



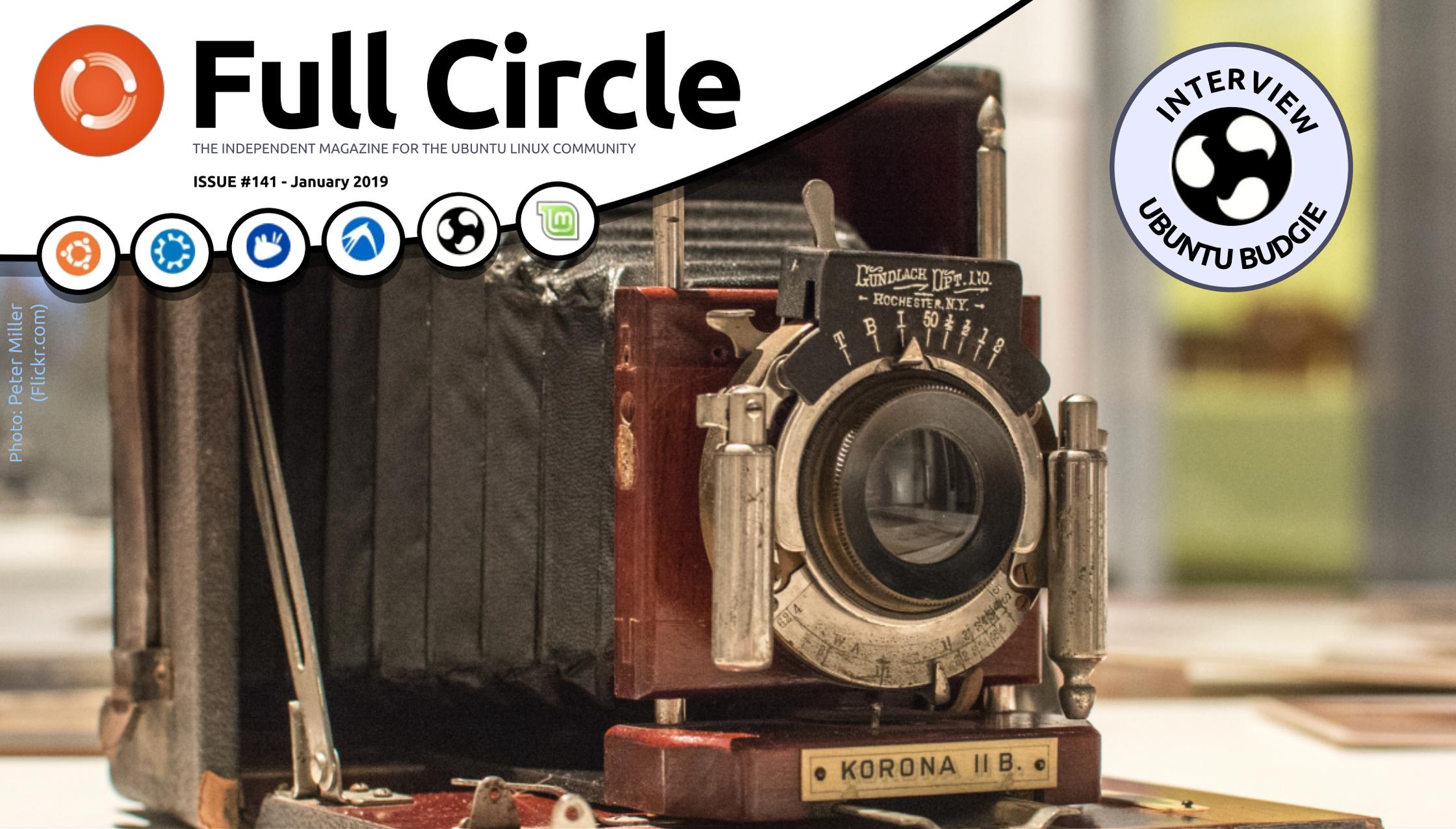
Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #141 - January 2019



Photo: Peter Miller
(Flickr.com)



DARKTABLE FOR EDITING YOUR PHOTOGRAPHS

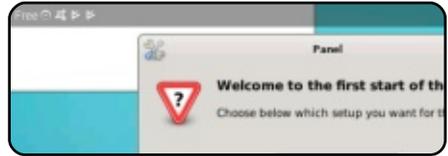
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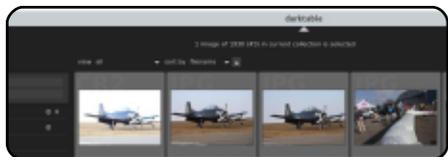
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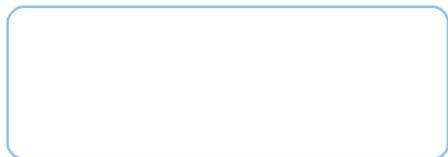
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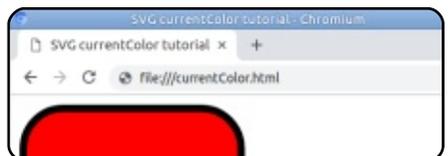
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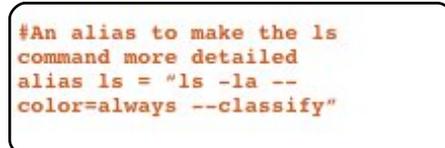


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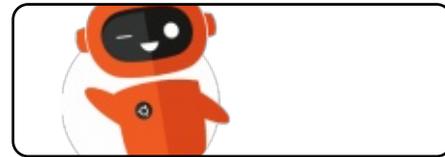


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WELCOME TO THE LATEST ISSUE OF FULL CIRCLE.

Welcome to a new year, and a new issue. We have the regular Python, and Inkscape, for you this month. Filling the gaps we dip into Darktable for all you photography types out there, and an interesting look at the trials and tribulations of AuntieE (from the French translation team) fighting to get Ubuntu (the real deal, not Touch) to run on an Honor 5C phone.

Speaking of Ubuntu and Touch, we have another OTA from the UBports team. OTA-7, the first OTA of 2019) was just released and I've pasted their release notes in as a UBports Devices article.

While on the subject of Touch, the maestro himself (Brian Douglass) has updated the Full Circle app for Ubuntu Touch. It looks even sexier than before. With it you can, of course, check for new issues, download issues, and read issues, all within the app itself. Amazing!

Going off the beaten path a bit this month we have an interview with one of the developers of Ubuntu Budgie, and a review of the Ruby First Steps online course. Both from Erik.

I shan't keep you any longer. Enjoy this first issue of 2019, and here's to another year of FCM!

All the best, and keep in touch!

Ronnie

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



RASPBERRY PI RECEIVES OFFICIAL TOUCHSCREEN SUPPORT WITH LINUX 4.21

Raspberry Pi touchscreen will be supported in the mainline Linux kernel. On Wednesday, Dmitry Torokhov issued a git pull request that has added support for the 7-inch, 800×480 display in the mainline kernel for the official Raspberry Pi Touchscreen.

Until now, touchscreen support was provided with the help of customized Linux kernels for Raspbian, a Debian-based OS meant exclusively for Raspberry Pi devices or using custom kernel patching.

Now since the Raspberry Pi has received the support for the touchscreen, it can be used for developing DIY tablets and other devices that require touchscreen interface.

The changes were pushed in the Linux 4.21 kernel with the 200+ lines of code input driver. The

driver will attain information from a memory mapped area via the Raspberry Pi firmware.

The 7-inch touchscreen monitor for Raspberry Pi enables users to integrate projects including infotainment system, embedded projects, and tablets amongst other projects.

According to the recently updated product page at the official Raspberry Pi website, “Touchscreen drivers with support for 10-finger touch and an on-screen keyboard will be integrated into the latest Raspbian OS for full functionality without a physical keyboard or mouse.”

The 7-inch touchscreen Raspberry Pi is priced at \$60.

Source: <https://fossbytes.com/raspberry-pi-touchscreen-support-linux-4-21/>

MANJARO DEEPIN 18.0.2 RELEASED, TONS OF PACKAGES UPDATED

The Manjaro team released a stable update for Manjaro Deepin, which focuses on a lot of improvements to existing packages.

For starters, a lot of improvements have been put into VirtualBox 6.0. These improvements include:

- Implemented support for exporting a virtual machine to Oracle Cloud Infrastructure
- User interface: greatly improved HiDPI and scaling support, including better detection and per-machine configuration
- Graphics: major update of 3D graphics support for Windows guests, and VMSVGA 3D graphics device emulation on Linux and Solaris guests
- Added support for surround speaker setups (as used by Windows 10 Build 1809)

Additionally, updates were

performed on MSM, Wine, Firefox, and all the regular Haskell, php, and Python updates. QT5 was updated to 5.12 LTS, which brings full Qt support for Python developers. All of the Qt APIs are now available for Python developers, which allows them to create complex graphical applications and UIs.

Mesa is updated to 18.3.1, which is a fairly tiny update that disables the VK_EXT_pci_bus_info extension that was previously introduced – basically a botched Vulkan extension.

KDE Frameworks was updated to 5.53.0, KDE Apps was updated to 18.12.0.

The Manjaro team recommends the XFCE Edition which comes with the latest packages. Alternatively you can try the KDE or Gnome editions.

Source: <https://appuals.com/manjaro-deepin-18-0-2-released-tons-of-package-updated/>

LINSPIRE 8.0 RELEASED

The story of Linspire could hardly have been more turbulent. The company, which was originally introduced under the name of Lindows, made a name for itself in the initial phase, especially with big announcements. The first concept of the company made the industry sit up and Microsoft frantically search for legal antidotes: Lindows announced a Linux-based operating system, on which even Windows programs would run smoothly. However, Lindows did not owe his customers the proof that the company could actually deliver such an operating system. Linspire was taken over by Xandros in mid-2008 and was discontinued as an independent distribution a few months later.

All the bigger was the surprise at the beginning of last year, when Linspire returned from the sinking. The Linux distribution Linspire and their free spin Freespire have been revived and released in new versions. Now, the US-based company PC / Opensystems LLC has released the product in a new version.

Linspire 8.0 updates the desktop and adds either KDE Plasma 5.12.7 or Mate 1.20.1 in the new version. The basis of the distribution is Ubuntu 18.04.1 LTS with all corrections and improvements. New versions of Google Chrome, Mozilla Thunderbird and LibreOffice 6.1.3 are also in the game. Other features include VLC Video Player, Rhythmbox, Microsoft Powershell, Inkscape, Gimp, Audacity, Openshot, and Oracle Java 10. Most applications are pre-installed when you install the distribution.

The new version is distributed in the form of a standard and a cloud edition (CE) on a USB stick or an SD card. The price of the single license is just under \$ 40 without support and just under \$ 80 with support. In addition, a download version is available, which costs just under \$ 30 without support.

Source: <https://www.pro-linux.de/news/1/26642/linspire-80-erschiene.html>

LINUX REACHES THE BIG FIVE (POINT) OH

Penguinistas, take heed. The kernel of your beloved OS has rung in the new year with a brand spanking new version number because... Linus felt like it.

Linux fans will be relieved to know that while 2019 should feature a gentler, softer and less swearsy Torvalds, the man's ability to make arbitrary decisions remains undiminished. The reason version 4.21 became 5.0 is because "I ran out of fingers and toes to count on."

As Torvalds observed, there are a ton of changes in the new kernel with toys aplenty. Raspberry Pi fans get touchscreen support and there is the usual array of GPU and CPU enhancements, including some early support for Nvidia's Turing GPUs, which will be of interest to those following CES 2019.

AMD has also seen some love in the form of tweaks to the handling of CPU microcode as well as the arrival of FreeSync, which synchronises the refresh rate of a

compatible display to the frame rate of a similarly equipped Radeon card.

Not to be left out, work has continued on Intel's Icelake graphics and, of course, ongoing mitigation for Spectre V2 and its ilk. NXP PowerPC processor received mitigation this time around while Linux's networking subsystem has been tweaked to at least partially deal with the performance hit introduced in 2018 as a result of handling the Meltdown issue.

Source:

https://www.theregister.co.uk/2019/01/07/linux_reaches_the_big_five_point_oh/

ENTROWARE LAUNCHES UBUNTU LINUX AIO PC WITH 6-CORE INTEL CPU

All-in-one PC is a pretty cool thing for people short on space or who simply prefer a neat desk. And just in case you are a Linux fan too, we have some good news for you!

The UK-based PC manufacturer

Entroware, which specializes in custom Linux systems, has launched the new Ares PC. This all-in-one PC is shipped with Ubuntu or Ubuntu MATE, and is great for home, office, business, and classrooms use.

AIO PCs like the 24! Ares pack all the components of a traditional computer into the monitor housing; all their parts are tucked behind the display in a sleek design.

The base model for Ares has a starting price of £739 (824 Euros) and offers a 24-inch 1080p matte display with built-in speakers. It has Intel Core-i3 8100 at 3.6GHz under the hood, along with 8GB of RAM clocked at 2400MHz, and a 120GB SSD loaded with your chosen version of Ubuntu or Ubuntu MATE.

Additionally, the Entroware offers a 3-year warranty on the Ares PC.

Source: <https://fossbytes.com/entroware-ubuntu-linux-pc-with-6-core-intel-cpu/>

UBUNTU TOUCH OTA-7 NOW AVAILABLE TO UBUNTU PHONE USERS WITH MANY IMPROVEMENTS

Packed with several enhancements and numerous bug fixes, the Ubuntu Touch OTA-7 update is here to introduce three new themes to the on-screen keyboard, which you can see in action if you access the screenshots gallery below, courtesy of UBports. This release also adds Android 7 support to the Mir display server for Qualcomm phones and finally supports Nexus 7 2013 Wi-Fi tablets with Android 5.1.

The Ubuntu Touch OTA-7 update also brings better support for devices with low memory (RAM), such as the BQ Aquaris E4.5 and BQ Aquaris E5 HD phones, which would crash and kill the Unity8 UI when running out of memory, better support for the Swiss-French keyboard, QtWebEngine support for online accounts logins instead of Oxide, mobile network improvements for Meizu PRO 5 devices, and better support for Nexus 4 devices.

The Ubuntu Touch OTA-7 update is now rolling out to all supported Ubuntu Phone devices, including Fairphone 2, Nexus 5, OnePlus One, BQ Aquaris M10 FHD, Meizu PRO 5, Meizu MX4, Nexus 4, BQ Aquaris E4.5, BQ Aquaris E5 HD, and Nexus 7 2013 Wi-Fi. Being an incremental update, it would probably take until the end of the week for the OTA-7 to be available for all users worldwide, but make sure you update your Ubuntu Phones as soon as possible.

Source: <https://news.softpedia.com/news/ubuntu-touch-ota-7-now-available-to-ubuntu-phone-users-with-many-improvements-524472.shtml>

NEW SIDE-CHANNEL ATTACK STEALS DATA FROM WINDOWS, LINUX PAGE CACHE

Details have emerged about a new side-channel attack that targets an operating system's page cache, where sensitive data that has been accessed for use, like program binaries, libraries, and

files and info sensitive in nature, is stored.

The attack is not limited by hardware architecture and it proved successful in local attempts against Windows and Linux machines, allowing bypassing of security sandboxes, running a timed user interface redressing, and the recovery of temporary passwords generated automatically.

The research team, comprised of experts from Graz University of Technology, Boston University, NetApp, CrowdStrike, and Intel, was also able, under certain conditions, to exfiltrate information to a remote attacker.

One method operating systems (OS) use to improve performance is to store data it reads from the hard disk for the first time in unused portions of the volatile memory. By storing, or caching, the data in memory, when that same data is accessed again it allows the OS to read it much quicker because volatile storage offers access speeds tens of times faster.

Although the researchers demonstrated their attack on

Windows and Linux, as page caching is present on all major operating systems it should be possible to obtain the same effect on macOS.

Source:

<https://www.bleepingcomputer.com/news/security/new-side-channel-attack-steals-data-from-windows-linux-page-cache/>

INSIDE UBUNTU'S FINANCIALS

Before being purchased by IBM, Red Hat was a public company, so we know in great detail about its financial results. Ubuntu's parent company, Canonical, its main Linux rival, however, is a private company, so we know far less about how much money it makes and how it generates its revenue. But, as Canonical moves to an Initial Public Offering (IPO), if you look hard enough, you can find clues about Canonical's financials.

Canonical is established in the UK. All UK companies are incorporated and registered through the UK Companies House.

So, even though Canonical's wholly owned by founder Mark Shuttleworth, the company still files an annual report.

This report, unlike those in the US, which are filed with the Security and Exchanges Commission (SEC), aren't timely. The latest annual Canonical report, for example, was filed on Jan. 3, and only covers its fiscal year ending March 31, 2018. Still, it does give a view into the popular Linux and cloud company.

First, Canonical, although it's the most popular cloud Linux, doesn't have Red Hat's revenue. In March 2018, Red Hat's total annual revenue was \$2.9 billion. Its full fiscal year net income was \$259 million. Canonical, on the other hand, made only \$110 million in total revenue with a net profit of \$6.2 million.

More troubling is, in 2017, Canonical had more revenue -- \$126 million in revenue to be exact. Canonical's COO Neil French blamed the decline on decreases in the company's staffing levels.

Still, after taxes, Canonical reported a profit of over \$11.1

million. That's much better than 2017's loss of \$8.8 million.

Source:

<https://www.zdnet.com/article/inside-ubuntu-financials/>

LINUX SYSTEMD AFFECTED BY MEMORY CORRUPTION VULNERABILITIES, NO PATCHES YET

Security researchers have disclosed three vulnerabilities that affect a system service part of 'systemd,' a core component in Linux that manages system processes after the boot process.

The bugs exist in 'journald' service, tasked with collecting and storing log data, and they can be exploited to obtain root privileges on the target machine or to leak information. No patches exist at the moment.

Discovered by researchers at Qualys, the flaws are two memory corruption vulnerabilities (stack buffer overflow - CVE-2018-16864, and allocation of memory without limits - CVE-2018-16865) and one

out-of-bounds error (CVE-2018-16866).

They were able to obtain local root shell on both x86 and x64 machines by exploiting CVE-2018-16865 and CVE-2018-16866. The exploit worked faster on the x86 platform, achieving its purpose in ten minutes; on x64, though, the exploit took 70 minutes to complete.

Qualys is planning on publishing the proof-of-concept exploit code in the near future, but they did provide details on how they were able to take advantage of the flaws.

All three bugs can be leveraged with no user interaction. One memory corruption is locally exploitable, while the other can be capitalized over the network.

The two memory corruption flaws are exploitable since systemd v201 and v230.

Source:

<https://www.bleepingcomputer.com/news/security/linux-systemd-affected-by-memory-corruption-vulnerabilities-no-patches-yet/>

ARCH LINUX KICKS OFF 2019 WITH FIRST SNAPSHOT POWERED BY LINUX KERNEL 4.20

Arch Linux 2019.01.01 is now available and it is the first snapshot of the popular Linux-based operating system in 2019, shipping with a new Linux kernel and all the package updates released during December 2018, since the release of the Arch Linux 2018.12.01, which was powered by Linux kernel 4.19.4.

Considering the fact that Linux kernel 4.20 was just released a couple of weeks ago, near the Christmas holidays, this would be a record for the Arch Linux developers to ship the new ISO snapshot with the most recent Linux kernel series, which can only mean that it successfully passed all tests.

With that in mind, if you plan on reinstalling your Arch Linux box or if you want to deploy the Linux-based operating system on new computers, you can go ahead and download the Arch Linux 2019.01.01 ISO image from the

official website. We remind existing Arch Linux users that they don't need to download the latest ISO snapshot to keep their installations up to date. As such, if you want your Arch Linux-powered computer to run the latest Linux 4.20 kernel, all you have to do is run the "sudo pacman -Syu" command in a terminal emulator.

Source:

<https://news.softpedia.com/news/arch-linux-kicks-off-2019-with-first-snapshot-powered-by-linux-kernel-4-20-524488.shtml>

KDE FRAMEWORKS 5.54 RELEASED FOR KDE PLASMA 5.15, ADDS ANDROID NOTIFICATIONS

Consisting of more than 70 addon libraries for the open-source and cross-platform Qt application framework, the KDE Frameworks software suite features numerous components essential to the KDE Plasma desktop environment.

The KDE Frameworks 5.54.0 a monthly update that adds

numerous improvements, as well as various new features in an attempt to stabilize the software suite. Also, this release is just in time for the upcoming KDE Plasma 5.15 desktop, due for release on February 12.

Highlights of the KDE Frameworks 5.54.0 release include the implementation of a notification backend in the KNotification component for Android devices, finally allowing you to see your phone's notifications on your KDE Plasma desktop environment.

The KIO (KDE Input/Output) system library received support for the TLS (Transport Layer Security) 1.3 standard for better security, and the KTextEditor text editor got better scripting support for Qt 5.12 and a new action for static word wrap.

The Breeze icon theme now features more icons, including drive-* icons for SUSE's YaST (Yet another Setup Tool) and YaST Partitioner, device icons for the RJ45 and RJ11 ports, flashlight action icons, a view-private icon, and the right icon for Python 3 scripts.

The Wayland support received some attention as well in the KDE Frameworks 5.54 release, which features touch drag support, Xdg decoration support, and allows for multiple touch interfaces per client. Various bug fixes are present too for improved stability.

Source:

<https://news.softpedia.com/news/kde-frameworks-5-54-released-for-kde-plasma-5-15-adds-android-notifications-524525.shtml>

FREESPIRE 5.0 "COHO" PLANNED FOR MID-NOVEMBER 2019, LINSPIRE 9.0 COMES LATE 2020

According to the roadmap, it looks like Linspire will be the focus of the development team for the 2019-2020 period, starting with an Office 365 Edition of Linspire CE (Cloud Edition) 8.0, planned for next month on February 21, and continuing with Linspire Server 2019 Edition, due for release on April 14, 2019.

The 2019 roadmap of Linspire continues with the first Service

Pack (SP) of Linspire 8.0 on July 14, followed by the second Service Pack (SP) on December 1 and Linspire Server 2019 R2 on December 31, 2019. In 2020, Linspire 9.0 "Halloween" enters development with the first Release Candidate (RC), available January 15, 2020.

A third Service Pack (SP) for Linspire 8.0 is scheduled for June 1, 2020, and the second Release Candidate (RC) of Linspire 9.0 should be available for testing on September 10, 2020. The final release of Linspire 9.0 "Halloween" is expected to hit the streets on Halloween 2020, October 31.

After that, the team plans to release a fourth and last Service Pack for Linspire 8.0 on November 1, 2020, as well as Linspire Server 2019 R3 on December 1, 2020. As for Freespire, the next release will be Freespire 4.5 planned for May 5, 2019, and the major version Freespire 5.0 "Coho" is coming later this year on November 15.

Next year, the team plans to release Freespire 5.5 on May 1, 2020, and Freespire 6.0 "Lobo" on November 27, 2020. Until then, you can download the Freespire

4.0 based on Ubuntu 18.04 LTS (Bionic Beaver), and you can purchase Linspire 8.0 from developer's website if you're interested in using these Linux-based operating systems.

Source:

<https://news.softpedia.com/news/freespire-5-0-coho-planned-for-mid-november-2019-linspire-9-0-comes-late-2020-524524.shtml>

LINUS TORVALDS SAYS THINGS LOOK PRETTY NORMAL FOR LINUX 5.0, RELEASES SECOND RC

According to Linus Torvalds, things are going in the right direction for Linux kernel 5.0 series, which should launch sometime at the end of February or early March 2019, and the second Release Candidate is here to add several perf tooling improvements, updated networking, SCSI, GPU, and block drivers, updated x86, ARM, RISC-V, and C-SKY architectures, as well as fixes to Btrfs and CIFS filesystems.

Of course, it's a bit early to say that everything's fairly normal for the Linux 5.0 kernel series as the development cycle was just kicked off a week ago, when Linus Torvalds announced the first Release Candidate, and it remains to be seen if it will be a normal cycle with seven RCs or a long one with eight RCs. Depending on that, Linux kernel 5.0 could arrive on February 24th or March 3rd.

Until then, we're looking forward to the third Release Candidate of Linux kernel 5.0, which is expected to hit the streets at the end of the week on January 17th. Meanwhile, you can go ahead and give Linux 5.0 a try on your Linux-powered computer by downloading and compiling the second Release Candidate from kernel.org. Keep in mind though that this is a pre-release version, so don't use it on production machines.

Source:

<https://news.softpedia.com/news/linus-torvalds-says-things-look-pretty-normal-for-linux-5-0-releases-second-rc-524541.shtml>

DEBIAN-BASED NETRUNNER 19.01 "BLACKBIRD" OFFICIALLY RELEASED WITH NEW DARK LOOK

Dubbed Blackbird, Netrunner 19.01 comes ten months after the Netrunner 18.03 "Idolon" release with a fresh, dark new look and feel with a more 3D-looking design, which was created using the Kvantum theme engine and the Alpha-Black Plasma theme. The new theme comes with some bling too as there's now a light glow for the "Minimize all Windows to show Desktop" function.

In addition to the new dark look and feel, the Netrunner 19.01 "Blackbird" release adds support for Web Apps, which are links to websites that can be easily added as launchers from the applications menu, the Plasma-Integration add-on to the Mozilla Firefox web browser, which enables media controls and visual feedback for downloads, as well as Plasma integration for GTK+ apps.

Updated components present in the Netrunner 19.01 "Blackbird" release include the KDE Plasma

5.14.3 desktop environment, accompanied by the KDE Frameworks 5.51 and KDE Applications 18.08 software suites, Qt 5.11.3, Mozilla Firefox 64.0 web browser, Mozilla Thunderbird 60.3 email and news client, as well as the Krita 4.1.1 digital painting software.

Source:

<https://news.softpedia.com/news/debian-based-netrunner-19-01-blackbird-officially-released-with-new-dark-look-524545.shtml>

ENTROWARE LAUNCHES HADES, ITS FIRST AMD-POWERED WORKSTATION WITH UBUNTU LINUX

With Hades, Entroware debut their first AMD-powered system that's perfect for Deep Learning, a new area of Machine Learning (ML) research, but also for businesses, science labs, and animation studios. Entroware Hades can achieve all that thanks to its 2nd generation AMD Ryzen "Threadripper" processors with up to 64 threads, Nvidia GPUs with up

to 11GB memory, and up to 128GB RAM and 68TB storage.

The Entroware Hades workstation can be configured to your needs, and you'll be able to choose a CPU from AMD Ryzen TR 1900X, 2920X, 2950X, 2970WX, or 2990WX, and RAM from 16GB to 128GB DDR4 2933Mhz or from 32GB to 128GB DDR4 2400 Mhz ECC.

For graphics, you can configure Entroware Hades with 2GB Nvidia GeForce GT 1030, 8GB Nvidia GeForce RTX 2070 or 2080, as well as 11GB Nvidia GeForce RTX 2080 Ti GPUs. For storage, you'll have up to 2TB SSD for main drive and up to 32TB SSD or up to 64TB HDD for additional drives.

Ports include 2 x USB Hi-Speed 2.0, 2 x USB SuperSpeed 3.0, 1 x USB SuperSpeed 3.0 Type-C, 1 x headphone jack, 1 x microphone jack, 1 x PS/2 keyboard/mouse combo, 8 x USB SuperSpeed 3.1, 1 x USB SuperSpeed 3.1 10Gbps, 1 x USB SuperSpeed 3.1 10Gbps Type-C, 5 x audio jacks, 2 x RJ-45 Gigabit Ethernet, and 2 x Wi-Fi AC antenna connectors.

Source:

<https://news.softpedia.com/news/entroware-launches-hades-workstation-powered-by-ubuntu-18-04-lts-and-amd-ryzen-2-524526.shtml>

CANONICAL PATCHES GNOME BLUETOOTH VULNERABILITY ON UBUNTU 18.04 LTS, UPDATE NOW

Security researcher Chris Marchesi recently discovered a security vulnerability, documented as CVE-2018-10910, in the BlueZ Linux Bluetooth stack, which made it incorrectly handle disabling Bluetooth visibility, allowing a remote attacker to possibly pair to Bluetooth devices.

Canonical was quick to release today patched versions of the BlueZ components for the long-term supported Ubuntu 18.04 LTS (Bionic Beaver) operating system series, addressing the security vulnerability, which might also affect all of the derivatives of Ubuntu 18.04 LTS, including Xubuntu, Kubuntu, Lubuntu, and Ubuntu MATE.

Canonical urges all Ubuntu 18.04 LTS users to update their systems immediately to the gnome-bluetooth 3.28.0-2ubuntu0.1 and libgnome-bluetooth13 3.28.0-2ubuntu0.1 packages, which are available for download right now from the official repositories. To update, follow the instructions at <https://wiki.ubuntu.com/Security/Upgrades>.

The GNOME Bluetooth vulnerability is confirmed not to affect other supported Ubuntu releases, such as Ubuntu 14.04 LTS (Trusty Tahr), Ubuntu 16.04 LTS (Xenial Xerus), or Ubuntu 18.10 (Cosmic Cuttlefish), but it might affect other Linux-based operating systems, so check your repos for recent updates to BlueZ and the GNOME Bluetooth tools and install them as soon as possible.

Source:

<https://news.softpedia.com/news/canonical-patches-gnome-bluetooth-vulnerability-on-ubuntu-18-04-lts-update-now-524542.shtml>

ANDROID-X86 8.1 OFFICIALLY RELEASED, LETS YOU RUN ANDROID 8.1 OREO ON YOUR PC

After entering development last year in June, the Android-x86 8.1 release, which is based on the latest Android 8.1 Oreo mobile operating system, saw two RC (Release Candidate) builds that allowed testers to try the upcoming OS on their PCs. Three months after the last RC build, the Android-x86 8.1 release is now finally stable and ready for mass adoption.

Software rendering is also possible on unsupported GPU devices with OpenGL ES 2.0 support via SwiftShader, and Android-x86 8.1 also comes with support for hardware accelerated codecs on devices powered by Intel HD and Intel G45 graphics cards series. For newer Intel and AMD GPUs, this release adds experimental Vulkan support available via Advanced options on the boot menu.

While graphics upgrades are essential for a smooth Android

experience on PCs, Android-x86 8.1 introduces lots of other goodies, including support for multi-touch, Bluetooth, DHCP-only Ethernet, Fi-Fi, audio, camera, and sensors, the ability to mount external USB drives and SD cards, as well as Secure Boot support when installing to and booting from UEFI drives.

Furthermore, Android-x86 8.1 adds a text-based GUI installer, theme support to the GRUB-EFI bootloader, support for both 32-bit and 64-bit kernels and userspace, support for ARM apps via the native bridge mechanism available under Settings > Android-x86 options, and mouse integration for virtual machines like Oracle VirtualBox, QEMU, VMWare, and Microsoft Hyper-V.

Source: <https://news.softpedia.com/news/android-x86-8-1-officially-released-lets-you-run-android-8-1-oreo-on-your-pc-524576.shtml>

DEEPIN 15.9 LINUX DISTRIBUTION IS HERE WITH NEW MULTI-TOUCH GESTURES AND IMPROVED POWER MANAGEMENT

Since Microsoft will be ending Windows 7 support in less than a year, many computer users will have to decide if they will move onto the much-maligned Windows 10. Alternatively, depending on their needs, they could opt for a Mac or Chromebook. But what if you are happy with your current computer and don't want to buy new hardware? In that case, Linux can save the day. The excellent Netrunner, for instance, is a great option for Windows switchers that fear a change of user interface.

If you are open to moving away from the traditional Windows-like interface, another superb Linux distribution to consider is deepin. If you aren't familiar, deepin is a very stable operating system that focuses heavily on appearance. Quite frankly, it puts Windows 10 to shame in that regard -- its "Deepin Desktop Environment" is far superior to the dated and boring interface found on

Microsoft's latest operating system. Today, deepin 15.9 becomes available for download with a huge list of changes, including new multi-touch gestures and improved power management.

Source: <https://betanews.com/2019/01/16/deepin-15-9-linux/>

PURISM 'PUREOS STORE' WILL BE FOR BOTH DESKTOP AND MOBILE APPS, AND THAT'S A MISTAKE

Purism is a company that focuses on privacy, security, and open source ideology. What's not to love? It already manufactures Linux-powered laptops with cool features like hardware kill switches for webcam and wireless radios. This way, you can be confident that your hardware is less likely be hacked and used to spy on you.

The company's core values are noble and respectable, but financially, this won't necessarily signal success. In fact, competing with the likes of Microsoft, Google,

and Apple for desktop computing is a very hard task. Even harder? Breaking into the mobile business which is dominated by iOS and Android. And yet, Purism plans to launch the Librem 5 smartphone (running Linux-based PureOS) at some point in the future. Of course, such a device will need an app store, so PureOS has finally revealed the name of its upcoming offering -- the unimaginatively named PureOS Store. Sadly, this will be an attempt to merge mobile and desktop into a single store.

While the idea of writing an app once and having it work on mobile and desktop sounds good, it has largely failed in practice. Microsoft tried it with Windows 10 Mobile, and developers didn't bite. Consumers seem to prefer separate stores and apps for desktop and mobile too. Convergence just hasn't lit the world on fire.

My suggestion to Purism would be to make two distinct app stores that focus on the best possible experience for each platform -- mobile and desktop. The odds are already stacked against the company, so it should learn from

the failures of other firms -- like Canonical's dashed smartphone dreams -- rather than repeat them.

Source:

<https://betanews.com/2019/01/18/purism-pureos-store-desktop-mobile/>

INKSCAPE 1.0 OPEN-SOURCE VECTOR GRAPHICS EDITOR IS FINALLY COMING AFTER 15 YEARS

Inkscape is quality SVG editor that runs on Linux, Mac, and Windows systems and can be used to create or edit vector graphics like logos, diagrams, illustrations, charts, and anything else in between. Inkscape 1.0 is a major release that all fans of the open source software have expected for so long, and it finally brings long-anticipated features and improvements.

Highlights of Inkscape 1.0 include an updated user interface that offers better support for 4K/HiDPI screens and theming support, the ability to rotate and mirror canvases, new options for

exporting to the PNG image format, variable fonts (requires pango 1.41.1 or higher), as well as much faster path operations and deselection of a large amounts of paths.

Among other changes coming to the Inkscape 1.0 release, which should be available later this year, we can mention the ability to control the width of the PowerStroke tool with pressure sensitive touch gestures on graphics tablets, support for fillet/chamfer LPE and lossless boolean operation LPE, and optional placement of Origin in the top left corner of the window.

A first alpha pre-release version of Inkscape 1.0 is now available for download as an ApplImage for Linux-based operating systems. A source package is available as well if you want to compile the software on Mac or Windows OSes.

Source:

<https://news.softpedia.com/news/inkscape-1-0-open-source-vector-graphics-editor-is-finally-coming-after-15-years-524596.shtml>

ORANGE PI 3 SINGLE BOARD COMPUTER IS HERE; RUNS LINUX AND ANDROID

The Raspberry Pi Foundation launched its updated mini-computer Raspberry Pi 3 Model A+ with built-in Bluetooth and 802.11ac Wi-Fi in November. But what if you are looking for an alternative? In that case, the Orange Pi lineup of SBCs (single board computers) definitely needs to be mentioned.

Just recently, Allwinner A6-based Orange Pi 3 computer has been made available via AliExpress. This full-fledged SBC follows Orange Pi One Plus and Orange Pi Lite2, which were limited to 1GB RAM.

The Pi 3 release hopefully addresses the concerns of users who complained that Lite2 and One Plus weren't able to fully take advantage of the powerful Allwinner H6 SoC.

Talking about the specs, Orange Pi 3 comes with 1GB/2GB RAM, 4 USB 3.0 ports, optional 8GB eMMC storage, and a mini-PCIe slot. The users can also load Linux 4.19-

based Ubuntu and Debian images provided by the Armbian community, as reported by LinuxGizmos.com.

The Allwinner H6 quad-core Cortex A53 processor can be clocked up to 1.8 GHz. It comes with RK3399-like peripheral support and Mali-T720 MP2 GPU with OpenGL ES3 and DirectX 11. The latest product from Orange Pi also supports "H.265 6K @ 30fps" video decoding and H.264 4K @ 30fps video encoding.

Orange Pi 3 costs \$29.90 for 1GB RAM variant and \$39.90 for 2GB RAM and 8GB eMMC version of the SBC.

Source:

<https://fossbytes.com/orange-pi-3-single-board-computer-is-here-runs-linux-and-android/>

LINUX VIRUS REMOVES SECURITY SOFTWARE TO MINE MONERO

Palo Alto Networks' Unit 42 reveals that it came across samples of malware used by a group called Rocke to infiltrate

into Linux systems and look for five different cloud security products that could block further malicious activities on the compromised hosts.

The analysis reveals that successful attacks launched by Rocke first require them to exploit vulnerabilities found in other software solutions that would allow them to deploy the malware. Flaws in Apache Struts 2, Oracle WebLogic, and Adobe ColdFusion are being used.

Once the host has been compromised, the malware downloads a script called a7 on the system and enables persistence using cronjobs.

Furthermore, it can kill all the other mining processes running on the same host, block other malware with iptables rules, hide its malicious process, and uninstall agent-based cloud security products.

Given the malware targets mostly security products developed by Alibaba and Tencent, most attacks are believed to be carried out in China, though it could very well be expanded to

other regions as well. Both companies have already been informed of the attacks in order to block potential exploits.

Source:

<https://news.softpedia.com/news/linux-virus-remove-security-software-to-mine-monero-524623.shtml>

WANT TO SPIN UP UBUNTU VMs FROM WINDOWS 10'S COMMAND LINE, EH? WE'LL NEED TO SEE A MULTIPASS

Windows 10 developers have been gifted yet another way of running Linux on their desktop in the form of Canonical's Multipass.

Users of Microsoft's OS have been spoiled for choice as the software maker has sought to persuade developers that these days it prefers to snuggle up to rather than stomp on penguin-based life.

Windows 10 Hyper-V has allowed developers to spin up Linux Virtual Machines with little

effort, and last September Canonical became a fully paid-up member of the Hyper-V club, with an Enhanced Session Mode-enabled (ESM) version of Ubuntu allowing clipboard and file sharing between Ubuntu's desktop and Windows.

A GUI is all well and good, but the command line is where the magic happens and, again, Microsoft has an answer in Windows 10 in the form of the Windows Subsystem for Linux (WSL). Fire up WSL for your distro of choice and hey presto! Here's Bash, ready to play.

However, WSL has some hulking limitations of its own, being more a compatibility layer and lacking a Linux Kernel.

Enter Multipass, which today made its way out of private beta.

Multipass, at its core, is a service to manage Linux (in this case, Ubuntu) virtual machines in Windows 10 without the overhead of faffing about with Hyper-V (although Hyper-V is most definitely required to make the thing work).

Source:

<https://www.theregister.co.uk/2019/01/22/multipass/>

UBUNTU CORE DOUBLES DOWN ON INTERNET OF THINGS

Canonical's Ubuntu is best known for its Linux desktop, but the company really makes its money from the cloud. And, founder Mark Shuttleworth has said, the Internet of Things (IoT). So, it comes as no surprise that Ubuntu Core is bringing Ubuntu 18.04 Long Term Support (LTS) codebase to embedded devices.

Ubuntu Core, with an image size of 260MB, is the smallest Ubuntu Linux release to date. This makes it ideal both for IoT devices and

cloud containers.

Of course, it takes more than size to make an operating system good for IoT. It doesn't hurt though. Besides making it possible to run on devices with minimal system resources, its tiny size gives it a minimal attack surface.

In addition, to install programs on Core, the operating system uses immutable, digitally signed snaps. Indeed, Core's entire platform is made of strictly confined snaps.

Snaps are Ubuntu's containerized software packages. These are corruption resistant. Even if a snap is compromised, Ubuntu Core snaps are confined to a sandbox. This limits potential damage. Ubuntu Core's snaps are also scanned regularly for known vulnerabilities.

Another plus for developers is the same Core snaps will run on Ubuntu server, desktop, and cloud. Snap's one platform, one format, and one process methodology means you can use your workstation, build farm, cloud, and servers to build your IoT snaps. Which ever works for you, will work for IoT development.

Source:

<https://www.zdnet.com/article/ubuntu-core-doubles-down-on-internet-of-things/>

RUNTIME SECURITY AGENT TAILORS ITSELF TO EACH LINUX-BASED IOT DEVICE

VDOO has launched an "ERA" (Embedded Runtime Agent) for securing Linux IoT devices. The

agent self-optimizes for specific systems with the help of the company's Vision analytics software.

Security startup VDOO has launched its ERA (Embedded Runtime Agent), which it claims is the first auto-generated runtime agent designed to offer security protections directly on Linux-based IoT devices. The ERA agent is claimed to offer more optimized and timely protection of IoT devices than is available from typical top-down enterprise security solutions. A runtime agent like ERA is better equipped for securing highly diversified IoT devices, says the Israel-based company.

VDOO secured \$13 million from Dell and other investors a year ago to help produce a growing stable of security software. Its major offering is a Vision security analytics platform, which is integrated with ERA.

Vision is used to scan and analyze the firmware of the device to identify vulnerabilities and provide optimized security recommendations. Vision then auto-generates a security plan that



DistroWatch.com

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enables the developer to tailor the ERA agent for the device to reduce unnecessary overhead and better protect against specific vulnerabilities.

Available for Linux and Android, with FreeRTOS support in beta, ERA supports Arm, x86, and MIPS devices. Its footprint is less than 1MB and it consumes less than 1 percent of CPU overhead, says VDOO.

Source:

<http://linuxgizmos.com/runtime-security-agent-tailors-itself-to-each-linux-based-iot-device/>

UBUNTU STUDIO 19.04 HAS NEW TRICKS UP ITS SLEEVE FOR LINUX CREATIVES

A few months ago Ubuntu Studio was on its deathbed. Development of the project -- which aims to provide a complete open source solution for creatives -- had stagnated since 2016, seeing virtually no progress between versions 16.04 and 18.04. A call was made to form a council focused on breathing new life into it, but no response came. That's

when Erich Eickmeyer stepped in.

As Ubuntu Studio Council Chairman, Eickmeyer has been instrumental in whipping the distro into shape and encouraging innovation for its current and upcoming 19.04 release.

As a musician, Linux enthusiast and Ubuntu user, Ubuntu Studio is at the top of my list as a potential solution for writing and recording songs using all open source software. It also has a wealth of apps for video producers, photographers, artists and all manner of creative types in between. So I caught up with Eickmeyer to chat about the future of Ubuntu Studio, and walked away pretty excited about two notable improvements.

The first one is a big deal for folks who don't want to abandon their current Ubuntu flavor of choice.

"With 19.04, we're working on not only our own default Xfce-based ISO, but also allowing users of other Ubuntu flavors (Kubuntu, Lubuntu, Ubuntu Budgie, etc) to install the backend configuration and whatever tools they want to

essentially bolt-on Ubuntu Studio to their existing setup." Eickmeyer says. "This will allow them to work in whatever desktop environment they choose without sacrificing the tuning we do."

This won't apply to Ubuntu derivatives like Linux Mint, but it's fantastic news for Ubuntu users who don't want to disrupt their current daily driver. It remains to be seen how this will be integrated, but I can't wait to test it out firsthand.

Source:

<https://www.forbes.com/sites/jasonevangelho/2019/01/24/ubuntu-studio-19-04-has-new-tricks-up-its-sleeve-for-linux-creatives/#7a3a077f3dc5>

UBUNTU CORE 18 RELEASED WITH 10-YEAR LTS SUPPORT

Earlier this week, Canonical announced the release of Ubuntu Core 18 for embedded Linux devices. This container OS also brings the benefit of 10-year long term support to ensure that the devices remain safe and

updated for a long time.

The base OS image has very few packages installed to ensure better security. It has also helped in reducing the size and frequency of security updates. Moreover, users also get more freedom to store data and applications.

As many of you might have already guessed, Core 18 is based on Ubuntu 18.04 LTS Bionic Beaver, which itself is supported for 10 years. The snaps delivered on the devices running Ubuntu Core 18 would be further scanned on a regular basis for vulnerabilities.

The OS also introduces "a new class of app-centric things" that lets one acquire snaps from the Snapcraft and Ubuntu ecosystems and adapt them for a specific model or brand.

"Specific apps can be required, or optional, per model. Manufacturers get complete control over the versions and updates relevant to their own devices," the official blog post mentions.

Due to the vast support of Ubuntu and its services across

NEWS

devices from leading vendors like Intel, Dell, Samsung, Qualcomm, etc., using Ubuntu Core brings added advantages.

Source:

<https://fossbytes.com/ubuntu-core-18-released-with-10-year-lts-support/>



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Carrying on from last month's article, I thought I'd cover a few aspects of theming my setup – that I've done to start the new year off with a fresh look. I'll cover setting terminal themes, a few websites and tools for generating colorschemes, and a few aspects of my particular system.

TERMINAL COLOR SCHEME

I spent some time in December converting my favourite syntax color scheme from VS Code (City Lights) into something usable in my Terminal of choice (Kitty). Since I also run i3, this included colors that i3 uses, and needed to also be carried over to Polybar. I did it all manually first, and then created a color scheme json file for Pywal.

The exact method of changing your terminal colors will, of course, depend on your terminal itself - urxvt pulls the data from .Xresources (like Xterm), Gnome-terminal has a settings panel (and so does Terminator), while Kitty has a configuration file. As such,

you'll need to check where your colors are stored and in what format. Below is the set of colors I've ended up using to replicate City Lights. It's not perfect, and some colors are simply doubled up since the light or dark variants are a little too frequently used for my taste. These are all pulled from my .Xresources, as this should be the most commonly used format.

```
*foreground: #b7c5d3
*background: #181e24
```

```
! Black
*color0: #333f4a
*color8: #41505e
```

```
! Red
*color1: #d95468
*color9: #d95468
```

```
! Green
*color2: #8bd49c
*color10: #8bd49c
```

```
! Yellow
*color3: #ebbf83
*color11: #f7dab3
```

```
! Blue
*color4: #539afc
*color12: #5ec4ff
```

```
! Magenta
*color5: #d44b7e
*color13: #b62d65
```

```
! Cyan
*color6: #70e1e8
*color14: #70e1e8
```

```
! White
*color7: #718ca1
*color15: #b7c5d3
```

Alternatively, if you want to use pywal to generate this you can create the below file:

```
{"special": {"background": "#181e24", "foreground": "#b7c5d3", "cursor": "#b7c5d3"}, "colors": {"color0": "#333f4a", "color1": "#d95468", "color2": "#8bd49c", "color3": "#ebbf83", "color4": "#539afc", "color5": "#d44b7e", "color6": "#70e1e8", "color7": "#718ca1", "color8": "#41505e", "color9": "#d95468", "color10": "#8bd49c", "color11": "#f7dab3", "color12": "#5ec4ff", "color13": "#b62d65", "color14": "#70e1e8", "color15": "#b7c5d3"}}
```

Save this somewhere you'll remember as citylights.json, and then run:

```
wal -f
/path/to/citylights.json
```

This is simply a copy of their included Monokai theme that I adapted and edited. Naturally, Pywal is intended to create/select a theme to match a wallpaper, but this purpose seems to work as well.

If you want to create your own scheme from scratch, something like <http://terminal.sexy/> might be what you're looking for.

GTK+ THEME, CURSOR & ICONS

I didn't go so far as to create a custom GTK+ theme to utilize the citylights.json theme (though it should be possible with oomox and pywal). Instead, I just selected one that I liked the look of (Adapta-Nokto-Eta). It's not perfect, but as I don't tend to see a lot of GTK applications, I haven't had any real issues with it.

Icon-wise I'm just using Luv, which is a nice blue-tinged set of icons. I have noticed in some dialog boxes that the icons are showing



up funny, but it doesn't happen often enough for me to track down the cause.

The cursor I use is StormDrops dark. It's overall a nice mouse cursor with sharp lines and a normal angle to the cursor. The only cursor I'm not sold on is the hand, which just feels out of place. I haven't yet found a better option for a dark-colored cursor though.

FONTS

Lastly, one of the most important parts of anyone's setup - their fonts!

Terminal/Polybar: Hack, FontAwesome, M+
GTK: Cantarell
VS Code: Fira Code (with ligatures enabled)

The first line has 3 fonts listed, as each one is progressively used as a fallback. FontAwesome gives me icons for use in Polybar (which I use for a couple of workspaces), and M+ gives me support for Kanji and Hiragana.

I highly recommend Hack as a terminal font, as it even includes Powerline icons by default (in case you use Powerline). Even if not, it's

very legible and offers some defining characteristics on symbols you may confuse (such as a dot in the 0 [zero]). I even used it in VS Code for a while, but have since changed to Fira Code.

FUTURE PLANS

I'm debating about trying Herbstluftwm instead of i3, simply for a little bit of a change. I'd also like to re-work my workspace names using Kanji or other icons, instead of largely being numbers. I also want to tweak Polybar a bit more, especially to see if I can improve the appearance of the

tray. I may also start using Conky again to see more information about my system.

Naturally, if any of my readers have preferred themes, icons, or fonts, I'm more than happy to feature them in a later article (and possibly use them myself!).

As always, I hope this article might have inspired at least a couple of you to try something new or to rework their system for the new year. If you have any issues, corrections, or questions for me, you can reach me at lswest34+fc@gmail.com.



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



PANDAS = CUDDLY... DATA?

This time, we will concentrate on the Pandas DataFrame and dealing with a semi-real world scenario.

You'll need to download a CSV file from kaggle.com. The link is <https://www.kaggle.com/sulmansawar/transactions-from-a-bakery>, and the file you need to get is 'BreadBasket_DMS.csv'.

Once you have that downloaded, create a folder to hold the code and the CSV file. This could all be done within the Python shell, but creating a file will make it easier to deal with until you get familiar with the commands and concepts that we will be using. We'll be building the code file step by step as we go along. I've put the source code up on PasteBin at <https://pastebin.com/uG1QSkmN> to make it easy for you.

The data that the CSV file holds is really rather simple. There are just four columns...

- Date
 - Time
 - Transaction (number)
 - Item
- and 21,293 rows.

To begin with, we will create a DataFrame by importing the data from the CSV file. You can also create DataFrames from database tables, but that's an article for another day. Here is a sample of what the base CSV file looks like...

```
Date,Time,Transaction,Item
2016-10-30,09:58:11,1,Bread
2016-10-30,10:05:34,2,Scandinavian
2016-10-30,10:05:34,2,Scandinavian
2016-10-30,10:07:57,3,Hot chocolate
2016-10-30,10:07:57,3,Jam
2016-10-30,10:07:57,3,Cookies
2016-10-30,10:08:41,4,Muffin
```

Of course, this is just the first 8 lines from the file.

To get started, we'll import Pandas (just like we did last month), define the filename of the CSV file, and create the DataFrame from the CSV file.

0	2016-10-30	...	Item
1	2016-10-30	...	Bread
2	2016-10-30	...	Scandinavian
3	2016-10-30	...	Scandinavian
4	2016-10-30	...	Hot chocolate
5	2016-10-30	...	Jam
6	2016-10-30	...	Cookies
...	Muffin
21287	2017-04-09
21288	2017-04-09	...	Tacos/Fajita
21289	2017-04-09	...	Coffee
21290	2017-04-09	...	Tea
21291	2017-04-09	...	Coffee
21292	2017-04-09	...	Pastry
			Smoothies

```
import pandas as pd

filename = 'BreadBasket_DMS.csv'

df = pd.read_csv(filename)

print(df)
```

What you will see is something like the data shown above.

All of the data is really there, but Pandas only shows a portion of the DataFrame information.

Now, to do any kind of work with the data, you will need to know the names of the columns. Many times, when we are working, we either don't have time or don't

take the time to make notes carefully. This is especially true when we deal with really large data files with more than 50 columns. That can take more time than we have. Thankfully, Pandas has a simple command that we can use to get all of our column headers. The command is 'df.columns.values.tolist()'. We can use it like this...

```
# get and display a list of the column names (headers)

col_list = df.columns.values.tolist()

print(col_list)
```

This will give us...

```
['Date', 'Time',  
'Transaction', 'Item']
```

We can also simply call `df.count()` and it will show us something like this...

```
print(df.count())
```

```
Date          21293  
Time          21293  
Transaction   21293  
Item          21293  
dtype: int64
```

So now, we have created and loaded our DataFrame and we know the column headers and know the number of data rows that we have. Now, let's see how many individual dates we are dealing with. To do that, we can create a list (almost like we did to get the column header list) by using the following command...

```
datelist =  
df['Date'].unique().tolist()
```

Then we can print the length of the list to know how many unique dates we are dealing with. We can also include the earliest and latest date that we have data for.

```
print(len(datelist), min(datelist), max(datelist))
```

which results in...

```
159 2016-10-30 2017-04-09
```

Keep the datelist variable in mind for later on.

We also know that we have the 'Item' column. We can do the same thing to see how many unique items we have.

```
itemlist =  
df['Item'].unique().tolist()  
print(itemlist)  
print(len(itemlist))
```

I won't print the entire item list here, but there are 95 unique items.

```
['Bread', 'Scandinavian',  
'Hot chocolate', 'Jam',  
'Cookies', 'Muffin',  
'Coffee', ..., 'Mortimer', 'Raw  
bars', 'Tacos/Fajita']
```

Ok, so now we know that we have a DataFrame that has 4 data columns, the data has 159 unique dates between 2016-10-30 and 2017-04-09, and 95 unique items in the DataFrame, and all in less than 20 lines of code and about 5 minutes of actual work.

Now, before we go any further, it would be a good idea to think about some of the questions that

	Date	Time	Transaction	Item
4121	2016-11-24	10:18:24	1954	Bread
4122	2016-11-24	10:18:24	1954	Bread
4123	2016-11-24	10:18:24	1954	Coffee
4124	2016-11-24	10:23:10	1955	Coffee
4125	2016-11-24	10:23:10	1955	Alfajores

would be asked about our data... probably by the boss. Some of them might be...

- By day, how many of each unique item was sold?
- By item, what were the top 10 sellers? What were the bottom 10?
- By day, what were the busiest times?

Before we can answer these questions, we have to come up with a plan for each. So, let's start with question #1...

By day, how many of each unique item was sold?

We know that our data is broken down by date, time of each sale (transaction) and each item sold. In addition, each sale has a unique transaction number that is duplicated if there were multiple items in that sale. For example, let's look at two sales (shown above).

Sale #1 (transaction 1954) was completed on 2016-11-24 at

10:18:24, and was for three items, two bread items and one coffee.

Sale #2 (transaction 1955) was completed on the same day at 10:23:10, and was for two items.

So how would we structure our research to accomplish the task? If I were to simply look at a single day, I would get all of the records for the day in question and sort the records by the Items sold. I would then count each unique item that was sold for that day. Using the five record set above, it would look something like this...

Date	Item	Count
2016-11-24	Bread	2
	Coffee	2
	Alfajores	1

Or to put it another way, I'd group the records by Date, then by Item and count (and record) each occurrence of the unique item.

So, how would we get from the output of a simple set of records

to a command set that gets us what we want for the full data set? The key is in the phrases 'group' and 'count'. There are helper functions in Pandas that accomplishes each of the two phase part of the task. The first is 'groupby' and we have already used the other, 'count'.

#1 - By Date, show how many of each item were sold...

produces a Series Data object

```
byDate =
df.groupby(['Date', 'Item'])['Date'].count()
```

So now, we know how to get the data for the boss for question #1. How about question #2...

#2 - By item, what were the top 10 sellers? What were the bottom 10?

Again, we want to find the top 10 sellers as well as the bottom 10. Here we want to groupby Item, counting each Transaction number within each group. Then we want to make sure the items are sorted from hi to low. The .head() and .tail helper routines will give us the answers we need.

By item, what were the top 10 sellers? What were the bottom 10?

```
sorteditemcount2 =
df.groupby('Item')[['Transaction']].count().sort_values('Transaction', ascending=False)
```

```
print(sorteditemcount2)
```

```
print(sorteditemcount2.head(10))
```

```
print(sorteditemcount2.tail(10))
```

#3 - By day, what were the busiest times?

Once again, we can group by data and time, then count the number of transaction items.

```
df.groupby(['Date', 'Time'])[['Transaction']].count()
```

```
Transaction
Date      Time
2016-10-30 09:58:11    1
           10:05:34    2
           10:07:57    3
           10:08:41    1
           10:13:03    3
           10:16:55    3
           10:19:12    4
...
...
2017-04-09 10:08:23    2
           10:36:11    1
           10:39:07    2
           10:52:02    3
```

```
11:14:28    1
11:17:43    2
11:22:01    1
```

[9531 rows x 1 columns]

So now we have answers for the boss and still all of the work could have been done within the Python Shell. I have created a simple program that contains all of the things that we did in one easy-to-see file. You can find it on pastebin at

<https://pastebin.com/uG1QSkmN>.

Next month, we'll continue dealing with Pandas and Python, this time looking at a different dataset. Until then, have fun!



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.



HOW-TO

Written by AuntieE

Run Ubuntu On An Honor 5C

My Honor 5C is over two years old and runs Android 7.0, Nougat; it works beautifully. But, having read in the News of Issue 138 that it is now possible to run Ubuntu on your Android telephone, without rooting it first (see page 12 of that issue on "Using UserLAnd"), I decided to try it out. Notice that I am willfully ignoring the old adage 'If it works, don't fix it', although I do hope that, after my trials (in all senses of the term), my phone will still work as well.

When I went to the Play Store and typed in Ubuntu, I got a list of possibilities that included Ubuntu for Android, Ubuntu Touch, and Ubuntu Launcher, which proposed, mainly, themes and icons. That being said, Ubuntu for Android proposes a Complete Linux Installer (from Zpwebsites, with 3.8 stars), and Debian noroot (by pelya, with 4.1 stars). Just below that, I found AnLinux: Run Linux on Android without Root Access, from EXA Lab, with 4.3 stars (53 reviews). Hmm... The last sounds enticing. What about UserLAnd,

though? It finally showed up when I searched with "ubuntu os for android no root," although AnLinux came first on the list. UserLAnd from UserLAnd Technologies LLC was well down, but had 4.4 stars, with 84 reviews.

The question in my mind is, Will there be a GUI or will it be "only" the terminal, as is possible in Windows 10? AnLinux says you need Termux (also available on the Play Store) AND you can "even run...Xfce4 Desktop Environment!!!" Back to UserLAnd, which says "Run full Linux distros

or specific applications on top of Android." The pictures do show a fairly normal desktop:

The installation is only 2.75 MB and took just a few seconds with normal WiFi. You then get a choice of "Apps" including Ubuntu. I selected Ubuntu, of course, and, when invited to do so, I put in a username and password as well as a VNC password. My telephone now shows that UserLAnd is running a background service and downloading things. The download took about 6 minutes, then the installation began, and, all of a

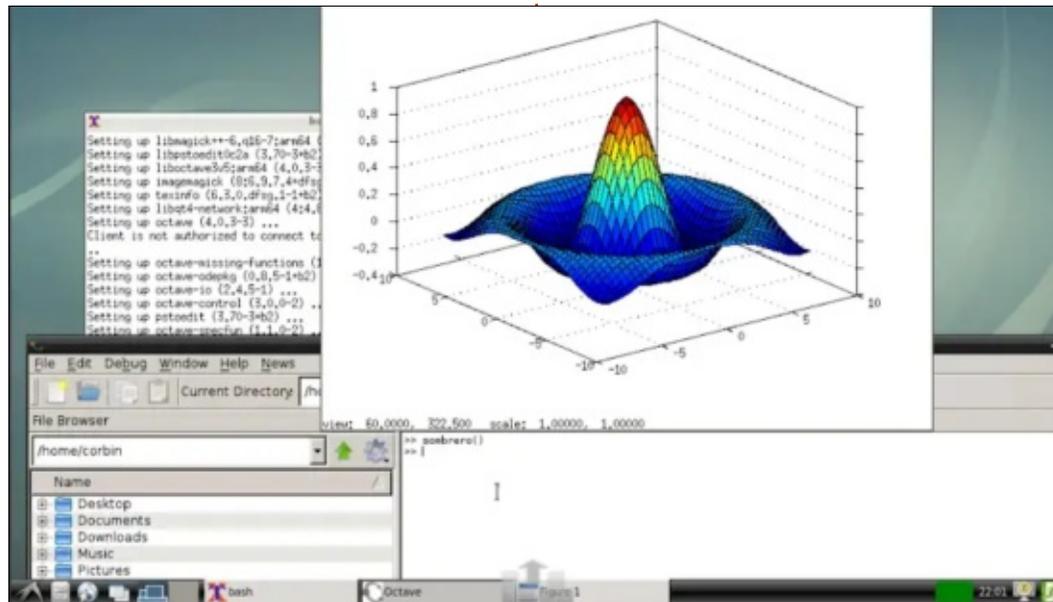
sudden, I found I must download and install bVNC: Secure VNC Viewer (7.22 MB and almost instantaneous to install). But it couldn't connect at first, and, once it apparently connected, all I had with UserLAnd thus far was a terminal...

Into which I typed:

```
sudo apt-get update
```

Now it was getting all kinds of Bionic Beaver files (?) or "ports"! Well, I definitely wanted a GUI, so I typed in "sudo apt-get install xfce" and it didn't find the package. Next I tried the same thing with "mate". It told me something like replacing mate with mate-desktop-environment, and then went to work on that. I wasn't sure I was doing things right, but I did manage to get back into Android when I tried... Now UserLAnd asked me if I wanted to continue with Mate and I said Yes. It kept doing things and I still had access to the telephone...

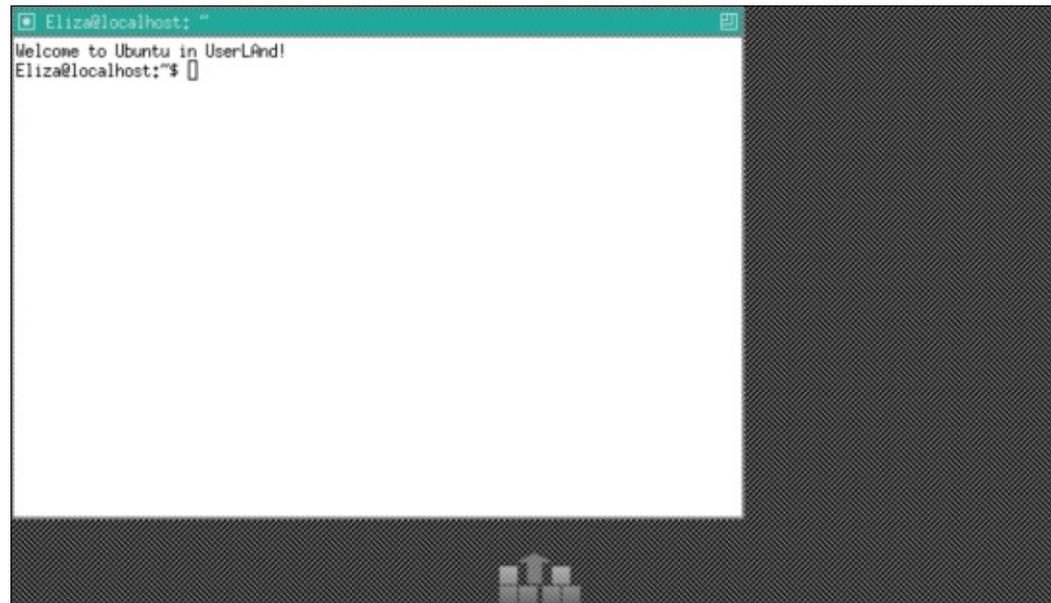
When I woke it up, I had a



message “UserLAnd is running a background service.” And then Android also decided to update a few things as well. When I checked again, UserLAnd’s background service had been running for 45 minutes...

When it stopped running, I went back and found only a terminal, which didn’t recognize the command “mate”, so I typed “exit” and ended up with nothing but a keyboard, which I found quite daunting. Despite the presence of a “Super” key, I was unable to get the terminal again. However, after I rebooted my telephone, there it was again. I was in my home folder, but would like to get to the desktop environment I installed previously. In the course of my research on doing just that, I came across an interesting article that tells you how to install an X server in the Bash shell you get with Windows Subsystem Linux – for Windows 10, it suggests Xming. <https://www.howtogeek.com/261575/how-to-run-graphical-linux-desktop-applications-from-windows-10s-bash-shell/> What I needed, I thought, was an X server for Android.

There are even X servers on the



Google Play Store. The first on the list is X server from Darkside Technologies Pty Ltd, with 3.9 stars, but there seem to be a few bugs. The second is Xserver XSDL from pelya with 4.3 stars from 831 reviews. I thought I’d try that first. It took about 1 minute to download and install. But it didn’t change anything.

Back in Bash, in my home directory (~) I tried “dir”, but there was nothing in it except my name. So I went into “/” and, with “dir”, found bin, data, etc, host-rootfs, media, opt, root, sys, usr, boot, dev, home, lib, mnt, proc, run, sdcards, support, tmp, var. I then went to /usr and saw that it contains bin games include lib,

local, sbin, share, and src. I then decided to uninstall everything and try again another day. The whole thing was using up internal space and a lot of my phone’s RAM. Would it be worth it?

I contacted UserLAnd directly and got some good tips from Corbin – to whom I owe very sincere thanks – as well as the URL of a GitHub page where you can report issues (and see how those that have been resolved were). So I was ready to try again... This time, I downloaded an Xserver AND bVNC before downloading UserLAnd.

But my next try yielded no better results, so I wrote another

email, this time to support@userland.tech, the address I suddenly saw at the bottom of the ratings on Google Play. Still, it was Corbin who answered my precise questions promptly and efficiently, suggesting lxde-core. I learned, for example, that Android can kill Background Services (which is what the install of lxde-core was) for lack of memory and that was probably why the download had stopped when I received an SMS. When I started up UserLAnd again, though, and typed in ‘sudo apt-get install lxde-core’ again, I saw that I could simply continue the download and was given the code to do so.

Tip: CLEAR YOUR MEMORY on Android before starting with UserLAnd and bVNC.

Despite doing lots of research on Google and the Ubuntu Forums, I couldn’t find how to get a terminal again, once I’d exited the first, without rebooting the phone – until Corbin gave me the answer: “You can long-press on the Ubuntu app in UserLAnd and kill it, and then start it again by clicking on it.”

He also told me that, because I was in VNC mode I should be able to reach the lxde desktop with a long-press – the equivalent of a right-click – on the App (in the UserLAnd menu, I think) to “Stop App” and then, when I started it again with a simple press/click, it should just launch into lxde. Once I had gotten this helpful advice, I was ready to try again. I uninstalled both UserLAnd and bVNC, I wiped the memory of my phone and even turned it off. I put my laptop on a cable connection to the Net so nothing, other than my new installs, would be using the WiFi. Then I turned my phone on again and installed UserLAnd, getting bVNC only when UserLAnd asked that I do so. I connected to Ubuntu as AuntieE and found myself in the terminal again (AuntieE@localhost). I installed lxde-core, this time with no interruptions. I stopped the app and, when I started it again, I could see it taking longer than usual and was most optimistic about my landing on the lxde desktop, but no. At various times, I would get either of these two message errors, saying, basically, that bVNC couldn't connect. But, when I tried again, despite the message, whichever it was, there was the

Terminal with AuntieE@localhost, but not the desktop, although I know it's installed.

I think I can avoid disturbing Corbin further until I have written an email to the contact for bVNC (iordanov@gmail.com) to ask him/her for suggestions, because I think it must be a problem of connecting – I have a Freebox... On the other hand, my phone has no firewall and bVNC never asked me for the WiFi password. I do have AVAST on the phone. Apparently, some people have had problems with Avast, others have had none, so, just in case, I uninstalled it, but that didn't change anything. And neither did re-installing it as had been the case for some people.

While I waited for iordanov to answer my email (to date, he or she still hasn't), I thought I'd see about starting lxde from the command-line, rather than by

closing it in UserLAnd and opening it again (since that didn't work).

Today, I updated and upgraded my Ubuntu, then began work on lxde, first with the help of this site, by Guillermo Garron <https://www.garron.me/en/go2linux/how-to-install-startx.html>, written in 2008. Using his information, I did `sudo apt install xinit`, then installed nano with which I made the `.xinitrc` file with just one line : `exec start lxde`. But when I typed in `startx` again, the connection to the X server was refused. Now I'm using the help of a different site, <https://superuser.com/questions/671169/starting-and-stopping-x11-and-lxde-from-command-line>, which is newer – 2013, revised in 2015. I checked and made sure that lightdm actually exists in my file system: `/etc/init.d/lightdm start`. It does exist, but in `/etc/`, there is no folder for `init.d`. So I `cd`'ed to `/etc/`, did `sudo lightdm start` and got this

error message (see below).

Note that lightdm IS present in the `etc` folder. The message is the same received by someone with Ubuntu in a VM on Windows XP, although I don't get more info about the system bus, as that person did.

The source for that is at: https://www.reddit.com/r/linuxquestions/comments/7uh0kz/ubuntu_is_failing_to_boot_after_an_xp_virtual/

with a similar reference (from the same person, I'd guess) here: <https://www.linuxquestions.org/questions/linux-newbie-8/ubuntu-is-failing-to-boot-after-an-xp-virtual-machine-crashed-my-system-4175622830/>

Could it be a question of the available RAM on my telephone? (Or is the RAM in bVNC what matters?) I have 3.64 GB free in the internal memory and 17.47 GB on the SD Card. There are a total of 1.7 GB of RAM, with only 538 MB free. And that's not much! Android OS itself uses 743 MB. Even after “freeing RAM” with Avast, there are still only 538 MB free. I just forced Avast to stop and will now

```
dropbear      libblockdev  python3.6    usb_modeswitch.conf
dropbear-initramfs  libnl-3      rc0.d        usb_modeswitch.d
emacs         lightdm      rc1.d        wpa_supplicant
environment   lintianrc    rc2.d        xdg
fonts         localtime    rc3.d
fstab         logcheck     rc4.d
AuntieE@localhost:/etc$ sudo lightdm start

** (lightdm:16060): WARNING **: 09:34:35.300: Failed to get system bus: Could not connect: No such file or directory
AuntieE@localhost:/etc$
```

do a complete reboot. And now I have only 41 MB more, or 579 MB of available RAM.

By that time, I'd registered on GitHub and put an "issue" on the UserLAnd page (<https://github.com/CypherpunkArmy/UserLAnd/issues/>) that pretty much uses the above information. Except that, when I read through the list of already published issues, I saw that some people succeeded in connecting to a desktop with SSH. I also saw that other people had done better with VNC's other than bVNC. After reading about SSH, I feel truly out of my depth. I guess the phone itself would be the client and UserLAnd Ubuntu, the server, but I don't understand how to configure them. I installed ConnectBot (which is what UserLAnd Ubuntu took me to as soon as I selected SSH instead of VNC in the App Info section available with a right-click), and it does allow for password authentication, rather than worrying about public and private keys. For the time being however, SSH in command-line is more than I can handle, all the moreso that I believe you need a keyboard with an Alt button on your phone to be able to use it. Because of those

complications, I went back to VNC with UserLAnd intending to uninstall bVNC and try the other VNC Viewers one after another!

The next day, I proceeded with uninstalling bVNC as planned and installed VNC Viewer instead. But when I tried to start Ubuntu in UserLAnd, it requested bVNC anyway. I then uninstalled UserLAnd and reinstalled it, but, even with VNC Viewer, it insisted on bVNC. So I went with bVNC. Now, I've gotten to Bash and am doing apt install lxde-core. I believe that UserLAnd was updated; at any rate, there was something new that time: the titles of the downloads were color-coded a fluorescent yellow with progress information given to the left and the Progress information for the actual installation was highlighted in green. I was hopeful ... Another positive point was that I got a phonecall while lxde was installing AND the UserLAnd background service was NOT interrupted. But I had been too hopeful: back in the UserLAnd app, I stopped the Ubuntu app. Then I started again (in other words, after the install, I restarted the "computer," hoping to reach the desktop), only to get another

"Error! Connection failed..." Still, generally speaking, since that latest install, the shell itself was working better, I think. I just tried sudo lightdm start again, but got the same message "Failed to get system bus: Could not connect: No such file or directory." The bottom line seems to be that, when bVNC refuses to connect to the desktop, I can still get into the terminal.

Another day, another try : no comments on GitHub about my issue, SO I decided to install AnLinux and give that a try. It works with Termux and once I'd installed that and opened AnLinux, it took me through the process of, first, creating a shell (as root, by the way – no need of sudo), then of creating an Ubuntu distrib. It recommended xfce4, so that's what I chose. Once Termux had done its stuff and also had me select a language and the disposition of my keyboard (which took a while and necessitated entering the same information several times), it asked for a password, which I gave and verified, and then told me that xfce4 was running and that the way to get it to stop was to run vncserver-stop. It told me that I could use the server I wished

(bVNC, what else?) and told me the port I should connect on. I put that in the port zone of bVNC, pressed on Connect andThere I was, still as root, on a full desktop! I must admit that it was definitely easier, as well as more successful, than UserLAnd had been thus far.

I clicked on the default config, checked what was available (nothing, really, beyond a terminal), admired the dock at the bottom of the screen, and went back to the home screen on my telephone. Obviously, Termux must have something going for it. And, just as obviously, using it, plus AnLinux to get things started, plus bVNC to connect to the desktop is, in a way, more complicated than just UserLAnd... In addition, apparently – although I may have done something wrong – when I went to Termux today and typed in vncserver-start, the command was not found. Then in AnLinux, the only option I had, as far as I could see, was to go through the process another time, which, on a daily basis would not be ideal.

So, the next day, I started over again with UserLAnd and bVNC and tried installing the xfce4 desktop instead of lxde. Perhaps

HOWTO - UBUNTU ON AN HONOR 5C

that would solve (what I thought might be) my memory problems. Something interesting showed up: with this new install of UserLAnd, the choice of full distributions is now between Debian, Kali and Ubuntu. Having chosen the latter, I put in my username and password, and a password for the VNC, and then, as before, it fetched everything necessary for the shell.

Once in the shell, I typed in `sudo apt-get install xfce4`. And waited. At one point, I caught a glimpse of a problem with a and/or the system bus, which made me think of the message I had gotten when I tried to start `lightdm` in `lxde` from the terminal. So, I was doubtful. As per Corbin's instructions, I stopped the App in UserLAnd, then started it again. Oh dear: I got a warning Could not connect! Acknowledge, which I did, then clicked on Ubuntu in UserLAnd, expecting to see a terminal. BUT, I got the `xfce4` desktop with `AuntieE@localhost` in the Xterm. I was thrilled!

Here's a quick recap :

- Install UserLAnd from the Play Store and open it.
- If the Ubuntu distribution automatically sends you to SSH,

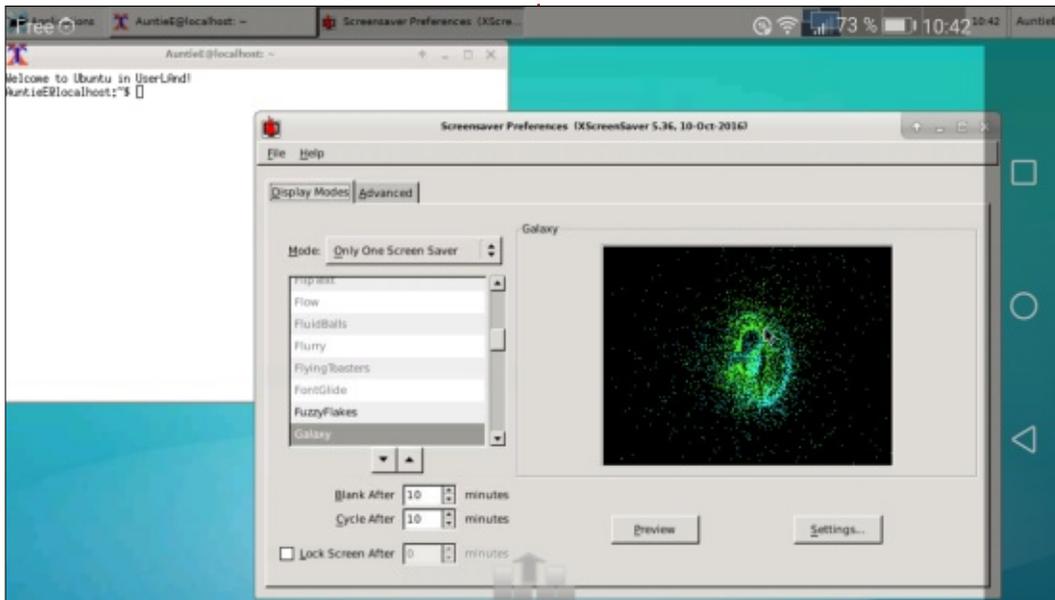


right-click the title (long press), and, in App Info, choose VNC.

- Give your username and password, plus a password (which must be between 6 and 8 characters) for the VNC server.
- UserLAnd will automatically invite you to download `bVNC`. Start it and provide the same password again.
- Go back to UserLAnd and restart Ubuntu. In the resulting terminal,

type in `'sudo apt-get install xfce4'` and wait, roughly half an hour, while it works.

- Return to UserLAnd, right-click the Ubuntu app and click on Stop App.
- Clear your memory of whatever's working (I'm not absolutely certain this is necessary).
- Open UserLAnd and click on Ubuntu. When you do, you may see what looks like the same-ol', same-



ol' UserLAnd terminal. But if you wait a couple of seconds, you will find yourself in `xfce4`.

I chose the default config and moved up in the screen and found that AuntieE was connected to the Xterminal (with Applications available at the top of the screen)!!! It seems that it MAY HAVE BEEN a problem of memory and NOT a problem with Huawei/Honor after all. What is more, my access to the desktop seems permanent. All it takes is a slight wait – even turning the phone off and on again.

My efforts have paid off. Perhaps my own experience will help those of you who, like me, proceed by trial and error, to get UserLAnd Ubuntu on your phone with a minimum of hassle.

Resources:

<https://github.com/CypherpunkArmy/UserLAnd/issues/> This is the place to go for fast and efficient answers to your questions. You can also make suggestions or requests here.

support@userland.tech

Additional information from Corbin: *UserLAnd* is now on *f-droid*!



HOW-TO

Written by Erik

Use Darktable For Photography

Version: 2.4.4

Website:

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

NOTE: to install, use the Ubuntu software Centre.

In this article, I plan to give you the penny tour of a great RAW photo editor Darktable. Maybe if there is demand, we can make it into a tutorial.

Lots of people use this stunning piece of software only as a photo manager. You may want to compare it to Adobe Lightroom,

but it actually has more (GASP!) tools than Adobe Lightroom.

How about we look at Darktable now.

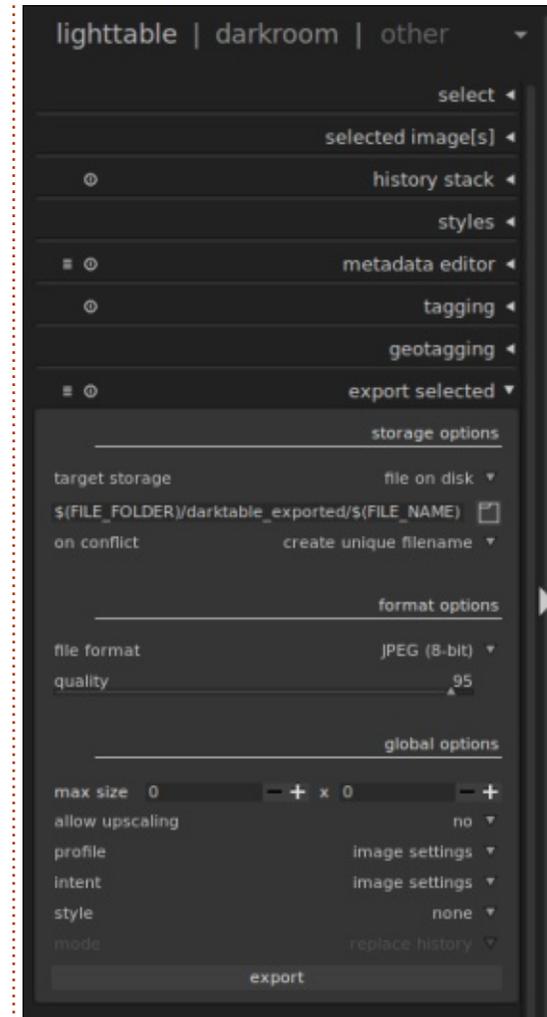
When we open Darktable, the default view is lighttable (see green arrow in image shown below). This is where you manage your photos and where lots of people stop. Next to lighttable, you have darktable, as well as 'other'. Clicking on the 'other' tab drops down another list we can get to at another stage, but let's take this one step at a time.

As you can see, the images have CR2 stamped on them, denoting RAW images. The ones with JPG stamped on the background are jpegs. The nice thing about RAW editing is that, when you take photos in one location, you can edit one and then apply those edits to multiple images. When you are done editing, you can export your images to other formats by clicking on the export command on the right-hand-side (RHS). As you can see in the illustration shown right.

Let us move to the next tab, Darktable. This is where you do all your editing. Double-clicking on any image in lighttable view, will immediately switch you to this view. This is the editing tab. You can change whatever you like and it will not affect your original RAW photo.

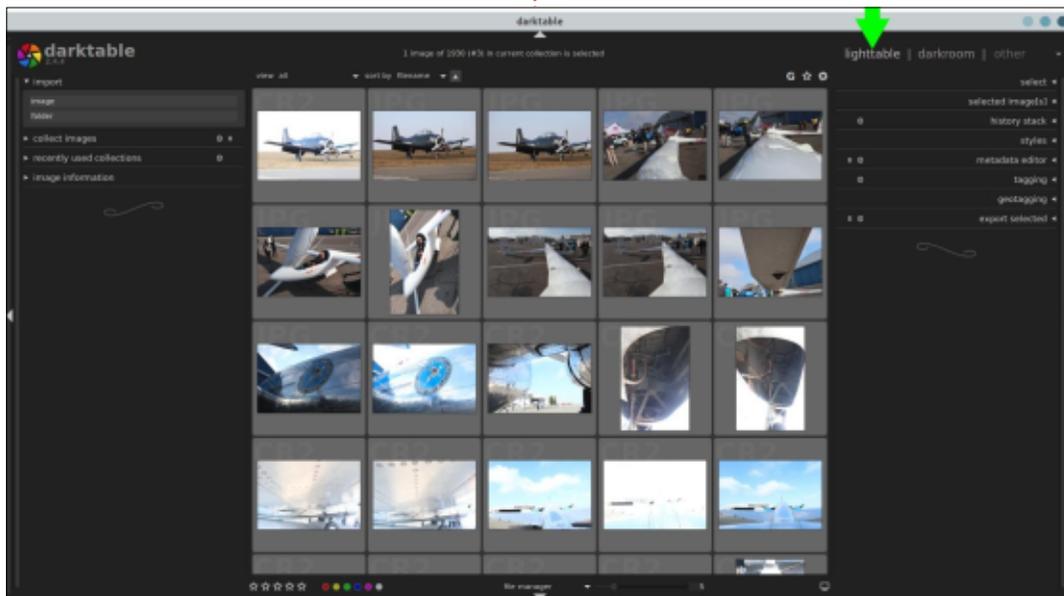
Just like those washing powder ads, this is where whites get whiter and colors brighter.

All of those changes are saved to a file and your original can be



made to look different again.

The last tab 'other' drops down with map and slide-show. I imagine everyone knows what those are. The first one brings up a world



HOWTO - USE DARKTABLE

map. This is for Geotagging. It is not something I use at all, but, it is there if you want it. The second starts a full-screen slide show of your selected photos. Just be aware that this requires memory and processing power as RAW files are large.

Sometimes, you may find you cannot exit from slide-show view, that's okay. You can switch between views with the shortcut keys D and L. If you have 4GB of memory or less, please be patient with the program, it will make generous use of your swap space. (There are some settings you can look at, but more on this later). M will bring up the map and S the slide-show. Rule of thumb here is first letter of the word.

When I use Darktable on my



laptop, I find the screen real estate to be a little small. This too is not a problem as all the panels can be hidden. When you look at the edges of the screen, you will see small white arrows (triangles). When you click this arrow, it hides that pane. they are located in the middle, North, East, South, West. If

you should click the arrow again (now inverted), the panel returns. Here too, there is a shortcut key, TAB. Pressing TAB will hide / unhide all the panels at once.

When you have Darktable open, the universal drop-down menu in Ubuntu contains only quit. The

settings for Darktable are actually the little gear, just below the word 'lighttable'. I suggest you take a gander at this as there are a lot of settings. Under the 'views' setting, you will find all the keyboard shortcuts that make working with Darktable a lot easier.

Now that we have a fundamental understanding of the interface, how about we dig deeper?

If you would like to know more about this powerful program, let us know!



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



HOW-TO

Written by Mark Crutch

Inkscape - Part 81

Over the past few months, we've looked at various tricks and effects that can be achieved when using an SVG file in a web page via the HTML `` element. But using an SVG like that is subject to various security restrictions imposed by the browser, preventing you from referencing external files (fonts, css, linked bitmaps) or using JavaScript. So now we're going to move on to alternative methods of using SVG in a web page, which offer a little more scope for customisation.

This instalment will look at a little CSS trick for inheriting a color from your HTML page into your SVG. Unfortunately, the laws of CSS scoping mean that this one works only if you inline your SVG code right into your HTML. This requires some care and attention, but isn't really that difficult, as you can largely copy and paste the contents of your SVG file from within a text editor. It does bloat the size of your HTML, but, conversely, you make a saving in not having a separate SVG image

to download. Let's start with a basic HTML page (top right).

Now we need some SVG to put into the file. For this demonstration, I created a simple rounded rectangle in Inkscape, then saved it as in "Optimised SVG" format to clear out a lot of the unnecessary metadata and other content. Even then, I was able to manually trim the resulting file a little further, as the namespace declaration isn't required, and I was left with a single `<g>` wrapping the content which serves no purpose in this case.

One option I did select in the save dialog was to "Convert CSS attributes to XML attributes". This breaks down the otherwise densely filled "style" attribute into a series of individual presentation attributes. You don't have to do that – this technique works just as well with the style attribute, or even a `<style>` section elsewhere in the XML – but having the styling split into separate attributes makes it a little clearer to explain what's happening.

```
<!DOCTYPE html>

<html>
<head>
  <title>SVG tutorial</title>
</head>

<body>
  <div>
    <!-- SVG goes in here -->
  </div>
</body>
</html>
```

The result of the export, manual trimming, and reformatting to fit the magazine, was the chunk of SVG shown below.

Copying this code and pasting it inside the `<div>` in the HTML file results, as you might expect, in the browser drawing a rounded

rectangle, with a dark red fill. No surprises so far.

The next step is to throw away the "color" attribute entirely: it's not needed in SVG, where we already have fill and stroke colors, but if it's left in place it will affect the CSS cascade and prevent the effect we're trying to achieve.

```
<svg width="250" height="250">
  <rect
    x="6" y="6"
    width="239" height="239"
    ry="44"
    color="#000000"
    fill="#800000"
    stroke="#000000"
    stroke-linejoin="bevel"
    stroke-width="8"
    style="paint-order:normal"
  />
</svg>
```

HOWTO - INKSCAPE

That effect is to get the SVG to use the current font color from the parent HTML page. We'll use it for the fill in this case, so that our rectangle basically becomes a giant color swatch displaying the browser's font color. To do this, we simply have to replace the value of the "fill" attribute with the keyword "currentColor" (note the spelling and capitalisation). Code is shown top right on this page.

Reloading the page will most likely show the rectangle filled with black. What else were you

expecting? Black is the default color for text in an HTML page if you haven't styled things differently. But we can change that by setting the CSS "color" property on the <svg> element or, crucially, one of its ancestors. For example, let's change the <div>:

```
<body>
<div style="color: red;">
<svg width="250"
height="250">
  ...
```

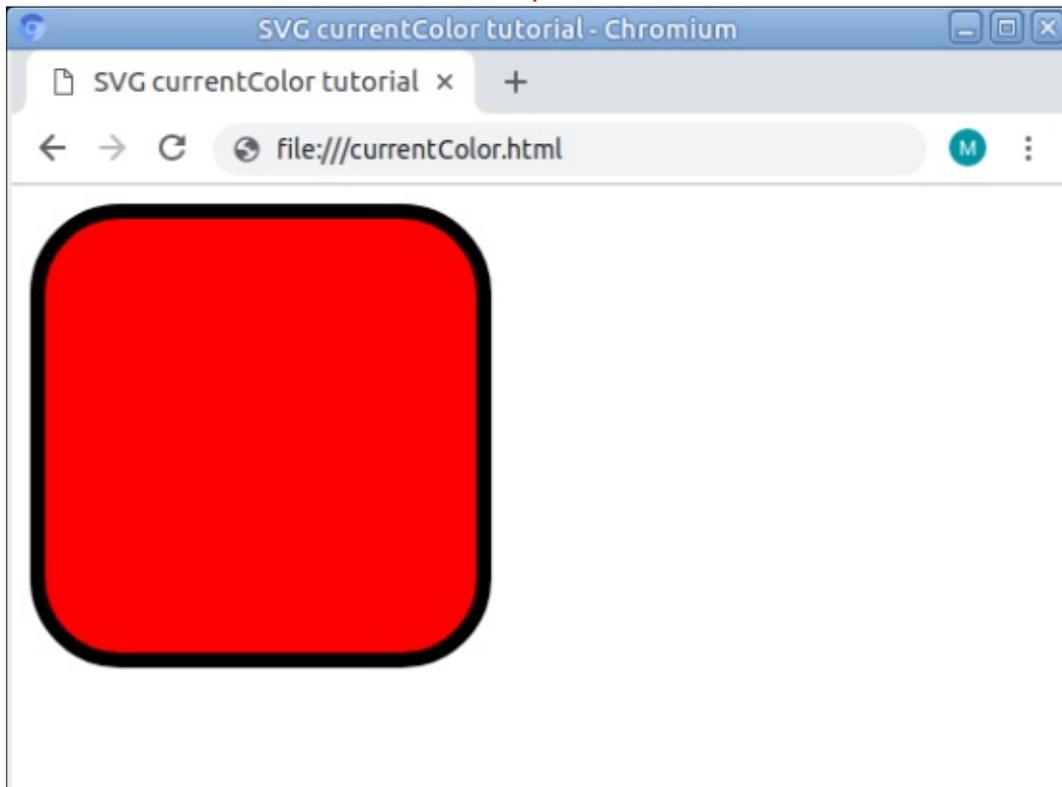
Now reloading the page in the

```
<svg width="250" height="250">
  <rect
    x="6" y="6"
    width="239" height="239"
    ry="44"
    fill="currentColor"
    ...
```

browser gives the result shown below left.

You'd be forgiven for not getting terribly excited by this, but take a step back and think about what you've achieved: you've set a color inside your SVG content based on a CSS value in your HTML. Still not getting it? Let's add an ID to the <rect> element, then create a couple more divs (below).

In case you hadn't guessed, the <use> element lets you re-use a snippet of SVG elsewhere, by referencing its ID in the fragment identifier part of the URL in the "href" attribute. In this case, we're referencing an element in the same file, so we don't need the full URL – just the fragment identifier (the ID preceded by a hash). So this code just tells the browser to render three copies of our <rect>,



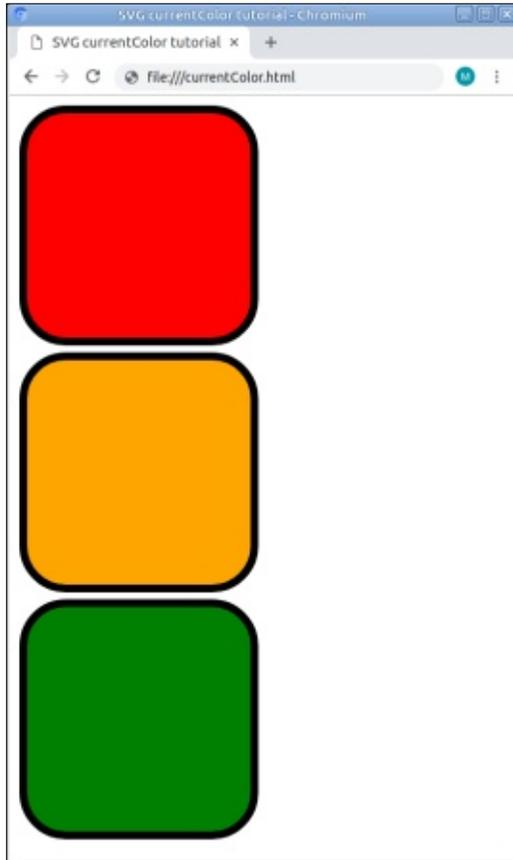
```
<div style="color: red;">
  <svg width="250" height="250">
    <rect id="rect1"
      ...
    </rect>
  </svg>
</div>

<div style="color: orange;">
  <svg width="250" height="250">
    <use href="#rect1" />
  </svg>
</div>

<div style="color: green;">
  <svg width="250" height="250">
    <use href="#rect1" />
  </svg>
</div>
```

HOWTO - INKSCAPE

but the CSS in each <div>, combined with the use of `currentColor` in the SVG, results in some rather cubist looking traffic lights:



Let's put this to a more practical use. How about icons for a website? Here (shown right) I've created four icons, each in a separate layer in Inkscape, and given each layer a descriptive ID. The details of the paths are omitted for brevity. The "color"

attributes are removed, and the fill or stroke color set to "currentColor" as necessary. Then the whole SVG block is hidden using CSS in the <svg> element.

Now each individual icon in the set can be displayed on the page via a <use> element, with its size and color set on the SVG element that contains the <use>, or even on a parent element above that – as demonstrated with these couple of sections (next page, top right).

Of course the color could be set at a much higher level on the page, so it needs to be set only once for the whole page – or you could use CSS variables for the same effect. Now a change to a single color will alter all the icons used on your page: you've just created a means of applying a theme. Because the CSS "color" property also affects the text on the page, you can ensure that your icons are kept in sync with the text, whichever theme is selected. As a demonstration, suppose we use a block like this several times (next page, bottom right).

For each copy of this block, we'll change the color values in the <div>. A little extra CSS adds a

```
<svg viewBox="0 0 4.23 4.23" style="display: none;">
  <g id="plus">
    <path d="..." fill="currentColor" />
  </g>

  <g id="cross">
    <g fill="none" stroke="currentColor" stroke-linejoin="bevel" stroke-width=".5">
      <path d="..." />
      <path d="..." />
    </g>
  </g>

  <g id="home">
    <g fill="none" stroke="currentColor" stroke-linejoin="bevel" stroke-width=".5">
      <path d="..." />
      <rect x="1.63" y="2.42" width=".98" height="1.32" />
    </g>
  </g>

  <g id="tick">
    <path d="..." fill="none" stroke="currentColor" stroke-linejoin="bevel" stroke-width=".5" />
  </g>
</svg>
```

border that also has its color set to "currentColor", and for some of the copies we'll even put in a "background" property to produce an inverted look. Here's the result of a few minutes of copying,

pasting, and editing some CSS – all with only a single copy of the SVG icons, each referenced multiple times:



I'll confess this trick of using `currentColor` in SVG is a limited one. The SVG has to be inlined with your HTML, and you can change only a single color. But, with a cleverly designed SVG file, it's possible to give the impression of something more sophisticated – by masking the colored element with a gradient, or using a filter to alter the color, for example. There is one interesting thing to note about this technique: it will work in Internet Explorer right the way back to version 9! If you need to theme some icons on a website, but still need IE support (so no CSS

variables), this might be just the trick you need.



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

```
<div>
  <svg viewBox="0 0 4.23 4.23"
    style="color: red; width: 25px;">
    <use href="#plus" />
  </svg>
</div>

<div style="color: orange; width: 50px;">
  <svg viewBox="0 0 4.23 4.23">
    <use href="#cross" />
  </svg>
</div>
```

```
<div style="color: red;">
  Theme 1:
  <svg viewBox="0 0 4.23 4.23">
    <use href="#plus" />
  </svg>

  <svg viewBox="0 0 4.23 4.23">
    <use href="#cross" />
  </svg>

  <svg viewBox="0 0 4.23 4.23">
    <use href="#home" />
  </svg>

  <svg viewBox="0 0 4.23 4.23">
    <use href="#tick" />
  </svg>
</div>
```



In the early history of home computers many computers had complicated cable connections. Each cable was not universal and dedicated for a single hardware peripheral. Each cable was unique with pin number for each manufacturer. Yet all things changed in 1996; the Universal Serial Bus, (USB cable) became available to the public. This was the result of a collaboration between the large computer manufacturers to standardize the cable plugs.

Ajay Bhatt is the team leader that developed the first integrated circuits at Intel for the USB cable. This project started in 1994 aimed for use with Windows 95, and later iMac. The legacy-free PCs' standard started, and underneath the Apple flagship USB took off. At this time

the standard was 1.0 and the standard data rates varied from 1.5 to 12.0 Mbit/s. The new acceptance of the USB standard allowed data transfer, data storage devices, hardware connections, and device powering. The USB then had plug modifications at one side from standard, mini, and micro until 2011. These plug modifications were mostly discontinued in 2012. In 2012 the USB 3.0 became established with only 3 distinctive plugs: standard, micro-B, and type-C. The type-C is capable of 20 Gbit/s and can charge devices up to 100 watts.

There is a non-profit organization, USB Implementers Forum. It is dedicated support and further advance Universal Serial Bus. The original creators are the board members to this non-profit.

USB CONNECOR TYPES



They issue vendor certifications to hardware manufacturers. The hardware can then carry the certified USB logo.



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.



About USB-IF >

Developers

About USB-IF



Last month, we took a look at vintage console gaming with the emulators Stella and ColEm for the Atari 2600 and Colecovision. This month, we're going to set up a couple of the best game consoles of the mid-1980's home console renaissance: the Nintendo Entertainment System and the Sega Genesis.

In 1983, the home video gaming industry had one of the most spectacular crashes of any individual industry in American economic history. Sales that had hit \$3.2 billion industry-wide in 1983 plummeted to a total of \$100 million by 1985. Most people attribute this to a market glut of poor quality games, put out by fly-by-night companies, and exacerbated by the truly dreadful Atari titles 'Pac-Man' and 'E.T., the Extraterrestrial'. Atari made the inexplicable decision to manufacture more 'Pac-Man' cartridges than the existing number of Atari consoles (why?!), and 'E.T.' was so unpopular that many unsold cartridges literally wound up in a landfill (recently

determined to be located in Alamogordo, New Mexico). The negative response to these titles (although 'Pac-Man' sold extremely well, it's fair to say the game was very poorly regarded and a massive disappointment) seemed to set off a domino effect throughout the industry, resulting in massive bankruptcies and multiple companies closing in 1983 through 1985.

After their experience partnering with Coleco to license Donkey Kong onto the Colecovision console (see FCM #140's Everyday Ubuntu column for more on that particular game system), Nintendo wanted to get into the home gaming market themselves. In 1985, they released the original Nintendo Entertainment System in the North American market.

The NES wound up being a huge hit, with the fantastic 'Super Mario Brothers' inclusion as the pack-in cartridge as a major factor. Many games would come out from a myriad of publishers for the NES.

Their main competitor, the Sega Master System, had some truly outstanding licenses from Sega's parent corporation, but the first round knock-out in this battle definitely went to Nintendo. The NES's success was a huge factor in reviving the home gaming industry.

The emulator we'll use for the NES is FCEUX. It can be installed via Synaptics Package Manager (see FCM #130's Everyday Ubuntu column for more on Synaptics). Use the search function at the top of the Synaptics window and look for FCEUX. Click the checkbox to select it and then Apply to install. Like the other emulators we've covered, you'll need ROM images for the games you want to play. These are readily downloadable from multiple websites, but what is or isn't legal to do in that regard is an open question. At the very least, you probably need to own a copy of the game in question.

Once FCEUX is installed, you can search for it in the Dash to run it. Go to the Dash (first item on

your Launcher to the left of your screen). Type in 'fce' where it says 'Search Your Computer'. This should be sufficient to find FCEUX. Click it to launch. The interface is pretty sparse.

Click 'File', then 'Open ROM', and navigate to the folder where your ROM images are stored. Press the Return key to start your game, arrow keys to move, and D and F as fire buttons, and you can heroically once again rescue Princess Toadstool from Bowser!



HOWTO - EVERYDAY UBUNTU

After the NES trounced the competing Sega Master System in the marketplace, it was time for round 2 of the mid-1980's home game console wars, and Sega had an answer: the Sega Genesis. There was no question that Sega had a huge comeback, as the Genesis definitely out-performed the next-generation Super Nintendo in their head-to-head battle.

The Genesis has a number of emulators available on Linux, and we're going to go with a CLI, or Command Line Interface, application called DGEN. We'll install DGEN using apt-get. Start a Terminal session (look up 'term' in the Dash if you don't already have Terminal on your Launcher). In the Terminal, type in:

```
sudo apt-get install dgen
```

and hit Enter. Respond to any prompts, including the password request.

Now, this is an older game emulator and does not have a GUI, much like last month's ColEm Colevision emulator. Open File Manager from the Launcher and go to the folder where you have

stored any game ROM files that you have downloaded. Right-click a blank area in the Files pane, and select Open In Terminal. This will open a Terminal session with the directory location already set to the current directory. Type in:

```
dgen filename
```

where filename is the name of the ROM file you want to run (case sensitive!), then hit Enter. The DGEN emulator will open with the

desired game loaded and ready to play:

Use arrow keys to move, and D and F keys as fire buttons. Defeat Dr. Robotnik and rescue the fluffy creatures!



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.



OTA-7 is the release where we take a breath and focus on getting the launch just right. We tracked it with a new tool and focused on making this a more disciplined release - only bugs which were assigned to a developer or fixed with an existing PR were added to the board.

KEYBOARD LOVE

Kugi Eusebio contributed support for keyboard theming in this cycle. This improvement enables users to change the color scheme of the keyboard. Nine preset themes are included in a range of light or dark, bordered or flat.

Themes can be selected in



Settings -> Language & Text -> Keyboard theme. You can take a shortcut to Language & Text by long-pressing on the "Language" button on the keyboard and then selecting Settings.

Vincas Dargis contributed a keyboard layout for Lithuanian as well. Thank you, Vincas, for your first code contribution to the Ubuntu Touch operating system!

There was also a fix for the Swiss-French keyboard layout, which previously failed to load.

MORPH BROWSER

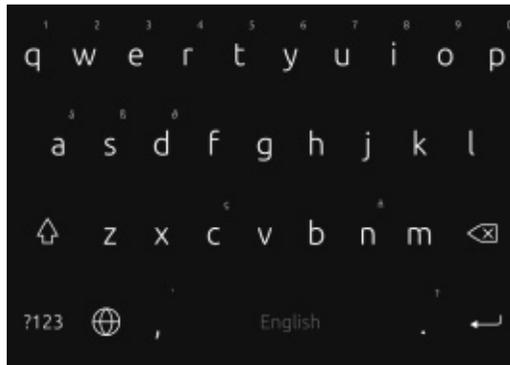
The Morph Browser has seen a host of improvements thanks to Chris Clime. His contributions



include:

- Fix problem where closing a single browser window would close the browser: [ubports/morph-browser#131](#)
- Fix problem where closed windows would be reopened in new browser sessions: [ubports/morph-browser#131](#)
- Add ability to close the current tab from the tab switcher view: [ubports/morph-browser#131](#)
- Prevent the device going to sleep while a video is playing: [ubports/morph-browser#132](#)
- Fix desktop mode not being respected in first tab: [ubports/morph-browser#120](#)
- Add options for default and per-page zoom: [ubports/morph-browser#89](#)

These changes make Morph a



seriously useful browser for most day-to-day tasks and truly demonstrate the power of having a supportive community behind a project. With that and the right tools, we have achieved all of this in just a few short months.

UPDATES FOR NEXUS 4 AND NEXUS 7 2013 [WIFI ONLY VERSION]

If you've previously had trouble installing Ubuntu Touch on a Nexus 7 2013, Wi-Fi only, this update overcame that issue. There was a quiet hardware revision to the Nexus 7 2013 that introduced a new memory chip. This change happened around the time that Google shipped Android 5.1 for the Nexus 7, so most devices which shipped with Android 5.1 had this revision. Ubuntu Touch was not updated to support that chip until now.

The Nexus 4 also had a fix to enable kernel modules which were not included with OTA-5 and 6. This means that more cryptographic



UBPORTS DEVICES

ciphers are now available for use on the Nexus 4.

PORTERS REJOICE!

As mentioned at the very end of the notes on the OTA-6 release, OTA-7 features a new and updated Libhybris!

Libhybris is the tool we use to "translate" between Android drivers and a GNU libc-based userspace. Put simply, it's the magic that lets us do wondrous things. This update brings us in line with the latest upstream source, allowing us to bring new stability fixes and performance improvements in quickly. We also have the new Android "N" linker, enabling Ubuntu Touch to use most drivers from Android 7.1 devices.

We've also introduced a new android-caf Mir platform. This allows Mir to use Qualcomm display drivers on Android 7.1.

Both of these changes make it much easier to port Ubuntu Touch to new devices using Halium.

CHANGELOG

A full changelog for this release follows. This does not include fixes and improvements gained from upstream Ubuntu, just the changes made by Ubuntu Touch contributors during this cycle:

- Add themes to on-screen keyboard: [ubports/keyboard-component#57](#) and [ubports/system-settings#117](#)
- Fix issue with mobile network dropping after a call on Pro 5: [ubports/telepathy-ofono#3](#)
- Fix a problem where low-RAM devices (Bq E4.5 and E5) would run out of memory, killing Unity8: [ubports/lxc-android-config#20](#)
- Fix issue causing Swiss-French keyboard not to load: [ubports/keyboard-component#61](#)
- Add Lithuanian keyboard layout: [ubports/keyboard-component#55](#)
- Switch online account logins to use QtWebEngine, breaking Oxide dependency: [ubports/ubuntu-system-settings-online-accounts#6](#)
- Upgrade to upstream Libhybris: [ubports/libhybris#7](#)
- Add support in Mir for Android 7 on Qualcomm phones: [ubports/mir#12](#)
- Morph-browser
 - Fix problem where closing a single browser window would close the entire browser:

[ubports/morph-browser#131](#)

- Fix problem where some closed windows would be reopened in new browser sessions: [ubports/morph-browser#131](#)
 - Add ability to close the current tab from the tab switcher view: [ubports/morph-browser#131](#)
 - Prevent the device going to sleep while a video is playing: [ubports/morph-browser#132](#)
 - Fix desktop mode not being respected in first tab: [ubports/morph-browser#120](#)
 - Add options for default and per-page zoom: [ubports/morph-browser#89](#)
- Fix an issue where some drivers and cryptographic ciphers weren't available on the Nexus 4: [ubports/ubuntu-touch#996](#)
- Enable installation of Ubuntu Touch on those Nexus 7 2013 Wi-Fi handsets which shipped initially with Android 5.1: [ubports/ubuntu-touch#300](#)



Follow the white
polar bear...

Now why does that seem
familiar...?

```
ping@ping -> follow the white polar bear...
```

THE DAILY WADDLE
by: ErikTheUnready





MY OPINION

Written by Derek Wallace

I waited for almost a week, begging on hands and knees to get my beloved laptop back from my kids. Well, not really, but it really was a week that I waited to get it from them. Afterwards, the Grub Menu was missing. The laptop would only go straight to Windows 10.

The Grub Menu is that menu you see on a dual boot that gives you the choice of running, for instance, Ubuntu or Windows 10. It was missing.

I was upset thinking my children had done something to mess up my laptop. I always say, though, that before you ask someone, you should Google. I found it was not an uncommon problem with dual-booting between Linux and Windows. At the end of the article there is an example.

With the Grub menu missing, I booted from a flash drive with Ubuntu 17.10. As soon as I got to the desktop, Software Update told me there were updates available and asked me if I wanted to do the

update. I did the update and restarted the computer.

Unlike with Windows, I didn't need to restart the computer because of the update. I suspected the Grub Menu would be fixed by the update, so I wanted to see if it had been restored.

Upon booting, there was the Grub Menu. A Windows update messed up my laptop (partially) and an Ubuntu update fixed it.

People will say that Linux can't do everything Windows can do, then, instead of listing those things, eg. graphics manipulations, playing games, etc, they will list Skyrim, Photoshop. These are 'programs' you can run in Windows – not what you can 'do' on Windows that you can't do on Linux. You can play games on Windows, you can play games on Linux. You can do graphics manipulation on Windows, you can do graphics manipulation on Linux. You can play music on Windows,

You can play music on Linux.

Saying Windows can do things that Linux can't and then quoting specific apps is a poor argument. Every platform or OS has OS-specific programs, programs available for only that OS. I can't run some of the Star Wars apps available on my wife's iPad on my Android tablet, because they are not available for Android. So I guess, using that logic, I could say "iOS can do things that Windows can't.– Windows can't play Star Wars.....(fill in the blank) for IOS".

When I had an iBook running OS X, it had different, OS X only, APPS, that did the same things as Windows only APPS. Some better, some worse. But they did the same thing. Don't say Linux can't run Photoshop – say Linux can't do Graphics manipulation. That's a true argument. But Linux can do graphics manipulation, etc, etc. Just not the same apps, which is true with every platform/OS.

You can either choose an Operating System for the quality of the Operating System, or you

can choose it for what programs are available, or you can try to find a balance between the two. For me, Linux, and specifically Ubuntu, gives me the best performance of any Operating System, and it's stable and secure. I chose it for its quality, not what programs were available. Yet there is an incredible set of programs available. It's just that some programs are not the same ones available in Windows.

People, usually ignorant about modern Linux, discredit Linux, and claim Windows is superior. Even if they look at modern Linux, they may have a bag full of complaints and criticism about Linux. It doesn't look as good as..... Fill in the blank. The games are not as good as..... I have even heard of Linux being criticized for the price. Free. How can it be any good if it's free?

Let's explore that. Windows has always cost money until Microsoft gave it away for a short period. Yet Windows has deserved criticism for



MY OPINION

many reasons: Lack of stability, BSODs (Blue Screen Of Death), and many others. If Windows was a series of cars, Microsoft would be out of business for all the warranty repairs they had to do. No one would put up with a car that stalled randomly. Unless they got it for free.

That brings us back to free. Linus Torvalds did the work of creating the first version of Linux which he released to the world for free. Since then, programmers all over the world have been working to improve Linux and then releasing their work for free. People create different versions of Linux we call distro's, such as Ubuntu, Ubuntu Mate, Linux Mint, and release it for free.

If someone gives me something for free, I'm not very critical of it. It's free. They worked hard on it and gave it away for free. In fact modern Linux doesn't have much to be critical of, at least not any more than MacOS or Windows, and it's free.

Linux is free. Windows costs money. Yet modern Linux performs at least as well as modern Windows – if not better, and it's

free.

So if you are considering Linux, or you are using Linux and you see Mac or Windows users making such intellectual remarks as "Linux sucks!", don't be discouraged about using Linux. Remember it's free. All Operating Systems have flaws, but Linux is at least equal to Windows and MacOS, and it's free.

Did I mention that it's free?

THE FULL CIRCLE APP FOR UBUNTU TOUCH - UPDATED!



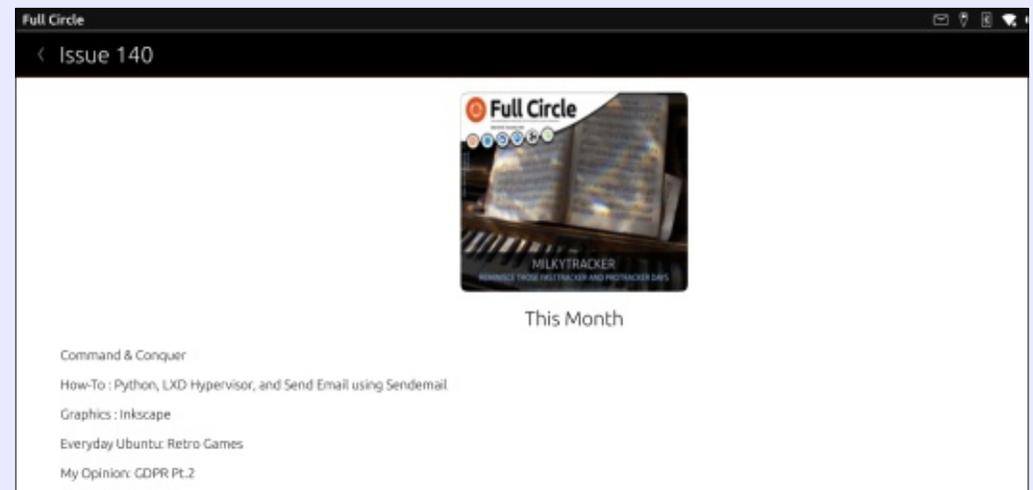
Brian Douglass has updated his FCM app for Ubports Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

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.





Are you contemplating upgrading a computer but you are not sure of the best path to take? There was a time when the least expensive path to upgrade an old computer was to increase the RAM. It rang true mostly in the old days when it was possible to pick up discarded computers at the curb on garbage day, and transfer the RAM to another computer (once in a while the computer on the curb was better than the one I was sourcing parts for). Purchasing more RAM to boost performance was still an option; at least the RAM purchase postponed the pain of transferring files from one computer to another.

New developments have changed my view on this. If the computer you wish to improve is a 32-bit machine, then purchasing RAM for it is a short-term solution because the current round of upgrades for most distros will be the last of the 32-bit operating systems. The year 2021 marks the end, and it will be here before we know it. Also, RAM for these 32-bit computers probably will not be

transferable to another computer. In recent years, I found the cost of RAM to be too high when I consider the low cost of a new computer. If purchasing new RAM chips forces me to discard the RAM chips that I paid for when I purchased the computer, I am not happy. Does anyone want to spend more than one third of the cost of a new computer on any upgrades, especially if you are not a gamer? I call it the one-third by-law of the law of diminishing returns.

The one-third by-law comes into play on older 64-bit computers as well. My computer at work is a five year old Dell Optiplex, a business class computer with lots of life left in it yet, but it only has two gigabytes of RAM. And even Ubuntu Mate was running slow on it – not painfully slow, but slow.

A recent visit to the showroom of a computer refurbish shop was an eye opener, as this shop was taking older computers and replacing the old mechanical hard disk with an SSD (Solid State Drive) – great idea, if you can buy them at

volume pricing. However, in the last few weeks, I have noticed the price of SSDs has fallen, and there have been some good sales on. I found a 120GB drive for forty dollars Canadian. At that price, how could I go wrong? I have never filled a 60GB drive with data. Remember that the main objective is to get the operating system on a faster disk – while spending the least amount of money. If all or your data will not fit, it can continue to reside on the original disk that can operate as a slave. Unlike RAM, a new SSD can be used in another computer later when the old computer bites the dust.

In the installation process, I disconnected the cables to my original hard disk and connected them to the new disk; my insurance policy to prevent me from doing something silly like overwriting my original disk with the new installation. I do not know about you, but if I had five cents for every time I zipped when I should have zapped, I would be a millionaire. Later, I used my USB hard disk enclosure to transfer my data from

the old disk to the computer.

I am happy to tell you that my five-year-old computer, with 2GB RAM, works much faster with the new SSD. Applications open quickly with no waiting. I noticed a big improvement in FireFox and LibreOffice. It was worth the effort in both time and money to do the upgrade.



John Eddie Kerr is the Law Librarian at the Wellington Law Association in Guelph, Ontario Canada. Ubuntu powers his workstation, laptops and Raspberry Pi.



INTERVIEW

Written by Erik

Website:

<https://ubuntubudgie.org/>

From the website: "*Ubuntu Budgie is a proud official member of the Ubuntu family. We combine the simplicity and elegance of the Budgie interface to produce a traditional desktop-orientated distro with a modern paradigm. Budgie is a desktop environment focused on having a clean and yet powerful desktop without unnecessary bloat.*"

In this issue, we would like to introduce you to one of the awesome people behind the popular Ubuntu Budgie, Dustin Krysak. Ubuntu Budgie is the new kid on the block in the Ubuntu flavours. The reason we picked Dustin, is because he is so active in the Linux community, this does not mean we are ignoring the other members of the Ubuntu Budgie team, by any means. Dustin is always willing to assist others and keeps a presence on Telegram.

I asked Dustin for an interview and he very kindly agreed to answer my questions:

Q: Dustin, thank you very much for your time. First, can you tell us something about yourself? How old are you? Where do you live? What do you do for a living? When and why did you start using Linux?

A: I'm old as dirt; 4* living in Vancouver BC (Canada). My background has traditionally been data centre design and systems administration, but the last 5 years have predominantly been working in AWS for a software company. I recently made the transition to working from home and doing AWS design full time for a VAR. My Linux background started out with Redhat 5 (1997 I think??). My Linux background, however, was predominantly servers though, because the desktops just didn't jive for me at the time due to the corporate environments I had to work in. But even with that being said, those were the early years. I would say that my real

"production" experience kicked off with Redhat 8. Starting out, I loved to tinker, but, moreso, I loved the "way" everything was done in Linux. The configuration, the more in-depth access to the system. It allowed you to really get under the hood if you needed to; and promoting a deeper understanding of your system.

Q: How did you get involved with Ubuntu Budgie, and why?

A: I had been a long-time consumer of open source software, but had never been a contributor. I wanted to change that and give something back. When I was looking for a "home," I wanted to find a place with a smaller team. I knew I was going to need some mentoring, plus I wanted to be able to actually have an effect on the outcome. The Ubuntu Budgie site had a "help wanted" section, and I basically just started communicating with the team on how to get started. Most people do not realize that you merely need to be willing to give your time. It is harder than you

Ubuntu Budgie

think to get long-term contributors or people that stick around in general. Things change, it is life. :-)

Q: Who would you imagine is Ubuntu Budgie's user base? (mostly?)

A: I think we appeal to the people who would like a modern desktop that is out of the way. Start it up and go type stuff. Not a ton of time or settings to be tweaked to become productive with your computer. The other aspect is just that the desktop looks great out of the box (people like shiny), and we attempt to make it easy through our welcome application to apply additional themes. To sum it up; people who like sane defaults.

Q: What would you say to users coming from another OS? And would Ubuntu Budgie be the right distribution to start with and why?

A: I think it is a great distro to start with mostly because it is not overwhelming with settings and configuration. It is built on an



INTERVIEW

Ubuntu base which provides a TON of support options, tutorials and information in general. If you are coming from another OS, the biggest thing to remember is that you may have to find an alternative software versus something you have used forever. But it exists, and many times can be superior in many ways. And, don't give up, the Linux community can be very supportive.

Q: The big leap from 18.04 to the impressive 18.10, who is responsible?

A: I'm going to give most of the credit to David (the team lead), and Jacob (Applet developer). They are insanely active, and productive.

Q: Where to from Ubuntu 18.10? Any surprises waiting in the wings?

A: I would say "spit and polish" currently. But there are a few milestones that we have to figure out, especially with Gnome/Nautilus dropping the desktop icon support. We have a few things in the works to ensure our users have the experience they expect after a fresh install.

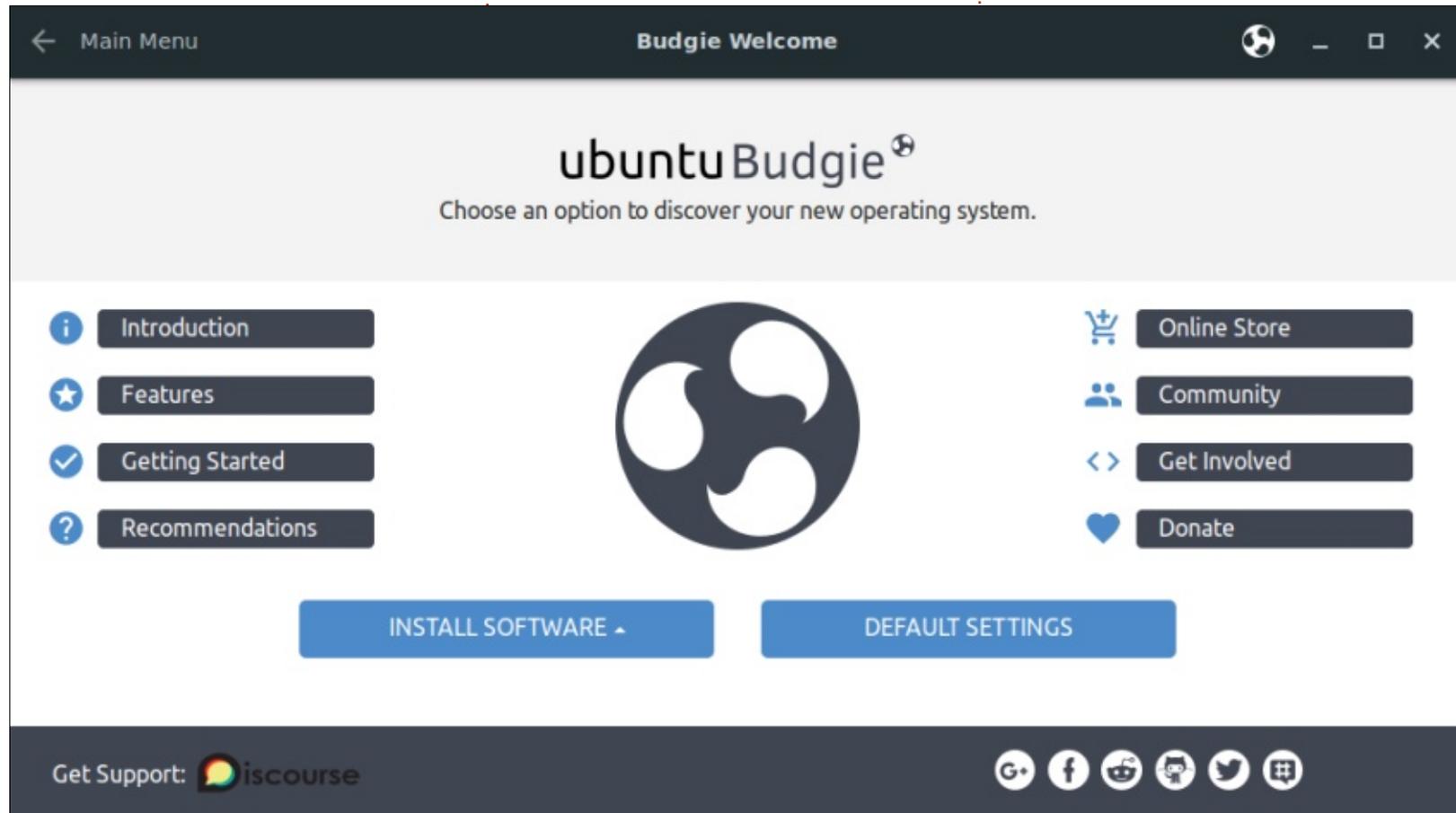
Q: Can you describe your personal desktop setup?

A: Simple to deploy, yet personalized over a long period. What I mean is that I don't change a lot immediately. And when I do change something, I use configuration management to script out every aspect of my modifications. This may "sound" complicated, but let me put it this way, I can restore from a bare-

metal install with all my apps, settings and data within 30 minutes. Without copying over config files (for the most part). All of my desktops pull from the same GIT repository for their configuration. So once I make a change and check in the script? The other systems will have changes within 10 minutes. By simple, a rebuild is mostly unattended, but yes, admittedly I had some upfront work to do.

Q: What do you think of the current trends in desktop environments and do you believe Budgie will endure?

A: I think it will endure. It fills that niche of a modern (minimal technical debt), beautiful, system with a great out-of-the-box experience. As for the trends, well, I find it hard to "spot" the patterns. Meaning each desktop seems to



INTERVIEW

have a different design goal and direction. Which is great! It gives the end user many choices to get the flow and experience that they want. But we are an excellent fit for those who want to install and go.

Q: Do you guys have any metrics on how large your user base is?

A: We do not participate in the data collection that Ubuntu does with the installer so it is hard to tell. We can monitor downloads, but I feel that is not overly accurate for representation of your user base. Meaning, how many stayed on the system? Did they convert to a full-time user post-test? I watch for growth based on the activity in our own community. I'm more concerned with movement and growth than assigning a number to it.

Q: Distrowatch.com puts Ubuntu Budgie at 64, do you think these 'rankings' are useful or are harmful to the distro by any chance?

A: Distro watch is not a useful metric in any way. I don't think it represents the actual number of

installs. I think it points new users in the wrong direction until they begin to understand the community.

Q: What is the best part of being part of the Ubuntu Budgie team?

A: Simply being able to help shape the distro and the direction it may move in. And if something is broken or does not work correctly, I can either fix it myself or have access to people who can. Giving back to the overall Linux ecosystem is the largest though. Moving from consumer to contributor was my biggest thing.

Ubuntu Budgie desktop is a very smooth implementation of Ubuntu for those who do not like Gnome 3. The Raven menu is easy to access, many standard key combinations are already set up for you. With easy settings to enable flatpack, etc, how could one overlook this distro? Ubuntu Budgie is happy with 2GB of memory, but by adding tabbed browsers, you better have 4GB. If you have not switched, why not try Ubuntu Budgie now?

THE FULL CIRCLE APP FOR UBUNTU TOUCH - UPDATED!



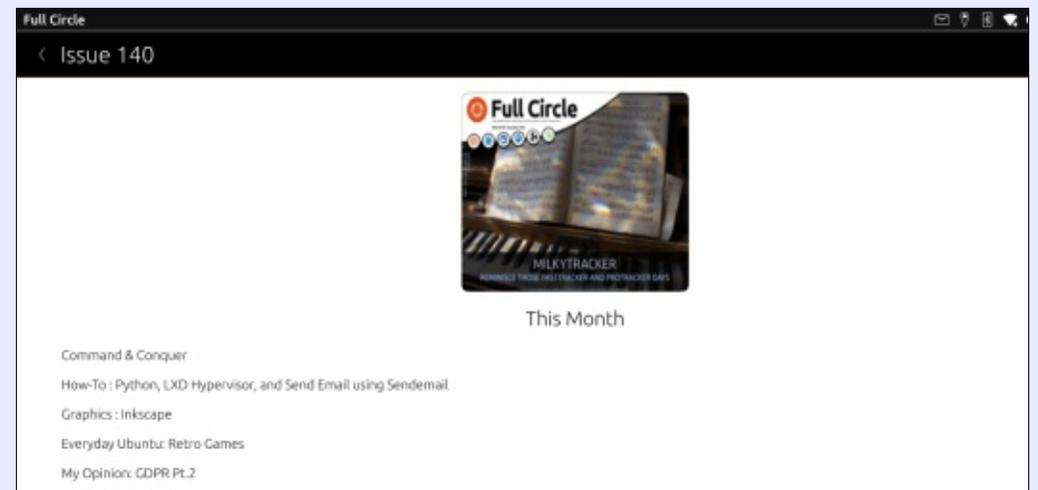
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<https://uappexplorer.com/app/fullcircle.bhdouglass>

HUGE thanks to Brian for this.





HOW-TO

Written by Ronnie Tucker

Write For Full Circle Magazine

GUIDELINES

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

RULES

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

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

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

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

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

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

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

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

TRANSLATIONS

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

REVIEWS

GAMES/APPLICATIONS

When reviewing games/applications please state clearly:

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

HARDWARE

When reviewing hardware please state clearly:

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

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





Website:

<https://openclassrooms.com/en/courses/4377316-take-your-first-steps-with-ruby>

Course presenter: Emily Reece

From the website: "In this course, you'll take your first steps with Ruby! In the first part of this course, we'll use a simulation of the Sims video game where you create characters, except we'll do it in -- you guessed it -- Ruby. We'll use silly little effects to illustrate that Ruby is an object-oriented programming language, and that it's very easy to create elements in your code that have certain attributes."

When I first heard about the French billionaire that sponsored free training, I had to look. That website was <https://openclassrooms.com/en/> and it is advertised as free. OpenClassrooms is an online education platform for vocational training, providing courses in IT, technology, entrepreneurship, and digital skills. Courses are

conducted fully online, through a mix of video resources, online reading, real-life projects, and individual mentoring sessions.

Founded in 2013 by Pierre Dubuc and Mathieu Nebra, OpenClassrooms now has 2.5 million users worldwide and offers courses in English, French and Spanish. The company's mission is to make education accessible - so let us take it for a spin.

For this review, I chose Ruby. It works very well under Ubuntu with all examples. The sound and video

quality of this course is outstanding. I actually had to turn DOWN my volume on my laptop as the perky Emily explained the basics. Actually, the presenter is so perky that you cannot fall asleep to this one. I have heard so much about Ruby and Rails, that this was an opportunity I could not pass up. I had two hours to kill waiting for an urgent proposal via courier, and jumped into this course. The instructions were clear and concise, that is until video four. Here Emily immediately glossed over the first part they typed, namely: "attr_accessor". Emily just

continued if it were not there, and my brain would not let go. If one does not get the foundation right, the house will never be solid. I had to look it up as video five also just ignored this. I found an awesome website to explain it : <https://metova.com/a-beginners-guide-to-ruby-getters-and-setters/> for your perusal. If you don't have prior programming knowledge, which this website assumes, one cannot glance over something so important.

The videos slowly increase in length, two minutes, four minutes, six minutes, eleven minutes, and I felt that maybe they could have made fewer videos with say a fifteen minute run time, that would allow you to plan your learning better. I only managed to monkey-see, monkey-do until the sixth video, before my documents arrived and I had to turn my attention elsewhere.

Overall, the course seems solid for a beginner, but as I am a "why" guy, not a "wise" guy, I do not like things that get glanced over as it is



REVIEW

assumed everyone knows what it is. I want to know "why". (That was why I was watching the course, no?).

About the paid part of OpenClassrooms: OpenClassrooms operates on a freemium basis. (Free is limited.)

<https://openclassrooms.com/en/premium>

A user can register on

OpenClassrooms gratis, and follow all courses on the platform. The number of videos a "free" user can watch is limited to 5 per week.

A user can sign up for a Premium Solo membership (costing €20 per month), and have access to unlimited videos as well as earn certificates.

A user can sign up for a Premium Plus membership (costing

from €300 per month), and follow a structured learning path consisting of projects, dedicated mentoring sessions, and a state-endorsed degree at the end.

I can definitely recommend this to anyone. The free price tag is something you cannot ignore for this kind of quality.





LETTERS

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

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ubuntuforums.org/forumdisplay.php?f=270

FULL CIRCLE NEEDS YOU!



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

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

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



DistroWatch.com

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



Q&A

Compiled by EriktheUnready

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

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

In the land before time, when I had just come out of Sinix-Z training, bright eyed and bushy tailed, my boss decided to give me the monkeypality as client because I "knew that UNIX stuff". Needless to say, I hit a total blank the very first time I stood before a server. Looking back now with 20/20 vision, I probably should have started and stopped the services to see if I could get it going again, but the only thing that came to mind was: init 6. Quaking in my boots, I entered the command and hit enter. The server did its thing and came up without error. I poked my head out the "server room" and asked the accountant in the next

office to try again. Everything seemed to work fine. Everyone logged in and all was well with the world.

When I got back to the office, their boss had called my boss and said I "fixed" the problem faster than any technician in the past and they do not want anyone but me to come to their premises. It took me a few years to realise that everyone else was charging them by the hour... It also amazed me how robust Linux was. You only learn to fix Linux by breaking it.

Q: How do I make a pretty display of all my bits and bobs with Ubuntu, displaying the Ubuntu logo in the terminal, like the Arch users do?

A: I am going to assume you mean the output of 'neofetch'. If you look nicely at those Arch linux screenshots, you will see the command is neofetch (there are also other options). To install it, simply type: sudo apt

install neofetch then type neofetch to run it.

Q: I wonder if you can help me. I tried to install steam on ubuntu 18.04 via the steam installer. It installed, but during the update, the power went out. I can't run it now. I can't update it. I have uninstalled it and reinstalled it, but I get the same error no matter which install method I use. My error is: "Couldn't set up Steam data - please contact technical support". In a small window in the centre. Ubuntu is updated, as well as all drivers. Steam support suggests running "steam - -reset", but it does not work, then I get a different error that it can't find the file.

A: Usually, there is a hidden folder named '.steam' in your home folder. I suggest you run: 'cd ~' then 'rm -rf .steam' - this should solve your problem. Remember to reboot and run a 'sudo apt autoremove' first, then try just installing steam by running 'sudo apt install steam' or download the .deb from steam and install it. I can

not vouch for the 'steam-installer' as I have never used it, but these two methods work 100%.

Q: I have installed a minimal install of Ubuntu 18.04. I installed all the apps I needed, but LibreOffice won't do the automatic spell-checking. Someone told me I need hunspell, will this fix my problem? I need to write for Uni. I have installed OnlyOffice to get spell-check going, but I prefer LibreOffice - and I want it to work. I am sure it was working with the full install.

A: Hunspell may and it may not, but I can give you a sure fire way to get it working. Install the dictionaries from here: <https://extensions.libreoffice.org/extensions/english-dictionaries> - This will add what you need. If you are not English, just search the extensions page for your preferred language. One thing to look out for when you are done is Only Office <-> LibreOffice compatibility. You may notice large chunks of your stuff missing. Specially things you copy and paste

from other Only Office documents. Sometimes whole paragraphs can be missing, so go over it carefully.

Q: Hi, I have Ubuntu Budgie 18.04 and when my laptop's power saving kicks in and I unlock it, my little power button-thingy moves from the complete left to the middle of my toolbar icons. How can I fix this?

A: I can confirm it is a bug. I have never noticed it before, but I just tested it on a PC and a laptop and it does in fact, move. Since it does not always move, I am trying to find out what causes it. We will have to wait for an update to fix it, or you can file a bug report.

Q: File roller will not unzip my old files from my DOS PC days. I installed engrampa, but that does not work either. How come Linux can't even do what MSDOS can do?

A: Linux is very modular – The UTILITY /APPLICATION does not matter. You can not unzip '.arj' or '.rar' files with the file roller / Engrampa, unless you install the compression method. The reason is that one can update the method, say 'rar', without having to update

file roller every time. You can also install an application with the compression methods internally built in. 'sudo apt install arj' or 'unrar' should solve your problem with file roller. If you want an application with built in functionality, look at 'Peazip'.

Q: I really need to stretch my laptop's battery. I have installed TLP, but what else can I do?

A: You can take a look at 'laptop mode tools' - be aware, mileage may vary.

Q: Since my brothers leech off my computer, I inspect the network with an IP scanner. However, Angry IP scanner in Windows gave much better results and output than the Linux version. How do I set it up to give me more info? How do I set up the firewall for scans? I use Ubuntu 16.04.5 with I7CPU and 16GB memory and UFW.

A: I am going to tell you not to bother with Angry IP Scanner. If you want results – nmap. If you want a GUI for it, - zenmap. It has a fast scan option that scans just as fast as Angry IP Scanner (AIS), if

not faster. You can pipe nmap output to a text file then manipulate that if you need to – or just use the GUI to see which of their friends are leeching off you. It is a lot more powerful than AIS. You will not look back.

Q: My computer dual-boots Windows 7 and Ubuntu. Everything was working fine. I was messing around in Windows and rebooted into Ubuntu. Now my wireless is just gone. Please help.

A: You have probably turned off wireless in Windows 7. Unlike later versions, Windows 7 has drivers that 'hard' off's the WiFi, whereas later versions do the 'airplane mode' 'soft' off. Ubuntu can turn on a WiFi that is 'soft' off, but you need to go back into Windows 7 and turn it back on in there. Another reason could be that your computer / laptop has a physical switch, like some SONY laptops. Another option could be that your wireless card is not seated properly.

Q: We watch Netflix on Ubuntu. There is ghosting from the wallpaper. My friend said the screen is burnt in, but if I make my wallpaper all white or all black, I

can't see it. I don't think burn-in is the case. Firefox is the latest version. We have only 5 addons in Firefox, so it's not that. I googled Netflix fix, but I can't find anything and I am not sure if it is Ubuntu or my Netflix setup.

A: Actually it's Firefox. Open a new tab, type: "about:config", click "accept the risk" and in the search bar at the top, type: "layers.excel". The list should narrow down to three items. Change the first one "layers.acceleration.force-enable" to True by double-clicking it. Now close everything and restart.

Q: I want to have floating buttons in Xubuntu 18.04 install like this picture. < Screenshot from 2018-09-28 12-10-53.png > What app is needed to make it?

A: All you need is, your current Xubuntu as-is. Create a new panel from your settings. (Use the plus sign next to 'Panel 0'). Add your desired launchers. Make the panel a few rows deep. Shorten the length percentage to fit your shortlist. Now make that panel transparent (under appearance tab), and viola! Floating buttons.

Q&A

You can even auto-hide them by making the panel auto-hide.

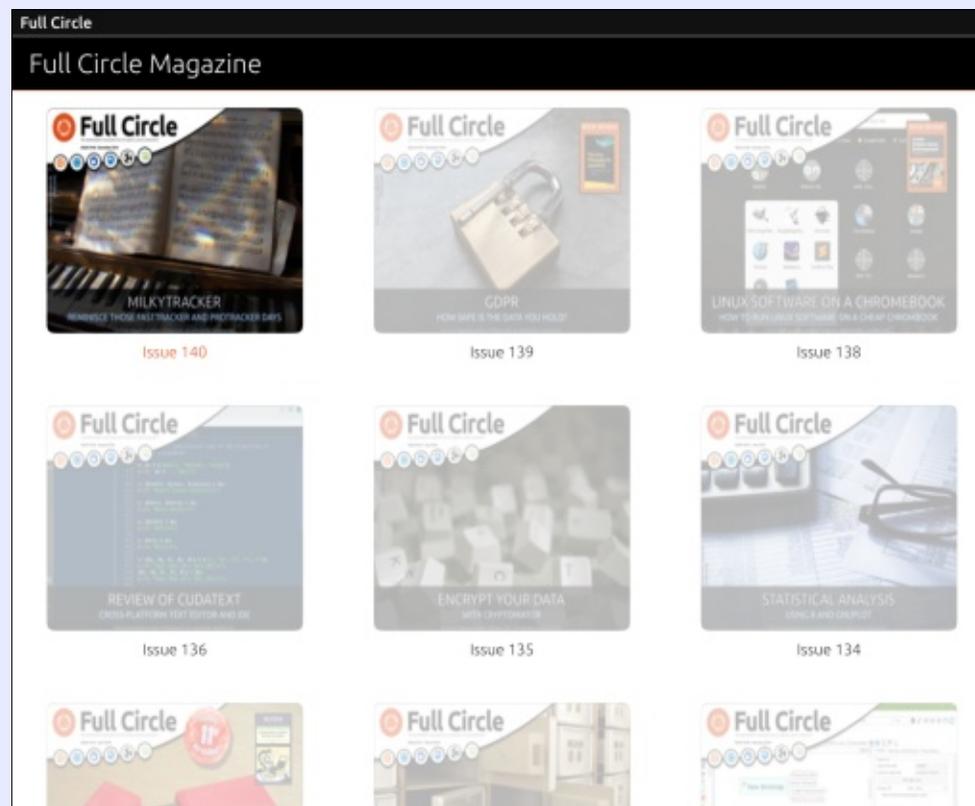
Q: Ubuntu 18.04 randomly freezes on me. I can't even use ctrl+alt+delete. I have to yank the power cord. What could be causing it?

A: Install the proprietary Nvidia driver. Some cards have issues (6-series). Turn off hibernation / sleep in power. I do not know why at this stage, I just know it works, as I have come across it.

Q: Hi, my question is not so much about Ubuntu itself, rather Python REPL; 16.04, unlike 18.04, does not support autocomplete, etc. How can I fix this? I am new to the whole open source thing.

A: I am not sure what you mean, but install bpython / bpython3 (whichever python version you use) as it supports things like syntax highlighting and auto-complete.

THE OFFICIAL FULL CIRCLE APP FOR UBUNTU TOUCH - UPDATED!



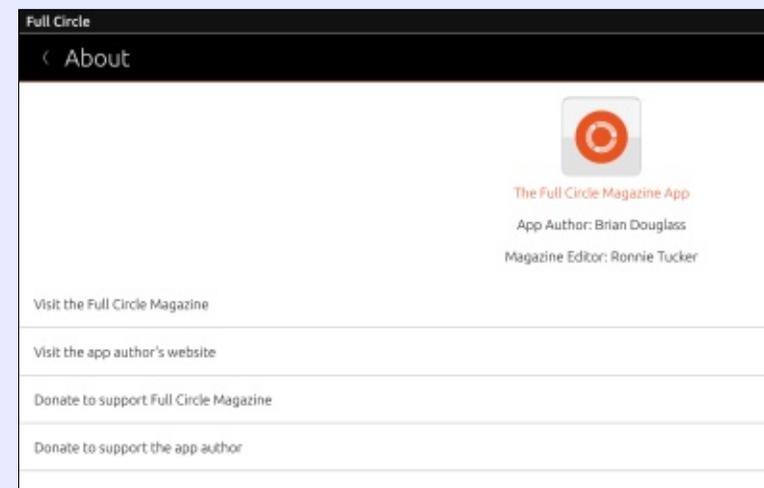
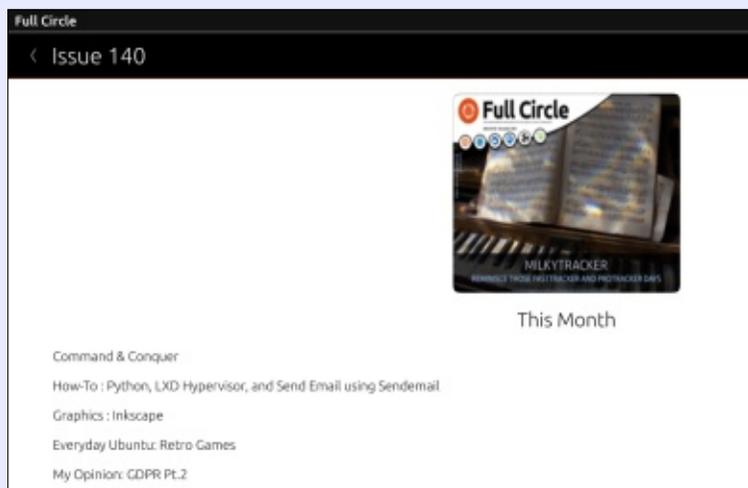
Brian Douglass has updated his FCM app for Ubports Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

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.





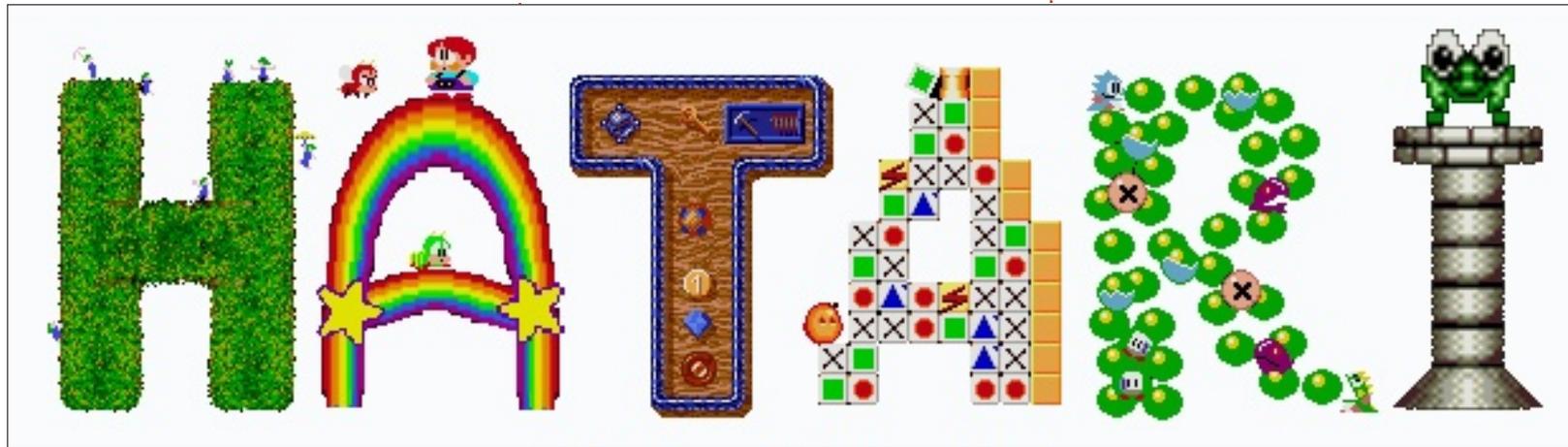
Version: 2.1.0

Website:

<https://hatari.tuxfamily.org/>

Reading Richard Adams' handy Dosbox nostalgia, I was overcome with nostalgia myself. My nostalgia, however, was not for the games. Though you can certainly get all the games the platform has to offer and play them too. I missed those amazing intro's and music disks. The days when the "Pirates" were much more skilled than the software houses. You could get a tape or disk that contained music to make your brain bleed. Brilliant scrollers, bouncy text and balls, all fitting in sixteen thousand four-letter words or less.

My first computer was a ZX Spectrum, so I was painfully aware of the sound and music limitations. The fat ugly graphics of the Commodore 64 did not impress me, but that SID chip, oh my! One day I read a magazine article about the music production on the Atari ST. For those of you that do not know what I am referring to, here



is a TL;DR refresher:

<https://www.youtube.com/watch?v=O4kf1Wbaruo>

LETS RE-CREATE SOME MAGIC!

The easiest way to install Hatari is via the command-line or software centre. However, this will *not* do. That will install a snap that puts things in different locations and does not create the folders you need, nor allow double-clicking playing your disks. Rather get it from here:

<http://download.tuxfamily.org/hatari/>

The second thing you will need is the boot ROM, known as a TOS. Hatari ships with emuTOS, but it is not 100% yet. You can get the whole lot here:

<http://ae.dhs.nu/tmp/toses.zip>

The third thing you need to do is create a "hard drive folder" on your drive, I named mine AtariHDD in my home folder. You may have started up Hatari and found it asks for a TOS in a folder, /usr/share/hatari. To remedy this, extract the 1.6 or 1.62 TOS from the archive and copy it there, renaming it to "tos.img". The boot ROM version 1.6 was for the Atari ST, and the emulator will switch to that mode. At this stage the

emulator is ready to go, but let us add a "hard drive" as well.

Press F12 with the emulator running. This will bring up the configuration. Go to hard disks and add a GEMDOS disk that points to the folder you created in your home folder, eg:

Tick 'boot from hard drive' too. Save your configuration file once done. You can further tweak the amount of memory to 4MB if you wish, but if you have issues with some demos, change it back to 2MB.

NOW FOR THE FUN STUFF!



UBUNTU GAMES

Download some demo disks from here: <http://www.creamhq.de/ymrocketz/downloads.php>, and unzip them into the AtariHDD folder you created (demozoo is another great site).

Start Hatari and you should be presented with the little green desktop. Open the hard disk folder and you will see the folders you just created. The executable file you are looking for has the .PRG extension. Now bask in the chiptune goodness of mega

talented musicians. The music and demo disks are all legal for you to download and share, so don't be shy.

For those of you chomping at the bit for all those games of yesteryear and demoscene goodness, stay tuned for the next issue of Full Circle Magazine. In the meantime, Rock on, "old skool" style!





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

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

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

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



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We are always looking for new articles to include in Full Circle. For help and advice please see the **Official Full Circle Style Guide**: <http://bit.ly/fcmwriting>

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