



# Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #119 - March 2017



Photo: Charles McColm

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## THE FUTURE OF LINUX SHOULD IT DROP 32-BIT SUPPORT?

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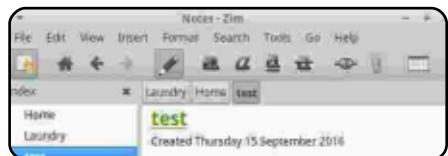




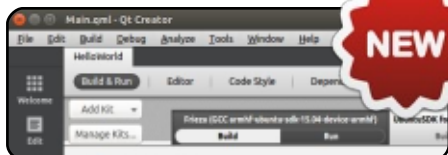
## HowTo



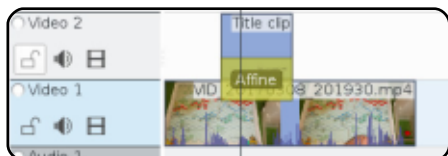
Python p.18



LaTeX With Zim p.21



Program Ubuntu Touch p.24



Kdenlive p.35



Inkscape p.31



## Graphics

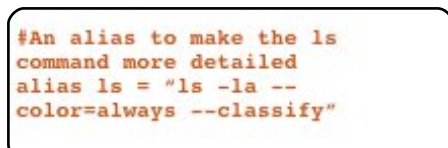


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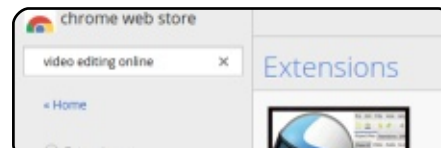
THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY



Linux News p.04



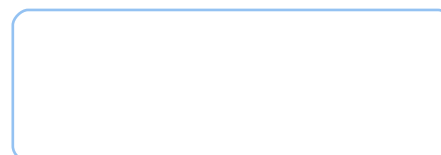
Command & Conquer p.16



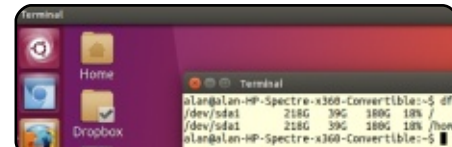
Chrome Cult p.37



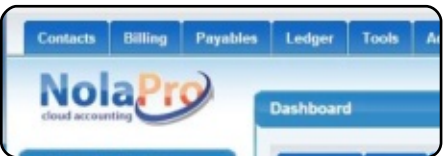
Linux Labs p.39



p.38



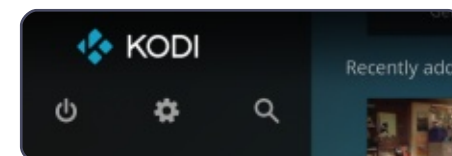
My Opinion p.43



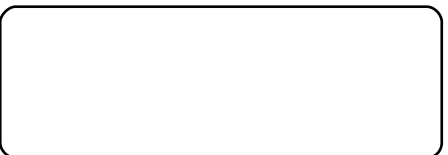
Review p.41



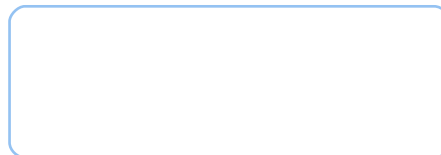
Letters p.XX



KODI Room p.47



Q&A p.49



p.XX



Ubuntu Games p.51



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## WELCOME TO THE LATEST ISSUE OF FULL CIRCLE.

Well, next month marks the tenth year of Full Circle. Absolutely incredible. I did hope to have a couple of special things lined up (interviews, etc.), but most of them have fallen through. So, it'll be business as usual, but hopefully I can find the time to squeeze in some extra articles. Oh, and I'll reveal the results of the survey from a couple of issues ago.

As ever, we have Python, Inkscape, Kdenlive, Ubuntu Touch, Q&A, a new LaTeX article, and a review of NolaPro (accounting software).

There's an interesting opinion piece from Alan Ward about his return to using Unity. Which I'm sure will spark mixed feelings. Personally, since Unity has matured I can now use it without any problems. Having said that, I hope that Unity 8 (whenever we may see it in general use) doesn't take us two steps back.

Charles has an interesting Linux Labs piece this month that discusses the news that quite a few Linux distributions are dropping support for older 32-bit hardware. Is it a good thing? Have a read through his article and drop us an email to let us know your thoughts on it. I'm a bit on the fence with this one. It's inevitable that you have to march forward and leave the old behind, but I do think that Linux should cling on to the fact that it will run on almost anything. Having said that, I'm sure that some distro's will continue to support 32-bit to stop old hardware from sitting dormant, and gathering dust.

**All the best, and keep in touch!**

*Ronnie*

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## ENTROWARE LAUNCHES UBUNTU-POWERED AETHER LAPTOP WITH INTEL KABY LAKE CPUS

Meet Entroware Aether, a slim and fast laptop powered by Intel's 7th generation Kaby Lake processors that are perfect for all of your daily computing tasks. Users can choose between having the laptop shipped with either Intel Core i3, i5, or i7 CPUs from the new Kaby Lake series, which are energy efficient and ensure maximum performance.

The laptop comes with an M.2 slot so you can attach a fast SSD (Solid State Drive) in case you want it even faster. "With an optional blazing fast M2 SSD, Entroware will install the operating system to this drive for lightning fast boot-ups and application start-ups so that you can get the best out of your Ubuntu laptop," said Entroware in the press release.

Entroware Aether is a 15-inch laptop that's highly configurable

so that you can buy it with either an Intel Core i3-7100U, Intel Core i5-7200U, or Intel Core i7-7500U processor, up to 32GB of DDR4 RAM, PCIe SSD support, as well as either HD (1366x768) or Full HD (1920x1080) displays.

The laptop also comes with a modern backlit keyboard with white LEDs that will help you type even in dark places. Like everything else, the keyboard can be configured to maximize your workflow, and you can choose between British, German, French, Spanish, and Italian layouts.

By far the most attractive part of Entroware Aether is the fact that users will be able to have the laptop shipped with Ubuntu Linux. On the product's website, you can select either Ubuntu 16.10 or 16.04 LTS with the Unity desktop or Ubuntu MATE 16.10 or 16.04 LTS with the lightweight MATE desktop. Pricing starts at £514.99 (~€610).

Source:

<http://news.softpedia.com/news/entroware-launches-ubuntu-powered-aether-laptop-with-intel-kaby-lake-cpus-513291.shtml>

## UBUNTU 17.10 TO SHIP WITH NAUTILUS 3.24 FILE MANAGER, WITHOUT TYPE-AHEAD SEARCH

Ubuntu GNOME's Jeremy Bicha is announcing today that the soon-to-be-released Nautilus 3.24 file manager will be implemented in the Ubuntu 17.10 operating system, whose development will start in late April this year.

It's a known fact that Ubuntu is always shipping with an older Nautilus version because Canonical always includes some patches to offer certain functionality to users. And it looks like these patches need to be updated every time a new Nautilus version is out, though some of them have failed to work because of the file manager's constant refactoring.

Nautilus 3.24 will have

numerous improvements that we've detailed for our readers earlier this week. It will launch next month on March 22, as part of the GNOME 3.24 desktop environment. At the moment, Canonical is using Nautilus 3.20.x for Ubuntu 16.10 (Yakkety Yak), as well as the upcoming Ubuntu 17.04 (Zesty Zapus) release.

According to the developer, the new Nautilus 3.24 packages should land in the repositories of Ubuntu 17.10 as soon as the OS is declared open for development, which should happen shortly after the April 13 release of Ubuntu 17.04. However, it looks like it won't ship with the type-ahead search feature some of you are currently using.

Source:

<http://news.softpedia.com/news/ubuntu-17-10-to-ship-with-nautilus-3-24-file-manager-without-type-ahead-search-513211.shtml>



## UBUNTU SNAPPY CORE LINUX OS NOW RUNS ON TECHNOLOGIC SYSTEMS' i.MX6-BASED TS-4900

Canonical announced a new partnership with Technologic Systems, Inc. to deliver the open-source and free Ubuntu Snappy Core 16 operating system on the TS-4900 high-performance Computer on Module (CoM).

Based on the NXP i.MX6 CPU, which implements the ARM CortexTM A9 architecture running at 1 GHz, the TS-4900 Compute Module has been engineered by Technologic Systems, Inc. for use in embedded systems applications, in particular those where wireless connection is required, such as industrial IoT (Internet of Things) gateways.

TS-4900 is a fanless device that can be bought in either single or quad-core variants with up to 2 GB DDR3 RAM, onboard Wi-Fi 802.11 b/g/n and Bluetooth 4.0, as well as support for Gigabit Ethernet, USB, SATA II, and PCIe Express ports. It has been rated at an industrial temperature range between -40

oC and 85 oC.

As noted by Canonical's Mike Bell, EVP IoT and Devices, in the press release, this unique partnership between Canonical and Technologic Systems, Inc. brings the Ubuntu Snappy Core operating system to the popular i.MX6 platform, allowing other companies to integrate it into their devices.

Source:

<http://news.softpedia.com/news/ubuntu-snappy-core-linux-os-now-runs-on-technologic-systems-i-mx6-based-ts-4900-513382.shtml>

## LINUX KERNELS 3.16.41 AND 3.2.86 RELEASED WITH NETWORKING AND FILESYSTEM CHANGES

Linux kernels 3.16.41 and 3.2.86 are now available for download if you're using a GNU/Linux operating system powered by any of these long-term supported (LTS) branches. However, they are small patches that include minor changes to the networking and filesystems areas.

According to their appended shortlogs, a total of 18 files were changed in Linux kernel 3.16.41 LTS, with 187 insertions and 52 deletions, and only 5 files have been changed in the Linux 3.2.86 LTS kernel, with 19 insertions and 12 deletions. Looking at the changes included in the Linux 3.2.86 LTS and Linux 3.16.41 LTS kernels, we can mention an updated networking stack with various IPv4, IPv6, and DCCP (Datagram Congestion Control Protocol) improvements, fixing `ip6gre_err()` invalid reads, freeing of `skb` too early for `IPV6_RECVPKTINFO`, and an infinite loop in `tcp_splice_read()`.

The EXT4 and TMPFS filesystems have also received improvements to be able to validate `s_first_meta_bg` at mount time, as well as to clear `S_ISGID` when POSIX ACLs are set, and `segmented_write_std` has been introduced for the KVM (Kernel-based Virtual Machine) implementation.

If you're using a GNU/Linux distribution powered by a kernel from the Linux 3.2 or 3.16 series, you are urged to update to the Linux 3.2.86 and Linux 3.16.41

releases as soon as possible.

Source:

<http://news.softpedia.com/news/linux-kernels-3-16-41-and-3-2-86-released-with-networking-and-filesystem-changes-513376.shtml>

## BLACK LAB LINUX GETS FIRST WEEKLY ISOs, ADDS LINUX KERNEL 4.8 FROM UBUNTU 16.10

Black Lab Linux Weekly 252 is a 64-bit snapshot ISO image of the GNU/Linux distro, bringing some of the latest components from the upUbuntu repositories. Specifically, this first release ships with the Linux 4.8 kernel from Ubuntu 16.10 (Yakkety Yak), as well as the Xfce 4.12 desktop environment and Chromium 56 web browser.

It also includes various open-source components, such as the Gnumeric spreadsheet viewer and editor, AbiWord word processor, Audacious audio player, GNOME MPlayer video player, Nitroshare file transfer utility, Synergy mouse and keyboard sharing tool, as well as the build-essentials package for

those who want to compile software.

Not recommended for the faint of heart

According to Black Lab Software, the Black Lab Linux Weekly releases are not recommended for the faint of heart because they are not considered stable builds like the recently released Black Lab Linux 8.1. These are designed for bleeding-edge users who want to try the latest software versions.

Keep in mind that some known issues remain in this first Black Lab Linux Weekly release, such as the fact that Wireless and Bluetooth may drop unexpectedly, Oracle Ksplice crashes constantly, and the installer crashes when the operating system is installed on an HFS volume.

Source:

<http://news.softpedia.com/news/black-lab-linux-gets-first-weekly-isos-adds-linux-kernel-4-8-from-ubuntu-16-10-513331.shtml>

## DOCKER LAUNCHES ENTERPRISE EDITION, COURTS BROADER CORPORATE ADOPTION

Docker's container management approach was already being adopted by enterprises via developers. Now Docker is stepping up its enterprise game with an edition that is likely to bolster adoption within companies.

The company has launched a commercial platform so enterprise developers can orchestrate containers and scale applications across clouds. The move highlights how Docker has become a developer favorite to one that's increasingly being adopted by enterprises more broadly. Docker is an open-source project that automates application deployment inside software containers. The container approach adds an additional layer of abstraction relative to operating system virtualization.

Docker Enterprise Edition includes a container runtime, orchestration tools, and security

and management features wrapped in one user experience.

According to Docker its Enterprise Edition comes in basic, standard, and advanced tiers. Docker also launched a certification program so third parties can integrate with its framework and sell software on the Docker Store.

Source:

<http://www.zdnet.com/article/docker-launches-enterprise-edition-courts-broader-corporate-adoption/>

## LINUX LITE 3.4 BETA IS BASED ON UBUNTU 16.04.2 LTS, DOESN'T SHIP WITH LINUX 4.8

Linux Lite 3.4 Beta is based on Canonical's recently released Ubuntu 16.04.2 operating system, which is the first point release to the Ubuntu 16.04 LTS (Xenial Xerus) series to come with an HWE (Hardware Enablement) kernel and updated graphics stack from a newer Ubuntu version, in this case Ubuntu 16.10 (Yakkety Yak).

However, this Beta release of Linux Lite 3.4 is not powered by the Linux 4.8 kernel that's been made available upstream for Ubuntu 16.04.2 LTS users. Instead, the GNU/Linux distribution remains true to the long-term supported Linux 4.4 kernel series, but ships with many other up-to-date components.

As reported by us last month, Linux Lite 3.4 will land on the first day of April 2017 with a revamped Lite Welcome app that promises to make the life of ex-Windows users who want to use an open-source operating system much easier by implementing a so-called 3-step post-install process for installing updates, drivers, and language support.

Additionally, Linux Lite 3.4 promises to enable window snapping by default and introduces the Lite Updates Notify app, which will always run in background to inform users when new updates are available for their system. Included in this Beta we can find the Mozilla Firefox 51.0.1, Thunderbird 45.7.0, LibreOffice 5.1.6.2, VLC Media Player 2.2.2, and GIMP 2.8.20 apps.



Source:

<http://news.softpedia.com/news/linux-lite-3-4-beta-is-based-on-ubuntu-16-04-2-lts-doesn-t-ship-with-linux-4-8-513461.shtml>

## BLACKARCH LINUX 2017-03-01 HACKING DISTRO RELEASED WITH 50 NEW TOOLS AND KERNEL 4.9.11

There are many categories of Linux distributions. Just recently, I told you about the best Linux-based operating systems for beginners. Another popular type of Linux distributions is ethical hacking distributions, a list which is consistently ruled by Kali Linux.

Whenever we talk about Linux Kali alternatives, we often end up talking about Parrot OS. But, there's another great option that's based on Arch Linux. Yes, I'm talking about BlackArch Linux. I keep tracking its releases regularly, and today I'll tell you about the freshly baked BlackArch Linux 2017-03-01.

BlackArch Linux 2017-03-01 is now available with an updated

build that consists of lots of updated components and packages. This update of ethical hacking distro has added more than 50 new tools.

If you're willing to try out the new tools and get these fixes, you can go ahead and grab the updated ISO files in Live and Netinstall version. The ISO files are available in both 64-bit and 32-bit versions. The Live ISO version has a complete and functional BlackArch Linux system and netinstall image is a light ISO for bootstrapping systems.

Source:

<https://fossbytes.com/blackarch-linux-2017-03-01-kali-linux-alternative/>

## BLACKMAGIC DESIGN ANNOUNCES DAVINCI RESOLVE 12.5 FOR LINUX NOW AVAILABLE

Blackmagic Design today announced that DaVinci Resolve, its professional editing and color correction software, is now available on Red Hat and

CentOS Linux. This allows customers with Red Hat or CentoOS 6.8 or 7.2 systems to download and use the free version of DaVinci Resolve or the full DaVinci Resolve Studio. Adding Linux support gives customers more choice in hardware, allowing them to build extremely high performance, low cost workstations for editing and color correction.

Previously, DaVinci Resolve Studio was only available on a special build of Linux for customers using the high end DaVinci Resolve Advanced control panel for professional colorists.

Like the existing Mac and Windows version, the new Linux version of DaVinci Resolve is available as a free download from the Blackmagic Design website. The full DaVinci Resolve Studio is available for \$995 from Blackmagic Design resellers worldwide. Existing DaVinci Resolve Studio customers can easily move their dongle between Mac, Windows and Linux systems as they upgrade their hardware.

Source:

<https://www.shootonline.com/spw/blackmagic-design-announces-davinci-resolve-125-linux-now-available>

## PCLINUXOS 2017.03 KDE RELEASED

PCLinuxOS is a popular and easy-to-use Linux distribution that's distributed as a LiveCD. It has a simple and step-by-step installation process that can be completed by any new Linux user. Founded by Texstar in 2003, this distribution was first derived from Mandrake Linux, which is now called Mandriva Linux.

The default desktop environment of this rolling release distro is KDE. It also ships in other desktops like MATE, LXDE, LXQt, and Xfce. Just yesterday, the developers of PCLinuxOS announced the release of the new ISO images for KDE Edition.

Apart from the regular package updates, PCLinuxOS 2017.03 KDE Edition comes with KDE Plasma 5.8.6 LTS desktop environment. The other updated KDE components are Frameworks 5.31.0 and Applications 16.12.2.

Thus, the users can now enjoy the new features available in KDE desktop.

Source:  
<https://fossbytes.com/pclinuxos-2017-03-kde-features-pictures-download/>

## DELL DOUBLES DOWN ON HIGH-END UBUNTU LINUX LAPTOPS

CEO and founder of Dell, Michael Dell, has long been a Linux supporter. By 2007, under his guidance, Dell became the first major OEM to offer a laptop with pre-installed Linux. His Linux of choice? Ubuntu Linux. Ten years later, Dell is still selling Ubuntu Linux-powered laptops.

The best known of these is the Dell XPS 13 developer edition, but it's not the only Linux laptop Dell offers.

It took longer than expected for Dell to get this new set of five Ubuntu-powered Precision mobile workstations out the door. The Precision 5520 and 3520 are now

available. To see their Ubuntu option, go to each laptop's page and click on customize and buy.

The 3520, the entry-level workstation, starts with an Intel Core 2.5GHz i5-7300HQ Quad Core processor with Intel HD Graphics 630. From there, you can upgrade it all the way to an Intel Core Xeon 3 GHz E3-1505M v6 processor with Nvidia Quadro M62 graphics.

This model's price is currently \$897.50. That's \$101.50 less than the same machine with Windows 10 Pro. Yes, that's right. At long, long last, you can get a Linux laptop from a mainline vendor without paying the "Windows tax".

The 5520 is Dell's lightest 15" mobile workstation. Its default configuration starts with an Intel Core 2.8GHz i5-7440HQ Quad Core processor with Intel HD Graphics 630. You can upgrade the graphics with Nvidia's new Quadro M1200 graphics and 4GBs of video RAM.

The price starts at \$1,297.50. Again, this is just over \$100 cheaper than the same model with Windows 10 Pro.

Source:

<http://www.zdnet.com/article/dell-doubles-down-on-high-end-ubuntu-linux-laptops/>

## LITEBOOK LAUNCHES \$249 LINUX LAPTOP

A company called Litebook has released a new Linux laptop that is priced to compete with Chromebooks -- if not as cheap as the \$89 Pinebook. That's because the Pinebook is bare-boned when it comes to specs, using an ARM CPU, 2GB of RAM, and 16GB of built-in storage. The Litebook, on the other hand, uses an Intel Celeron processor (the N3150), twice as much memory, and a 512GB hard drive. (An extra \$20 gets you a 32GB SSD in addition to the hard drive to help speed up boot-ups.) It also includes a 14.1-inch display with 1,920x1,080 full HD resolution. It's similarly priced to the assembly-required Teres laptop, though it appears to be much better equipped.

The Litebook ships with the Elementary OS flavor of Linux, though you can install an alternate that uses the Linux kernel 4.8. It also comes with WPS Office pre-installed. It comes in a choice of

colors (black, red, or white) and provides a \$20 discount if you want to order it without a drive installed.

Source:  
<http://www.zdnet.com/article/litebook-launches-249-linux-laptop/>

## VMWARE AFFIRMS ITS OPEN SOURCE COMMITMENT BY BECOMING GOLD LINUX FOUNDATION MEMBER

Today, VMware shows its commitment to the open source community by becoming a Linux Foundation Gold Member. The company joins many other successful companies at that level, such as Facebook, Toshiba and Toyota, to name a few.

Dirk Hohndel, Vice President and Chief Open Source Officer at VMware explains that the company "looks forward to working more closely with the open source community, and we know this involvement will enable even better solutions and services for our customers. As a Gold member, we are committed to increased interaction with and contributions



to the community."

While VMware will certainly enjoy additional respect and credibility from the open source and Linux communities by becoming a Gold member, it is arguably the Linux Foundation that benefits most. After all, VMware is a major player in the technology world. The addition of such a major brand name to the list of Gold membership certainly bolsters the organization's appeal.

Source:

<https://betanews.com/2017/03/06/vmware-open-source-gold-linux-foundation/>

## ARCH LINUX-BASED MANJARO 17.0 'GELLIVARA' NOW AVAILABLE WITH CHOICE OF KDE OR XFCE DESKTOPS

Arch is a very cool Linux distribution, but it isn't for the faint of heart. Once it is installed and running, it can be very rewarding. Unfortunately, it is the installation that can be a pain point. Yeah, installing Arch from scratch can be a good learning

experience, but some folks just want to use an operating system as a tool -- not to get an education.

Luckily, some distributions offer a friendlier installer with an Arch base -- the best of both worlds. One such popular Linux distro that uses Arch as a base is the wonderful Manjaro. Today, the operating system reaches version 17.0. Code-named "Gellivara," it features a refreshed settings manager, offering a more attractive design. Users can choose between two desktop environments -- Xfce and KDE.

Source:

<https://betanews.com/2017/03/07/manjaro-arch-linux-17-gellivara-kde-xfce/>

## PARROT 3.5 "CYBERGALLEON" HACKING DISTRO RELEASED WITH NEW FEATURES

Parrot Security OS is often regarded as the best alternative to ethical hacking operating system Kali Linux. In late December 2016, we told you about the release of Parrot Security OS

3.3, which was powered by Linux kernel 4.8. The developers of the operating system called that release a "working snapshot of the bigger work."

Now, after the hard work of about 2 months, the developers of Parrot Security OS, Frozenbox Network, has announced the official release of Parrot OS 3.5, which is codenamed CyberGalleon. This Debian-based ethical hacking operating system is based on Debian GNU/Linux 9 Stretch.

As expected, Parrot Security OS 3.5 ships with many updated and tested packages from Debian. This release is powered by Linux kernel 4.9.13. Soon, Parrot team will start working on its patches for Linux kernel 4.10.

Apart from that, the team has also worked to implement some new features and ditched some obsolete ones. The older packages that didn't meet the Debian standards have been dropped. This includes the old and discontinued gtkdialog and some other software built on top of it. The other dropped packages are airmode and penmode.

About the new additions, native

VirtualBox and VMWare guest support has been included by default in Parrot 3.5. It also comes with Cryptkeeper, ZuluMount, sirikali, onboard virtual keyboard, CUPS and printing support, and experimental Cinnamon support.

Source:

<https://fossbytes.com/parrot-security-os-3-5-features-download/>

## CUJO IS A SMART FIREWALL THAT STOPS PEOPLE FROM HACKING YOUR INTERNET DEVICES

Already built into current versions of the operating system, people aren't excited about installing separate software for that purpose. A much-needed strategic shift in the security industry was shown by Cujo LLC, an LA-based company, last year. It's their malware fighting hardware CUJO smart firewall, which looks like the Google Home speaker.

They say that antivirus software can only protect the device on which it's installed. But the number of internet-connected devices around us has increased and so has

the possibility of security breaches. Their CUJO Smart Firewall safety device can kick out malicious data packets before they try to enter your home network.

CUJO is a network firewall with a brain. It connects directly to your router using an RJ45 connector. It monitors all the incoming and outgoing data packets on your network. If it finds something fishy, it sends the details to its creator's cloud servers for further analysis.

Source:

<https://fossbytes.com/cujo-smart-firewall/>

## ENDLESS MISSION ONE – A \$250 LINUX COMPUTER MAKES US FEEL IT'S TIME TO SWITCH

Endless Mission One is a Linux-powered desktop computer developed by Endless Mobile, Inc. Under the hood, it includes an Intel Celeron N2807 processor coupled with 2GB of RAM. Along with various connectivity options, Mission One comes in two storage options, 500GB and 320GB. One

can buy Mission One desktop for \$249. With all the major breeds of computers, whether laptops, desktops, and mini PCs, being Windows-centric, it's hard to find good hardware that has an eternal love for Linux distributions. But we have seen some good machines like the Mint Box Pro.

The minds behind the Linux-based Endless OS have also created a bunch of box computers, that come pre-installed with Endless OS. And I am sure, even if you don't buy these machines, they'll change your view about Linux machines regarding visual appearance. One of them, the Endless Mission One, has a wooden-finished body that makes it soothing AF in the first look itself.

Source:

<https://fossbytes.com/endless-mission-one-a-250-linux-computer-makes-us-feel-its-time-to-switch/>

## SYSTEM76 UBUNTU-POWERED LAPTOPS INCLUDE 4K DISPLAY AND KABY LAKE CPU OPTIONS

Linux users and fans of Ubuntu are probably quite familiar with the PC machines of System76. The company's machines come with Ubuntu pre-installed but are also flexible enough to handle Linux distros like Fedora, Mint or others without a problem. In addition to these highly flexible characteristics, System76's machines deliver some great specs, potential spec upgrades and great usability overall.

Now, as of just a couple weeks ago, System76 has been improving some of their notebook machines even further by giving them major cutting-edge hardware upgrades that include Intel's 7th generation Kaby Lake processing chipsets, the option of 4K UHD laptop display and the inclusion of NVIDIA GTX 10 GPU technology. The specific laptops to which these augmentations apply consist of the Oryx Pro, Serval WS and Bonobo WS notebook editions. Oryx already offered 4K and GTX 10 options for its pricier versions but the inclusion of Kaby Lake 7th generation Intel chips is new for all three notebooks. The Oryx Pro, Serval WS and Bonobo WS come priced between \$1,399 and \$2,799,

depending on model and specific configuration.

Source:

<http://4k.com/news/some-system76-ubuntu-powered-laptops-come-with-4k-display-and-kaby-lake-cpus-18926/>

## REFRESHED STABLE LINUX MINT DEBIAN EDITION (LMDE) 2 'BETSY' ISO IMAGES NOW AVAILABLE

Linux Mint is one of the most popular Linux-based desktop operating systems. With that said, did you know there are two versions of the OS? No, I am not talking about the multiple desktop environments, such as Cinnamon, MATE, and KDE. There are actually two entirely different operating systems that share the Mint name. The normal version of Linux Mint is based on Ubuntu, while a lesser known version, LMDE, is based on Debian. Is it confusing? Absolutely. A waste of resources? Probably. But hey, that's the state of Linux on the desktop nowadays.

Linux Mint Debian Edition 2 'Betsy' launched way back in 2015,



and hasn't needed a major base upgrade. Instead, LMDE has received a steady stream of updates over the last two years. The problem? The ISO images were very outdated, meaning a fresh install required a lot of updates. As a way to improve the experience, the Linux Mint team has decided to refresh the installation media. Today, refreshed stable Linux Mint Debian Edition (LMDE) 2 'Betsy' ISO images become available, with the choice of either Cinnamon or MATE.

Source:

<https://betanews.com/2017/03/13/stable-linux-mint-debian-betsy/>

## MATE 1.18 DESKTOP ENVIRONMENT RELEASED, FOCUSES ON COMPLETING THE GTK3 MIGRATION

**M**ATE 1.18 comes about 6 months after the release of MATE 1.16, during which was developed under the MATE 1.17.x umbrella, packages that some of you were able to install from the testing repositories of your favorite GNU/Linux distributions.

This release focuses on completing the GTK+3 migration, but also adds new features.

Prominent new features of the MATE 1.18 desktop environment release include support for the libinput library for handling touchpad and mouse input devices, updated Caja file manager with support for mouse-based back and forward navigation, notifications when external drives are safe to be removed, and copy pausing/queue functionality.

Source:

<http://news.softpedia.com/news/mate-1-18-desktop-environment-released-focuses-on-completing-the-gtk3-migration-513872.shtml>

## CHAKRA GNU/LINUX 2017.03 "GOEDEL" RELEASED TO SUPPORT LUKS ENCRYPTED PARTITIONS

**D**ubbed Goedel, in the memory of the mathematician, philosopher, and logician Kurt Goedel, Chakra GNU/Linux 2017.03 is the first ISO snapshot of the KDE

Plasma oriented distribution originally based on Arch Linux. The new release comes with a revamped Heritage theme and the Calamares installer with support for LUKS encrypted partitions.

Among the new components included in the Chakra GNU/Linux 2017.03 "Goedel" ISO snapshot, we can mention the KDE Plasma 5.9.2 desktop environment, KDE Applications 16.12.2 software suite, KDE Frameworks 5.31.0 collection of add-on libraries for Qt (both Qt 5.7.1 and 4.8.7 are included), Calligra 2.9.11 office suite, as well as the SDDM 0.14.0 login manager.

Source:

<http://news.softpedia.com/news/chakra-gnu-linux-2017-03-goedel-released-to-support-luks-encrypted-partitions-513918.shtml>

## NETBSD 7.1 IS OUT WITH SUPPORT FOR RASPBERRY PI ZERO, BETTER LINUX COMPATIBILITY

**N**etBSD 7.1 entered development only two

months ago, when we reported the availability of the first Release Candidate (RC) build, which brought various improvements and bug fixes. It's the first point release to the stable NetBSD 7 series and comes with a bunch of exciting new features.

Prominent features of the NetBSD 7.1 release include support for the Raspberry Pi Zero single-board computer, better compatibility with Linux binaries so you can use various apps and plugins, such as Adobe Flash Player, better Ethernet support for ODROID-C1 SBCs, and the implementation of the vioscsi driver for Google Compute Engine disks.

NetBSD 7.1 also comes with initial DRM/KMS support for Nvidia GPUs by using the Nouveau open-source graphics driver, which appears to be disabled by default. To enable it, you will have to uncomment both nouveaufb and nouveau in the kernel config.

Source:

<http://linux.softpedia.com/blog/netbsd-7-1-is-out-with-support-for-raspberry-pi-zero-better-linux-compatibility-513974.shtml>

## ORACLE RELEASES VirtualBox 5.1.18 & 5.0.36 WITH IMPROVEMENTS FOR SHARED FOLDERS

Oracle announced the availability of two new maintenance updates for the 5.1 and 5.0 stable branches of the open-source and cross-platform Virtualbox virtualization software for all supported platforms.

VirtualBox 5.1.18 is now the newest and most advanced version of the 5.1 series, bringing improvements for Shared Folders by addressing two regressions discovered in the previous point release. Specifically, it fixes an issue with access to long paths and case-insensitive filename access, but only for Windows guests.

These two bug fixes for Shared Folders have also been implemented in the VirtualBox 5.0.36 release, the most advanced in the 5.0 series, which also fixes an issue with virtual machine log collection for the VBoxBugReport component, as well as the autostart service script for Linux hosts, which were also fixed in the

VirtualBox 5.1.18 release.

Other than that, it looks like the VirtualBox 5.1.18 update addresses a Windows Additions regression from the VirtualBox 5.1.14 release related to automatic logins for Windows Vista and newer operating systems, and patches two API bugs that improve snapshot handling of PCI device and medium attachments.

Source:

<http://linux.softpedia.com/blog/oracle-releases-virtualbox-5-1-18-5-0-36-with-improvements-for-shared-folders-514009.shtml>

## SOME FIREFOX 52 USERS ON LINUX LEFT WITHOUT SOUND

Many Firefox users on Linux were left without the ability to play sound in their browser after updating to Firefox 52, released last week.

The issue at the heart of this problem is that Mozilla dropped support for ALSA (Advanced Linux Sound Architecture) and is now requiring Linux users to have installed the PulseAudio library to

support audio playback inside Firefox.

ALSA is a software framework included in the Linux kernel that provides an API for sound card drivers. On the other hand, PulseAudio is a more modern sound server that's already supported on most Linux distros, but also on FreeBSD, OpenBSD, and even macOS.

Most modern Linux distros come with PulseAudio installed by default, but some minimalistic distros still rely on the built-in ALSA framework.

Users on these distros were left with no sound in Firefox 52, which now requires AudioPulse as a minimum requirement. Users on mainstream distros, but which use older OS versions, are also affected.

While Mozilla engineers talked about imposing AudioPulse as a minimum requirement for Firefox, this conversation took place on an obscure Google Groups topic back in July 2016.

Firefox 52 Linux users weren't told about this change and had no

forewarning. The Firefox 52 release notes didn't mention anything about ALSA or PulseAudio.

Source:

<https://www.bleepingcomputer.com/news/software/some-firefox-52-users-on-linux-left-without-sound/>

## LINUX KERNEL 4.4.55 LTS ARRIVES WITH VARIOUS MIPS CHANGES, UPDATED USB DRIVERS

Many Linux-based operating systems still rely on the Linux 4.4 LTS kernel, including Alpine Linux and Ubuntu 16.04 LTS (Xenia Xerus), so the new patch is here to improve security and compatibility with newer hardware. Coming only five days after the previous update, Linux kernel 4.4.55 LTS changes a total of 45 files, with 289 insertions and 155 deletions.

Shipping with pretty much the same changes as its bigger brothers, namely Linux kernel 4.10.4 and Linux kernel 4.9.16 LTS, the Linux 4.4.55 LTS kernel includes a bunch of improvements to

various MIPS architectures, as well as a small s390 and PowerPC (PPC) changes, a fix for an EXT4 issue, the usual mm and core kernel changes, as well as updated USB, ACPI, MD, MTD, NVDIMM, networking, SCSI, and TTY drivers.

If you're using a GNU/Linux distribution powered by a kernel from the Linux 4.4 LTS series, you need to update to Linux kernel 4.4.55 LTS as soon as possible, or as soon as it lands in the stable repositories. It is also possible to download the Linux 4.4.55 LTS kernel source tarball right now from [kernel.org](http://kernel.org)

Source:

<http://news.softpedia.com/news/linux-kernel-4-4-55-lts-arrives-with-various-mips-changes-updated-usb-drivers-514063.shtml>

## EMMABUNTUS DEBIAN EDITION 1.02 LANDS BASED ON DEBIAN GNU/LINUX 8.7, XFCE DESKTOP

**D**esigned to revive those old computers donated to humanitarian organizations, as

well as to promote the discovery of GNU/Linux and extend the lifespan of computer hardware, the Emmabuntüs distro received its second maintenance update for the Debian edition, based on Debian GNU/Linux 8.7 "Jessie" and the Xfce 4.12 desktop environment.

Prominent new features introduced in Emmabuntüs Debian Edition 1.02 release include the integration of the Lilo search engine (see the attached screenshot for details), support for the new UEFI (Unified Extensible Firmware Interface) standard during installations.

It also improves support for the KeePassX password manager utility to no longer send qwerty characters instead of azerty, adds "The beginner's handbook" that's been released on December 20, 2016, along with the English version of Emmabuntüs Tutorials, and updates the Emmabuntüs Wiki.

The Baobab (Disk Usage Analyzer), Systemback and Mint Stick utilities have been added, along with a new tool that promises to let users enable and disable the Cairo-Dock dock. On

the other hand, Emmabuntüs Debian Edition 1.02 updates the TurboPrint, HPLIP, and Ancestris apps to their latest versions.

Among other changes, we can mention that the RecordmyDesktop screen recorder was replaced with Kazam, Pipelight flash player plugin with Freshplayerplugin, and the Catfish search utility with GNOME Search Tool. The Audacious audio player was updated as well to better support Cairo-Dock.

Source:

<http://news.softpedia.com/news/emmabuntus-debian-edition-1-02-lands-based-on-debian-gnu-linux-8-7-xfce-desktop-514108.shtml>

## LEADING LINUX DISTROS DAWDLE AS KERNEL FLAW PERSISTS

**A** local privilege escalation flaw has been fixed in the Linux kernel, but several upstream distributions have yet to release updates. Administrators should plan on mitigating the vulnerability on Linux servers and workstations

themselves and monitor the distributions for their update plans.

The race condition flaw in the `n_hdlc` driver in the Linux kernel 4.10.1 (CVE-2017-2636) can lead to a double-free error in `n_hdlc_release()` when accessing the `n_hdlc.tbuf` list, said Alexander Popov, a researcher at Russia-based Positive Technologies who found and reported the flaw. A local, unprivileged user able to set the HDLC line discipline on the tty device could exploit this flaw and gain increased privileges over the affected system or cause a denial-of-service condition.

The vulnerability, which got a base score of 7.8 under Common Vulnerability Scoring System (CVSS) 3.0, doesn't need to be triggered by any user interaction, and the attack complexity is considered low. Exploiting this flaw does not require specialized hardware or peripherals to be attacked in the targeted system. Under CVSS, the vulnerability is considered High severity because of its impact.

Source:



<http://www.infoworld.com/article/3182385/security/leading-linux-distros-dawdle-as-kernel-flaw-persists.html>

## ZORIN OS 12 DOWNLOADED OVER HALF A MILLION TIMES, 60% ARE WINDOWS AND MAC USERS

Believe it or not, the Zorin OS 12 open-source operating system passed the half million downloads mark today, as the development team proudly announced the milestone on the official Twitter account of the project.

Zorin OS 12 launched last year on November 18 based on the long-term supported Ubuntu 16.04 LTS (Xenial Xerus) operating system. It's dubbed by the development team as "the biggest release ever" and it introduced an entirely new Zorin Desktop experience that promises to make your PC more powerful and enjoyable to use.

During these past four months since its release, Zorin OS 12 has been downloaded over half a

million times from the official website, according to the Zorin team, who said that more than 60% of these are coming from Windows and Mac users who wanted to migrate to an open-source, Linux-based operating system.

The first point release, Zorin OS 12.1, also arrived and contributed to the half million downloads mark, along with the Zorin OS 12 Business and Education editions, and it now looks like the development team is working hard to release the Zorin OS 12 Lite flavor featuring the a brand-new Xfce-based desktop environment.

Source:

<http://news.softpedia.com/news/zorin-os-12-downloaded-over-half-a-million-times-60-are-windows-and-mac-users-514145.shtml>

## LINUX-USING MATES GONE AWOL? NETFLIX JUST ADDED LINUX SUPPORT

If your Linux-using mates suddenly disappear for a day or two, we can explain why: Netflix has just revealed it's fully and formally available on the OS.

As the streamer points out, Chrome's worked for in-browser playback since 2014. But not officially.

As of Tuesday, however, "users of Firefox can also enjoy Netflix on Linux."

Netflix reckons this is "a huge milestone for us and our partners, including Google, Microsoft, Apple, and Mozilla that helped make it possible."

HTML 5 had a lot to do with it, too, because by enabling plugin-free video playback it meant Linux users were spared the the recurring security nightmare that is Adobe Flash, which recently made a meaningful Penguin-land after ignoring Linux for years.

The Venn diagram describing the world population of Firefox-and-Linux-using-Netflix-subscribers probably doesn't have a large central overlap. But Netflix doesn't care: it says the effort to get its wares into Linux is part of a wider plan to get higher-quality video into more devices.

Source:

[https://www.theregister.co.uk/2017/03/22/netflix\\_on\\_linux/](https://www.theregister.co.uk/2017/03/22/netflix_on_linux/)

## GNOME 3.24 LINUX DESKTOP ENVIRONMENT RELEASED | HERE ARE THE NEW FEATURES

The GNOME Project has released the latest stable version of their open source desktop environment. GNOME 3.24, codenamed Portland, is here after 6 months of development and 28459 changes. Some of the biggest features of GNOME 3.24 are Night Light, improved notifications, new Recipes and Games application, two GPU support, etc. In any desktop-focused Linux distribution, a desktop environment plays a major role. Having said that, GNOME is one of the most popular desktop environments and it ships as a default desktop environment in many distributions. GNOME is an acronym for GNU Network Object Model Environment and it's a little younger than KDE.

The latest release of GNOME, GNOME 3.24, is now available. As

expected this release ships with tons of improvements and bug fixes. The GNOME Project calls the 3.24 release another step forward for GNOME. This release is here after spending 6 months in development. It's the 33rd release of GNOME.

Source:

<https://fossbytes.com/gnome-3-24-linux-desktop-environment-released-new-features/>

## UBUNTU MATE 17.04 FINAL BETA IS OUT WITH MATE 1.18, DROPS 32-BIT POWERPC SUPPORT

As some of you out there might have noticed, Ubuntu MATE 17.04 did not participate in the Ubuntu 17.04 Beta release for opt-in flavors last month, as the team worked hard on the recently released MATE 1.18 desktop environment, which brings numerous new features, it's fully ported to the GTK+ 3 technologies, and is shipping in the Final Beta.

Among some of the highlights introduced by MATE 1.18 in

Ubuntu MATE 17.04, we can mention full support for libinput to handle mice, trackpads and touch screens on both Wayland and X11, improved accessibility support, action icons support for notifications, desktop actions support and support for the Menulibre menu editor in MATE Panel.

Brisk Menu 0.3.0 applications menu is also included in Ubuntu MATE 17.04, as well as Ubuntu MATE Artwork 17.04.7, Ubuntu MATE Settings 17.04.5, Ubuntu MATE Welcome 17.04.8, MATE Tweak 17.04.2, MATE Menu 17.04.2, and MATE Dock Applet 0.76. Under the hood, the Final Beta is powered by Linux kernel 4.10 and uses the Mesa 17.0 graphics stack.

Ubuntu MATE 17.04 Final Beta does not ship with a 32-bit PowerPC (PPC) ISO image, and support for this platform has been dropped, officially. The final release of Ubuntu MATE 17.04 will be available only for 64-bit and 32-bit PCs, but it looks like the team will still support Ubuntu MATE 16.04 LTS 32-bit PPC installations until April 2019.

Source:

<http://news.softpedia.com/news/ubuntu-mate-17-04-final-beta-is-out-with-mate-1-18-drops-32-bit-powerpc-support-514211.shtml>



The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all.

The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day.

[podcast.ubuntu-uk.org](http://podcast.ubuntu-uk.org)



This month, I'm doing things slightly differently. As I don't have a topic lined up for a typical length article, I am instead covering two smaller articles, which would otherwise not be covered here (due to them being too short).

## RAZER DEATHADDER ELITE

Towards the end of 2016, my old mouse was starting to look really worn. As such, I decided to replace it with a Razer Deathadder Elite. As is the case with almost all Razer devices, it offers a lot of lighting options. Unfortunately, at the time of purchase, it wasn't supported by any Linux tools for configuring Razer devices. Recently, that has changed. As such, I'll be covering what worked for me to configure the effects of my mouse.

## SOFTWARE

I used polychromatic-controller and razer-drivers. Installation instructions are listed here:

<https://github.com/lah7/polychromatic> and <https://github.com/terrycain/razer-drivers#installation>

## SETUP

I had to run razer-service to get the daemon to run correctly, and set it to autostart in my i3 configuration. Depending on what DE/WM you use, you'll probably need to do the same.

## CONFIGURATION

Once set up, I opened polychromatic-controller, and set up the effects, brightness, colors, and could even adjust the DPI settings. Oddly, the breath animation wasn't available for the logo, which should be a bug (as far as I know, breath is supported on both LEDs). In any case, the software offered more options than alternatives (such as razercommander) for this particular device.

## THE FUTURE

Recently, Razer announced that they wanted to improve their support of Linux on their systems, as it is one of the most requested changes made by customers. To this effect, they've now also opened an official Linux Corner area on their forum (link below in Further Reading). No concrete promises yet about their Synapse software or other changes, but it's a step in the right direction.

Hopefully this short article will be useful for anyone who owns Razer products and wants to have more control over the various effects and colors. Macro keys are also partially supported. If you have any questions, suggestions, or recommendations for articles, feel free to contact me at [lswest34+fc@gmail.com](mailto:lswest34+fc@gmail.com).

## FURTHER READING

<https://insider.razerzone.com/index.php?forums/linux/> - Razer Insider Linux Corner

## Go

For anyone who thinks that I mean the programming language, I'm sorry to say I'm actually referring to the board game. If you're looking for places to start with the programming language, I would recommend the official tour. Back to the topic on hand!

## WHAT IS GO?

Go is a board game played with white and black stones played on a 19x19 grid board, that has been around for, quite literally, thousands of years. It's focused around creating territories of stones, and capturing the stones of your enemy. It is a highly strategic game, and more complex than typical chess or even Shogi (at least when you consider the number of possible moves). It got recent widespread coverage when AlphaGo (an AI created by DeepMind) played (and beat) Lee Sedol (a professional Go player, and one of the top in the world). Since then, AlphaGo has also



played online under the alias of "Master".

## CAN I PLAY IT ON LINUX?

While there are a few apps that allow you to review SGF (Smart Go Format) files or play against bots such as gnugo, none of them have ever particularly overwhelmed me. Instead, my preferred approach is to play on <https://online-go.com>. The website offers the ability to play live against other people, play correspondence games (that is to say, games played over long periods of time), the computer, and to review games.

## HOW DO I GET STARTED?

There are plenty of ways to get started playing Go. The initial rules aren't terribly complicated, but gaining a proficiency in actually playing the game can take a while. There are some books, websites, and even some YouTube videos that can explain the rules to you. Once you know how pieces are played and the basic definitions of territory, alive, and dead, you can probably manage a good teaching game against a stronger player, or else do some life or death (Tsume)

problems on websites such as <https://online-go.com>.

## ANYTHING ELSE I CAN DO?

If you're not completely new to Go, it can usually be quite interesting to study other people's games. These are frequently posted on the web as SGF files, or conducted on Twitch/YouTube. Recently, AGA (the American Go Association) has begun posting videos of reviews done by Michael Redmond and Chris Garlock. These SGF files can also be imported into online-go's SGF Library (publically or privately) to study using their system (which I find much better than desktop tools I've tried). They are typically annotated, and offer alternative moves.

Otherwise, you can simply play other people. Go supports handicaps, and as such, you should be able to balance the scales even against much stronger opponents. Even a loss can teach you something, especially if the game is reviewed later (either via forums, or directly after completion).

There are also a bunch of

associations worldwide that have various communities and followings. Depending on where you live, there may even be one near you.

## WHAT ARE THESE RANKING SYSTEMS?

Go players are split into two groups - Kyu, and Dan. Kyu ranks are typically amateur or student rankings, and Dan ranks are masters/professionals. The Kyu ranks decrease the better you are, and the Dan ranks increase. The typical rankings are 30-21Kyu (for beginners), 20-11Kyu (for casual players), 10-1 Kyu (for players who are good, but have either opted to not advance to Dan, or who aren't yet capable of advancing). And the Dan ranks are 1-9. I've seen Dan ranks listed as 1-7d, which seem to be used for amateur players who are at Dan strength, and 1-9p, which are the professional levels and rankings. There are some special titles, but for most people, this is all you need to know. Personally, I'd say I'm still well within the 30-21 Kyu mark.

I hope this has given a starting point to anyone interested in Go. If

you have questions, or want to play a game against me, you can find me as lswest on online-go (22 Kyu). If you have recommendations, or suggestions, for C&C, feel free to email me at [lswest34+fcc@gmail.com](mailto:lswest34+fcc@gmail.com).

## FURTHER READING

<http://senseis.xmp.net/> - Sensei's Library

<https://www.youtube.com/user/USGOWeb> - American go Association's YouTube page.

*The Book of Go* by William S. Cobb - A beginner's book to Go, includes a small portable set of pieces and a cardboard board (9x9 and 13x13 size).

*Games of Go* by Neil Moffat - A set of fully commented games of Go that have been played online. Not necessarily for a complete beginner, but it's a nice set of explanations.

<http://81dojo.com/> - Not a website for Go, but for Shogi. In case anyone is interested in Japanese chess, this website is one of the best I've found.



This time, we will start controlling the Arduino with the Raspberry Pi. To do this, we will be using the Firmata library and protocol.

## WHAT THE HECK IS FIRMATA?

Firmata is a serial communications protocol long used for communications between microcontrollers and programs on another computer. Firmata gives access directly to the Arduino board. You can communicate through the serial port of the "host" computer using just about any serial language, including Python. It is based on the MIDI spec.

By using the "Standard Firmata" script included in the Arduino examples, you can access and control any of the digital and analogue pins on the Arduino board, without having to write any custom code. If you want, you can write specialized code incorporating the Firmata library

for the Arduino that does specialized functions.

## GETTING STARTED

Load the "StandardFirmata" script from the Arduino examples (File|Examples|Firmata|StandardFirmata), compile and send it to the Arduino.

If you are going to test Firmata/Arduino on the Raspberry Pi, you should download a version of Firmata\_Test program that is compiled for the RPi from: <https://github.com/freetronics/PiL-even/wiki/Direct-Control-with-Firmata>, otherwise, you can download the Firmata\_Test from [firmata.org/wiki/Main\\_Page#Firmata\\_Test\\_Program](http://firmata.org/wiki/Main_Page#Firmata_Test_Program). I saved it to my RPi desktop, but you can save it anywhere you want.

Be sure to set the permissions to allow execution, since it's a .bin file. Then run it

```
./firmata_test
```

Set the port to the same port

your Arduino is. In my case, it's on /dev/ttyACM0. Then after a few seconds, the program will show the 13 digital ports and the 5 analogue ports.

Click on the button marked "Low" for pin 13. This should change to "High" and the LED on the arduino board should light up. Click it again and it should turn back to "Low" and the LED should go out.

## GOING FURTHER

For now, most anything you want to do in Python will work with the "Standard" Firmata code uploaded to the Arduino by using the pyFirmata Python library. However, you can write your own Firmata code on the Arduino.

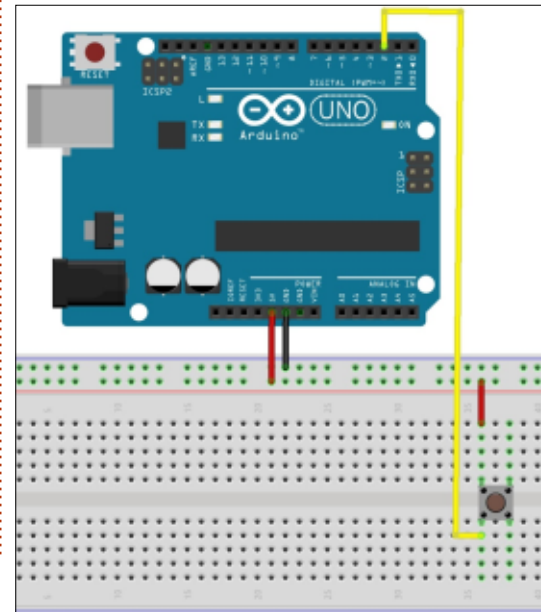
For the Python side of things, we will need to install two libraries (if they aren't already installed). The first is pySerial and the second is pyFirmata. You can use pip to install both.

```
sudo pip install pyfirmata
```

## USING PYSERIAL

Our first Python example will require a momentary push-button connected to pin 2 of the Arduino. Below is the Fritzing breadboard layout.

Basically, we simply connect +5VDC from the Arduino through the pushbutton to Digital pin #2. Alternately, if you don't have a small pushbutton available, you can momentarily connect a jumper



```
sudo pip install pyserial
```

# HOWTO - PYTHON

between the +5VDC pin and Digital pin #2.

On the Arduino, compile DigitalRealSerial example file from the File|Examples|01 Basics menu.

On your computer, you can either simply use the Python Terminal Interface or enter the following code into an IDE like Geany and run it in a terminal.

```
import serial

s =
serial.Serial('/dev/ttyACM0',
9600) # You might need to
change this to ACM1 or
whatever your Arduino is
connected to

while True:

    print s.readline()
```

As you press the button and release it, you should see the output in the terminal change from 0 to 1 and 1 to 0.

To quit the program, use <Ctrl> + C.

Now you have written your first program to control the Arduino from Python.

Now we'll do something a bit

more complicated. We'll "monitor" an analogue voltage (controlled by a potentiometer) on analogue input A0 and if the voltage is over a certain value (.50) we'll turn on a LED connected to digital pin #2. Below is the Fritzing breadboard.

Using the StandardFirmata Arduino code again, start up the Arduino board.

Below is the Python code. I've named it "analogue\_test1.py".

```
import pyfirmata
PORT = "/dev/ttyACM0" #
Change this to suit your
```

## setup

```
board =
pyfirmata.Arduino(PORT)
```

In the first three lines, we import the pyfirmata library, assign the serial port and create an instance of the "board".

```
PINS = (0, 1, 2, 3)
```

Here we are setting up for 4 analogue pins to be handled, even though we are only going to use pin 0 for this example.

The next two lines create an iterator to handle the serial

communications for the analogue ports. This is recommended in the pyfirmata documentation.

```
it =
pyfirmata.util.Iterator(board)
it.start()
```

Now we enable the 4 analogue pins for reporting so we can read the value. We also set up digital pin 0 as an output pin (to be able to drive the LED).

```
for pin in PINS:
```

```
board.analog[pin].enable_reporting()
```

```
pin2 = board.get_pin('d:2:o')
```

The next two lines will read analogue pin 0 and then wait one second. This allows for the board to settle before we start the loop.

```
val = board.analog[0].read()
```

```
board.pass_time(1)
```

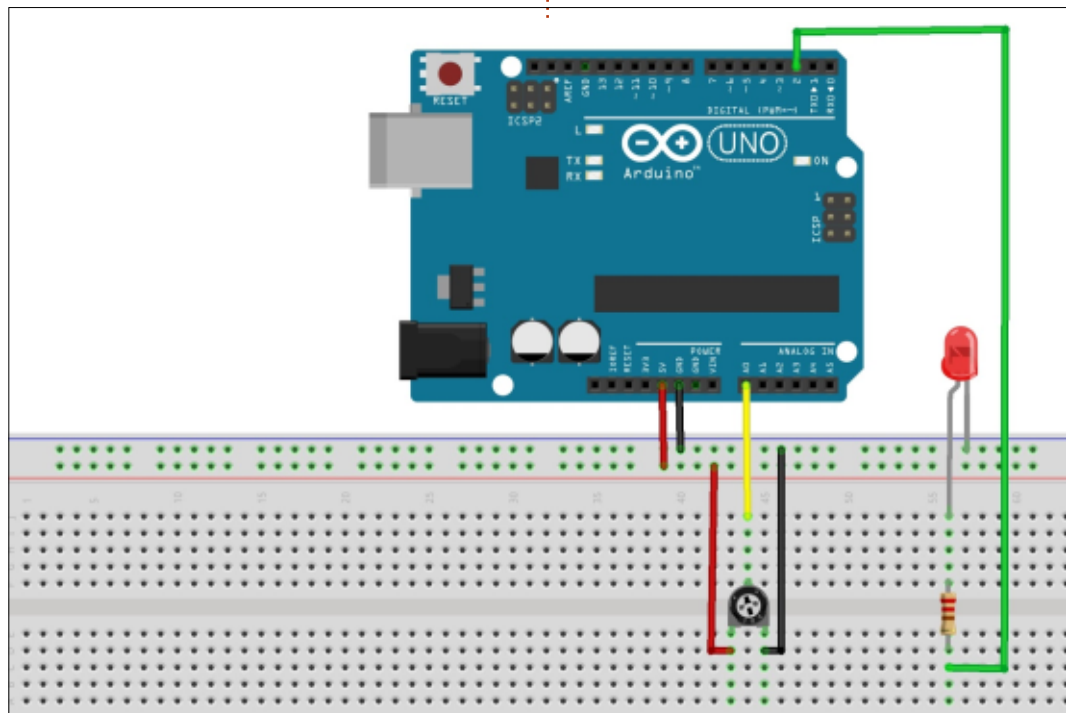
Now we start a forever loop...

```
while True:
```

```
    val =
board.analog[0].read()
```

```
    print val
```

```
    if val >= .50:
```





```
        pin2.write(1)
    else:
        pin2.write(0)
```

Within the loop, we read the analogue pin (remember the value will be between 0.0 and 0.9) and if it is at or greater than 0.5, then we write a 1 to the digital output pin #2, turning on the LED. Once it is under .50, then we write a 0 to the pin, turning off the LED again.

```
board.pass_time(1)
```

The `board.pass_time` command takes an integer of `t` number of whole seconds. It is a non-blocking call, so it does not block other processing.

The Python source code is available on pastebin at <http://pastebin.com/xG9VJ34i>

Now that you have the basic idea, we can move forward.

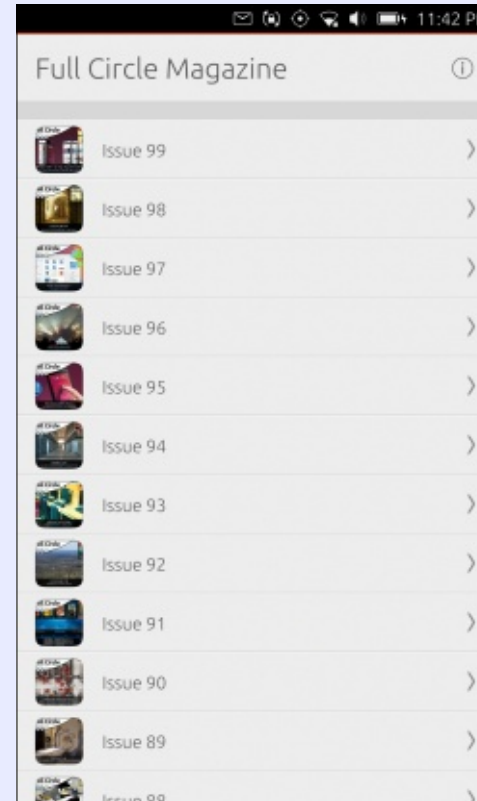
You might have realized that this solution will work only as long as we have a direct serial connection to the Arduino board. What if, however, we need to have a wireless connection to the Arduino? We'll save that discussion for another time.

Enjoy.



**Greg Walters** is owner of RainyDay Solutions, LLC, a consulting company in Aurora, Colorado, and has been programming since 1972. He enjoys cooking, hiking, music, and spending time with his family.

## THE OFFICIAL FULL CIRCLE APP FOR UBUNTU TOUCH

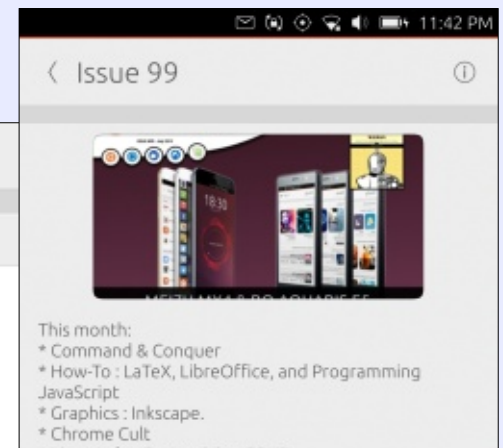
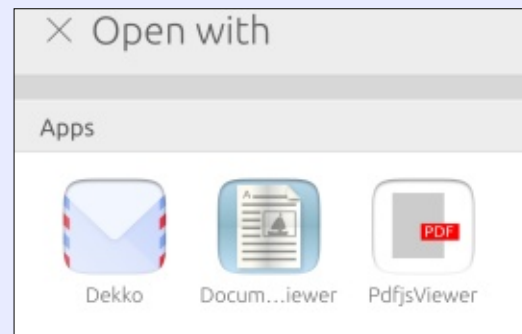


**Brian Douglass** has created a fantastic app for Ubuntu Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

### INSTALL

Either search for 'full circle' in the Ubuntu Touch 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>





# HOW-TO

Written by J. Kerr

## LaTeX Export With Zim

LaTeX can be found in the most surprising places. It is not only the ability to compose in LaTeX that can be found, it is the ability to export data in a \*.tex file which is then compiled to produce the pretty .PDF file. The financial package Grisbi can do that, as well as Gnumeric. It is not uncommon. I have seen others, they just do not come to mind right now. However the programs export only the .tex file, we need the rest of the LaTeX packages to compile.

The ability to do a .tex export of files can be found in the desktop Wiki application called Zim. You can find Zim in the Ubuntu repositories. I found Zim one day when I was just skimming through the lists of software as they are found in the Synaptic Package Manager, and I thought that Zim looked interesting. Here is the description from Synaptic:

*"Zim is a graphical text editor used to maintain a collection of wiki pages.*

*"Each page can contain links to*

*other pages, simple formatting, and inline images. Pages are stored in a folder structure, like in an outliner, and can have attachments. Creating a new page is as easy as linking to a nonexistent page.*

*"All data is stored in plain text files, with wiki formatting. Various plugins provide additional functionality, like a task list manager, an equation editor, a tray icon, and support for version control.*

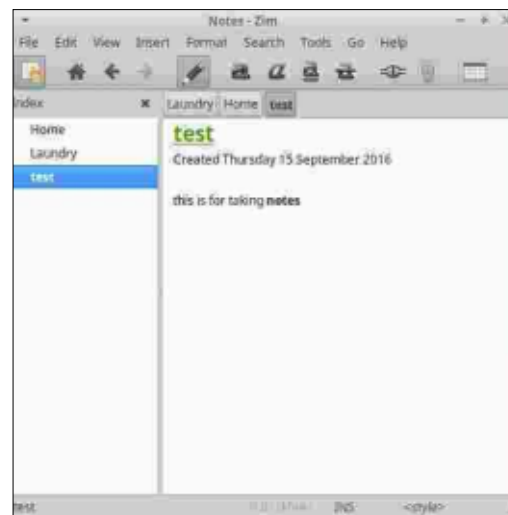
*"Zim can be used to:*

- \* Keep an archive of notes*
- \* Take notes during meetings or lectures*
- \* Organize task lists*
- \* Draft blog entries and emails*
- \* Do brainstorming"*

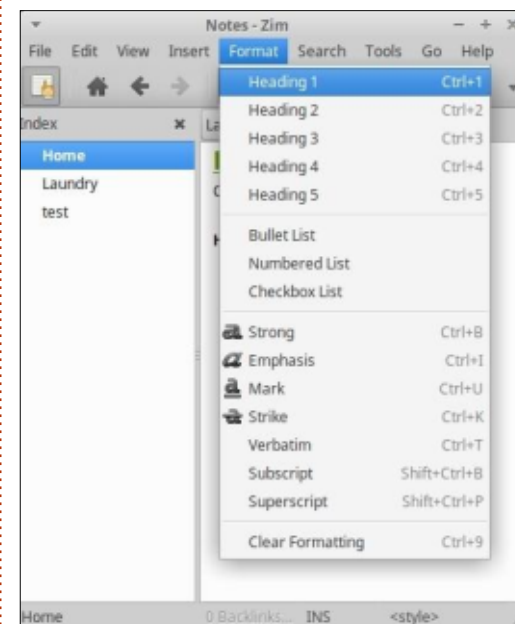
So, all that I was expecting was a text editor that would permit me to link to my files. An editor and some kind of organiser. File format exporting in LaTeX, HTML, MHTML, RST or Markdown is not mentioned, this is a bonus that I found later. In fact, the more I looked into Zim, I realised that this application was much more than as

advertised in Synaptic.

Zim looks like any other text editor, with text formatting such as bold, italic, underline and strike-through. The top menu bar also has a link icon, an attachment icon, and a calendar icon that will start a journal section on your Index column as soon as you click on a day in the calendar.



As for page formatting, click on the Format menu and we find just about everything we need for everyday documents and more:



Zim is full of surprises, and, hang on, I will get to LaTeX in a few minutes. Under the Edit menu we find Templates, where we can select a template to use for the way Zim looks when you open it, and a choice of six HTML templates. We can choose from three LaTeX document styles, default Markdown, and RST. But wait! There is more! In the Templates menu there is a link to get more templates online at: <https://github.com/jaap-karssen/zim-wiki/wiki/Templates>.

## ANOTHER PLEASANT SURPRISE: THIRD-PARTY HTML EXPORT TEMPLATES

There are export templates that will allow you to export your files as a complete Wiki in HTML format. This feature enables us to run an instant website on something as small as a Raspberry Pi. The following is a cut-and-paste from the Zim web site:

## EIGHT-FIVE-ZERO

A template for exporting content from the Zim program as a website. It is designed to be responsive for viewing in all devices. Specifically, it is designed as "mobile-first," (dropping navigation to the bottom of the screen), and will enable right-side navigation only if the device is of significant width and in landscape mode. Available on github

## ECODIV-RESPONSIVE

Template to export your Zim notebook as a responsive/adaptive website that can be viewed in desktop and mobile devices alike.

You can find more information, or download the template, on this github page. For an example, see <http://ecodiv.org/> and <http://notebook.ecodiv.org/>

## ECODIV-MOBILE

Template to export your Zim notebook as a website with mobile theme. Build with jquerymobile to create a website with a focus on mobile devices, but which will also look good on the desktop. The template offers some pointers to customize the design to fit the user's need. For more information, or to download the template, go to the github page.

## LATEX EXPORTING



Yes it is about time I got to this. Here is a short entry I made to Zim:

- To export this as a LaTeX file:
- Click on File ---->Export---->Single Page
  - Forward
  - Under Format select LaTeX
  - Choose a template
  - Forward
  - Give the output file a name and/or select the directory it is to go into
  - Click OK

This is the file I created under the "Part" template:

```
+
\part{Home}
\chapter{Home}
Created Wednesday 31 August 2016
\chapter{Hello World}
\textbf{Some Thoughts on Software Freedom}
```

There are some things that we have to keep in mind about Free Software.

```
\begin{enumerate}[1]
\item "Free software" means software that respects users' freedom and community. Roughly, it means that the users have the freedom to run, copy, distribute, study, change and improve the software. \textbf{Thus, "free software" is a matter of liberty, not price.}
\item In computer history, take Richard Stallman, Linus
```

Torvalds, and Tim Berners-Lee out of the equation \emph{and the .dot com billionaires don't happen.} \item At this very moment you are benefiting from the efforts of the three people listed above. Keep in mind that there are many more people who have contributed to free software. \end{enumerate}

Copy the .tex file in whole or part into your LaTeX editor, You will need to provide the preamble. There may be gremlins and you may have to make some edits such as:

- Remove the [1] from the first line.
- Replace any " or ' using your LaTeX editor.
- Any words that have capitals in the middle of them are treated by Zim as a link. So a word like CanLii will have to be broken up (Can Lii) and the code for the link removed.

Take care of those gremlins and you should have a very nice .PDF file with all of your formatting intact. Your Latex editor will alert you of any changes like this that need to be made.

I would not want to use Zim as my main LaTeX editor, but it is nice to know that after you have done



# HOWTO - LATEX EXPORT WITH ZIM

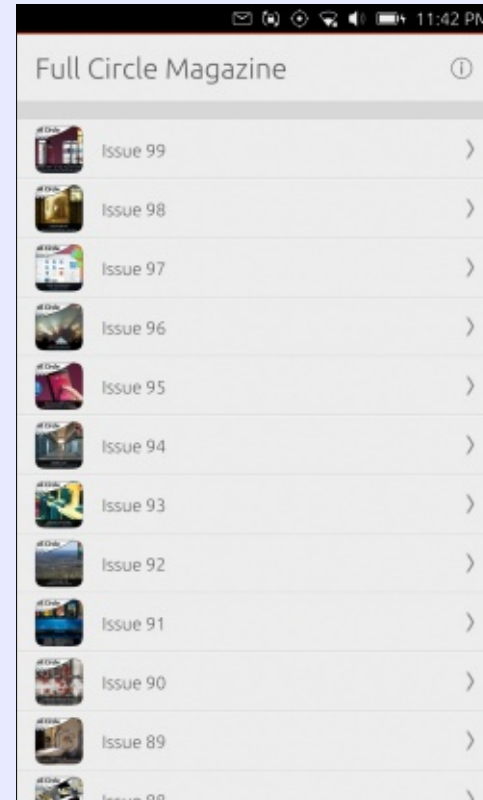
some work within Zim, you have an option to export in a LaTeX document format that can be imported into an existing document or be a LaTeX document on its own.

I will be using Zim to create an internal website at the law library where I work. Zim automatically saves any edits that you make to the file. I like this feature – I can't forget to save before closing. To date, it is the best organiser, note taker, journal creator, and backup LaTeX editor, that I have found.

Zim is the creation of Jaap Karssenberg  
(jaap.karssenberg@gmail.com)  
Thank you Jaap.

**This article was written using Zim, LibreOffice, and Shutter on a Raspberry Pi3.**

## THE OFFICIAL FULL CIRCLE APP FOR UBUNTU TOUCH

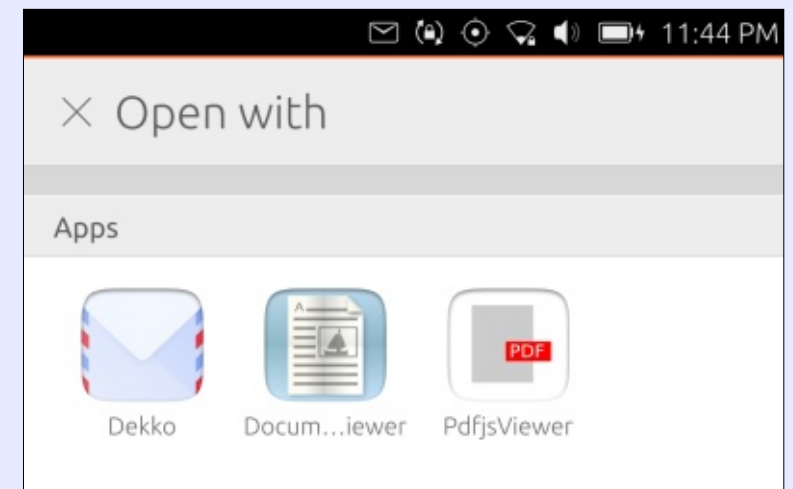
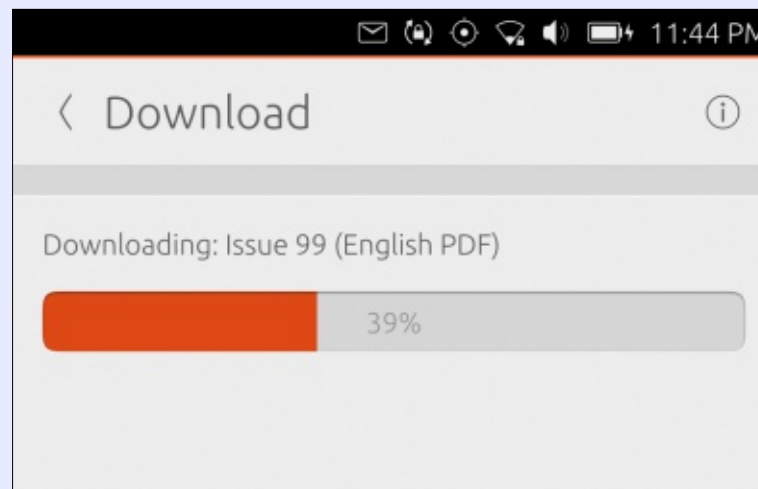


**B**rian Douglass has created a fantastic app for Ubuntu Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

### INSTALL

Either search for 'full circle' in the Ubuntu Touch 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>





# HOW-TO

Written by Miguel Menéndez Carrión



NEW

# Ubuntu Touch Pt.2 - Install Dev Tools

In the previous chapter we have seen an introduction to the programming course with Ubuntu Touch. The next step is to prepare the development environment. When programming in any language, an SDK (Software Development Kit) is often used. The SDK consists of a set of tools that processes the source code and generates the executable for the platform that is being used. Ubuntu Touch is not an exception and also has its own SDK.

Applications in GNU / Linux are in repositories. The repository contains a set of applications that can be easily installed. On some occasions, there are applications that are not in the official repositories. For these cases, it is possible to use personal repositories, also known as PPA repositories. The Ubuntu Touch SDK is in a PPA repository that will have to be added to the system in order to be installed. With this limitation, it can be programmed only on distributions that can work with PPA repositories, that is to say, all the distributions that use

Debian as a base. If the distribution uses RPM packages, as in the case of OpenSuse or Fedora, alternative measures will have to be taken.

There are two other ways to do this: create a Live USB with Ubuntu, or use a virtual machine that has Ubuntu installed. The first one is simpler and works reasonably well if the USB memory is fast. The second way is more comfortable since it does not depend on a USB stick, but requires a more powerful computer to run the virtualized operating system. I will not go into how to create a Live USB or virtual machine. Anyone in one of these two cases can ask in the mailing list and I will guide him/her with the most important steps.

My development environment is:

- Ubuntu 16.04 LTS.
- Aquaris E4.5 with OTA-14.
- Aquaris E5 HD with OTA-14.
- Aquaris M10 FHD with OTA-14.

It is possible that in other distributions there are some

intermediate steps that need to be done to configure the SDK. If that is the case you can indicate it.

## INSTALLING THE UBUNTU TOUCH SDK

Installing the SDK is very simple and should not take more than a couple of minutes. It is advisable to have the system updated before you start. In the case of Ubuntu, this can be done with the commands:

```
sudo apt-get update && sudo  
apt-get upgrade && sudo apt-  
get dist-upgrade
```

You use sudo because package installation requires administrator permissions. The first command updates the list of repositories. If there is no error, the second command is executed, which is responsible for updating the applications. Finally, the third command updates some operating system packages that are not updated by default.

Add the Ubuntu Touch SDK

repository with the command:

```
sudo add-apt-repository  
ppa:ubuntu-sdk-team/ppa
```

The repository information will be displayed. You can continue by pressing the ENTER key.

All repositories have a signature that assures us that the installed packages come from the repository. This signature is added to the system and will be used when repository packages are installed.

After adding a repository, it is necessary to update the information of the packages that it contains. You can do this with the command:

```
sudo apt-get update
```

Everything is ready. The last step of this section is to install the Ubuntu Touch SDK.

```
sudo apt-get install ubuntu-  
sdk
```

Although only one package

# HOWTO - PROGRAMMING FOR UBUNTU TOUCH

(ubuntu-sdk) is put in the command, all the dependencies of that package are automatically installed, so it works without problems. The installation may take a while depending on the Internet connection. It's a good time to let the computer work and have a good coffee.

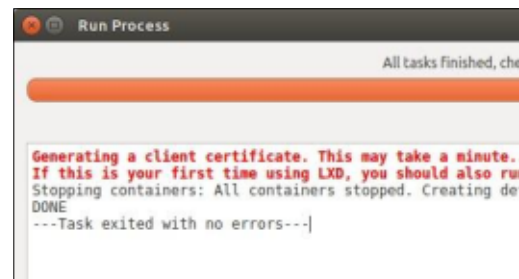
## SETTING UP THE ENVIRONMENT

The Ubuntu Touch SDK includes tools to generate applications, and an editor to make programming easier. The tools take the source code of the application and process it. If the target is a computer there is no problem. However, if the target is a device that uses Ubuntu Touch, we are in a different scenario. These devices use the ARM architecture, which is different from the one used by the PC. To generate the executable, you have to use a cross-compiler that runs in a container (LXD in the latest versions of the SDK).

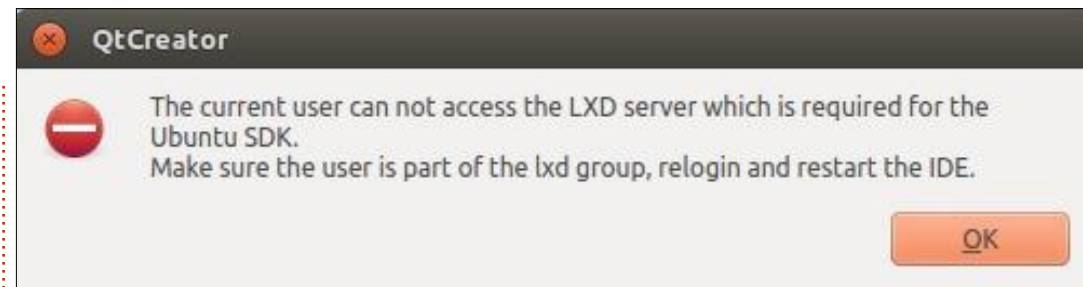
To work with LXD, you have to add the user (that is used on the computer) to the group lxd.

```
sudo usermod -a -G lxd user
```

After writing the command, you have to close the user's session and log in again. You can start working with this small modification. To start, we need to run the ubuntu-sdk-ide application; it can be launched from the desktop start menu, or by pressing ALT + F2 and typing its name. The first time it's launched, a screen appears asking which lxd has to be configured. Just press 'Yes' to generate the default configuration.



If the user is not in the lxd group, the following screen error will appear. In that case, it is sufficient to log out and log in again. When launching, the IDE of



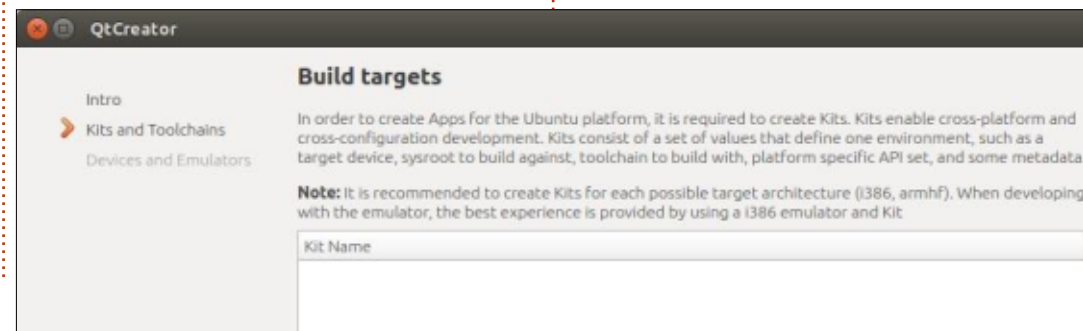
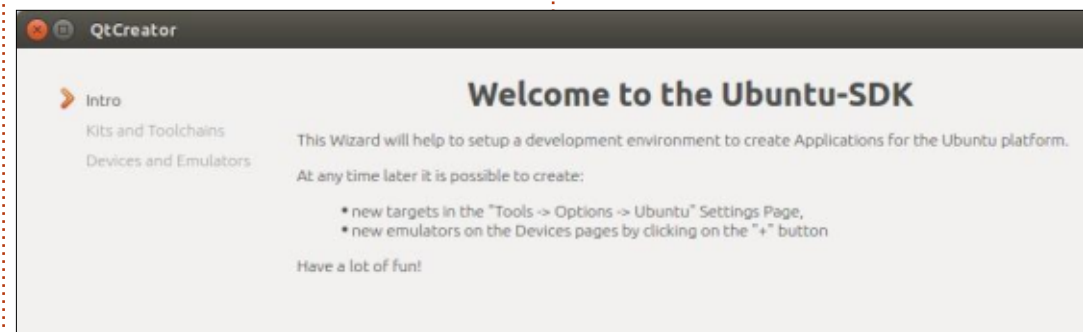
Ubuntu Touch should give you no errors.

## CONFIGURATION WIZARD

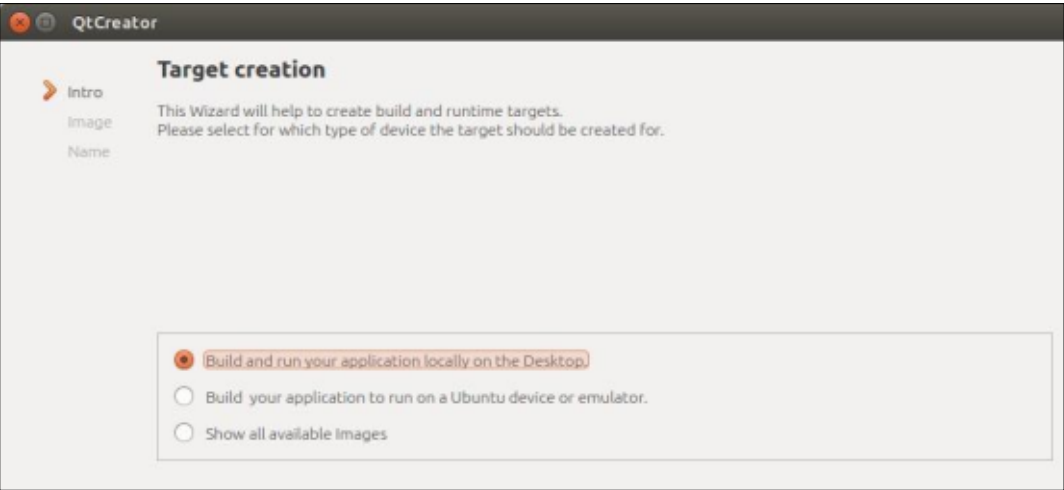
The first screen (shown below) of the wizard is an introduction to Qt Creator. To continue, click the 'Next' button.

Although the course is focused

on mobile devices such as phones or tablets, you may also apply the knowledge learned to create desktop applications. Each of these devices has an associated kit – a set of tools which is based on the code that is programmed and generates the necessary files for each device (screen shown bottom).

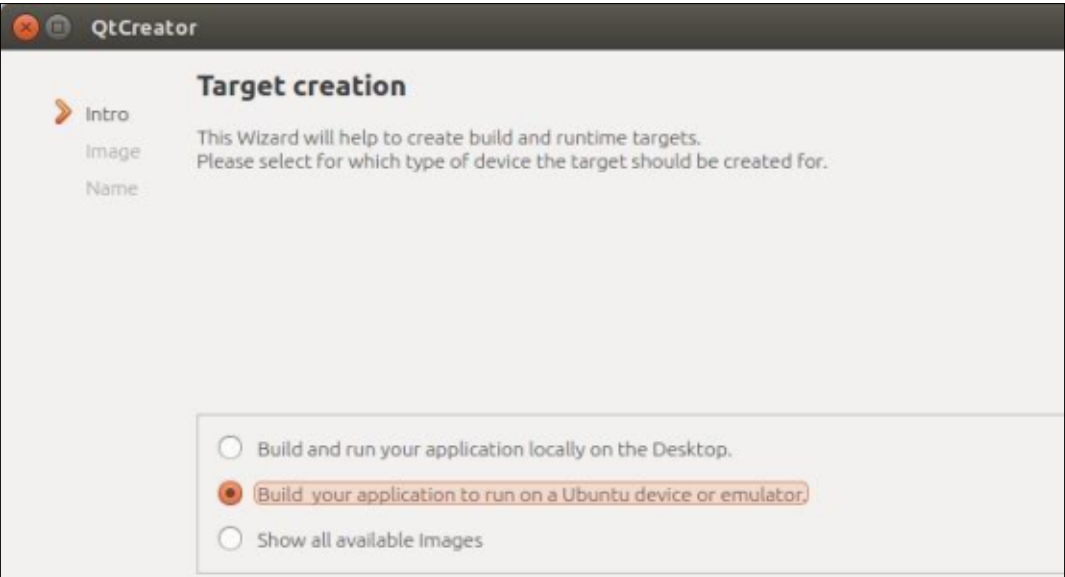






Click the 'Create new Kit button' (shown above). The first option must be selected.

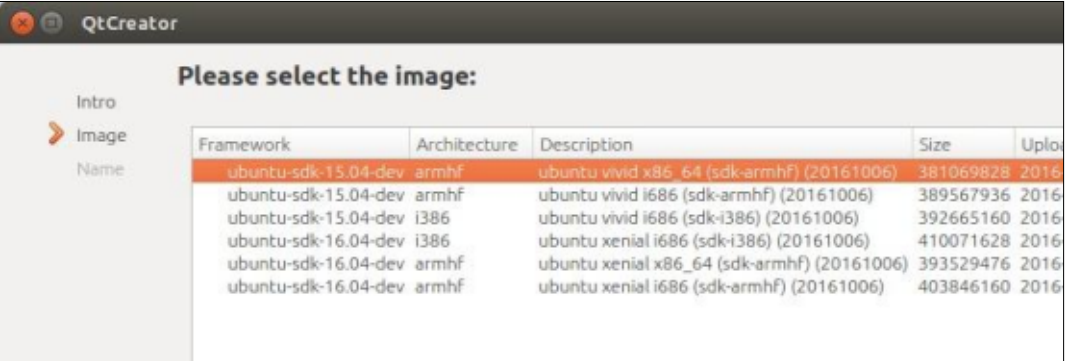
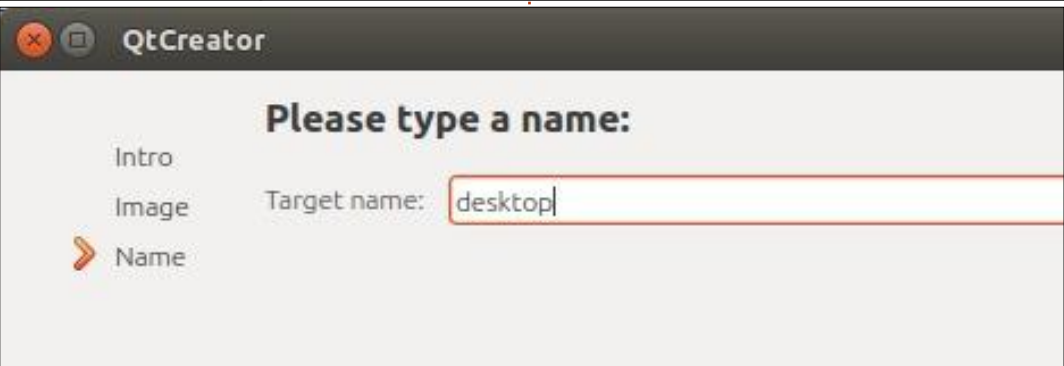
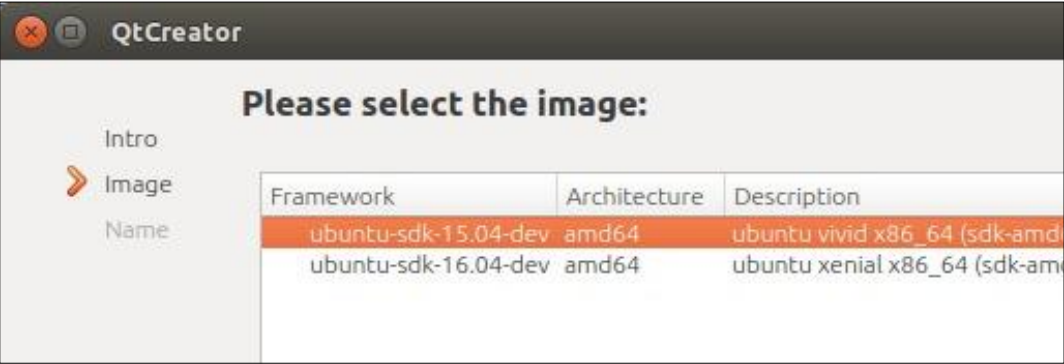
In the list (below), there are several kits to download. Ubuntu Touch is currently based on Vivid so you have to select that option.



Finally (bottom left), write the name of the kit.

When you complete the last step, you return to the initial screen of the kits. Press the 'Create new Kit' button again and repeat the process by selecting Ubuntu Device.

With this kit, there are more options to choose from. Phones or tablets that use Ubuntu Touch work with the armhf architecture. In the list, you have to select a kit that has that architecture. The version of Ubuntu Touch is Vivid, as in the previous case. Finally, you have to choose 686 or x64 depending on whether the computer uses 32 or 64 bits.

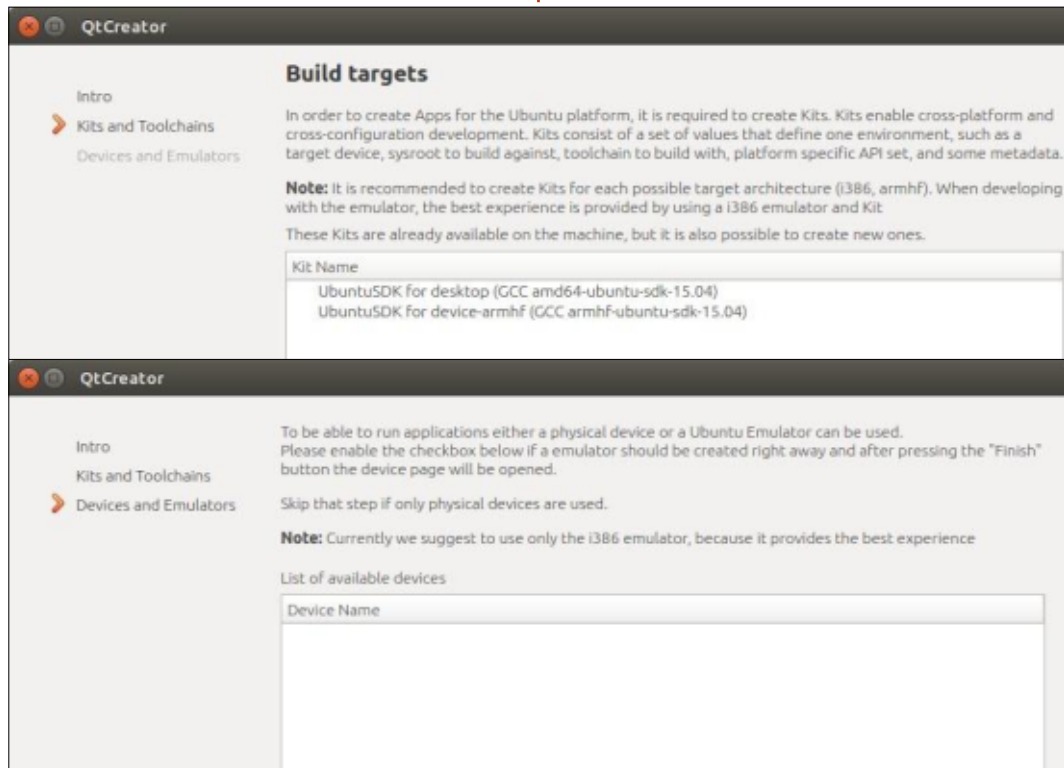




After pressing the 'Next' button, you must write the Kit name.

At this time it is not necessary to create additional kits (below).

In the last step of the wizard (bottom), you can configure the physical devices and the emulator. There are some problems with the emulator. For now, I recommend not to configure the emulator.



Applications can be tested natively on the computer. For this reason, you must uncheck the 'Create emulator' box, and click on the 'Finish' button.

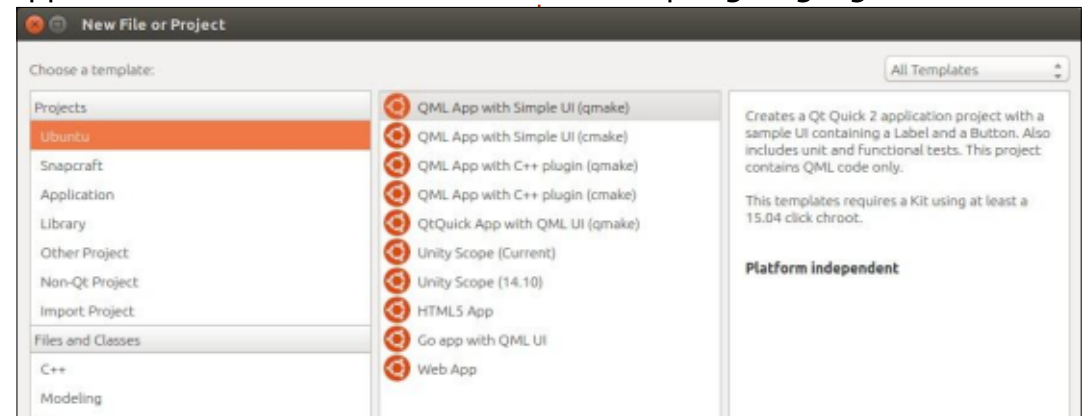
computer natively and on a tablet. As you will see, it is quite simple to do it. Kits are updated frequently. If the screen above appears, all the kits must be marked and updated.

## HELLO WORLD

In order to keep the good traditions, the first step is to program a minimal application that allows us to check the correct operation of the SDK. The application will run on the

## PROJECT CREATION

Click on the File menu, New file or project. A window (below) will appear with the types of projects that can be used. The user interface is made with QML which is a scripting language oriented to



# HOWTO - PROGRAMMING FOR UBUNTU TOUCH

the creation of graphical interfaces. The logic of the application can be done with several languages. JavaScript will be used for now. Select the first option and then click on the 'Choose' button.

You must choose the folder in which the projects will be saved. The project name cannot contain spaces.

Applications need basic information: user and maintainer. All other parameters should be left

at their defaults. It is important to respect the structure in the Maintainer field so that it allows us to continue.

You have to select the kits that you want to use. By default, the two will be selected in order to run the application on the computer and on the mobile device.

The last screen contains a summary of the wizard steps. Click on the 'Finish' button.

The project (shown below) will

open automatically.

## RUNNING THE APPLICATION ON YOUR COMPUTER

To run the application you have to press the 'Play' button in the lower left part of Qt Creator.

## RUNNING THE APPLICATION ON A REAL DEVICE

Before running the application, it is necessary to configure the device. For testing, I have used an Aquaris M10 FHD tablet with the OTA-14 —although the procedure is the same on the other devices. Leave ubuntu-sdk-ide open and connect the device via USB to the computer. To activate the

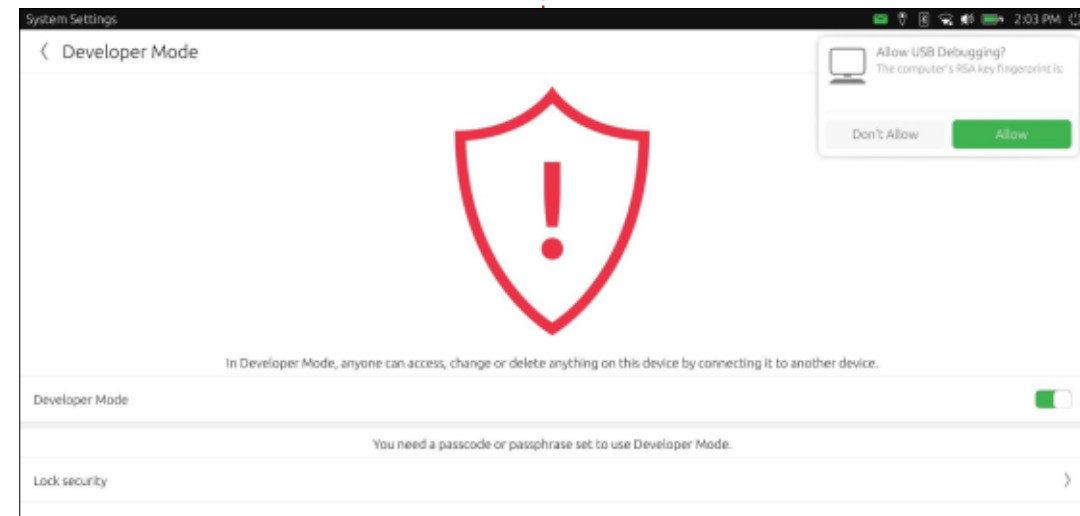
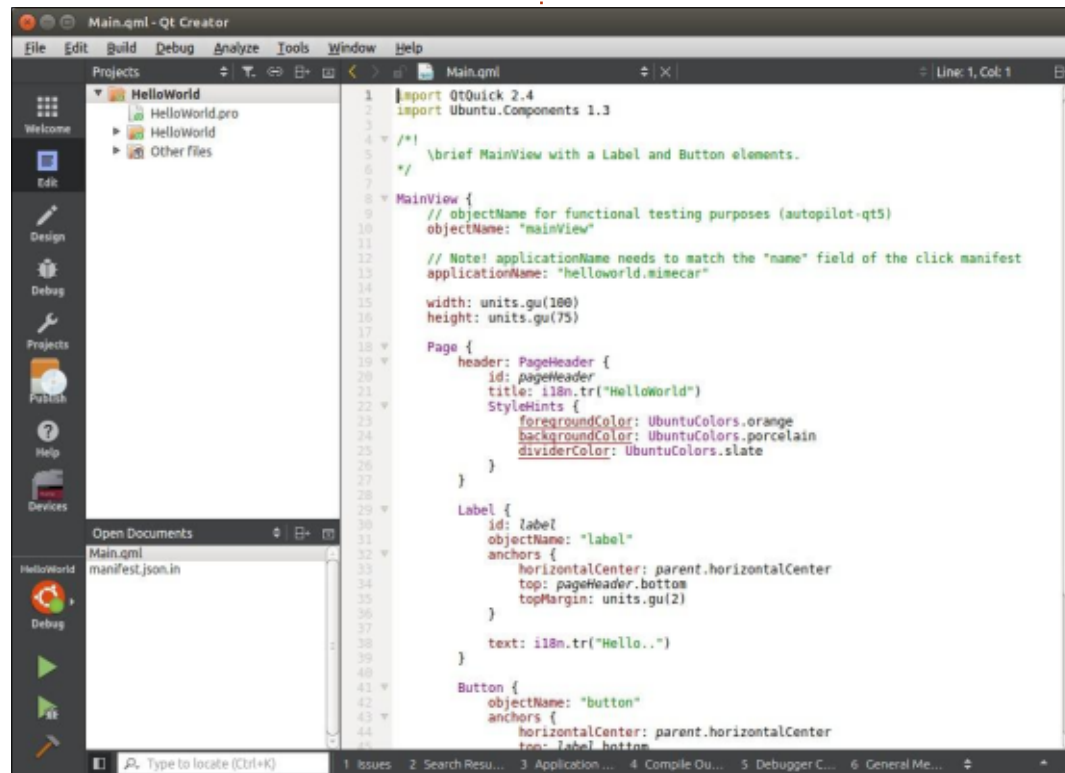
development options, access the System Settings.

Click on About.

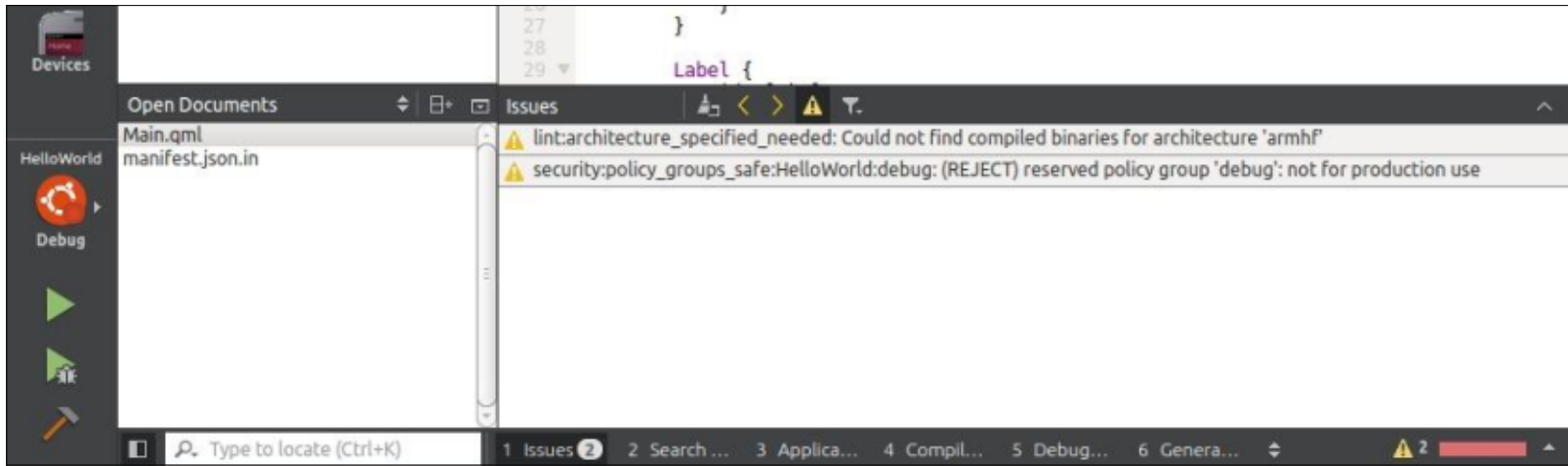
Select Developer Mode. This mode is disabled by default because it allows remote control of the device if it is connected by USB to the computer. Check the box.

After a few seconds, a notification must appear with the connection request of the computer.

You have now completed all the steps on the side of the tablet. In the IDE, you must select the tablet as the compilation target. To do this, click on the button above the Play, and select the device we just







configured as the destination.

A few seconds after pressing the Play button, the application will appear on the device.

The error shown in the above image may appear.

In the sidebar of Qt Creator, you have to click on the 'Devices' button. Then click on the device and Kits click on the 'Remove' button. Then click on the 'Create' button.

Now you have to associate the

Kit back to the Project. Click on 'Projects' (on the sidebar), 'Add Kit,' and select the Kit that appears in the dropdown.

Wait a couple of seconds and select the device as the compilation target. It is important that you try the compilation in

both cases. In the next chapter, I will start with the source code and assume that everything works correctly on both the computer and the test device. If you have any problems you can ask on the mailing list.

## RESOURCES

Mailing List:

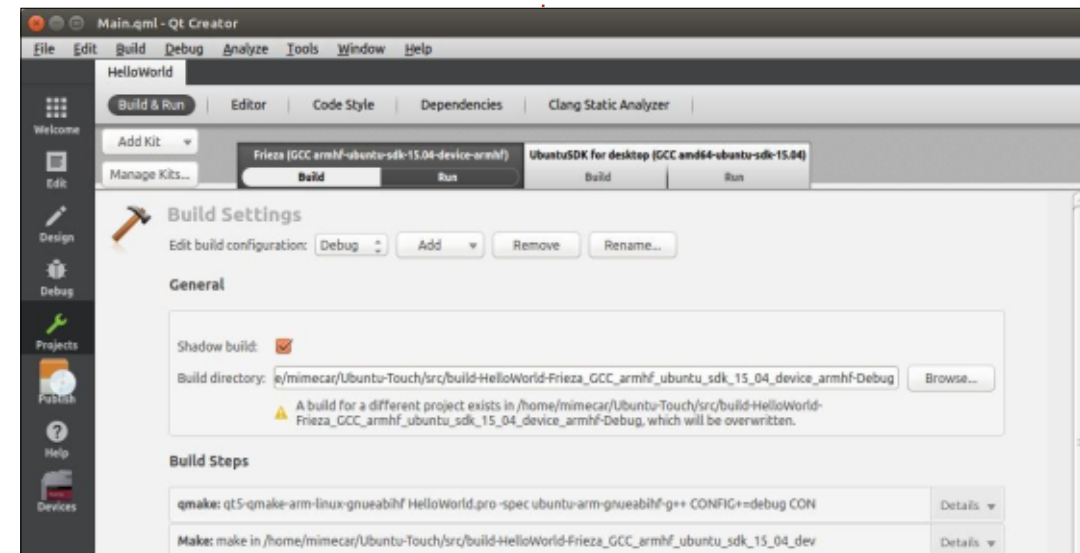
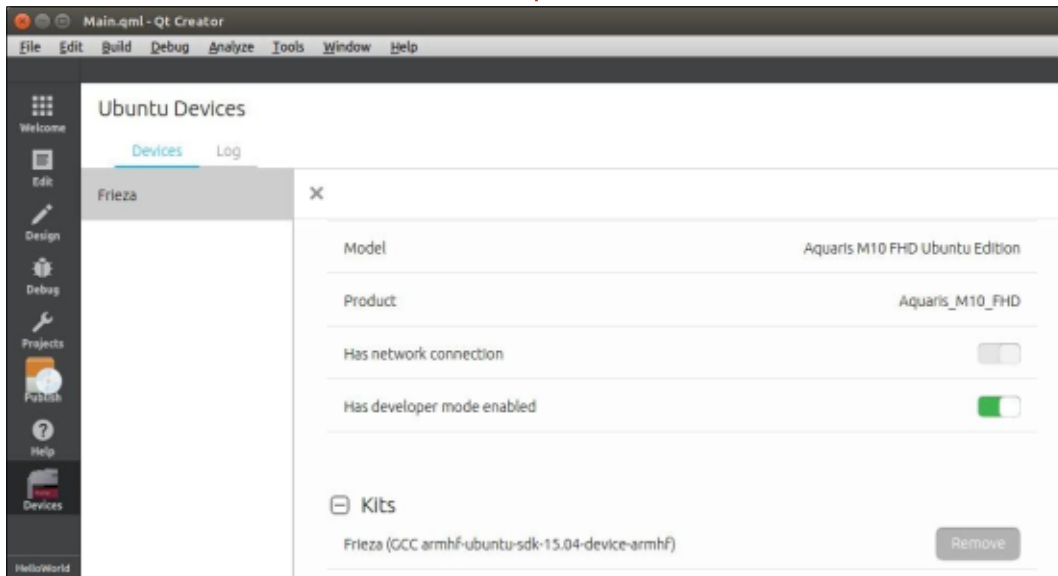
<https://launchpad.net/~ubuntu-touch-programming-course>

## PEOPLE WHO HAVE COLLABORATED

**Larrea Mikel:** revision of the chapter in Spanish.

**Cesar Herrera:** revision of the English translation.

**Joan CiberSheep:** revision of the English translation.



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# HOW-TO

Written by Mark Crutch

## Inkscape - Part 59

In the previous instalment, I talked about the very real danger facing the SVG 2 standard: although it contains some extremely useful new features, lack of buy-in from the browser vendors threatens the very future of SVG as an independent standard. As individual users, there's little we can do to influence the outcome, but one thing we can do is to start putting documents online that use some of the SVG 2 features, to prove that there's a demand for them. Short of hand-coding documents, however, this limits us to those features that have support in the authoring tools – which, practically, means those supported in Inkscape.

Last time I looked at the uncontroversial addition of Paint Order to the SVG spec. This time I'll look at another big addition – one that has been eagerly anticipated by Inkscape users since it first made an appearance in development releases – Mesh Gradients (also referred to as Gradient Meshes, depending on

who you ask). To follow along, you'll need a copy of Inkscape 0.92; see the previous article for some hints about installing it.

There's no doubt that the simple linear and radial gradients available with SVG 1.x are extremely limiting. Rather than add separate types for conical, spiral, square and other gradients, SVG 2 adds Mesh Gradients, which are flexible enough to cover all these cases and more – albeit at the expense of more manual tweaking to get the exact results you want. As with any type of gradient, you'll first need an object to apply it to – I'll begin with a simple square. With the target object selected, click on the Mesh Gradient icon in the toolbar:



This will display the Mesh Gradients tool control bar (shown below).

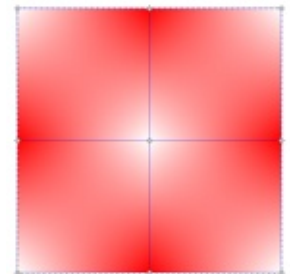
To create a new mesh on your object, you first have to set up a

few simple parameters. The first two icons (labelled "New:") let you select between a Mesh Gradient and a Conical Gradient. In practice there isn't a genuine conical gradient in SVG – the button just creates the convenient illusion of one using a mesh gradient. For now, ensure that the first button is selected. The next pair of buttons ("on:") define whether to create the mesh on the fill or the stroke of your object – I'll use Fill for these examples. Finally you need to decide how many rows and columns should be present in your mesh. Higher values will slow down rendering, but grant you finer control over the gradient. I'll start with a simple 2×2 mesh, as that's sufficient to explain the basics.

As you move your cursor back over the canvas, the status bar informs you that you can "Drag or double click to create a mesh". With a single object selected, both approaches give the same result, so I usually just double-click on the object. With more than one object

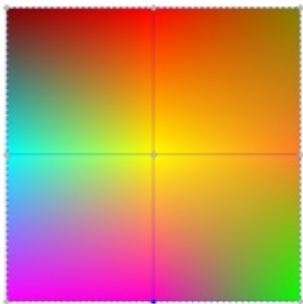
selected, however, a double-click will apply the mesh to only one of them, with the others becoming de-selected. Click-dragging the mouse, on the other hand, applies separate meshes to each object. You don't even have to drag over the objects themselves, so, if you've got a particularly busy drawing, you can simply drag over a blank bit of canvas around the periphery to have the same effect without any risk of accidentally affecting other elements.

Whichever approach you take, your object will now be filled with a grid of nodes and connecting lines, dividing the area into the number of rows and columns you selected in the tool control bar. Each node is given a color, alternating between the fill color and white, to give a result something like this:



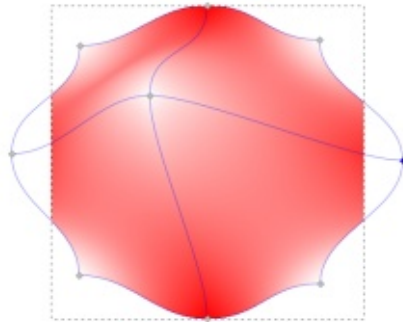


In this case there are nine nodes. With the Mesh Gradient tool active, you can click on an individual node to select it, a connecting line to select the nodes at each end, or you can drag over a number of nodes to perform a rubber-band selection. You can also use the Shift key to add nodes to the selection, or remove them from it. With one or more nodes selected, you can use the swatches at the bottom of the window, or the Fill & Stroke dialog, to assign a color to them. Setting each node to a different color immediately lets you create complex gradients that would have been extremely tedious to create with earlier releases of Inkscape:

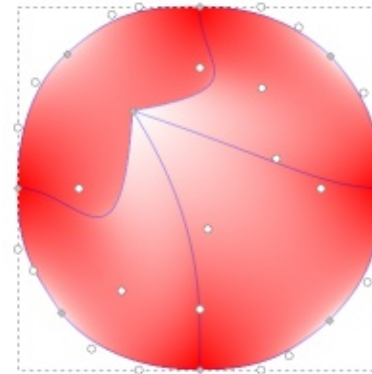


As well as giving each node a different color, it's also possible to move them around by dragging with the mouse, allowing you to set the color at any point on your object, not just the regularly

spaced ones that you're initially provided with. Dragging the edge nodes inside the object leaves empty gaps around the edge; there's no notion of repeating gradients here. Dragging those nodes outside simply cuts off the fill at the edges.



Halfway along the tool control bar you'll find a toggle button for showing and hiding the nodes' handles. With this active, you can use the handles to control the shape of the paths that join the nodes, and therefore fine-tune the precise shape of the gradients within the mesh. Long-time readers of these articles may remember that early instalments presented a variety of different ways to create a circle in Inkscape. Mesh Gradients add another to the armoury, although you're more likely to end up with something circle-ish than a mathematically correct shape.



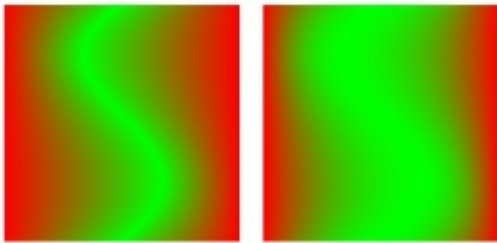
While we're in the vicinity of the Show/Hide Handles button, it's worth mentioning the buttons to the right of it. First are a pair of buttons to show and hide the editing nodes for fill and stroke gradients respectively. Depending on your preferences, gradients can (to some extent) be modified while the Node tool is active, which makes it easy to tweak your gradients by just double-clicking on your object. The nodes and handles of the gradient, however, can interfere with the handles you might usually use to manipulate your object. In the case of a rectangle, for example, the default positions of the mesh nodes put them directly on top of the handles for resizing the rectangle or changing the radius of the corners. One solution is to double-click the Node tool to access its preferences, then uncheck the "Enable gradient editing" option so

that there's no longer any conflict between node and gradient editing. If you do want to be able to edit gradients with the Node tool, however, you can work around the co-located handle problem by switching to the Mesh Gradient tool, toggling the Show/Hide button(s) to turn off the visibility of the gradient nodes and handles, and then switching back to the Node tool to make your changes.

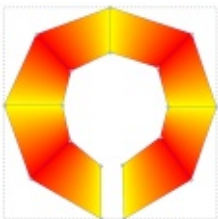
Moving on from those buttons there's one with a warning symbol, intended to make it absolutely clear that the Mesh Gradient tool is still slightly experimental. Click on it and you'll be presented with a dialog that tells you the SVG syntax could still change, and that "Web browser implementation is not guaranteed". That's quite the understatement!

Finally on the toolbar is a drop-down menu to select the algorithm used to interpolate the colors between each node in the mesh. "Coons" mode uses linear interpolation to ramp from one color to the next, but this can result in visible banding at the boundaries between patches (a phenomenon known as "Mach

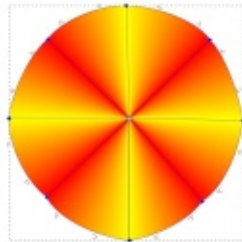
Banding”). “Bicubic” mode uses a non-linear interpolation which results in smoother transitions. In the example below, note the visible banding in the middle of the green section on the left-hand image (Coons), compared with the smooth transition of the right-hand image (Bicubic).



Now imagine, if you will, creating a mesh of one row by eight columns on a square object, then moving the bottom nodes upwards to give you a thin gradient strip running along the width of the shape. With a little manipulation, you can bend the strip into an arc, then even further into a donut. The top nodes become the outside of the mesh, and the bottom row of nodes becomes the inside. It would end up looking something like this:



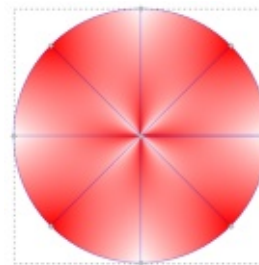
Now use the node handles to curve the outer edges, whilst also moving the inner nodes towards each other until they’re all co-located at the center of your shape. You’ve just turned your mesh into a conical gradient – something hitherto impossible to create with SVG.



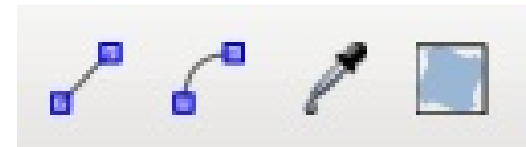
It’s not a “true” conical gradient, of course. The XML markup is way more complex than would be necessary if SVG had native support. For a start, the center of the cone is defined not by a single node, but by eight of them stacked upon each other. If you want to move the point – or the bottom middle “node” (which is actually two co-located nodes) – you need to rubber-band select in order to ensure that all the nodes are moved at once. Otherwise your cone will quickly deconstruct and reveal the secret sauce behind it.

The reason for showing you this is that it helps to explain what

happens when you use the second button on the toolbar to create a conical gradient, rather than a mesh gradient. The result may look different – for a start it will actually be circular, rather than the rough approximation in my hand-constructed version – but in reality it’s still a mesh gradient, and if you want to manipulate it or move the nodes, you’ll need to treat it in the same way as the manual version by rubber-band selecting any co-located nodes. Don’t worry if you move a single node by mistake though; just CTRL-Z to undo your edit, then rubber-band and try again.

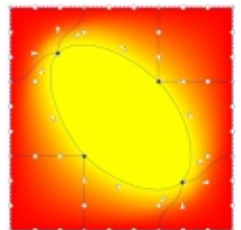


There’s a block of four icons on the tool control bar that I haven’t covered yet – although don’t let that grouping fool you into thinking that they share related functionality. This is really just the “miscellaneous” bin of the toolbar, where odd buttons that don’t have any friends are bundled together.



The first of these icons lets you switch selected lines between straight and curved modes. Straight lines have no Bézier handles, but behave a little more predictably when you drag them around, so sometimes it’s easier to convert to a straight line, move the nodes, then convert back to Béziars for final tweaking. It’s how I produced the manual version of the conical gradient above. Note that you use the same button to switch back to Béziars – the second icon might look like it’s the right one for the task, but it’s not.

Rather, the second button will change the length (but not the angle) of the Bézier handles of any selected nodes, in order to make the paths form an ellipse, if possible. This may seem like a rather arbitrary thing to do, but it does make it easier to smooth the transitions between different parts of your mesh, simplifying the creation of gradients like this:



The third button is intended to save you a little work if you're using mesh gradients to reproduce the tones of an existing image. Clicking it causes any selected nodes to take on the color of the object behind them in the z-order. Consider trying to create a vector representation of a bitmap image: you can drag the nodes around to position them over key points in the image, press CTRL-A to select all the nodes, then click the button to set them to the respective colors. In this example I've used this technique to "trace" a bitmap image of a red pepper:



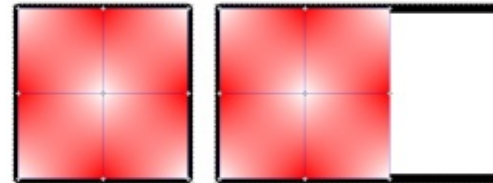
The mesh in this case was 10×10, but even then there aren't enough nodes in some areas to capture the details – the green stalk at the top is perhaps the most obvious example. This is an unfortunate limitation of mesh gradients: there's no way to subdivide individual patches in the mesh, to allow for fine detail

where it's needed, while retaining broad swashes of color elsewhere. The workaround is to stack several meshes on top of each other, but this then becomes harder to manage.

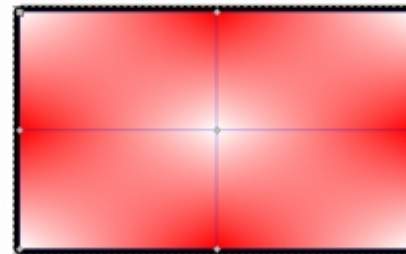
If you do need more detail it is possible to split a row or column in two, creating more patches to work with. With the Mesh Gradient tool active, double-click on the line connecting two nodes and an extra set of nodes and lines will be inserted. Remember, though, that the operation affects the entire row or column, not just a single patch, so potentially adds many more nodes than you actually need. Currently there is no way to delete a row or column, so it's usually better to start with a slightly coarser mesh than you need and then split to add more nodes where you need to, rather than be stuck with an unnecessarily fine mesh that you can't simplify.

The last rogue button in the toolbar is used to address a small deficiency in the mesh gradients implementation: they don't track changes to the bounding box of your object. This is easiest to demonstrate by creating a mesh gradient on a square, then

switching to the Node tool to convert the square to a rectangle by dragging the handle in the bottom right. You'll see that the mesh retains its previous dimensions.



With the newly rectangularised (that's a word, right?) object selected, switch to the Mesh Gradient tool and click on the final button in the miscellaneous bin. Lo and behold, the mesh is stretched to suit the new bounding box of the object.



That's the new Mesh Gradient tool in a nutshell. Now go ahead and create SVG files filled with meshes, and put them online for Google to index! Of course you'll face the catch-22 issue that browsers won't know what to do with the new content in your files,

so you might also want to post an exported bitmap image until such time as the browsers (hopefully) catch up. Alternatively you could try using the JavaScript polyfill written by Tavmjong Bah (the author of the mesh gradient code in Inkscape):

<http://tavmjong.free.fr/SVG/POLYFILL/MESH/mesh.html>

Mesh gradients are just one feature of SVG2 that is at risk if browser vendors can't be persuaded to support it. The only way that SVG will continue to have a strong future is if people use it. Whether your SVG files use mesh gradients or not, post them online and encourage others to do the same.

### IMAGE CREDITS

<https://commons.wikimedia.org/wiki/File:Red-Pepper.jpg>



**Mark** uses Inkscape to create three webcomics, 'The Greys', 'Monsters, Inked' and 'Elvie', which can all be found at

<http://www.peppertop.com/>





# HOW-TO

Written by Ronnie Tucker

## Kdenlive - Part 3

If you're anything like me then you'll need to add some errata notes to your videos. For this, I use a text overlay. This text overlay (called a 'Title Clip') could also be used as quick and dirty subtitles. But, usually for subtitles, you'd create a separate file so as not to 'burn' the subtitles into the video which this method does.

### ADDING TITLE CLIP

The first thing you need to do is add a video file to one of the video

lines. I'm using Video1 for my video.

In the Kdenlive menu, choose Project > Add Title Clip. A window will pop up which has a chequered background. The chequer board signifies transparency.

The outer (solid) red line is the boundary of your video. Anything hanging outside of this red line will not be seen at all. Keeping within the second (or middle) red line is safe. The first (thin) red line is your safety net to be absolutely sure



nothing will get cut off. I usually ignore the two thin red lines.

### ADDING TEXT

Click the 'Add Text' button at the top left of the screen.



Now click somewhere on the chequered pattern and you'll see the word 'Text' appear.



Before editing, make sure the Move icon is selected at the top left. It's the icon beside the 'Add Text' one. Now, double-click the word 'Text' and it will become editable. Enter whatever you'd like. If 'Add Text' is chosen, then it will keep adding text when you click rather than editing.

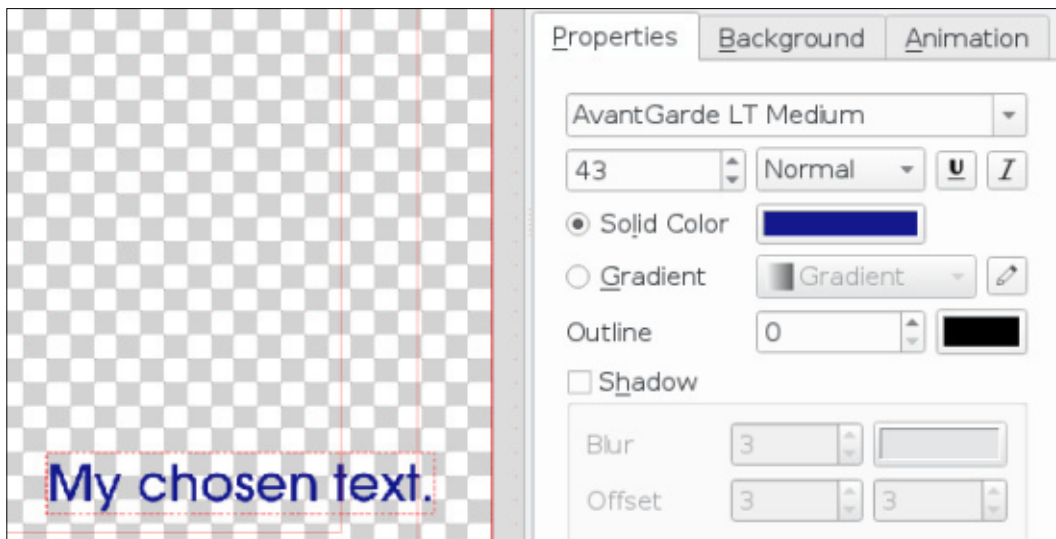
**NOTE:** Kdenlive isn't so good with its visual editing of text. By that I mean that you often won't see a flashing cursor to show you that it's in editing mode. It usually won't show any cursor, so you're not sure what you're about to change. It's a bit of a nuisance.

### COLOR

To change the color of the text you first need to select it (it'll have a dotted box around the text), then choose the color from the right-hand side of the window.



There's a property called 'Solid Color'. Click the box beside the option and choose a color.



Kdenlive has a good many tweaks for your text such as outlines, shadows, fonts, bold/italic, etc.. I won't explain those as they're self-explanatory and easy to use.

**NOTE:** you can animate 'Title Clips' but we'll come to that after you've learned the basics.

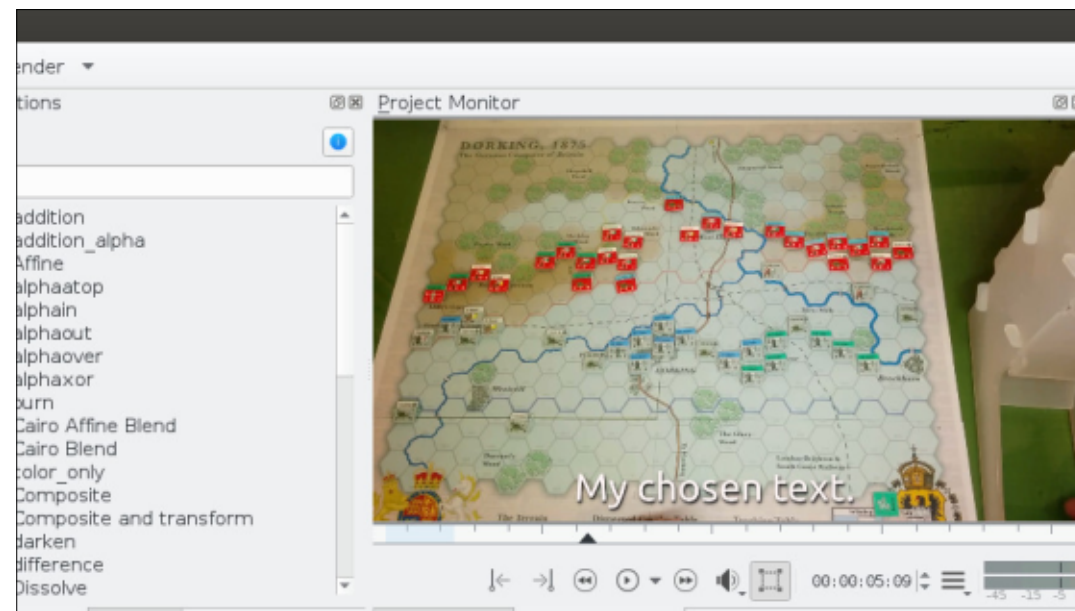
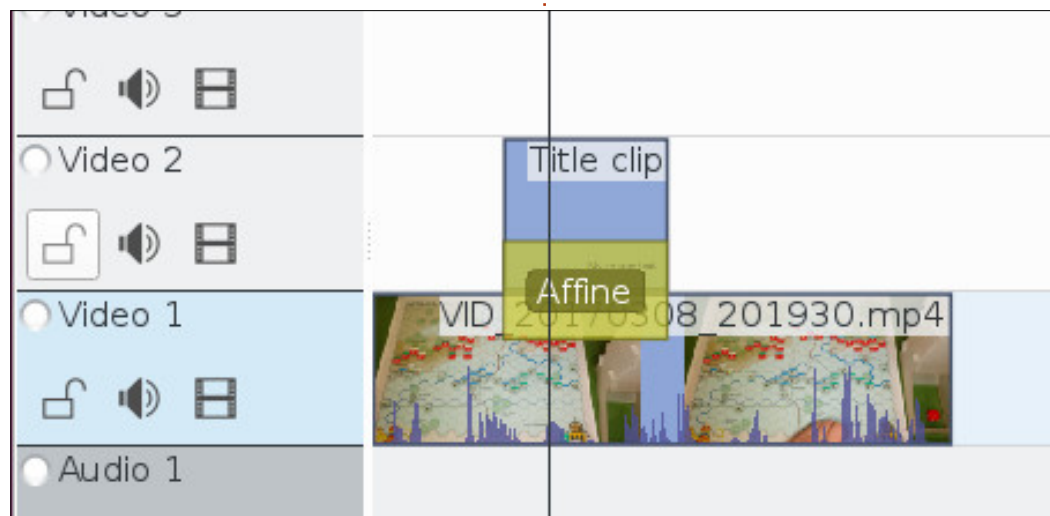
When you're happy with your chosen text click the OK button at the bottom right of the window.

## ADDING

Your text will now appear in the list of project files as 'Title clip'. You can double-click the name to change it.

Drag it down from the Project Bin (top left panel) to, in my case, the Video2 line.

This is now where you find out if the color, size, and position of your title is correct, and readable.



I need to center, change the color, and enlarge the text on mine.

To edit the text again you double-click the text clip that's in the Project Bin window (not the

one you've dragged down to Video2).

That's better!

Yes, you can animate text and have your titles fade in, and we'll cover that next month.



**Ronnie** is the founder, and editor, of Full Circle. His other interest is art, and his work can be seen at: [ronnietucker.co.uk](http://ronnietucker.co.uk)



This past month, I attempted to use my Chromebook for two on-the-fly tasks: video editing and PDF file conversion. I work at a medical university, interacting with student doctors and medical professors. Often times, I am asked to do quick jobs to facilitate research or student learning. The Chromebook allows for implementation of these requests. However, this was the first time the Chrome OS failed in these two areas.

In the early part of February, a

medical professor and I recorded a demonstration video for a teaching lab. We used a Canon EOS Rebel camera on video mode. The video file was 15 minutes long. I did not want to hike across the campus back to my office at the end of the day to edit the file. I opened my trusty Toshiba Chromebook to find an app that would resolve this problem. There were two options for video editing.

The OpenShot online is an extension that requires a payment

for use. I prefer using apps instead of extensions, so I tried WeVideo. The app worked well; however; I was severely limited in use. WeVideo allowed for only a 1 GB file, and 5 minutes for editing. Anything beyond those 2 conditions requires a yearly subscription. I could try using ClipChamp to edit video locally on my Chromebook, but it is geared towards vloggers and Youtube Channels. I ended up using my Linux machine to edit the video.

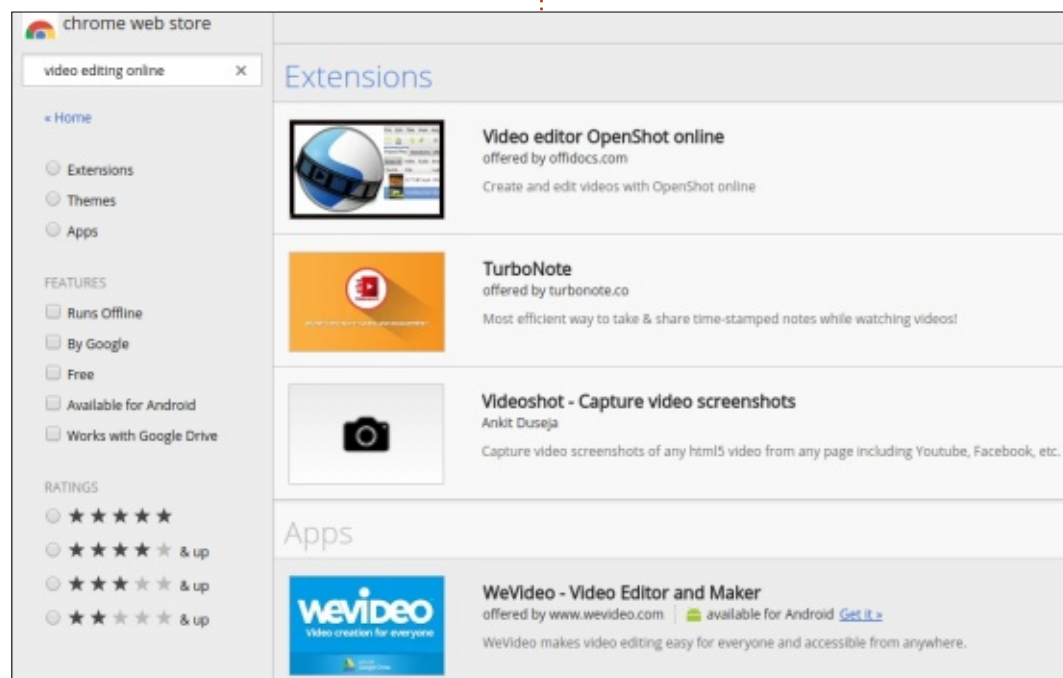
The second failure involved PDFs. I had to convert Research Abstract Posters. The posters were in PDF format and needed to be placed into MS Publisher. There is a minimal number of PDF readers, editors, and mergers for the Chromebook. However, none of those apps or extensions met my need. I ended up doing a trial run of Adobe Reader Pro to finish this task. There is currently no open-source solution that adequately answers the proprietary software.

The frailty to Chrome OS is apparent when specific tasks are

required. Currently, my Toshiba Chromebook 2 does not have access to the Google Play Store's Android Apps. The Chrome OS Developer Channel indicates that the Toshiba Chromebook 2 is inline for gaining Android Apps. The Android Apps might have fixed these two problems.

Google realizes this mistake. They are slowly integrating older hardware-compliant Chromebooks into the Google Play Store. The Chrome OS is too popular to fail, and the merge of Android into Chrome OS is probably done under the Chrome banner.

The biggest problem currently for older Chromebooks are the limitations of the Chrome Web Store. And, for the next 3 columns, I will review the apps and extensions available for other popular web browsers: Firefox, Vivaldi, and Midori. I will lightly cover the capabilities of each browser.







# 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://url.fullcirclemagazine.org/75d471>

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

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

document.

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

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

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

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

## TRANSLATIONS

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

## REVIEWS

### GAMES/APPLICATIONS

When reviewing games/applications please state clearly:

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

### HARDWARE

When reviewing hardware please state clearly:

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

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





Back on June 29, 2016, Joey Sneddon wrote an article entitled Ubuntu To Drop 32-bit Desktop and Server Installers for OMG! Ubuntu discussing the merits of the Ubuntu team dropping 32-bit support in future releases of Ubuntu. Echos of this sentiment were mirrored in the Xubuntu mailing list as well as several other distributions (Fedora, Arch, OpenSUSE). Much of the talk was around the amount of extra effort it requires to support these dated platforms.

From the perspective of a not-for-profit computer refurbisher, I had mixed feelings about this news. Flush with systems, our project decided last year to stop building 32-bit desktop systems (but we continue to support people running 32-bit systems for repairs). Laptops however were a different story, we still see many Pentium M and Pentium 4 class machines simply because we don't have the same kind of volume of Core 2 or better laptops as we do desktops. With laptops so much more in demand, it's difficult for us

to just relegate useful notebooks to the recycling bin. Part of our decision around desktops was spurred on by the fact that Pentium 4 machines tend to have quite a bit of difficulty displaying 1080p video. And although most people tend to use portable systems for watching video, there's still a market for people who just need a simple web browser and office suite to "write their book" or

contact their friends on social media.

It's hard to see 32-bit support being dropped because we tend to value reuse over recycling. We often see hardware (there's a flatbed scanner on our shelf for example) that's unsupported by modern versions of Windows but still is supported under modern versions of Linux. Linux has often

had a reputation for running on just about everything, and yet here we are discussing the death of Linux on a fairly large platform.

Yet there is something to be said for moving on. 64-bit DEC Alpha's were introduced back in 1992 - 25 years ago. On the desktop side of things, the first Athlon 64 was released back in late 2003 - almost 14 years ago. 64-bit has been with us a long time. We also have to consider the recent popularity of 64-bit single board computers (SBC). Like it or not, SBCs are changing the landscape. SBCs may not be able to encode a video like a hopped up i7 with a GTX1080, but they're cheaper and faster at many tasks than a lot of 32-bit hardware - with the added benefit of being less power-hungry.

Still, there is something attractive about old technology. Perhaps it's children of the 70s and 80s reliving their childhood through Commodore 64s, Apple IIs, and ancient game consoles, but lately it seems there are more and





more channels popping up on Youtube talking about retro technology. Whether it's computer hardware, stereo equipment, vinyl, cassette tapes, game consoles, cars, or mint condition classic sneakers, retro seems to be the "in thing" at the moment.

Just last week, someone brought in a Dell Dimension 4100 (Pentium III 1GHz, 128MB RAM, 20GB HDD) to our refurbishing project. At first we laughed and talked about pulling the hard drive before recycling it, but, because it was in mint condition, and because we thought we had some original ME restore CDs, we dug up the restore CDs, installed Windows Millennium Edition, and stopped

laughing when we realized how quick it actually was compared to modern operating systems. Windows ME was one of the most unloved children of the Windows empire, but, looking back, it didn't seem so bad (at least on the Dimension 4100). We may yet attempt to install some flavour of Linux on this machine, but it isn't a practical machine for most kinds of Internet use (in fact we needed to put a network card in it, it came with only a modem).

Regardless of practical use, there's something to be said about exploring hardware we couldn't buy as a child/adult. Although I don't have any Sun Microsystems hardware anymore, I fondly



remember how interesting I found the Sun Enterprise Ultra 2 I bought on eBay was. It was a different experience – boasting a BIOS that was much more flexible than anything we saw on a PC at that time.

As much as I'm torn dropping support for 32-bit systems, I agree it's almost time. The Ubuntu timeline of late 2018 seems about right. By late 2018, I expect our project will be a bit more flush with 64-bit-capable notebooks. The emergence of Virtual Reality hardware will probably only add to the push of better, faster hardware. It's a bit sad to think we'll be leaving 32-bit behind, but 25 years after the first 64-bit

processors, it's really about time.



**Charles** is the author of Instant XBMC, and the project manager of a not-for-profit computer reuse project. When not building PCs, removing malware, and encouraging people to use GNU/Linux, Charles works on reinventing his blog at <http://www.charlesmccolm.com/>.





# REVIEW

Written by Ron Swift

# Nolapro Accounting

When my company was looking at possible open-source program alternatives to Quickbooks seven years ago, there were very few options available. Luckily, we discovered Nolapro by Noguska and we have been extremely happy ever since. It is a full-featured accounting program for small businesses.

Nolapro was offered initially as a self-hosted free program. It ran on a Linux or Windows server using Apache2, PHP and MySQL. It came

bundled with all the accounting options to include General Ledger, Payables, Billing, Order Processing, Inventory, Shopping-eCommerce and Payroll. Companies can manage customers, vendors, employees and inventory in the system. It uses an ajax lookup feature that works very effectively when entering customer, vendor and employee data.

Today, it is offered as a Cloud hosted or self-hosted program, and modules such as Payroll are paid

options.

We were able to initially import our Quickbooks data into Nolapro. This set up the chart of accounts and provided our opening balances. There were a few problems with the import back then that forced us to manually add some of the accounts. Also, we were not using Quickbooks for our payroll so we had to set that up manually.

You must begin with a chart of

accounts that you import or set up manually. Sample charts of accounts for various business types are included in the base program. You can always add to a chart, after you start using the program. Included is a screenshot of my Chart of Accounts that we imported initially from Quickbooks.

Nolapro is very user friendly so that business owners and non-accounting managers can use the system. It is accessed via a browser.



Chart of Accounts List				
Chart of Accounts for Swift Staffing as of 2016-09-28				
ACCOUNT	DESCRIPTION	ACCOUNT TYPE	SUMMARIZE TO STANDARD	Cost Center
1020	Checking Account	Current Assets		
1021	Checking account at Harbor Bank	Current Assets	1020 Checking Account	
1022	Payroll 3 - Harbor Bank	Current Assets	1020 Checking Account	
1023	Harbor Bank CD	Current Assets		
1024	SECU - Checking	Current Assets		
1025	SECU - Savings	Current Assets		
1026	M&T Bank - Checking	Current Assets		
1027	M&T Bank - Money Market	Current Assets		
1028	Harbor Line of Credit Checking	Current Assets	1020 Checking Account	
1029	Wells Fargo Checking	Current Assets		
1030	Wells Fargo Savings	Current Assets		
1031	BB&T Checking	Current Assets		
1100	Accounts Receivable	Current Assets		
1110	Employee Advances	Current Assets		
1150	Allowance for Doubtful Account	Current Assets		
1200	Inventory	Current Assets		
1260	Inventory Loss	Current Assets		
1400	Prepaid Expenses	Current Assets		
1500	Property and Equipment	Fixed Assets		
1501	Furniture	Fixed Assets	1500 Property and Equipment	
1502	Office Equipment	Fixed Assets	1500 Property and Equipment	
1503	Vehicles	Fixed Assets	1500 Property and Equipment	
1900	Accum. Depreciation - Prop&Eq	Fixed Assets		
1903	Harbor Bank Line of credit	Other Assets		

# REVIEW - NOLAPRO ACCOUNTING

It provides all the reporting that we have needed for our accounting firm to complete our corporate taxes and personal property tax filings.

Our company is a staffing firm so we have many contract W-2 employees working each week. We have an enterprise back-office system that tracks employees, work orders, placements, hours worked, with integration to our time-sheet program and invoicing. We preferred not to have to enter data twice in the enterprise and accounting program so we had Noguska write an import program that uses a csv file generated from the enterprise app to import weekly payroll data into Nolapro. It has worked flawlessly for more

than seven years.

The payroll module has enabled us to manage this difficult process in-house. It has a time-tracking program that we do not use, that allows for employee time capture. Paychecks and direct deposit files are generated from the system. A complete set of reporting for 941, 940 and electronic filing of tax deposits and year-end W-2 reporting is included. It uses a third party system that is accessed from within Nolapro. It is a paid system. My only problem with it is that it requires you to use a Windows system to electronically process and reconcile Federal and State W-2. I have complained for years about this but to no avail. It is used only once a year but it is still an

annoyance.

The Payables module produces ageing reports, vendor bills and statements, tracks credit card payments, and checks the status of payments. It provides an easy way to pay bills. It allows you to enter bills for later payments, manually pay bills, and manage your accounts payables with aging lists. Vendor files can be created in advance or when you are posting the first bill from a new one.

The billing module is used to generate invoices, ageing reports and customer files. There are extensive reports and most reports have a drill-down feature for more details.

The General Ledger section provides P&L and Balance sheet reporting. You can also make individual entries in a ledger.

Noguska has done an excellent job of providing updates and support. I estimate that there are about 6-8 updates each year. Support is provided on a pay-per-incident basis, or you can buy a long-term support agreement. Email support is free.

Nolapro is a full-featured accounting program that offers all the features of Quickbooks for a small-to-medium size company.

NolaPro

View/Cancel Checks

ContactsOrdersInventoryBillingPayablesPayrollLedgerToolsAdminReports

ChecksPurchasingVendor BillsReports

Manual ChecksView/Cancel ChecksWrite ChecksChecks Table

To UNCASH a check, enter the Check Number

Check #:

Invoice #:

Vendor Name:

Start typing to select

Begin Date of Checks:

End Date of Checks:

Checking Account:

All

Order:

Checking Account, Date, Check #

Next

NolaPro

New Vendor Bill

ContactsOrdersInventoryBillingPayablesPayrollLedgerToolsAdminReports

Bank DepositsInvoicesPayment PlansReports

New InvoiceEdit InvoiceNew Non-Invoiced SalesEdit Non-Invoiced SalesCalculate InterestEnter PaymentsInterest AdjustmentsInvoices TablePoint of SaleRefund CreditVoid Payments

Invoice #:

Vendor Name:

Start typing to select

Add

Total:

Invoice Date:


2016-09-28

Bill Into How Many Equal Parts:

1

Next

full circle magazine #119 42

 contents ^





# MY OPINION

Written by Alan Ward

## The Road Back To Unity

For a person whose livelihood is based on computers, the choice of a laptop is quite a serious affair. Having a good rapport with your keyboard can reduce wear and tear, increase productivity when writing, and feeling comfortable with your device is a must when doing presentations in front of an exigent audience - e.g. a classful of adolescent students. Since my computing equipment has aged over the years, it was time to go looking for a new machine. I had been waiting for Apple's most recent offerings but, once the new Macbook Pro came out this year, like many other power users, I confess to having been rather underwhelmed by their specifications. So this time 'round, I went for another brand, an HP Spectre two-in-one laptop with the 13-inch tactile screen that folds around, a decent keyboard, and a Core i7 processor.

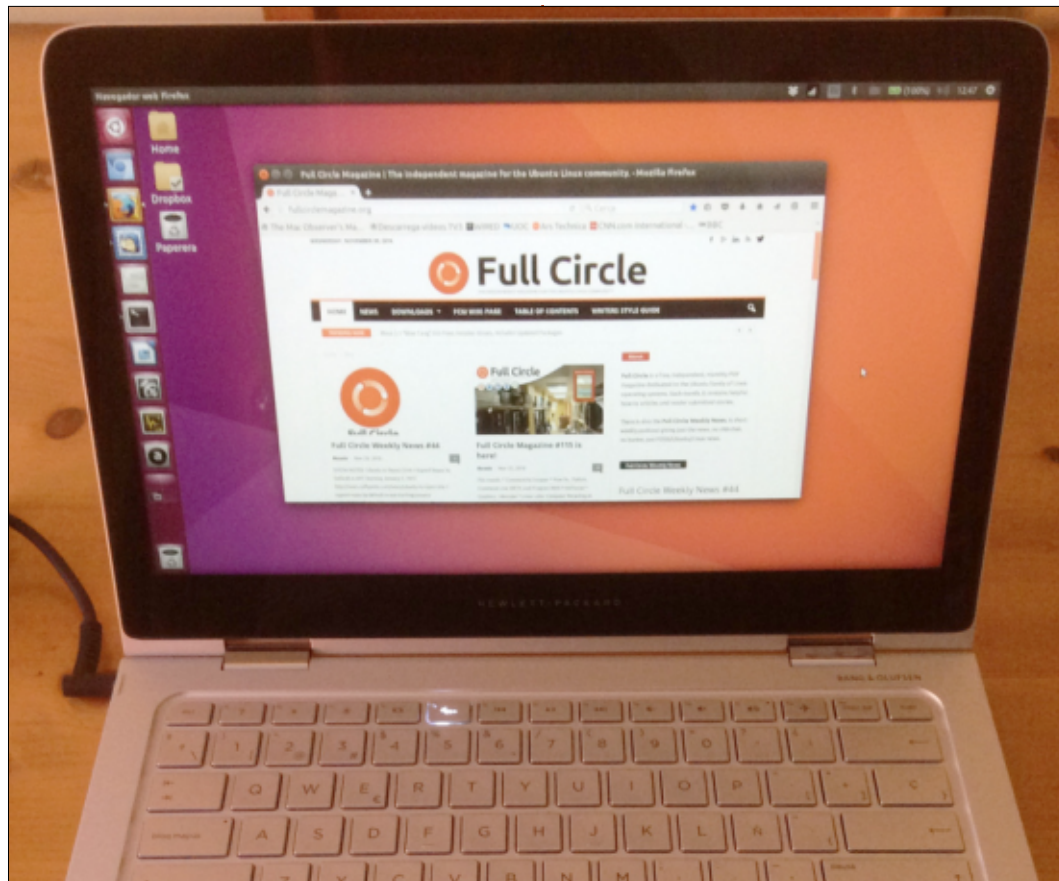
Perhaps the first thing to report is that installing GNU/Linux went beautifully. The Live CD versions of Ubuntu and Kubuntu 16.10 worked perfectly, as did Linux Mint 18. All

hardware was detected, and the appropriate drivers activated. This includes WiFi, sound, and the touch screen – which is in marked contrast to several el cheapo laptops I had been using over the recent years. On those, issues such as the WiFi card not working well, or a graphics driver causing grief, were fairly common.

All of this confirms my impression that Linux support for hardware is rather better for higher-end devices than for the cheap stuff. This makes sense, since building drivers for new hardware is quite a lot of work, and it is more rewarding for developers to work on the latest and greatest. So, if I had to give

advice on purchasing a computer to use with any distribution of GNU/Linux and aiming for the least probability of hardware incompatibility, it would be to get the best hardware you can afford (or feel comfortable paying for), and putting in a recent version of your favorite distribution. In fact, this would be about the same advice I would give on the topic of getting a new computer with any other operating system.

One issue that did crop up with all of the distributions tested was screen resolution. This particular computer comes with a 1920 x 1080 pixel screen on a panoramic display that is 13 inches large. Needless to say, the icons and other desktop elements are very small when booting from the Live CD environment, due to the high pixel density. This feature of modern screens is known as HDPI (High Dots-Per-Inch) or simply "High Density", and was originally marketed by Apple with their Retina line of screens for computers and devices. Anything over about 180 DPI counts as HDPI.





Some desktop managers are better at handling high density screens than others, and the same can be said for handling tactile screens. Among the desktop environments tested, Cinnamon does not seem to care for HDPI, nor did Kubuntu's Plasma give me much help. Gnome offers some adjustment for screen scaling in the Tweak tool, though I had some difficulties choosing non-integer values of scaling: i.e. I could leave the desktop elements at their usual small size on screen (scaling factor 1), or double their size (factor 2). What I really wanted was a factor of about 1.5, which I finally found the settings for in Ubuntu's unity, which can be found in the main Unity Control Center's section for screen settings.

The Gnome desktop environment has gained adepts for tactile displays, perhaps because its general disposition rather suits using your fingers. Mint's Cinnamon, on the other hand, is a very desktop-oriented environment with rather small visual elements such as window buttons and the tool bar. It works very well with a mouse, but rather less with a tactile screen when

your large fingers need to aim quite precisely to hit their target. This is, naturally, a very personal and subjective assessment, so by all means go and try it out for yourself.

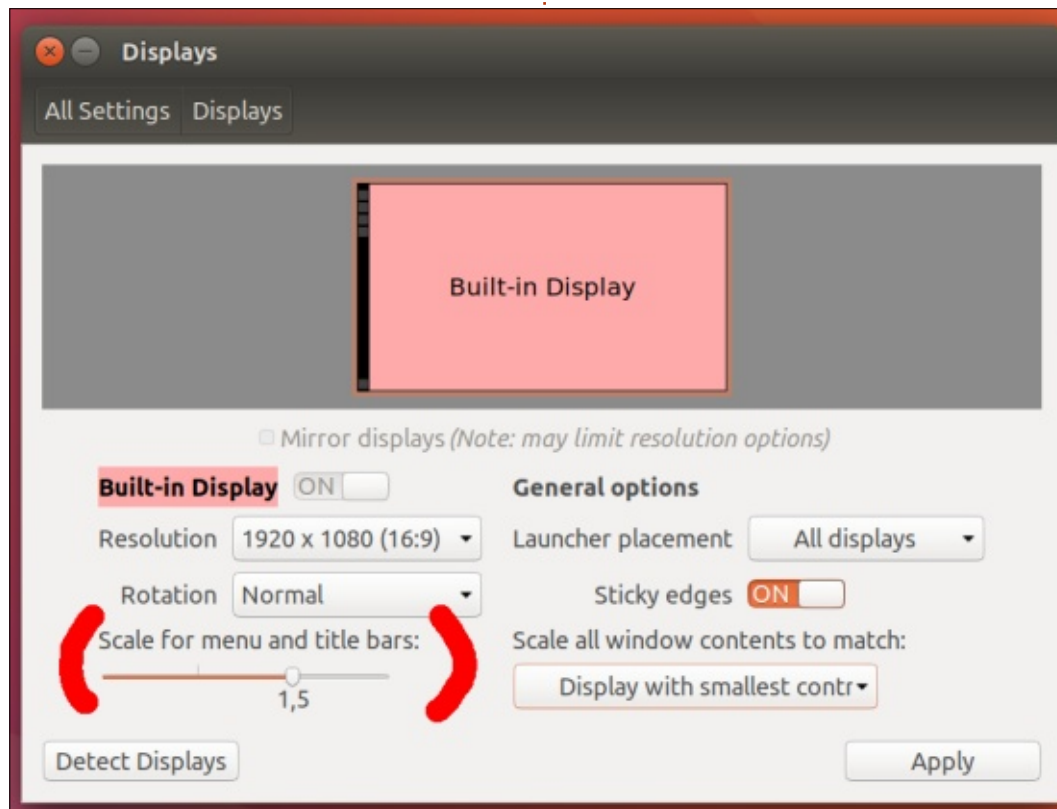
Once more, what worked best in my opinion was Unity. The general screen disposition with the launcher on the left worked well with a tactile screen, since the left hand can be called into play to launch applications and close windows, while the right hand

handles window placement and sizing, as well as general screen input. This was especially clear when using the computer in tablet mode, and, to my mind, shows the work accomplished by the Ubuntu project on their mission towards convergence between desktop and tablet display environments.

Also in tablet mode, at some times it can be useful to access a virtual keyboard on screen, instead of needing to fold back the laptop to get to the physical keyboard

that rests underneath. The Gnome project's onboard package came in useful. I left it always visible in the upper indicator zone, where it can be easily activated on need. Having a higher screen resolution than that found in most tablets is a significant help, since the virtual keyboard remains usable even when occupying a smaller proportion of screen real estate: between a third and a fourth of the screen is sufficient, while on a 10-inch tablet the keyboard really would need up to half of the screen area.

All in all, changing from a normal laptop to a tactile screen 2-in-1 computer has been a bit of an eye-opener. From the hardware point of view, I have long been a doubter of tablets. I do find them useful for some specific tasks, for instance to read documents, or to browse the Web. But their lack of a keyboard does restrict their usefulness. My other favorite gripe is against the ARM processors which, even in their new 64-bit editions, are rather limited when heavy duty lifting is needed. Trying to edit some video on a tablet would be an exercise in futility, all the moreso since there is next to no software available to do so.



## MY OPINION

This brings me to the software side of the equation. I like to use the very same software, regardless of the actual platform on which it is being executed. There are a few reasons for this, one of which is habit. Another is that I tend not to trust overmuch the publishers of applications for mobile devices. There are surely some of them that must be honest; however, the general experience is that software developed both for iOS and Android tends to be closed code and developed by groups who are not very well known in general terms. Visibility is important to generate trust, to my mind, and I very much prefer to use the classical navigators and office packages available for GNU/Linux than any less known ersatz from the tablet world.

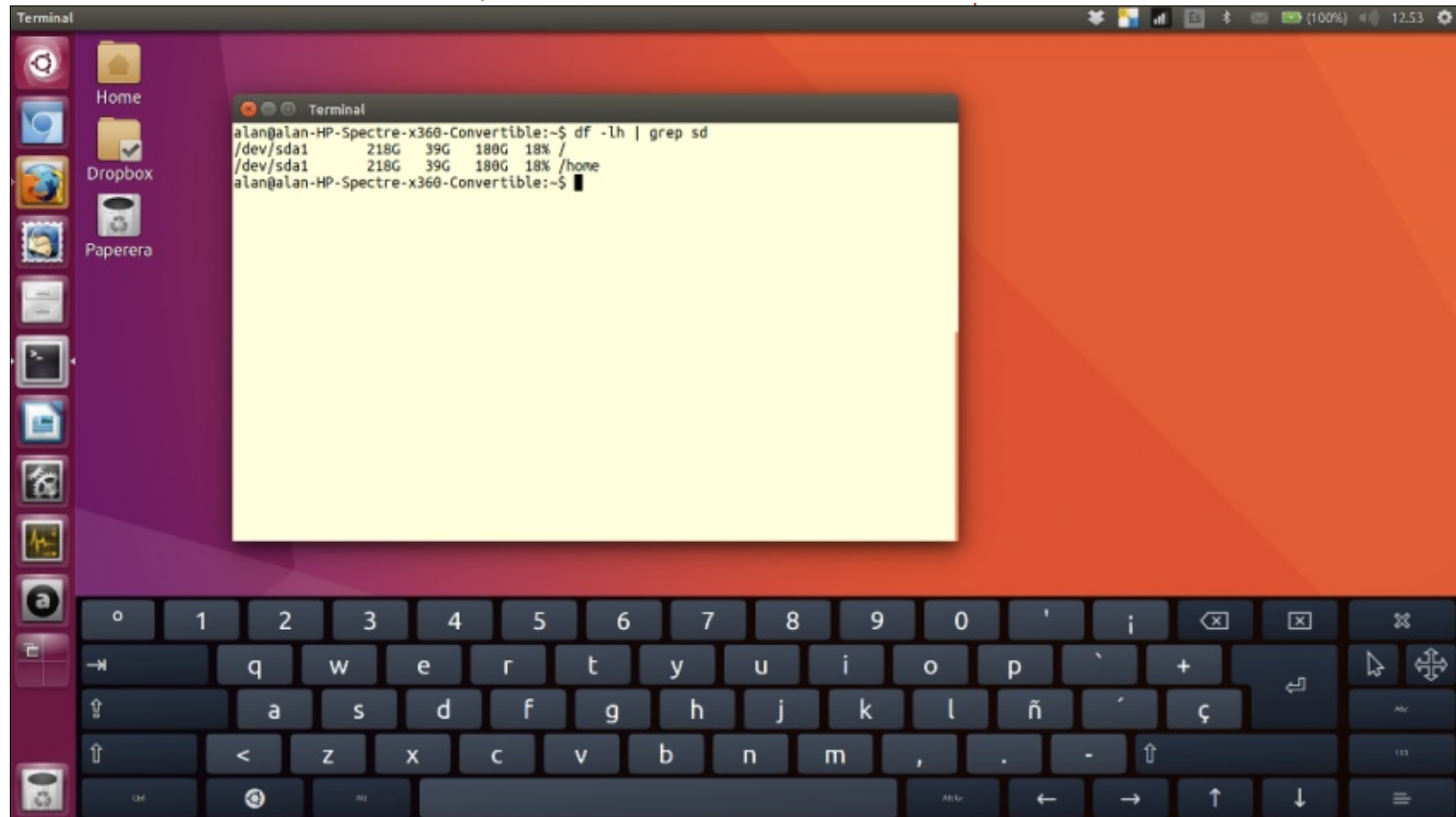
This is why I, among many others, have been very attentive to Ubuntu's efforts towards convergence. Having LibreOffice or Gimp available on a tablet is a time saver if we want to consider tablets as a viable option to get some work done, so Ubuntu Touch on the one hand and larger (and more powerful) tablets seem to be going in the right direction.

Meanwhile, a regular laptop that can be transformed at will into a slightly weighty tablet (about 1.35 kg or 3 lbs) with a full-blown operating system on board, suits my computing needs very nicely. That the best choice for the system should be Ubuntu 16.10 with Unity came out as a bit of a surprise, since recently my personal inclination went more towards Linux Mint 18 (and now 18.1) and I

had more or less abandoned Unity for the last three years (since 12.10). Unity took some beating from the community for its quirks at one point, but from what we can see from the current version, it does seem to be getting there. Good show!



**Alan** holds a PhD in Information and the Knowledge Society. He teaches computer science at Escola Andorrana de Batxillerat (high-school). He has previously given GNU/Linux courses at the University of Andorra and taught GNU/Linux systems administration at the Open University of Catalunya (UOC).





# LETTERS

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## 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.







It's been more than six years since KODI (then XBMC) had a major facelift. KODI 17, released February 2017, introduces Estuary as the new default interface and Estouchy as the recommended interface for touch-screen devices.

In their release announcement, the KODI team indicated that version 17 has "updated default user interfaces, better organization of settings, and many under-the-hood changes on VideoPlayer, Music Library, PVR, audio on Android, and thousands

of small bugfixes and improvements to stability."

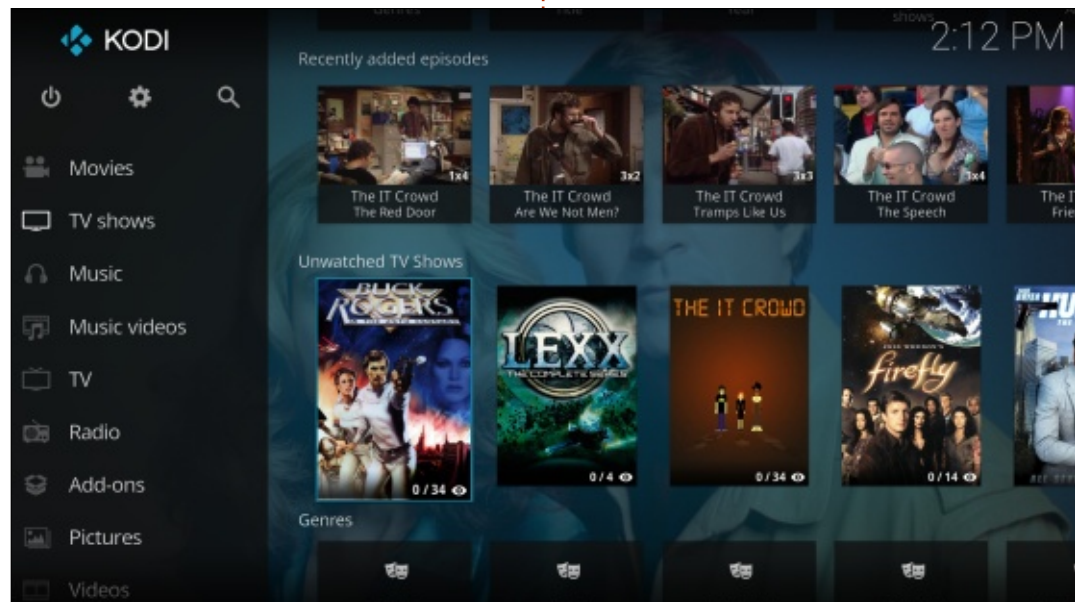
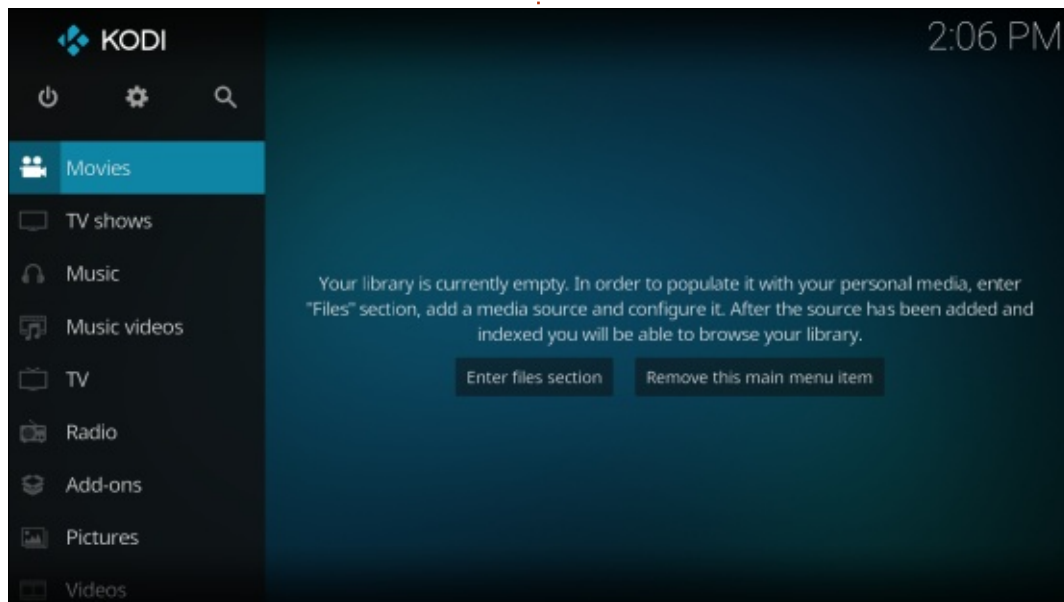
Confluence, the interface since version 9.11, placed the menu smack in the middle of the screen. Estuary puts the menu on the left-hand side. A number of new entries have been added to the menu: TV and Radio are PVR entries, and Add-Ons, which was once a sub-menu, now has a place in the main menu. Settings and Programs have been removed from the menu. While the settings menu option has just been moved to a gear

under the KODI logo at the top left of the screen, the Programs menu option seems to have been completely removed. (Program Add-ons are still present in the Add-ons menu).

One very handy addition to the interface is the search icon just right of the settings gear. The search function lets you search your local library, add-ons, Youtube, or TheMovieDB movie scraper. A couple of times I've scrolled through my movie collection – to discover a movie

that I thought was a single movie was actually part of a collection. I can see myself using the search facility to find the names of the other movies in the collection so I pick them up.

KODI/XBMC was originally designed as a media center for managing local content. Estuary makes adding new local content a bit more obvious than Confluence did, and I say this begrudgingly because I still prefer Confluence (it's what I'm used to). Confluence hid the Movies and TV Shows menu



until local content of that type was added through the Videos > Files > Files > Add Videos menu (4 steps). Estuary simplifies this process: Movies > Add Videos (2 steps). Note that if the blue “active menu option” is on the Movies menu, you can just press Enter or click the button on your remote to enter the “Files” section where you can Add Videos, or you can navigate to the Enter Files button, press Enter, and Add Videos off that menu (3 steps).

Estuary is a bit more busy of an interface; it adds more content to the menu interface. Movies, Television Shows, Music, and Music Videos not only display recently added content (Confluence did this for Movies, TV Shows and Music), but it also displays a selection of unwatched shows/movies.

The one gripe I have is that content at the edge of the screen is displayed partially off the screen. I like the interface neat and tidy, and seeing part of an image on the side of the screen makes me feel like the interface is less polished (just a personal peeve). I’ll borrow from Wikipedia “a 10-foot UI needs to arrange items on screen in a way that clearly shows

which item would be next in each of the four directions of the directional pad.” In the screenshot, part of the fifth episode of IT Crowd is cut-off the screen (in fact you can’t tell if it’s the fifth episode or not), as is the fifth show Hunter.

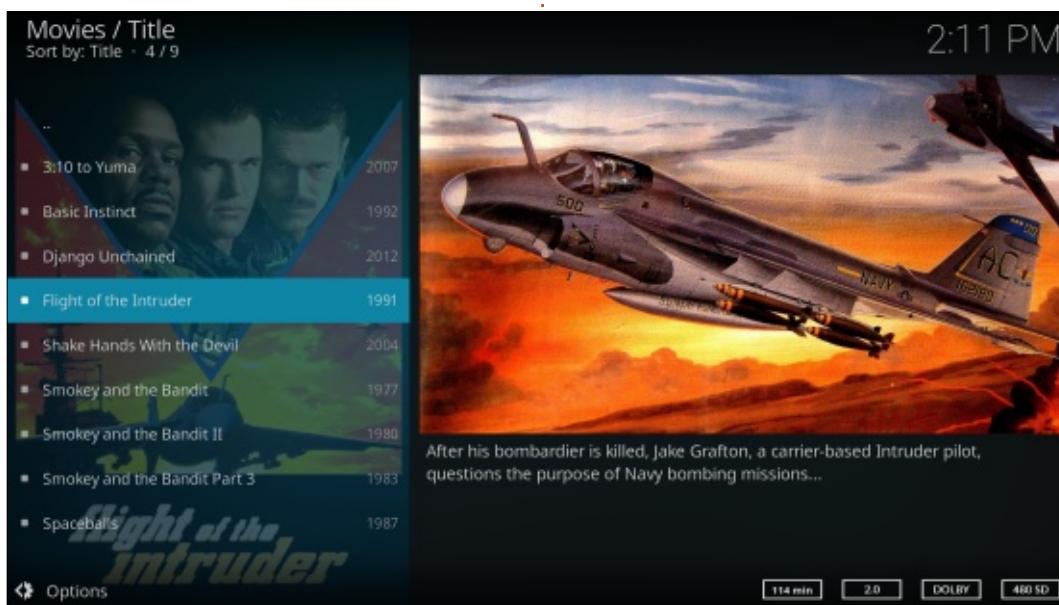
As with Confluence, and all other themes, once you’re in the Movies/TV Shows/Music/Music Videos section, you can change how content is displayed. Estuary content tends to look a bit more polished, but doesn’t include as much information on the screen as Confluence. If you’re an info junkie, you’ll want to change how videos are displayed (Shift is a good

Viewtype that includes a bit more information than Fanart, Wall or Infowall).

My gripes aside, the general consensus among people I talked to is that they love KODI 17. At least two people I spoke to mentioned they found KODI 17 was more stable on their hardware than 16. At home, my better half (who’s less interested in technology) had no issues figuring out the new interface and was able to find what she wanted without calling me.

Our family primarily uses KODI as it was originally intended – managing local content. Next

month, I’ll delve in a bit deeper into 17 to look at other improvements – including the tighter integration of PVR elements, the new web interface, and more.



**Charles** is the author of Instant XBMC, and the project manager of a not-for-profit computer reuse project. When not building PCs, removing malware, and encouraging people to use GNU/Linux, Charles works on reinventing his blog at <http://www.charlesmccolm.com/>.



## Q&A

Compiled by Gord Campbell

If you have a Linux question, email it to: [misc@fullcirclemagazine.org](mailto:misc@fullcirclemagazine.org), and Gord will answer them in a future issue. Please include as much information as you can about your query.

**Q** I have a double-width, half-length, video card with two DVI connectors and two HDMI connectors. It has a fan and an 8-pin power connector. The silkscreening assures me that it was made by Nvidia, but does not disclose a model number. According to lspci and lshw, it's an NVIDIA GeForce GTX 760. How can I learn more?

**A** (Thanks to **efflandt** in the Ubuntu Forums) Once you install an Nvidia driver package (which you can do from Additional Drivers), there is the nvidia-smi command which can tell much more about the card, especially with -q.

**Q** I get errors from this command: sudo apt-get update && apt-get upgrade && apt-get install

**A** (Thanks to **lisati** in the Ubuntu Forums) You might wish to try this:

```
sudo apt-get update && sudo
apt-get upgrade && sudo apt-
get install
```

**Q** I can't connect to my main wifi router from my laptop. My network card stopped seeing it. This is the network card:  
Broadcom Corporation BCM43225  
802.11b/g/n (rev 01)

**A** (Thanks to **jeremy31** in the Ubuntu Forums) You may have issues with the internal Broadcom card if the access point is on a channel higher than 11 in 2.4GHz.

**Q** I have some media on a mounted drive (mounted to /mnt/hdd1 in fstab) that I can double-click to open/play with video player, but when I open with "other application" and select VLC, it will not play. If I open up VLC and try to browse, it sees only the home directory so I'm guessing it's a permission issue.

**A** (Thanks to **mc4man** in the Ubuntu Forums) You are probably using the snap version of

VLC, which is confined to your home folder. So remove it with:

```
sudo snap remove vlc
```

Then install the deb package version.

**Q** Firefox 52 disables Java support. However, I can't use some important web sites without it. How can I enable it?

**A** (Thanks to **Joey Sneddon** at **OMGUbuntu**) There is a way to enable Java, Silverlight, etc, "NPAPI" plugins in Firefox 52 using an about:config setting. Add new Boolean string "plugin.load\_flash\_only" and set it to false. Then restart the browser.

**Q** I'm trying to work out how to turn a Ruby on Rails app into a .deb package.

**A** (Thanks to the OP, sbutton in the Ubuntu Forums) I can see that using "dpkg-deb --build" is the way to go for this.

## TOP QUESTIONS AT ASKUBUNTU

\* Why is some software not in the official Ubuntu repositories?  
<https://goo.gl/5lbOug>

\* What is the difference between using "touch file" and "> file" in creating a new file?  
<https://goo.gl/Uy2Svd>

\* How do I disable the touchpad while typing?  
<https://goo.gl/z3d8LL>

\* Is it safe to have no /home partition?  
<https://goo.gl/LC2rNJ>

\* Is it possible to run Ubuntu Server 16.04 alongside Windows 10 Pro?  
<https://goo.gl/9Tblln>

\* Can I make Unity Hot Corners run custom commands?  
<https://goo.gl/rZdxNE>





\* Why isn't Chromium up-to-date in all the Ubuntu LTS repos, like Firefox is?

<https://goo.gl/7LFfn9>

\* Is there a command to display a Calendar in the terminal?

<https://goo.gl/W684tB>

\* Anti Censorship software?

<https://goo.gl/zrTGYd>

## TIPS AND TECHNIQUES

### IoT: problem or solution?

One of the hottest technologies recently has been "the Internet of Things" (IoT), adding intelligence to (mostly) mundane appliances.

Sadly, many implementations have been flawed. They are based on Android as of a certain date, and have no facility for applying updates to close security holes which are discovered later. Hackers exploit these flaws, and take over the device to send you spam email or mount denial-of-service attacks on whichever website has annoyed them lately.

When all the smart lightbulbs concentrate on sending garbage traffic to your bank's website, you will probably be denied from doing online banking.

Relief may be in sight. Canonical has developed Ubuntu Core, which is designed to be the OS for IoT devices -- and it allows for updating. Now the question is, how successful will they be in marketing Ubuntu Core? We can only wish them well.



**Gord** had a long career in the computer industry, then retired for several years. More recently, he somehow found himself "The IT Guy" at a 15-person accounting firm in downtown Toronto.



In February 2017, Hitman was released on Linux. Hitman is the sixth title from the Hitman series and the first to be ported to Linux. Originally released in 2016 as an episodic stealth video game, Hitman was developed by IO Interactive & published by Square Enix for Microsoft Windows, PlayStation 4 & Xbox One.

A total of six episodes were released, one at a time, over the course of 2016. These six episodes were put together to form what is called Hitman: The Complete First Season in 2017, which was then ported to Linux by Feral Interactive. Hitman: The Complete First Season sells for \$59.99 through Steam and it is rated M for Mature. However, if you'd prefer to first try out the game you can buy the Hitman: Intro Pack which includes the Prologue and the 1st Episode for the very low price of \$14.99 after which you can buy the remaining chapters for around \$9.99 per chapter. There is a mild saving if you buy the complete first season all at once instead of buying each chapter individually,

so it's a decision you'll have to make.

This latest game in the Hitman series is one of the best I've played. It's a third-person action-adventure, stealth game in which the stealth element is so important that you're rewarded extra points for not being noticed when executing a contract. You're also

deducted points for killing anyone who's not one of your contracts, so extra care must be taken to only kill your targets.

The game begins with a short prologue which is a sort of tutorial where you're given points for learning some key elements which you'll be using later, such as finding a disguise, learning how to

use your instinct, moving about unnoticed, etc.

In this game, you play the role of Agent 47, a hitman sent out to kill undesirable targets. The prologue guides you into a ship where you're supposed to kill your target and then get out. Upon completion, you must then complete a second mission where



you're expected to infiltrate a heavily guarded facility and then eliminate your target. After this, your first official mission is in a Paris fashion show in which you're given two targets to kill.

Compared to previous Hitman titles, in this latest game you're given lots of freedom to complete your missions. For example, you can use any object and any disguise to kill your targets. There are a few

limited elimination opportunities which, if taken, will yield you a higher score because of their complexity. Having completed your Paris mission, you may begin Episode 2 which takes you to fictitious Sapienza, Italy. Here you're expected not only to kill your two targets but also to destroy a virus which they've been developing.

Hitman: The Complete First

Season is, in many ways, an open-world game in which you've got certain preset goals which you need to accomplish. The storyline is not too complicated and it includes, at most, three missions per episode – which makes it so you can complete the heart of the game in a very short amount of time. However, there is much more to the game than just completing the storyline missions. At first I was a little confused as to why you

must be online to play the game but, after playing it for a while, I figured out that the online element actually brings a few new features to the game, and it is, in fact, what separates this title from others in the series. One of the novel features is the contract creation aspect. You can custom-create contracts which can be added to other players' contracts. This means that, if you come up with a cool way to kill a non-playable-character, then this character can become a contract that other people can select. It's a cool feature because it means that there's always new content being added to the game.

Another feature, and perhaps the most interesting, is the Elusive Target missions. Elusive targets are targets that are available for only a limited amount of time, they're harder to find, track and kill. What's even more interesting is that, once you kill the target, you will no longer be able to kill that target ever again. Also, elusive targets are each available for only a limited time (usually less than a week in real-time) which means that, if you weren't able to find and kill an elusive target, you'll never again be able to complete this





contract (and I do mean never). This elusive target concept is, in my opinion, what takes this game to another level, and makes it very unique because you're basically given a window of opportunity to complete your contract and you may kill these characters only once, so once they're dead, they're dead for good.

The game's graphics are pretty awesome, especially during the storyline cinematic scenes which sometimes almost seem like they're authentic movie-like quality. The sound is equally superb, especially if you've got a surround-sound system, or if you're using earphones, since sound comes at you from virtually 360 degrees. The voice acting also deserves being mentioned in that it excels at many levels.

You can play this game with mouse/keyboard or with a gamepad controller – either way it will feel right at home. There's nothing revolutionary in the game-play, on the contrary, it feels very instinctual and familiar. This makes it easy to understand and play right off the bat. For anyone who's never played any of the previous Hitman games, it should be pretty

straightforward as well. You control your character by moving around with either the WASD keys or the left joystick on a gamepad. Then, when you're behind any other character, you can "subdue" them until they're rendered unconscious – at which point you've got the option of snapping their neck or you can just let them be since they're already passed out. At this point, you can take the person's clothes which will then provide you with a new disguise to use. A very important action which must be taken next is to drag the unconscious body and drop it in a bin or a closet so that it's hidden from others. If you're spotted by anyone dragging a body then your cover is blown and you must find another disguise or hide somewhere until the threat level drops.

Although you have some weapons at your disposal, such as guns, poison, fiber wire, knife, etc, it's generally best practice to not kill anyone except for your contracts. Remember what I said earlier about getting points deducted for killing innocent people.

The elusive targets and the

customized contracts are the two features that add a lot of value to the replay factor. You can complete the storyline missions and afterward you can go back to replay the same city but this time looking for different contracts than the ones offered in the regular storyline.

I have not encountered any glitches in this game after playing it since it was released on Linux, which so far is a good sign. However, I did notice that there was a bit of a drag when I first played the game due to my graphics driver not meeting the minimum requirement suggestion. Unfortunately, the minimum requirement for my graphics card driver is one that needs to be installed by using a PPA or straight from the Nvidia website, it's not one of the ones available natively through my distro. This is the only game I have which requires the Nvidia 375 or higher driver. A flaw in this driver due to it not being officially supported by Ubuntu is that it causes problems to my window borders when resuming from suspend. If not for this high requirement for the graphics driver, I would be giving this game a full 5 star rating.



## MINIMUM REQUIREMENTS

OS: Ubuntu 16.04

CPU: Intel Core i5-2500K/AMD FX-8350

RAM: 8 GB

GPU: Nvidia GeForce GTX 680/AMD R9 270X graphics card or better

Storage: 67 GB available space

Additional Notes: Nvidia graphics cards require driver version 375.26 or better. AMD graphics cards require MESA 13.0.3 or better. Intel graphics cards will not be supported on release.



**Oscar** graduated with a music degree from CSUN, is a Music Director/Teacher, software/hardware beta tester, Wikipedia editor, and active member of the Ubuntu community. You can email him at: [7bluehand@gmail.com](mailto:7bluehand@gmail.com)



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

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

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