have only desktop Linux, don’t worry, this will work just as well with your user, try it now. Have a look at my output on my laptop:

Now if you look at my “device” column, you will see 8,2. If you have a blank stare right now, I did too, the first time I saw it. Looking for the device is not simple either as `ls -l /dev | grep 8,2` brings up no results! Do not wildcard it (`ls -l /dev | grep 8,*`) as it will just list anything with an 8 in it, instead, just use 8. Please try all three ways on your system now using YOUR device number, to see why.

Now, how do we bring it together? Well let’s say top or htop is giving you excessive usage in one of our resources, lsof will list the PID too and you need to match the two up. Then, from that bit of information, lsof now gives you the device, the node name, and so on, to help you diagnose your fault or performance issue.

How easy was that? I told you Linux was not difficult! Remember, LPI wants to know you can diagnose performance issues as it helps you plan for the future. I refer you back to the very first link about exam objectives. The key words are “measure” and “troubleshoot” and “capacity planning”.

Let us look at a typical exam question: In capacity planning exercises, which tools assist in listing and identifying processes of interest? (Choose TWO correct answers):

- A. acpid
- B. lsof
- C. pstree
- D. telinit b

Since it cannot be A or D, it must be B and C. See how easy that was? acpid is not a command but an event notifier, and telinit tells your computer which runlevel you want to move to. Try them all in a terminal if you like.

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/117-201>

**These were once valid LPI questions and will ease you into the format.**

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

Let us know how you did – good or bad, it does not matter. Good means you are ready to write and confident in your skills. Bad means you will be learning new stuff!! Yay! There is no down-side here. If you do not know why an answer is the way it is, contact us.



For well over a decade, Valve's Steam Engine has dominated the PC video game scene. Lately, Epic games has been trying to cut into Valve's PC dominance. Epic Games put on its boxing gloves by announcing that they will be taking a 12% cut from games sold on their platform. This is significant because the average that other services take from the sale of each game is 30% which is what Steam also charges. This is a great incentive for developers to go to Epic Games and could be a game changer in the long run. As for us Linux gamers, Epic still has a very, very long way to go; especially when compared to Valve's Steam Video Game Engine which has done more for Linux gaming than anyone else in history. Especially recently, with the addition of ProtonPlay on Steam which makes most Steam games compatible on Linux even though the game might have been made only for Windows.

Putting that aside, there is another powerful rumbling going on that's directly setting the stage for the ultimate Valve vs. Epic

Games fight: a chess video game. The game stuck in the middle of the Valve v Epic fight is called Dota Auto Chess; which oddly enough is neither one of the three things it directly mentions:

- Dota? – Aside from the characters, the game is not exactly Dota; it's more chess than Dota.
- Auto??? what do the game developers mean by putting this word in the title? The game is not about auto car racing. However, the game is a sort of automatic Dota game (if that's how you wish to look at it). But even then, does this word need to be mentioned in

the title?

- Chess? – It's definitely not a chess game, in fact it's more of a Dota game than a chess game.

## ORIGINS OF AUTO CHESS

Auto Chess was originally given birth through the Arcade section of Dota 2. A group of developers calling themselves Drodostudios came up with this new game that was introduced as part of Dota 2's Arcade. Dota Auto Chess was introduced as a Dota 2 Mod but having gained such popularity in so

little time, it seems that the game is now being split into two separate games. This is where the Epic vs Valve fight comes in. So, after negotiating for a while without coming to some sort of agreement, Valve & Drodostudios have decided to amicably split the game into two. One version of the game will be released by Valve and it will be called Dota Underlords; the beta opens in late June 2019 exclusively to Battle Pass owners. In early July, the game should become available for free on Windows, Mac OS X, Linux, Android & iOS. To find out more about Dota Underlords you can read this article by Kotaku:

<https://kotaku.com/valve-is-making-its-own-version-of-dota-auto-chess-1834934135>

The other version of the game, which is where Drodostudios will be migrating, will be released by Epic Games. The Epic Games version will simply be called Auto Chess and as of now, this is what the Epic Games Store has about the game on their website:

<https://www.epicgames.com/store/en-US/product/auto-chess/home>





## DOTA AUTO CHESS

We will begin by trying to explain how the game works but keep in mind that this review is based on the Mod available through the Dota 2 Arcade which may no longer be available once the other two games are officially released. So, perhaps in an upcoming issue, there may be a more in-depth review of one of the newer games but for now we will focus on the most basic of basics. As with most games that are in pre-Beta, which is basically what Dota Auto Chess is, there are few guides on how to play the game and none that I've found to be a great starting guide. Most guides available assume that you already know a little about the game but if you're a new player these guides may seem a bit too vague. However, it is worth pointing out a couple that I found to be useful. One of the better guides I found can be found at:

<https://www.metabomb.net/dota2/gameplay-guides/auto-chess-guide-5> if you're more of a video person, you can check this out: [https://www.youtube.com/watch?time\\_continue=542&v=s3WpwnXbaCM](https://www.youtube.com/watch?time_continue=542&v=s3WpwnXbaCM)

If you want to play Dota Auto Chess, you'll need to install Steam and then through Steam install Dota 2 which will have a section called Arcade from which you can install Dota Auto Chess. It's quite a process if you don't already have Steam, but believe me when I say that it's worth it, even if you hate Dota 2. Like I said before, this is NOT at all like a Dota 2 game, nor is it like a chess game. To begin with, Dota 2 is a team sport whereas Auto Chess is described in the [dotaautochess.gamepedia](http://dotaautochess.gamepedia.com) as "an 8-player PvP game mode in Dota 2". While you do play on an 8x8 chess board, you do not play with chess pieces. Instead of chess pieces, you play with Dota heroes.



During the first three rounds you play against AI Creeps while you build your team. Before the first round begins you have to buy a hero and place it on the board. Then, you buy a second hero, then a third and so on until you've reached maximum capacity. From here on, you are strategically trying to build a winning team so that by the time you get to the fourth round and start to battle against other players, you're better positioned to put in a good winning run. As you progress, there are opportunities to level up your players but there's also a synergy factor to consider when deciding which players you will pair together. Players with good synergy will do better against your

opponent but remember that there are other elements at play which will make learning the correct strategy a true delight which can only be solved by playing the game. One important thing to consider is that you only get 30 seconds to make all of your decisions in between rounds. I've come to find that a good strategy is to use the time during the actual round to do the planning needed for when the round ends. From the second the round begins, there are a few things you can do, but not very many so this is the ideal time to plan your strategy for the following round at this point. Also, it's possible that you hover over to other chess boards where the other six players are playing so you can spy and carefully deploy the best strategy against them.

While the game is definitely fun to play, for those of you who may be looking for a short game that you can pick up and put down whenever you want, this is not for you. If, however, you're looking for a good Real-Time-Strategy, 8-Player PvP Board game and you don't mind sitting down for half hour at a time, then this is for you. Each match has the potential to last anywhere from 25 minutes to



beyond an hour (I don't know how long the longest game has been). On the other hand, if you don't like Chess and you don't like Dota, then this game might still be for you. Prior knowledge of either chess or Dota is not a requirement. As I've said before, Auto Chess is nothing like either Dota or Chess, and that's a good thing.

In an upcoming issue, we'll take a look at Dota Underlord, which by the time of this publishing should be released to the public through Steam. Also, but only if it's possible, we may take a look at the Epic Games version of the game, AutoChess.

Another publication I used as a source:  
<https://www.theverge.com/2019/4/16/18334865/epic-games-store-versus-steam-valve-pc-gaming-console-war-reimagined>



**Oscar** graduated from CSUN, is a musician, game enthusiast and has been working with Bitcoin and other alt-coins. You can follow him at: <https://twitter.com/resonant7hand> or email him at: [7bluehand@gmail.com](mailto:7bluehand@gmail.com)

Crossword answers:





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

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

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

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### FCM#147

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