



Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #164 - December 2020



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COOKING WITH UBUNTU KOOKBOOK AND COOKIES

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Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

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

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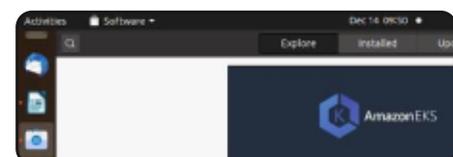
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number of Characters	Numbers only	Upper or lower case letters	upper or lower case letters mixed	numbers, upper and lower case letters	numbers, upper and lower case letters, symbols
1	Instantly	Instantly	Instantly	Instantly	Instantly
2	Instantly	Instantly	Instantly	Instantly	Instantly
3	Instantly	Instantly	Instantly	3 secs	10 secs

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WELCOME TO THE LAST ISSUE* OF FULL CIRCLE

Yes, within this last issue of FCM* we have more Python, more Podcast production, more Inkscape, and a very timely piece on using nwipe. Maybe you'll get the gift of a new hard drive? Well, nwipe will help you properly erase that old drive. Personally, by the time I replace a hard drive it's usually given me so much grief that I happily take the old one outside and smash the living daylight out of it with a large hammer.

Following on from last month's review of 20.10, we have reviews from Adam of Kubuntu and Ubuntu 20.10. In other reviews, Erik takes a look at Goggle Music Manager and interviews the developer.

Elsewhere this issue, we have Flash giving us a brief cookery lesson. I'm definitely going to try his cookie recipe. Wish me luck. I've got the fire blanket and extinguisher at the ready. I'll know they're ready when the smoke alarm goes off.

In other news: Ubports have released another update to their mobile Touch OS. OTA-15 brings more under the hood changes and sets the stage for another big version update in the future.

That's it for FCM*. Stay safe and well!

All the best!

Ronnie

ronnie@fullcirclemagazine.org

* the last issue of 2020 that is... :)



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GNOME CIRCLE INITIATIVE FOR GNOME PLATFORM DEVELOPERS:

11/30/2020

The GNOME Project introduced the GNOME Circle Initiative to make it easier for third-party projects to enter the GNOME ecosystem. Until now, joining the GNOME project required a transition to the GNOME infrastructure and adherence to the project's rules of development, which was a barrier to the entry into the GNOME community of developers developing personal projects.

With the help of GNOME Circle, it is planned to reduce the barrier to entry into the project and organize interaction with developers developing programs based on the GNOME platform. In order to become a member of the GNOME Circle, it is enough to develop a quality application or library that uses the GNOME platform or GTK library, and the

code is distributed under an open source license approved by OSI .

Developers who join the initiative are not required to follow the GNOME development schedule and develop on the GNOME infrastructure. For applications, it is desirable, but not required, to package in the Flatpak format, follow the GNOME interface design guidelines, and provide components for integration with the GNOME desktop (icon, desktop file, and screenshot for the application manager). For libraries, it is desirable to maintain glib, follow GNOME coding guidelines, and provide documentation. GNOME Circle does not accept projects that require a Code Transfer Agreement (CLA).

GNOME Circle members, in addition to promoting their development more broadly, will have access to grants from the GNOME Foundation for conference travel and marketing. Participants will also be given access to GNOME services such as @ gnome.org email, blog hosting, video

conferencing platform, Gitlab repository, and a Nextcloud based repository account.

<https://www.gnome.org/news/2020/11/gnome-circle/>

END OF SUPPORT FOR CENTOS 6, RHEL 6 AND SCIENTIFIC LINUX 6:

11/30/2020

November 30 was the last day of support for the CentOS 6, RHEL 6 and Scientific Linux 6 branches, which have expired and will no longer be maintained. The Red Hat Enterprise Linux 6 branch was conceived in November 2010 and has been supported for 10 years.

All Scientific Linux 6 related packages have been moved to the archive, which will break the Scientific Linux 6 yum repos using the official servers. Users are encouraged to upgrade their systems to branches 7 or 8. For

RHEL users, an additional paid Extended Life Cycle Support (ELS) subscription is offered, updates with critical fixes will be released for RHEL 6 branch until June 30, 2024. Oracle Linux 6 support will end in March 2021.

<https://www.mail-archive.com/scientific-linux-announce@listserv.fnal.gov/msg00057.html>

OPENZFS 2.0 RELEASE, ZFS IMPLEMENTATION FOR LINUX AND FREEBSD

12/01/2020

After a year and a half of development , the OpenZFS 2.0 project has been released , developing the implementation of the ZFS file system for Linux and FreeBSD. The project became known as "ZFS on Linux" and was previously limited to developing a module for the Linux kernel. After the transfer of support for

FreeBSD, it was recognized as the main implementation of OpenZFS and was removed from the mention of Linux in the name. All ZFS development activity for Linux and BSD systems is now concentrated in one project and is being developed in a common repository.

OpenZFS is already used in the FreeBSD upstream (HEAD) and is included with Debian, Ubuntu, Gentoo, Sabayon Linux and ALT Linux distributions. Packages with the new version will soon be prepared for major Linux distributions, including Debian, Ubuntu, Fedora, RHEL / CentOS. FreeBSD keeps the code in sync with the current OpenZFS codebase. OpenZFS has been tested with Linux kernels 3.10 through 5.9 (last release supported kernels from 2.6.32) and FreeBSD 12.2, stable / 12 and 13.0 (HEAD) branches.

<https://zfsonlinux.org/>

LIGHTTPD 1.4.56 HTTP SERVER RELEASE WITH HTTP / 2 SUPPORT

12/01/2020

The lighttpd 1.4.56 lightweight http server has been released . The new version contains 600 changes. The most significant innovation is the implementation of support for the HTTP / 2 protocol , which is still disabled by default and requires the installation of the "server.h2proto" and "server.h2c" options in server.feature-flags.

<https://www.lighttpd.net/2020/11/29/1.4.56/>

NETHSERVER 7.9 SERVER DISTRIBUTION IS AVAILABLE

02.12.2020

NethServer 7.9 is out, which offers a modular solution for rapid deployment of servers in small offices or medium-sized enterprises. The distribution is based on the CentOS 7.9 package base and provides a web interface

for managing the available server components. The size of the installation image is 1.2 GB. An online demo is provided to get acquainted with the capabilities of the interface . The project developments are distributed under free licenses.

<https://community.nethserver.org/t/nethserver-7-9-released-roasted-chestnut-edition/17002>

BUDGIE DESKTOP 10.5.2 RELEASE:

03.12.2020

The developers of Solus have unveiled Budgie 10.5.2 desktop. The Budgie desktop is based on GNOME technologies, but uses its own implementations of the GNOME Shell, panel, applets, and notification system. The project code is distributed under the GPLv2 license. In addition to the Solus distribution, the Budgie desktop also comes in the form of an official Ubuntu edition .

To manage windows, Budgie uses the Budgie Window Manager (BWM), an advanced modification

of the basic Mutter plugin. All panel elements are applets, which allows you to flexibly customize the composition, change the placement and replace the implementation of the main panel elements to your taste. Among the available applets are the classic application menu, task switching system, area with a list of open windows, viewing virtual desktops, power management indicator, volume control applet, system status indicator and clock.

<https://getsol.us/2020/12/02/budgie-10-5-2-released/>

SQLITE 3.34.0 RELEASE:

03.12.2020

The release of SQLite 3.34.0 , a lightweight DBMS designed as a plug-in library, has been published. SQLite code is distributed as a public domain, i.e. can be used without restrictions and free of charge for any purpose. SQLite developers are financially supported by a specially created consortium that includes companies such as Adobe, Oracle, Mozilla, Bentley and Bloomberg.

<https://www.sqlite.org/changes.html>

MANJARO LINUX 20.2 DISTRIBUTION RELEASED:

03.12.2020

Manjaro Linux 20.2 , built on the base of Arch Linux and aimed at novice users, is out . The distribution kit is notable for the presence of a simplified and user-friendly installation process, support for automatic hardware detection and installation of the drivers necessary for its operation. Manjaro comes in live builds with KDE (2.9 GB), GNOME (2.6 GB) and Xfce (2.6 GB) graphical environments. Builds with Budgie, Cinnamon, Deepin, LXDE, LXQt, MATE and i3 are additionally developed with community participation .

<https://forum.manjaro.org/t/manjaro-20-2-nibia-got-released/41034>

BEAKER 1.0 BROWSER WITH

P2P PLATFORM FOR DECENTRALIZED SITES INTRODUCED:

04.12.2020

After two years of development , the first major release of the experimental Beaker 1.0 web browser, notable for its built-in support for Hypercore P2P communications, is out. With the help of this protocol, a decentralized content delivery network is made, the nodes of which are browser users. Such a network makes it possible to host web applications that do not require servers. The project code is written in JavaScript using the Chromium engine and Electron platform, and is distributed under the MIT license. It is available for Linux, macOS and Windows.

<https://beakerbrowser.com/2020/12/02/beaker-1-0.html>

DECEMBER UPDATE OF THE RASPBERRY PI OS:

12/04/2020

The Raspberry Pi project developers have published the December update for the Raspberry Pi OS (Raspbian) distribution based on the Debian 10 "Buster" package base. Three images are available for download - a reduced (438 MB) for server systems, with a desktop (1.1 GB) and a complete one with an additional set of applications (2.9 GB). The distribution comes with a custom PIXEL environment (a fork of LXDE). About 35 thousand packages are available for installation from the repositories .

<https://www.raspberrypi.org/blog/new-raspberry-pi-os-release-december-2020/>

RELEASE OF THE NPM PACKAGE MANAGER 7.1:

12/05/2020

NPM 7.1 , included in the Node.js distribution and used

for distributing JavaScript modules, has been published. The NPM repository serves over 1.3 million packages, which are used by about 12 million developers. About 75 billion downloads are recorded per month. To install NPM 7.1 without waiting for a new version of Node.js, you can run the command "npm i -g npm @ 7".

<https://blog.npmjs.org/post/636604708661886976/release-v710>

T2 SDE 20.10 META-DISTRIBUTION RELEASED:

05.12.2020

10 years after the last stable release , the release of the meta-distribution T2 SDE 20.10 has been published, which provides an environment for creating your own distributions, cross-compiling and keeping package versions up to date. Distributions can be built based on Linux, Minix, Hurd, OpenDarwin, Haiku, and OpenBSD. Popular distributions based on the T2 system include Puppy Linux.

The new release adds support

for ARM64 and RISC-V architectures, and improves cross-compilation tools. Support for legacy systems including Sony PS3, SGI Octane and Sun UltraSPARC is retained. More than a thousand new packages included. 11,743 packages were updated, including new versions of the Linux kernel, GCC, LLVM, Clang, Rust, X.org, Wayland, Firefox, KDE and GNOME.

<https://www.mail-archive.com/t2@t2-project.org/msg03851.html>

DEBIAN 10.7 UPDATE:

12/05/2020

The seventh corrective update for the Debian 10 distribution is out, which includes the accumulated package updates and fixed bugs in the installer. The release includes 54 updates that address stability issues and 38 updates that address vulnerabilities.

Of the changes in Debian 10.7, an upgrade to the latest stable versions of the mariadb, openjdk, eas4tbsync, tbsync, tor and ublock-origin packages were highlighted.

They added code to enigmail to simplify migration to Thunderbird's native OpenPGP implementation.

<https://www.debian.org/News/2020/20201205>

FIRST PUBLIC RELEASE OF THE RADICLE DECENTRALIZED COLLABORATIVE DEVELOPMENT PLATFORM:

12/07/2020

The first beta release of the P2P platform Radicle and its associated desktop client Radicle Upstream was just introduced. The project aims to create a decentralized service for collaborative development and storage of code, similar to GitHub and GitLab, but not tied to specific servers, not subject to censorship and working using the resources of P2P network participants. The proxy code for the node operation is written in Rust, in the graphical client in TypeScript, Svelte and Electron. The developments of the project are distributed under the GPLv3 license. The images are

prepared for Linux (ApplImage) and macOS.

<https://twitter.com/radicle/status/1333403629961797635>

XINE 1.2.11 RELEASED:

12/07/2020

Xine-lib 1.2.11, a multi-platform library for playing video and audio files, as well as a set of related plugins, is out. The library can be used in a number of video players, including xine-ui, gxine, kaffeine.

Xine supports multithreading, supports a large number of popular and little-known formats and codecs, and can process both local content and multimedia streams transmitted over the network. The modular architecture makes it easy to add functionality through plugins. There are 5 main classes of plugins: input plugins for receiving data (FS, DVD, CD, HTTP, etc.), output plugins (XVideo, OpenGL, SDL, Framebuffer, ASCII, OSS, ALSA, etc.), plugins for unpacking media containers (demuxers), plugins for decoding video and

audio data, plugins for applying effects (echo cancellation, equalizer, etc.).

<https://sourceforge.net/projects/xine/files/xine-lib/1.2.11/README.txt/view>

STABLE RELEASE OF THE CROSS-PLATFORM BROWSER VIVALDI 3.5

08.12.2020

The release of the proprietary Vivaldi 3.5 browser, developed on the basis of the Chromium engine, has been published. The browser is being developed by the former developers of Opera Presto and aims to create a customizable and functional browser that preserves the privacy of user data. The main features include a tracking and ad blocker, note, history and bookmark managers, private browsing mode, end-to-end encrypted sync, tab grouping mode, sidebar, configurator with a large number of settings, horizontal tab display mode, as well as in test mode built-in email client, rss reader and calendar.

The browser interface is written in JavaScript using the React library, Node.js framework, Browserify and various ready-made NPM modules.

<https://vivaldi.com/blog/>

BASH 5.1 SHELL RELEASE

08.12.2020

After two years of development, a new version of the GNU Bash 5.1 shell has been published, which is the default in most Linux distributions. At the same time, a release of the readline 8.1 library was formed, which is used in bash to organize command line editing.

<https://lists.gnu.org/archive/html/bug-bash/2020-12/msg00002.html>

RED HAT STOPS DEVELOPMENT OF CENTOS 8 IN FAVOR OF TEST CENTOS STREAM

12/08/2020

The Red Hat company announced the termination of development of the CentOS 8 distribution in its classic version, which implies the provision of the most approximate rebuilds of the Red Hat Enterprise Linux releases. Instead of classic CentOS, users will be prompted to upgrade to the continuously updated edition of CentOS Stream, which can be seen as an intermediate between RHEL and Fedora, at the beta level of RHEL. Formation of updates for classic CentOS 8 will be discontinued on December 31,

2021. Maintaining the CentOS 7 branch will continue unchanged until 2024.

Unlike regular CentOS, in CentOS Stream, instead of rebuilding the original packages used in the already formed stable RHEL releases, it offers builds based on the experimental and unstabilized packages generated for the next RHEL interim release. CentOS Stream allows earlier access to the capabilities of future RHEL releases, but at the price of this stability at the beta level.

<https://www.redhat.com/en/blog/centos-stream-building-innovative-future-enterprise-linux>

CRUX 3.6 LINUX DISTRIBUTION RELEASE

09.12.2020

After a year and a half of development, the release of an independent lightweight Linux distribution CRUX 3.6 has been prepared, developed since 2001 in accordance with the KISS (Keep It Simple, Stupid) concept and aimed at experienced users. The goal of the project is to create a simple and transparent distribution kit for users based on BSD-like init scripts, having the most simplified structure and containing a relatively small number of ready-made binary packages. CRUX maintains a ports system that allows you to easily install and update FreeBSD / Gentoo style applications. The size of the iso image prepared for x86-64 architecture is 819MB.

<https://lists.crux.nu/pipermail/crux/2020-December/006755.html>



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QEMU 5.2 EMULATOR RELEASE

09.12.2020

The release of the QEMU 5.2 project is presented . As an emulator, QEMU allows you to run a program compiled for one hardware platform on a system with a completely different architecture, for example, to run an application for ARM on an x86-compatible PC. In virtualization mode in QEMU, the performance of executing code in an isolated environment is close to the hardware system due to the direct execution of instructions on the CPU and the use of the Xen hypervisor or the KVM module.

<https://lists.nongnu.org/archive/html/qemu-devel/2020-12/msg01961.html>

APACHE NETBEANS 12.2 IDE RELEASE

09.12.2020

Apache Software Foundation Organization introduced an

integrated development environment for the Apache the NetBeans 12.2 , which provides support for Java SE programming languages, Java EE, PHP, C / C ++, JavaScript and Groovy. This is the seventh release made by the Apache Foundation since Oracle donated NetBeans code.

<https://blogs.apache.org/netbeans/entry/announce-apache-netbeans-12-2>

CENTOS FOUNDER STARTED DEVELOPMENT OF NEW FREE RHEL BUILD - ROCKY LINUX

09.12.2020

Gregory Kurtzer , founder of the CentOS project, when discussing Red Hat's transformation of the stable CentOS platform into a test rolling CentOS Stream distribution, announced his intention to create a new rebuild of RHEL and invited other developers to join this initiative. For development of the new distribution, Gregory registered the rockylinux.org domain and created a repository on GitHub.

The project is still at the planning stage and the formation of a development team. It is stated that Rocky Linux will continue the tradition of classic CentOS and will be developed by the forces of the community. The project will provide a fully compatible Red Hat Enterprise Linux rebuild that demonstrates the level of stability of RHEL releases and is suitable for use in production projects and enterprises. To finance the project, resources will be attracted from Control Command , which is headed by Gregory.

<http://gmkurtzer.github.io/>

OPENWRT UPDATE 18.06.9 AND 19.07.5

10.12.2020

Updates for the OpenWrt 19.07.5 and 18.06.9 distribution have been published. They are intended for use in various network devices such as routers and access points. OpenWrt supports many different platforms and architectures and has a build system that allows you to easily

and conveniently cross-compile, including various components in the assembly, which makes it easy to create a ready-made firmware or disk image adapted for specific tasks with the desired set of pre-installed packages. Assemblies are generated for 37 target platforms. The OpenWrt 18.06.9 release will be the last in the 18.06 series, users are encouraged to upgrade to the 19.07 branch.

<https://openwrt.org/releases/19.07/notes-19.07.5>

KDE APPLICATIONS 20.12 RELEASE

12/11/2020

The December Cumulative Update of Applications (20.12) developed by the KDE Project is presented. In total, as part of the December update , releases of 224 programs, libraries and plugins were published . Information about the availability of Live-assemblies with new releases of applications can be found on this page:

https://community.kde.org/Plasma/Live_Images

CUPS AUTHOR HAS RELEASED PAPPL 1.0, A FRAMEWORK FOR ORGANIZING PRINT OUTPUT

12.12.2020

Michael R Sweet, the original author of the CUPS printing system, who after leaving Apple switched to developing the CUPS fork of the OpenPrinting project, presented the first stable release of PAPPL, a new protocol-based CUPS Printer Applications framework. IPP Everywhere, which is recommended as a replacement for traditional printer drivers. The framework code is written in C and is distributed under the Apache 2.0 license with the exception that allows linking with code under the GPLv2 and LGPLv2 licenses.

The framework was originally designed to support the LPrint printing system and Gutenprint drivers, but can be used to implement any printer and driver support for printing on desktop, server, and embedded systems. The PAPPL is expected to help accelerate the advancement of IPP

Everywhere technology instead of classic drivers and facilitate support for other IPP-based programs such as AirPrint and Mopria.

PAPPL includes a built-in implementation of the IPP Everywhere protocol, which provides the means to access printers locally or over the network and process print requests. IPP Everywhere operates in "driverless" mode and, unlike PPD drivers, does not require static configuration files. Interaction with printers is supported both directly through a local printer connection via USB, and over the network using the AppSocket and JetDirect protocols. Data can be sent to the printer in JPEG, PNG, PWG Raster, Apple Raster and "raw" formats.

<https://github.com/michaelsweet/pappl>

OBS STUDIO 26.1 VIDEO STREAMING RELEASE

12/14/2020

Published edition package OBS Studio 26.1 for streaming, compositing and video recording. The code is written in C / C++ and is distributed under the GPLv2 license. Assemblies are generated for Linux, Windows and macOS.

The development goal of OBS Studio is to create a free version of the Open Broadcaster Software application, not tied to the Windows platform, supporting OpenGL and extensible via plugins. The difference is also the use of a modular architecture, which means the separation of the interface and the core of the program. Supports transcoding of original streams, video capture during games and streaming to Twitch, Facebook Gaming, YouTube, DailyMotion, Hitbox and other services. To ensure high performance, it is possible to use hardware acceleration mechanisms (for example, NVENC and VA-API).

<https://github.com/obsproject/obs-studio/releases/tag/26.1.0>

CLOUDLINUX ANNOUNCED THE DEVELOPMENT OF AN ALTERNATIVE TO CENTOS 8

12/15/2020

CloudLinux, which develops a commercial distribution kit of the same name based on the RHEL package base, has announced the Lenix project, within which, with the participation of the community, it is planned to develop a free clone of Red Hat Enterprise Linux similar to CentOS. More than a million dollars a year will be allocated for the development of the project.

It is noted that CloudLinux has ten years of experience in creating assemblies based on RHEL source packages, a ready-made infrastructure and a large staff of developers and maintainers. The motivation for developing a free RHEL build is associated with promoting a commercial Linux kernel update service without rebooting KernelCare and providing extended support services. For example, CloudLinux provides an extended support

service for CentOS 6 that continues to publish updates until 2024, despite the end of the maintenance cycle of the CentOS 6 branch.

Like CentOS, Lenix will be free, open source and binary compatible with RHEL 8. The first release is slated for the first quarter of 2021. Updates for Lenix 8 will be released until 2029. For migration from CentOS 8, a toolkit will be prepared that will allow one command to replace repositories and keys from CentOS to Lenix.

<https://www.businesswire.com/news/home/20201215005483/en/CloudLinux-Commits-More-Than-1-Million-a-Year-to-CentOS-Replacement>

TAILS 4.14 DISTRIBUTION RELEASE

12/15/2020

The release of the specialized distribution kit Tails 4.14 (The Amnesic Incognito Live System), based on the Debian package base and designed to provide anonymous access to the network,

has been formed. Anonymous login to Tails is provided by the Tor system. All connections, except for traffic through the Tor network, are blocked by the packet filter by default. Encryption is used to store user data in the save user data mode between runs. A 1 GB iso image has been prepared for downloading . It can work in Live mode.

In the new issue Tails updated tor 0.4.4.6, Thunderbird 78.5.1 and Tor Browser 10.0.7 (officially releases Tor Browser 10.0.7 and Firefox 84 will be released in the evening), The Linux kernel has been updated to release 5.9. The Unifont font has been removed from the distribution.

https://tails.boum.org/news/version_4.14/index.en.html

THE

VIRTUALBOX NETWORKING PRIMER

Connecting and Configuring
Virtual Machines



Robin Catling

The VirtualBox Networking Primer

Connecting and Configuring Virtual Machines

The VirtualBox Networking Primer is a no-nonsense guide for the VirtualBox user taking their next steps into virtual networks.

While Oracle VM VirtualBox is a great free tool, the real power of virtualisation comes when you start connecting virtual machines to each other and to the wider world. Software development, sales, education and training are just some of the areas in which network access to virtual machines offers endless opportunities. But the world of computer networks is filled with complex technical jargon.

Complete with principles, practice, examples and glossary, The VirtualBox Networking Primer takes the frustration and confusion out of connecting real-world projects.

Author: **Robin Catling**

Publisher: Proactivity Press

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Amazon US link:

[https://www.amazon.com/dp/1916119484?
ref =pe 3052080 397514860](https://www.amazon.com/dp/1916119484?ref=pe_3052080_397514860)

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[https://www.amazon.co.uk/VirtualBox-Networking-Primer-
Connecting-Configuring/dp/1916119484/ref=sr_1_1?
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Website: <https://gbhackers.com/external-penetration-testing/>

This time, the website is different, to reflect what we want to do with nmap.

Please read this article, and you will be much wiser as to how nmap is used.

Welcome back to another educating experience: 'demystifying nmap'. So, last issue, we talked about customising your ping sweep, but we did not say how. If you read the linked article, you will know the why. However, if you don't know how ICMP works, I have good news for you; you will learn something new. You don't have to remember the whole table, but get an overall feel. Please peruse the table (0-18) here: <http://www.informit.com/articles/article.aspx?p=26557&seqNum=5>

Now, it is true that you don't need to know what electricity is to use it, and I suppose the same can be said of nmap. The fact of the matter is, if you knew better, you

would not do things like the outlet challenge either: <https://www.the-sun.com/news/299433/stupid-tiktok-outlet-challenge-penny-game-deadly/>

I will refer to this table, and you can simply look it up if networking is not your thing.

Note: This will be our first nmap query to require root / sudo privileges. (On Linux, only root is generally able to send and receive raw TCP packets.)

Let's make another ping sweep.. Do you still remember how? In this category, we have PE; PP; PM (ICMP ping types) that we use to modify our query. Like so:

```
nmap -sP -PP 192.168.1.0/24
```

Nmap can send the standard packets sent by the ubiquitous ping program. Nmap sends an ICMP type 8 (echo request) packet to the target IP addresses, expecting a type 0 (echo reply) in return from live hosts. Unfortunately for us, many hosts and firewalls now block

these packets, rather than responding as they are supposed to. The ICMP standards also specify timestamp request, information request, and address mask request packets as codes 13, 15, and 17, respectively. While the ostensible purpose for these queries is to learn information such as address masks and current times, they can easily be used for host discovery. In our example case, we can use type 13, and we will tailor our request as follows:

```
sudo nmap -sP -PP 192.168.1.0/24
```

Go on, try it on your local network. (Again, don't try it on the police services website?)

Okay, back to our ping sweep. Remember that I told you the ACK flag was set on the TCP packet? We can change that to a SYN, to fool stateful firewalls. The default destination port is 80. Alternate ports can be specified as a parameter. Note that if you specify an alternative port, there is no space between the PS and the port number. The SYN flag suggests to

the remote system that you are attempting to establish a connection. Normally the destination port will be closed, and a RST (reset) packet sent back. If the port happens to be open, the target will take the second step of a TCP three-way-handshake by responding with a SYN/ACK TCP packet. Nmap does not care whether the port is open or closed. Either the RST or SYN/ACK response tell nmap that the host is available and responsive. What will that look like? Try this:

```
nmap -sP -PS 192.168.0.0/24
```

You are doing great so far if you have been following along. We can also skip the port scan, by specifying -sn. We are also able to spoof our egress port, with the -g switch that we tack on right at the end of our query.

For example: -g137 will tell our target the request came from port 137.

Easy-peasy-lemon-squeezy!

It goes without saying that if -PS is the SYN flag, -PA is the ACK flag.

Our cheat sheet is shown below.

Nmap even allows you to get more creative with your packets! But, more on this in the next issue of FCM. Hope to see you there.

Hope you enjoyed this third demystifying nmap article and I'll see you next issue for something new.

As always, comments, compliments, complaints, all to: misc@fullcirclemagazine.org



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

HOSTS :

```
Scan a single IP:      nmap 192.168.1.1
Scan a host:          nmap www.myserver.net
Scan a range of IPs:  nmap 192.168.1.1-20
Scan a subnet:        nmap 192.168.1.0/24
Scan from a text file: nmap -iL list_of_ips.txt
```

PORTS :

```
Scan a single Port:   nmap -p 22 192.168.1.1
Scan a range of ports: nmap -p 1-100 192.168.1.1
Scan 100 most common ports: nmap -F 192.168.1.1
Scan all (65535) ports: nmap -p- 192.168.1.1
```



Last month, we looked at using the datetime library to, among other things, calculate a billing cost for hours worked. Unfortunately, I didn't have enough time or space to discuss adding multiple hours worked to get a "grand total" to bill the customer.

One would assume that since you can subtract two datetime objects, that you could add two datetime objects just as easily. But you can't.

If we use an example from last month and have the two datetime objects st and et (meaning start time and end time), and try to add them – which really makes no sense, but let's try it anyway – you will receive the text shown below.

While there are a few ways to actually add times using datediff, they are very clumsy, and I really don't think I could properly explain it, so I started looking for a better

solution.

After digging around on the Internet, I found this discussion on stackoverflow.com. (<https://stackoverflow.com/questions/2410454/adding-up-time-durations-in-python>).

Banderlog013 answered the question the best, so I grabbed a copy of his code.

It seems the solution is "simply" to use the numpy library. After playing around with the code, I realized that, for my needs, it didn't quite give me what I needed. Here (top right) is his original code, including his comments.

While this worked on a basic level, it wasn't really what I wanted. So I started modifying the code. But, before we get too deep into the code, I will remind you that you need to have the numpy library installed. Most of my regular readers already have done this, but

```
import numpy as np # read file with one duration per line
with open('clean_times.txt', 'r') as f:
    x = f.read()
# Convert string to list of '00:02:12.31'
# I had to drop last item (empty string)
tmp = x.split('\n')[:-1]
# get list of ['00', 02, '12.31']
tmp = [i.split(':') for i in tmp.copy()]
# create numpy array with floats
np_tmp = np.array(tmp, dtype=np.float)
# sum via columns and divide
# hours/24 minutes/60 milliseconds/1000
# X will be a float array [days, hours, seconds]
# Something like `array([ 0. , 15.68333333, 7.4189 ])`
X = np_tmp.sum(axis=0) / np.array([24, 60, 1000])
```

let's go through the motions – just in case you haven't done this yet. You can simply use pip (or pip3) to install numpy ...

```
$ pip3 install numpy
```

If numpy is already installed, that's ok. You'll just get a gentle message that you have already done this ...

Requirement already satisfied: numpy in ./local/lib/python3.8/site-packages (1.19.2)

The program assumes that you have the hours put into a text file. Here 's the one that I will use for this project. It's simply just a series of task times for our mythical employee. One entry per line.

```
06:00:00
03:00:00
02:08:00
03:10:00
11:10:00
08:00:00
```

Make sure that you press <Enter> after you make the last entry in the text file. You can use any text editor you wish, from Vim, to nano, or your favorite IDE. Save the file as "hours-11-20-20.txt".

```
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
TypeError: unsupported operand type(s) for +: 'datetime.datetime' and 'datetime.datetime'
```

HOWTO - PYTHON

Now that is taken care of, let's look at the code (after I modified it), block by block, with some explanations along the way. To run the program, you will need to use a version of Python that is 3.7 or later, since I use "f-strings" throughout.

First, we need to import numpy into our program, and then read the file. The data from the file is going to be put into a variable named "x". At this point, most of this is the code from Banderlog013, including his original comments (top right).

At this point, the data that is in the variable "tmp" is:

```
['06:00:00', '03:00:00',  
'02:08:00', '03:10:00',  
'11:10:00', '08:00:00', '']
```

I didn't include microseconds in my data entries, so it's just a list of the simple strings that we had entered into the file. Also notice that the last element of the list is a blank string, which is why he mentions that he needed to drop the last item in his comments.

Now, we need to take each

entry in our list and convert that into a list of lists.

```
# get list of ['00', 02,  
'12.31']  
  
tmp = [i.split(":") for i in  
tmp.copy()]  
  
print(f"tmp={tmp}")
```

The print statement is mine – so that we can see the data. The variable tmp now contains:

```
tmp=[['06', '00', '00'],  
['03', '00', '00'], ['02',  
'08', '00'], ['03', '10',  
'00'], ['11', '10', '00'],  
['08', '00', '00'], ['']]
```

There is the list of lists I mentioned above. Next, we create an empty list that will hold each of the items and then walk through each item, convert that to a numpy float array, append that to the empty list (np_tims) see below.

So this is the end of the for loop. At this point, the program has printed each of the values for

```
np_tims = []  
for ls in range(len(tmp) - 1):  
    # for ls in range(len(tmp)):  
    # create numpy array with floats  
    np_tmp = np.array(tmp[ls], dtype=np.float)  
    print(f"np_tmp={np_tmp}")  
    np_tims.append(np_tmp)
```

```
import numpy as np  
  
# read file with one duration per line  
with open("hours-11-20-20.txt", "r") as f:  
    x = f.read()
```

Now we need to manipulate the data in the variable x so we can use it. He converts it into a list:

```
# Convert string to list of '00:02:12.31'  
# I had to drop last item (empty string)  
tmp = x.split("\n")[:-1]
```

np_tmp and has appended each into the np_tims list. Our output, at this time, looks like this:

```
np_tmp=[6. 0. 0.]  
np_tmp=[3. 0. 0.]  
np_tmp=[2. 8. 0.]  
np_tmp=[ 3. 10. 0.]  
np_tmp=[11. 10. 0.]  
np_tmp=[8. 0. 0.]
```

And the np_tims list looks like this:

```
[array([6., 0., 0.]),  
array([3., 0., 0.]),  
array([2., 8., 0.]),  
array([ 3., 10., 0.]),  
array([11., 10., 0.]),  
array([8., 0., 0.])]
```

We are getting close to the "magic" of what the program does. Since we are done with the for loop, we'll now use the .sum function of numpy. He originally divided the array sums by another array of [24, 60, 1000]. However when that happened, it threw the numbers off. So I changed the code to leave the array sums as it was, which worked for me.

```
# x =  
np.array(np_tims).sum(axis=0)  
/ np.array([24, 60, 1000])  
  
x =  
np.array(np_tims).sum(axis=0)  
# / np.array([1, 60, 1000])  
  
print(X)
```

Now when we hit the print(X) line, the output from our program presents us with:

```
[33. 28. 0.]
```

At this point, we pull the hour and minute values from the list so that we can easily deal with them.

```
hrs = X[0]
mins = X[1]
print(hrs, mins)
```

And the output here would be:

```
33.0 28.0
```

And, as you know, the value on the left is hours with the value on the right being the minutes. Notice that I don't really care about seconds at this point, so they are ignored.

Next, we convert the hours to seconds by multiplying by 3600, and the minutes by 60, and then adding them together.

```
totalsecs = (hrs * 3600) +
(mins * 60)
```

```
print(f"TotalSecs:
{totalsecs}")
```

```
TotalSecs: 120480.0
```

You COULD make the line:

```
Totalsecs = (X[0] * 3600) +
(X[1] * 60)
```

Which is much more intuitive

and requires a lot less programming, but I wanted to break it down into easily "digestible chunks".

As we did last month, we use divmod to convert the numbers into hours, minutes and seconds just in case we have more minutes than 60 so the values correlate correctly:

```
min, sec = divmod(totalsecs,
60)
```

```
hours, minutes = divmod(min,
60)
```

```
print(f"{hours} hours and
{minutes} minutes")
```

```
33.0 hours and 28.0 minutes
```

Luckily, in this example the numbers match. Finally, we apply our billing factor. In this case, our mythical programmer bills out at \$25 per hour, AND we bill portions of an hour instead of rounding everything up to the next hour.

```
billingratehours = 25
billingrateminutes = 25 / 60
billtotal = (hours *
billingratehours) + (minutes
* billingrateminutes)
print(f"Bill= $
{billtotal:.2f}")
```

```
Bill= $836.67
```

If you look at the print statement at the end of the code block, we format the total amount to be billed to only two decimal points by using the `:.2f` constructor. What if we didn't format the billtotal variable? The program would print:

```
Bill= $836.66666666666666
```

Which doesn't make sense for a billing amount.

Since we spent time creating a program, I thought long and hard about how to provide the source code. If I went to pastebin as I have in the past, you would have to make two separate downloads, but if I put the code on my github repository, then you have to download only one happy little zip file. So, I have put the code in my github repository. You can download them at <https://github.com/gregwa1953/FCM164>.

As always, until next time; **stay safe, healthy, positive and creative!**



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



HOW-TO

Written by Tony Hughes

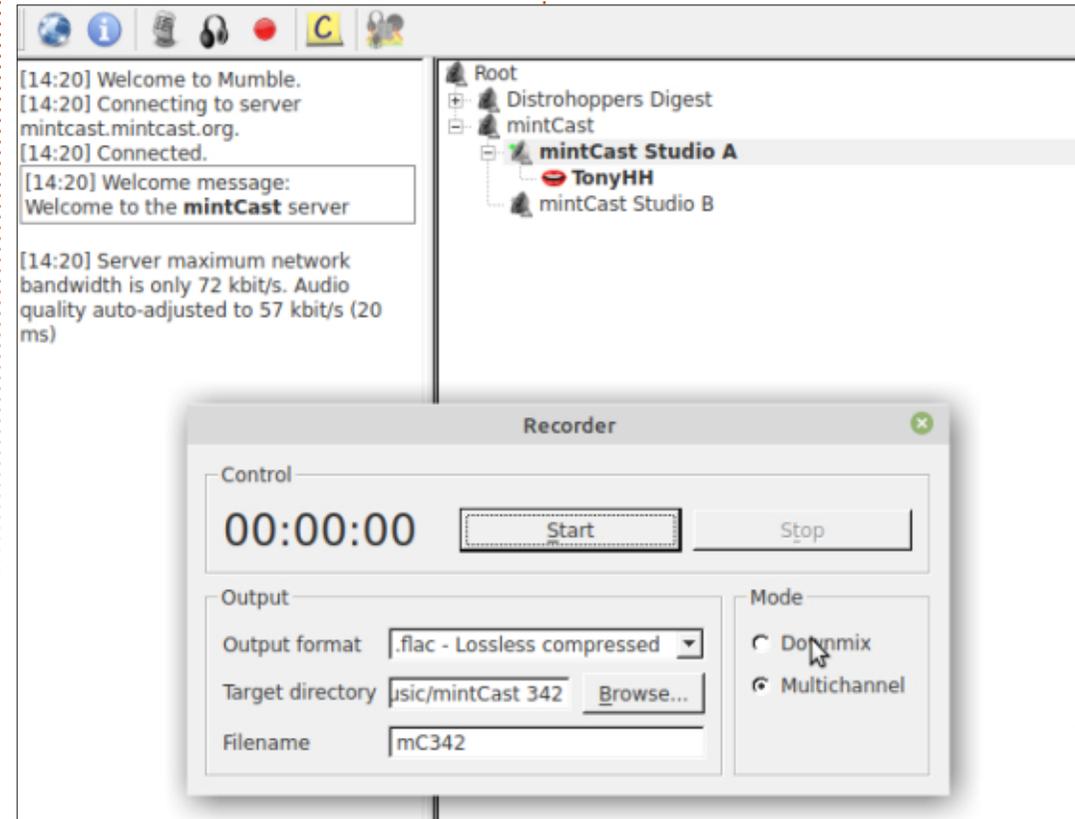
Podcast Production in Linux - Pt.6

So in the first 5 articles we have looked at the hardware, the software needed to record your audio, and the process to get it out to those wishing to listen to it. In this month's article, we will look at how we record the audio for a multi-host podcast when you are all in different locations, and the process of putting that audio together for publication on the internet.

For the purposes of this article, I will talk about how we do this on the mintCast podcast as this was my first experience of being on and being part of the post-production team editing the show audio. I am by no means an expert, and others may have different methods that would make the process easier or the final product sound better, but this is what we have found works quite well for us. If you have any suggestions or comments on what I discuss here, please write a letter or another article outlining your process for audio editing; Ronnie is always up for more content for the magazine.



First let us talk about how we record the show. On mintCast, we use Mumble to meet up both to plan and record the show. We record every two weeks on a Sunday evening at 8pm UK local time, 3pm EST in the US. During the periods when the clocks change in the spring and autumn (fall for our US friends) things can get a little complicated, but that's just the way these things happen. As mintCast is now a weekly show, you may have gathered (and it is no secret to those who listen to the live feed) that we record the show and split it into 2 episodes; this is so we can be weekly without upping the recording commitment, which, if you start your own podcast, you will need to think about. On Distrohoppers, we chose to be monthly, partly for better show content, and partly to reduce the



time commitment needed for the recording and post production process.

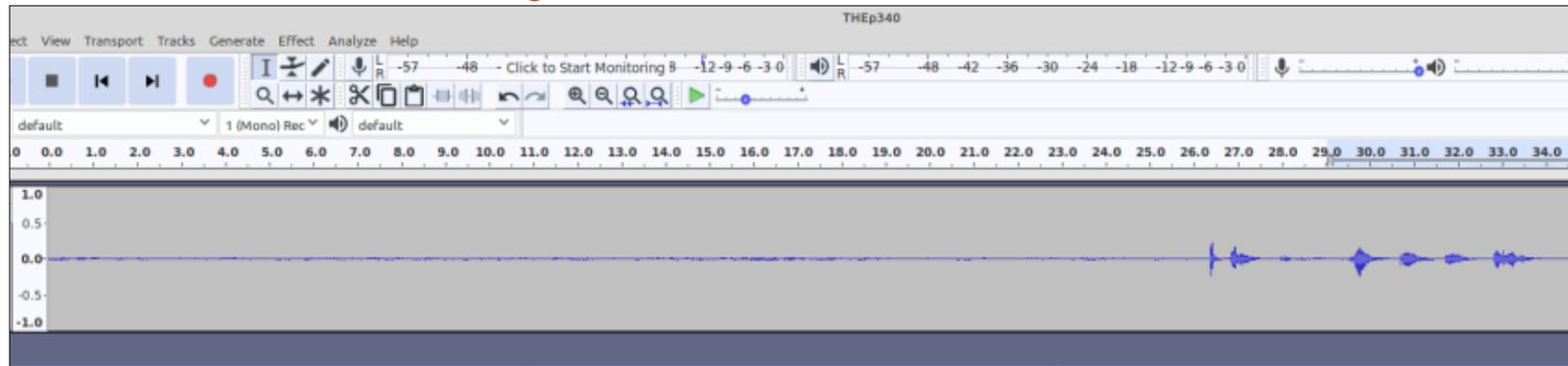
Back to the recording. As I have said, we all use Mumble to record the show, and within mumble you have the facility to record the audio; while this is not the best option for the final edit, we do this as a backup in case the local audio of one of the hosts recorded in

Audacity fails for some reason. To do this, we record Mumble using the multi-track function and change the mode to .flac. One of the advantages of recording the Mumble tracks is that Mumble automatically syncs the audio, so, if a host drops out and rejoins while their audio would now be on 2 separate tracks, they are in sync with the rest of the show audio and you can merge these down to a

HOWTO - PODCAST PRODUCTION

single audio track that is easier to edit back into the final recording. Just one other point to note is that each episode of the show is also live streamed on YouTube, and, if we have a total disaster, we also have the audio from this as a further backup.

So that is Mumble and how we can all talk to each other, and record audio. But, to give a better quality final edit, we also all record our own audio track locally using Audacity. For those who are not aware of Audacity, it is a fairly powerful audio recording and editing program that is still reasonably easy for a novice audio editor like myself to get to grips with. The latest version is 2.4.2 but the Ubuntu repositories currently have 2.3.2, although, if you wish to install the latest version on Ubuntu or Mint, you can install the Snap or Flatpak.



So before we start to record the show, we all start audacity and save a mono audio track as our initials and the episode number. Example: THEp340.aup this is the raw audacity format. Then the person leading the audio recording will do a countdown of 3,2,1, record, and we all start our Audacity recording at the same instant; at this point we record 25 seconds of silence to record the background noise at each person's location for later editing of the audio. Then shortly following the silence, we will do another countdown of 3,2,1, Zero, where the audio lead does the countdown and we all say zero together; this is later used as a way of lining up the individual audio tracks to account for lag over the internet.

At this point, if I am the audio lead, I will hand back to Leo as the show's lead host, and we will start

the recording of the show. At the end of the show recording, we all stop our audio and the first thing we do is save the track as the raw audacity file by going to file – save project. This ensures we have the audio as an audacity file if the export goes wrong. We then export as a .flac by going file - Export – Export audio, choose a location to save the .flac file to, and select the best quality 24bit for future editing. Once we have all done this, we each send a copy of our audio file of the show to a folder in our drive account so the editor can download all the audio for the post show process.

So that is how we get the audio; next month, we will look at putting all those tracks together and producing the edit that you, the listener, hear each week.

If you wish to contact me for

more information you can get me at:
distrohoppersdigest@gmail.com
or
th@mintcast.org



Do you have a new computer? What are you doing with that old one? Time to send it to e-waste for recycling or give it to a friend to reuse?

Before you do that take a moment to think about what might be on that hard drive. Banking information? Credit card numbers? Passwords? Videos that it would be better if the world didn't see them? Perhaps you think, "no problem I'll just delete those". Did you know deleting files doesn't actually make them unreadable on the drive? It just makes them available to overwrite; they can still be easily retrieved and read.

Be safe: don't pass any hard drive to anyone without blanking it first, using real military-grade blanking, so you know that data is truly gone.

For older style rotating hard drives there are a number of ways of blanking them. Some years ago the preferred choice was DBAN, (Darik's Boot and Nuke), a self-contained ISO file that you could

download and put on a CD, DVD or a USB stick and then run it to blank a hard drive. DBAN development ended in 2015, that free software project was sold to a commercial company and there hasn't been a new release in five years. DBAN was nice and simple. It used a

blanking program called dwipe that ran on top of a Linux kernel.

The great thing about free software is that it is easy to fork and so dwipe has become nwipe, developed by Martijn van Brummelen. It is easy to get too.

To blank a drive you have to run it from somewhere other than the drive being blanked. If you want to blank the main hard drive on a computer then you need to run it from some other media, like a CD, DVD or USB stick.

```

nipwe 0.17 (based on DBAN's dwipe - Darik's Wipe)
----- Options -----
Entropy: Linux Kernel (urandom)
PRNG:    Mersenne Twister (mt19937ar-cok)
Method:  DoD Short
Verify:  Last Pass
Rounds:  1 (plus blanking pass)

----- Statistics -----
Runtime:
Remaining:
Load Averages:
Throughput:
Errors:

----- Disks and Partitions -----

> [ ] 1. /dev/sda - ATA ST9160310AS (160041885696 bytes)
   [ ] 2. /dev/zram3 - Unknown (505540608 bytes)
   [ ] 3. /dev/zram1 - Unknown (505540608 bytes)
   [ ] 4. /dev/sr0 - TSSTcorp CDDVDW TS-L633F (695205888 bytes)
   [ ] 5. /dev/zram2 - Unknown (505540608 bytes)
   [ ] 6. /dev/zram0 - Unknown (505540608 bytes)

Ctrl-C=Quit S=Start M=Method P=PRNG V=Verify R=Rounds B=Blanking-pass Space=Sele

```

HOWTO - ERASE WITH NWIPE

One way to get nwipe is to get it pre-packaged, such as in the All-in-One System Rescue Toolkit (AiO-SRT), put out by Paul Bryan Vreeland. It is easy to download the AiO-SRT, make a disk and then boot it up to run nwipe, right from the AiO-SRT desktop. The current version of AiO-SRT is based on Ubuntu 16.04 LTS, though and so newer hardware may require a newer Linux kernel to run it.

nwipe is also available as a package in the Ubuntu repositories. That means you can add it to any 'buntu flavor running as a live session and run it using the newest kernel, which will support newer hardware. I have done this with Ubuntu 19.10, being run from a USB stick. It can be installed from the package manager or from the command line:

```
$ sudo apt install nwipe
```

and it installs in seconds, being only 32 kb in size. Running it is equally easy:

```
$ sudo nwipe
```

and it will open in a terminal window with a simple ncurses interface. Just arrow key to the

drive to be blanked, space bar to select and shift+s to start it running.

The default blanking pattern is the DoD Short (US Department of Defense 5220.22-M short 3 pass wipe, using programmed passes 1, 2 & 7), using the Mersenne Twister pseudo random number generator. In case you prefer another method, the interface allows choosing any one of seven others:

- Zero Fill - Fills the device with zeros, one round only.
- RCMP TSSIT OPS-II - Royal Canadian Mounted Police Technical Security Standard, OPS-II
- DoD 5220.22M - The American Department of Defense 5220.22-M full 7 pass wipe.
- Gutmann Wipe - Peter Gutmann's method (Secure Deletion of Data from Magnetic and Solid-State Memory).
- PRNG Stream - Fills the device with a stream from the PRNG.
- Verify only - This method only reads the device and checks that it is all zero.
- HMG IS5 enhanced - Secure Sanitisation of Protectively Marked Information or Sensitive Information

If nwipe is being run from a 'buntu disk then any screensavers should be disabled to make sure nwipe completes its task unimpeded.

How long does it take to blank a drive? That all depends on the speed of the processor and the size of the drive, plus the method used. I was recently able to blank a 250 GB drive with an Intel Core i5 dual core CPU running at 2.30 GHz, in about five and a half hours. A 1 TB drive may take 24 hours.

When it is finished, the nwipe interface gives a "success" report, which provides some confidence that it is done right. Checking the drive with Gparted or the KDE Partition Manager will show the disk is all "unallocated space", if it is done right. There will be no operating system, no file system and no partitions present on the blanked drive.

nwipe is used for rotating hard drives, but it is not used on solid state drives (SSDs). Those newer style drives can be blanked with Parted Magic, which has a utility that can do it, called Secure Erase. Secure Erase can also blank rotating hard drives, too.

It is probably worth noting that all these blanking methods only work on drives that still work (even if they have errors on them). If a drive no longer works, it is best to physically destroy it, before recycling it.

CONCLUSIONS

nwipe gets your drive safely sanitized and ready for recycling or reuse. It is easy to get in several ways and simple to use. Best of all, it works!

LINKS

nwipe home:

<https://github.com/martijnvanbrummelen/nwipe>

nwipe on Launchpad:

<https://launchpad.net/ubuntu/+source/nwipe>

All-in-One System Rescue Toolkit home:

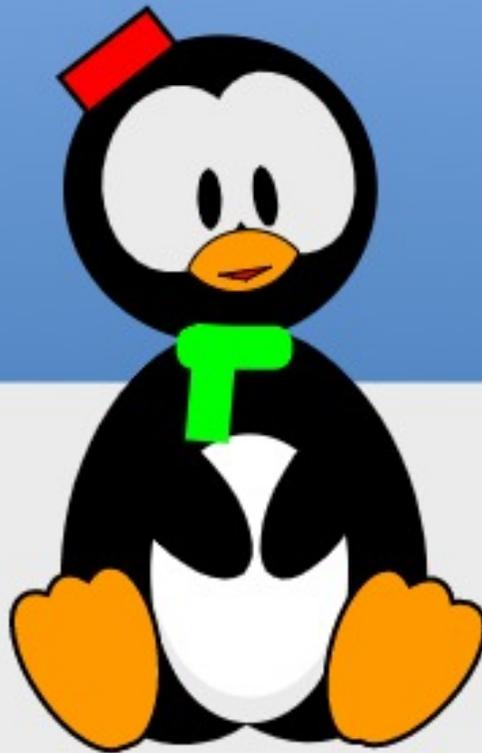
<https://paul.is-a-geek.org/aio-srt/>

Parted Magic Secure Erase:

<https://partedmagic.com/secure-erase/>

The Daily Waddle

**Guys! Guys, huddle,
someone swears they
saw a nun in the arctic!**





HOW-TO

Written by Mark Crutch

Inkscape - Part 104



This month, we'll be continuing to look at the changes in Inkscape's drawing tools that arrived with version 1.0.

PENCIL TOOL

Last time, I covered changes to the Bézier and Calligraphy tools, so let's start this article with the third of the line-drawing tools, the Pencil or Freehand tool. The release notes mention only one change to this tool (albeit one that comes with controls for several parameters), so I'll begin with that. In Inkscape 1.0, the tool control bar has gained an additional button in the "Mode" section, outlined in red in this screenshot:

Whereas the first three entries in this section act as radio buttons, the new addition acts as a toggle.

This seems a little odd to me, because toggling it 'on' immediately disables the other three buttons. It's still only possible to have one option exclusively selected (the hallmark of radio buttons), so I don't really understand why this wasn't just included as an extra radio button, rather than implemented as a toggle. What it does mean, though, is that switching to a different mode requires the additional step of turning off this toggle to re-enable the older buttons.

Minor UI gripes aside, what does this button actually do? It enables pressure sensitivity for the tool, which is of no practical use to mouse users, but may be beneficial to tablet users. Time to dig out my 'cheap-but-does-the-job' Monoprice branded tablet; it's no Wacom, but it works out-of-the-box

on my Ubuntu Mate system and supports pressure sensitivity.

With the toggle enabled, the tool control bar changes to look like the image below, providing additional controls labelled "Min", "Max" and "Caps":

Before describing what those controls do, a brief recap of the way that the Pencil tool works is probably useful. Historically, it was just a tool for freehand drawing that would create simple paths. Starting and ending at the same point would create a closed path, whereas a different ending point would result in an open path. The thickness and style of the resultant path was trivially based on the fill and stroke options, as you might expect.

More recent releases added a "Shape" pop-up menu. With that set to "None", the behaviour remained as described above, but

by selecting a different option in that menu, the behaviour of the Pencil tool changes dramatically. The shape you draw is no longer the stroke of a path, but rather it is a filled path in its own right. In 1.0, the shape is the result of applying a Live Path Effect onto the skeleton path you've drawn. The triangle-in and triangle-out shapes are created using the Power Stroke LPE, whereas the ellipse and clipboard-based shapes are produced using the Pattern Along Path LPE. As you can see, this tool relies heavily on LPEs for its more advanced features.

This brings us back to the new pressure-sensitive mode. This is also implemented using the Power Stroke LPE, but whereas triangle-in and -out just have a single control point for setting the thickness of the triangle's base, in pressure-sensitive mode, Inkscape creates multiple control points along the length of the drawn line – whenever there's a significant change in pressure. The result is a line that moves from thin to thick and back, based on the pressure



HOWTO - INKSCAPE

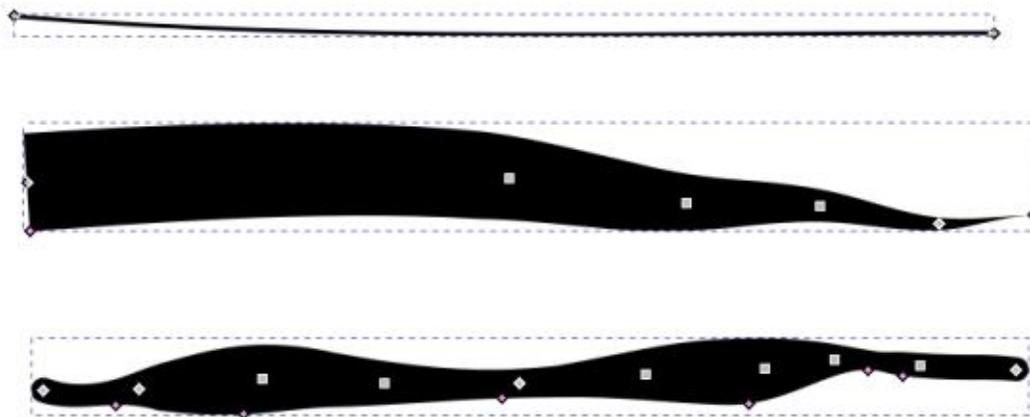
you apply, but with the ability to tweak the thickness of each part of the stroke by switching to the Node tool and manipulating the purple control points.

You can see the effect in the image below. The top line was created with the shape control set to “None”: it’s a simple path with nodes at the ends, but no way to adjust the stroke thickness along its length. The second line used “Triangle-out”, and you can see that there’s a single purple handle at the left that is used to adjust the stroke thickness set by the Power Stroke LPE. The third line was the result of some random pressure adjustments using a graphics tablet: this one has even more handles for adjusting the skeleton path, plus additional purple LPE handles at each pressure change.

This makes it easy to compensate for poor pressure control by adjusting the line thickness after drawing.

Knowing that this mode enables the Power Stroke LPE makes it easier to understand what the various controls on the tool control bar do. Min and Max set the minimum and maximum values for the purple control points. The Caps control sets the shape of the end caps, and mirrors the corresponding control within the LPE itself.

For my tablet, setting a Min of 0 and a Max of 20, with round end caps and a small amount of smoothing (around 10 on this scale), gives a nice “marker-pen” effect that responds quite nicely to the pressure I tend to apply to the stylus. Potentially, this can provide



a much more naturalistic feel to cartoons and sketches – though it still requires a more artistic hand than my own to produce something impressive.

ERASER TOOL

I make no secret of the fact that the Eraser is one of my least favourite tools in Inkscape. Not because it has any inherent problems or limitations, but because it’s deceptively familiar for users coming from bitmap editors. Too many words have been expended on forum threads in which new Inkscape users bring their bitmap preconceptions to the vector world, and the presence of an eraser that goes some way towards mimicking its raster equivalent makes it even harder to explain why Boolean operations or clipping paths are a usually a better solution to their task.

Nevertheless it does exist, and it does have its uses, so it’s nice to see it gaining some additional features in 1.0. The bulk of the additions are to make it operate in a similar way to the Calligraphy Tool: there’s a toggle for pressure-sensitivity, which causes the

“Width” field to become a maximum value, but with the actual value used depending on the pressure applied to the stylus. It also gains controls for Thinning, Caps, and Tremor, mirroring those in the Calligraphy tool.

I won’t spend any more time discussing these: you can read my description of the Calligraphy tool in part 78 if you wish. I still believe a more useful approach would actually be to draw the erasing line you want using the Calligraphy tool (or some other tool, if you prefer), then either perform a Boolean operation or use it as the basis of a clip or mask.

In that vein, however, the second addition to the Eraser is more welcome: a clipping mode. Previously this tool could either erase objects entirely, or cut away parts of the shapes by effectively performing an immediate Boolean operation with the drawn line. The clipping option adds a third button to the Mode section of the tool control bar:



HOWTO - INKSCAPE

With this enabled, the “erasing” is actually performed by creating a clipping path that is immediately applied to the object. Where more than one object is affected, each one gets its own clipping path, independent of the others, even if the original objects overlapped.

A very nice touch is that only a single clipping path is created for a given object, even if you erase using several separate strokes. This makes it easier to remove large parts of an object with a thick eraser, then reduce the tool’s width for subsequent passes to refine the shape being removed, without ending up with multiple clip paths to manage.

It’s important to note, however, that the results produced by clipping will not always be the same as those created using Boolean erasing, particularly if the target object has a visible stroke

applied. Consider the image below, with a deliberately thick stroke to make the point. On the left is the original shape, whilst the middle and right-hand images show the results of the Boolean eraser and the clipping eraser, respectively. Notice that the Boolean eraser results in separate path objects, each with a complete stroke around them. The clipped shape, on the other hand, is still a single object, so the cut faces are not “closed” by the path.

The clipping mode is a great addition to the Eraser tool, creating a non-destructive edit that can later be refined, or reverted entirely, with ease. When creating my comic strips, I often have to apply clipping paths around very precise shapes. Usually I block them out with straight-line paths, then use the Node tool to fine-tune the corners and curves. But this new feature promises to get me



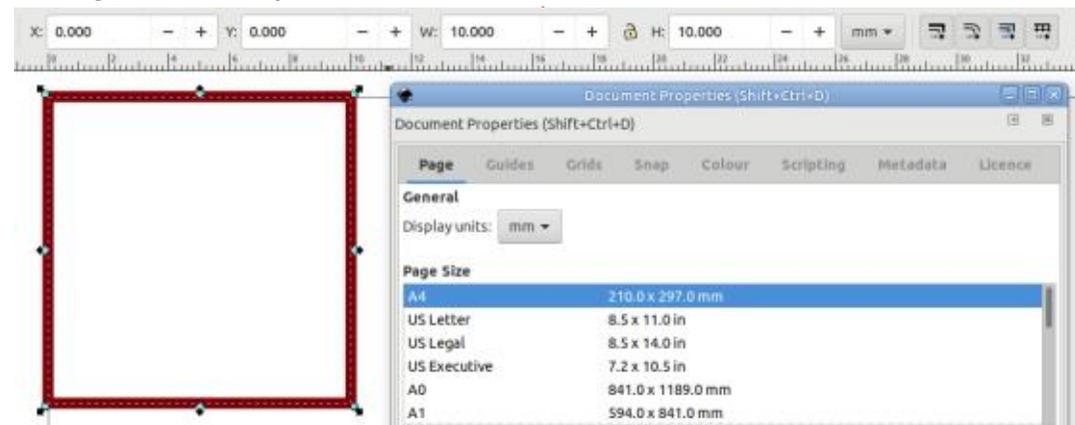
90% of the way to a finished clipping path in a fraction of the time. In fact, this addition alone may have just promoted the Eraser tool from being one of my least used tools, to being a clear favourite.

MEASUREMENT TOOL

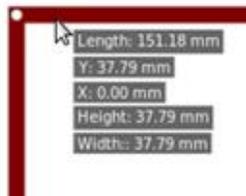
The Measurement tool is another that I rarely use, but which has also seen some small but significant additions in Inkscape v1. This month, I’ll talk about the first of these: an extended “tooltip” that appears when hovering over a path (or an object that can be trivially converted to a path, such as a rectangle, ellipse or star). The tooltip shows the length of the path, as well as the X and Y coordinates, width and height of the object’s bounding box. In theory, this could provide some

useful at-a-glance information about a path... if it wasn’t for the fact that the data displayed aren’t always correct. Let me prove this assertion with an example. Here’s a square, drawn so that its top-left corner is at (0, 0), with sides of 10mm. The document properties are set with mm as the display units, and I’m using the geometric bounding box so that the stroke width doesn’t factor into the dimensions.

Switching to the measurement tool and hovering over the square produces this tooltip:



The first problem here is that the values displayed are in pixels, even though I specified mm as my display units. That's easily explained: the Measurement tool has its own toolbar, with a pop-up menu to select the units it displays. Changing that pop-up to "mm" results in this tooltip instead:

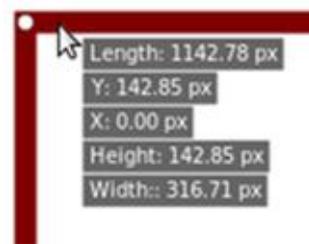


A quick comparison with the previous screenshot shows that although the units are now correct, the actual numbers are still the pixel values! According to this tool, my 10mm square now has sides that are nearly four times as long.

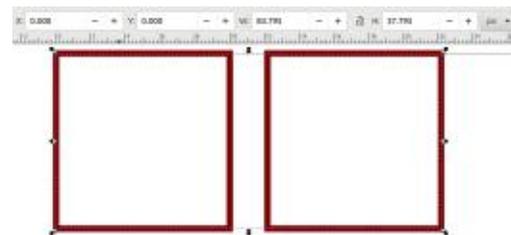
And what of that Y value? I drew the rectangle from top-left to bottom-right, the selector tool shows the Y value as zero, and even the XML editor agrees. Yet, for some reason, the measurement tool wants to take its Y value from the bottom of the shape, not the top.

Now let's give it a more complex

path to work on, by duplicating the square, moving the copy, then using Path > Union to convert the two squares into a single path comprising two sub-paths. Since each sub-path's perimeter is 151.18px, surely the Length in the tooltip for both paths must simply be double that value, right? Wrong.



The Length displayed for two identical paths combined is over 7.5 times the value shown for a single path! The Height and Width values also have me scratching my head: they might make sense if the squares were arranged along a diagonal, but they're side-by-side. Here's what they look like when using the Select tool, together with the tool control bar's interpretation of these values (in px):



Having the Select tool declaring a width of 83.795px and height of 37.795, while the Measurement tool claims values of 316.71px and 142.85px, leaves me thoroughly confused as to how the values in the tooltip are actually calculated. This situation leaves me uneasy about the measurement tool in general; I wonder what it has to say when used in the traditional click-and-drag mode?



For clarity, I've copied and enlarged the top and right values, and put them inside the boxes. The width and height are reported as the expected values of 83.79px and 37.79px.

The tooltip mode has another feature which I'll mention for completeness: when used on a group of paths, it will show values for the width, height and position of the whole group, but you can

hold Ctrl (incorrectly described as Shift in the release notes) to see the data for an individual path. But given that the values in the tooltip clearly can't be trusted, this capability is somewhat moot.



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

The Daily Waddle

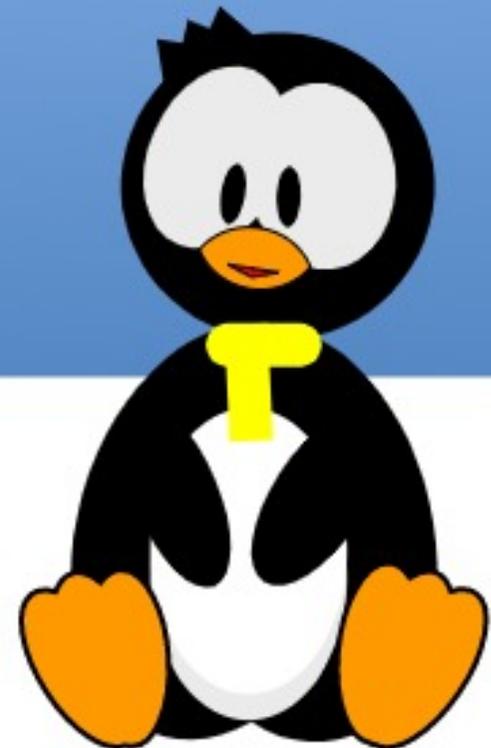
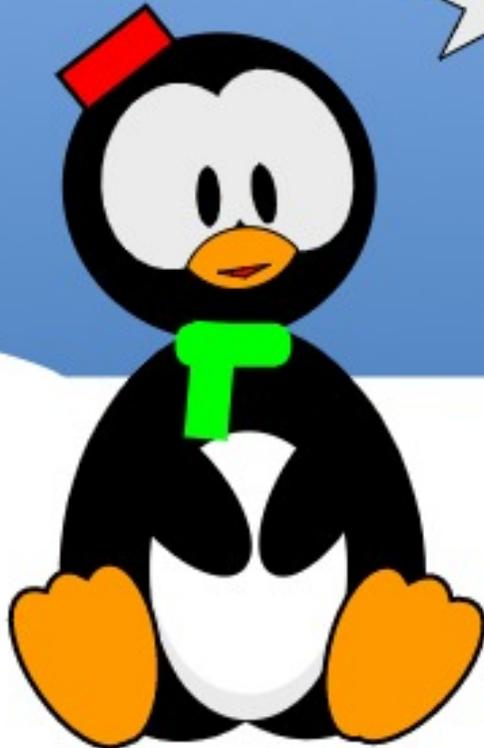
THE DAILY WADDLE

by: ErikTheUnready



**I thought you guys
went paperless???**

**Failed
Implementation...
They started in
the toilet...**





LINUX LOOPBACK

Written by S. J. Webb

BACK NEXT MONTH



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



For loyal readers of this column (both of you, and, yes, I've used that joke before and undoubtedly will again), you may recall that this column addressed recipe management once before, but we ran into evident bugs and a lack of documentation for the KRecipes application, so we were not entirely successful in those efforts (see Everyday Ubuntu in Full Circle Magazine issue #148, page 28 and

issue #150, page 30). The ultimate problem was that KRecipes would not work correctly: it would save a file after entering recipe instructions, but upon re-opening the file, the instructions had not actually been saved. It was also impossible to save recipe pictures.

Since then, I've updated from my hamster-wheel powered Ubuntu 16 rig to Ubuntu 20. On my

16.10 machine, I couldn't get any other recipe software, besides KRecipes, to run at all. Now, however, I can run both Kookbook and Recipes. Since a big part of the holiday festivities every year revolves around cooking, it seems like now would be an especially good time to revisit the subject of how Ubuntu can help us with the cooking aspect of everyday life.

Kookbook has a simple main screen (see image left)

Let's enter a basic sugar cookie recipe, so we can bake Santa some goodies to leave out. Here's our ingredient list:

- ¾ cup sugar or sucralose
- 1 1/8 tsp baking powder
- ¼ tsp salt
- 1 cup all-purpose flour
- 1 egg
- ¾ stick softened salted butter
- 1 ½ tsp vanilla extract

And here are our instructions:

- Whisk together the flour, baking powder, and salt. Set aside.
- Cream the softened butter with the sugar. This can most easily be

done with an electric mixer, but can also be done with a spatula.

- Add one whole egg and the vanilla, mixing until incorporated.
- Slowly add the dry ingredients to the wet mixture while continuing to mix until dough just becomes smooth in texture.
- Chill dough, covered, in the refrigerator for an hour.
- Divide the dough into 6 equal parts. Shape each portion into a ball and flatten slightly.
- Bake on a cookie sheet (pre-sprayed with cooking spray) at 350 degrees F for 8-10 minutes, until lightly browned.
- Remove to wire rack to cool.

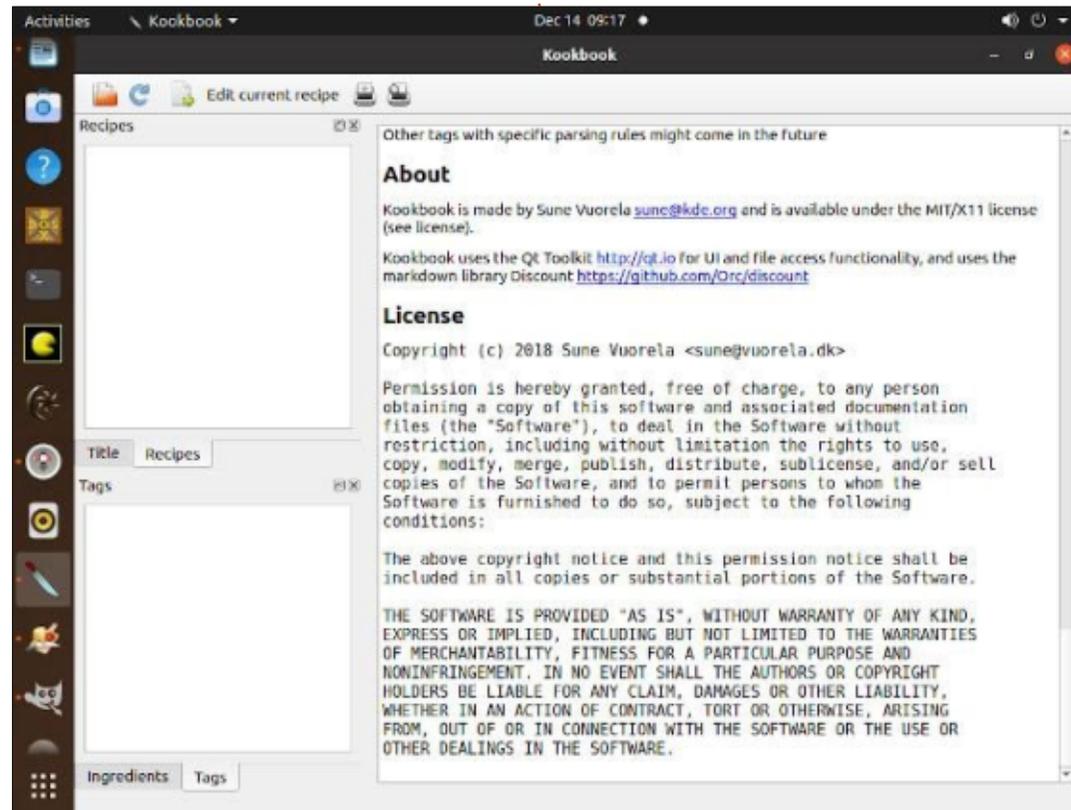
By the way, this recipe can scale up readily to make larger batches.

KOOKBOOK INSTALLATION

To install Kookbook, go to the Ubuntu Software Center (icon on the Launcher that looks like a suitcase with a blue circle and nine small dots or squares):



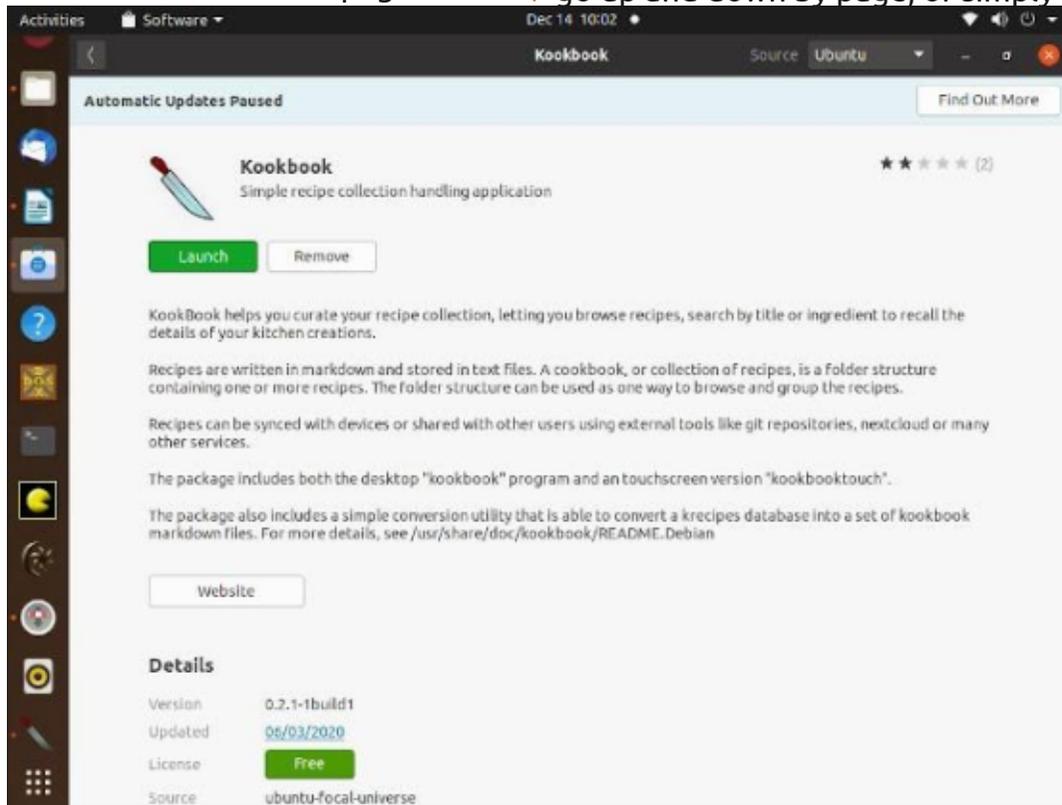
If the Software Center does not



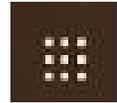
default to the Explore tab (top of screen), click it.



Click the magnifying glass at the top left to invoke a search, then type in Kookbook. You'll get the Kookbook information page:



From here, you can select Install at the top to install the Kookbook software. This screenshot shows Launch, but that's because I installed it previously. To launch the software, click the nine white dots/icon at the bottom of the Launcher:



then look for Kookbook in the installed applications. You can navigate from page to page using the white dots on the right side to go up and down by page, or simply

type Kookbook at the top and hit <Enter> to search.

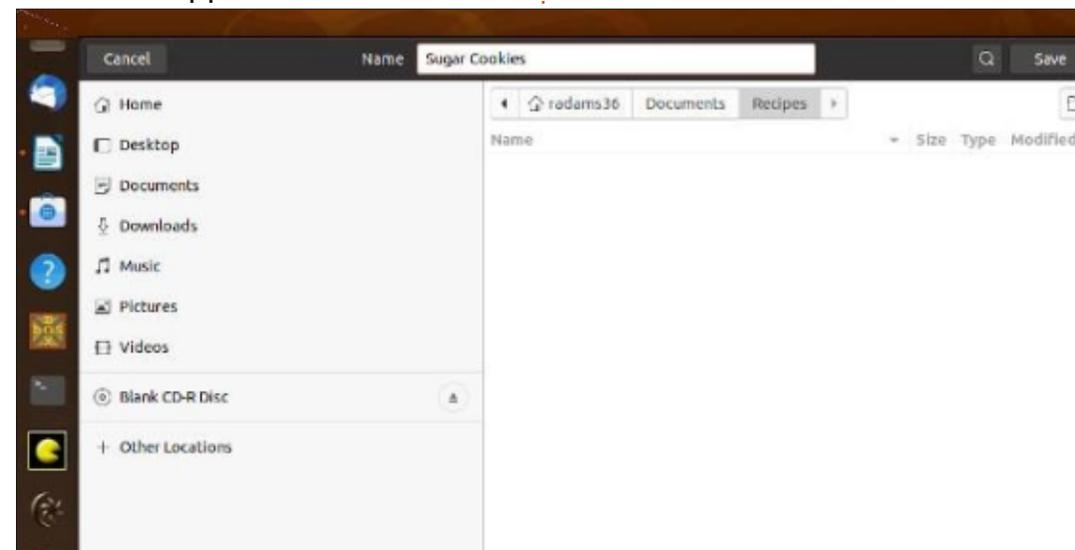
ADDING A NEW RECIPE

Once we've found and launched Kookbook, we can enter a new recipe. Click the 'plus' symbol at the top to begin a new recipe:



We'll have to create a new, empty recipe file. Let's select Documents on the left, then click the New Folder 'Plus' icon at the top right, then type in Recipes as our new folder name. For the recipe name up top, let's use the name Sugar Cookies (see image below).

This is supposed to invoke an



editor for recipe entry, but that did not happen for me. Let's try clicking the Open Collection icon at top left:



Then we'll browse to the Recipes location. Hmm, the folder is still empty, so the program didn't even save an empty file. Time to contact our best friend, Google.

Well, maybe my friend, Google, is really Le Chiffre's friend, Google (gratuitous James Bond reference), because I could find next to nothing on Kookbook. No documentation, no existing recipe collections, and it looks like it's technically a beta, and has seen no development progress for about two years now. I also tried

uninstalling and reinstalling Kookbook, but that resulted in no change.

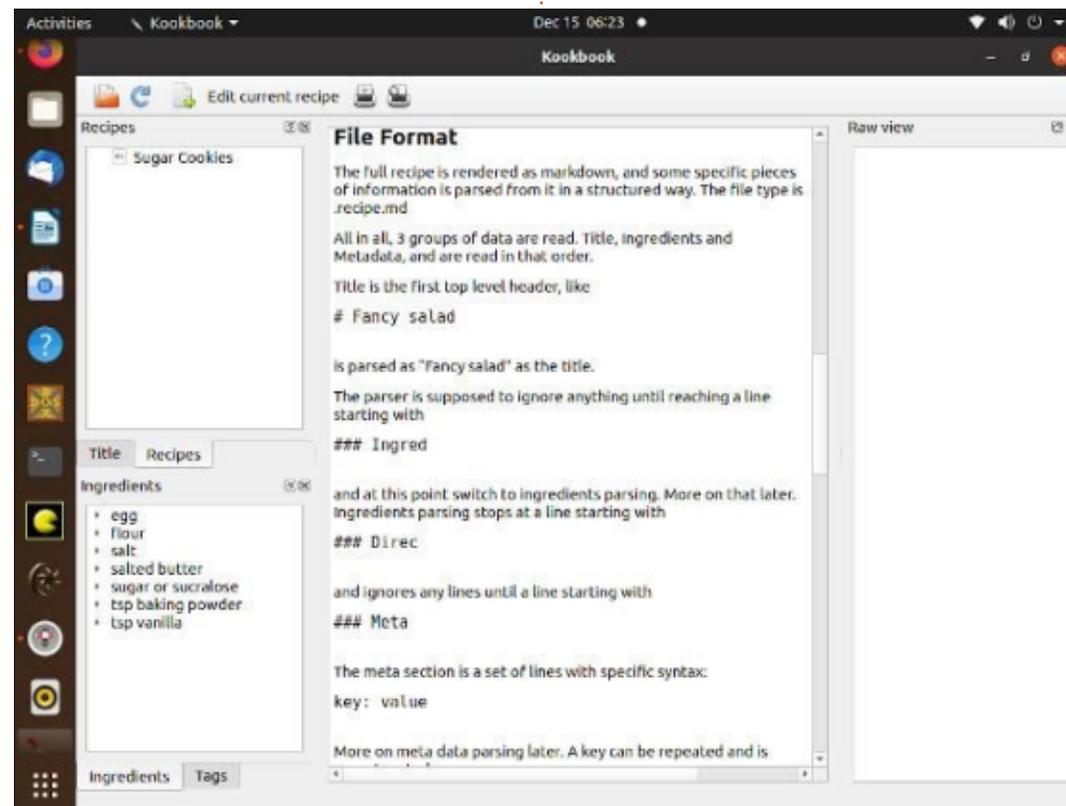
MARKDOWN FILES

Well, we can read the documentation within the program and see if that helps, minimal though it is. It tells us it uses a 'markdown file'. I don't really want to learn a computer format just to use a recipe application, but let's see how hard it is.

The documentation that comes up in the initial application window shows us this information on the file format it uses (see image below).

So let's give it a try. Editing text files, especially initialization and configuration files, used to be a completely essential Linux skill. While that may not be so much the case any more, it can still prove valuable, so let's give it the ol' college try, for practice, if nothing else.

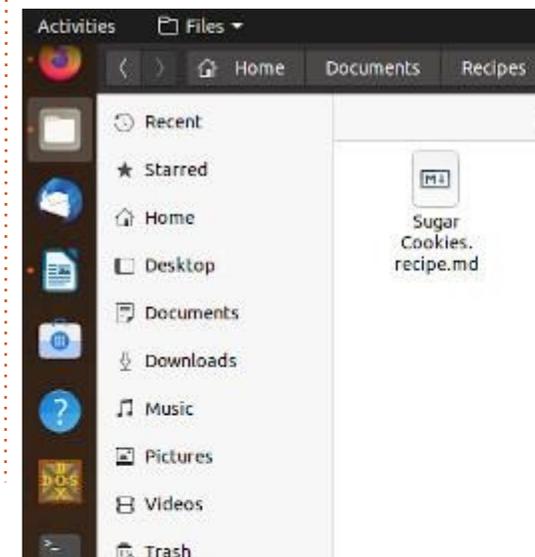
```
# Sugar Cookies
### Ingred
3/4 cup sugar or sucralose
1 1/8 tsp baking powder
1/4 tsp salt
1 cup all-purpose flour
1 egg
3/4 stick softened salted butter
1 1/2 tsp vanilla extract
###Direc
1. Whisk together the flour, baking powder, and salt. Set aside.
2. Cream the softened butter with the sugar. This can most easily be done with an electric mixer, but can also be done with a spatula.
3. Add one whole egg and the vanilla, mixing until incorporated.
4. Slowly add the dry ingredients to the wet mixture while continuing to mix until dough just becomes smooth in texture.
5. Chill dough, covered, in the refrigerator for an hour.
6. Divide the dough into 6 equal parts. Shape each portion into a ball and flatten slightly.
7. Bake on a cookie sheet (pre-sprayed with cooking spray) at 350 degrees F for 8-10 minutes, until lightly browned.
8. Remove to wire rack to cool.
```



We can find the default text editor the same way we launched Kookbook. It is imaginatively named 'Text Editor', although you can certainly use other editors if you prefer. Let's launch it and we'll enter this text (shown top right) into it.

For simplicity's sake, we'll skip the `###Meta` section's potential contents. Now, we'll save the file to Home/Documents/Recipes as 'Sugar Cookies.recipe.md', the prescribed file name format for the

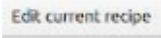
markdown files:



SUCCESS (?)

If we open the Recipes folder as a collection, as we tried before, we can now see the Sugar Cookies recipe. Click the recipe name in the top left pane to display it:

We can also now edit by clicking the Edit Current Recipe button at the top:



Which will bring us to the screen where we can modify the recipe as

desired:

Save after completing any desired edits, using the Save button up top, then close the editing window to return to Kookbook.

CONCLUSION

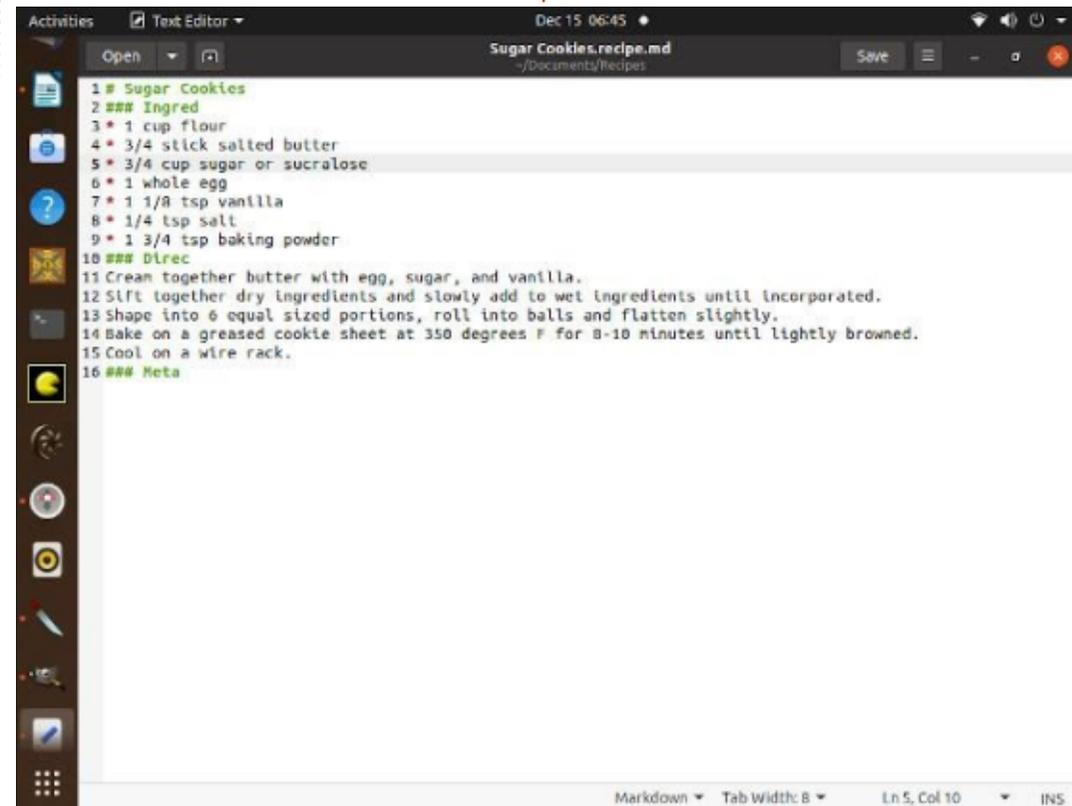
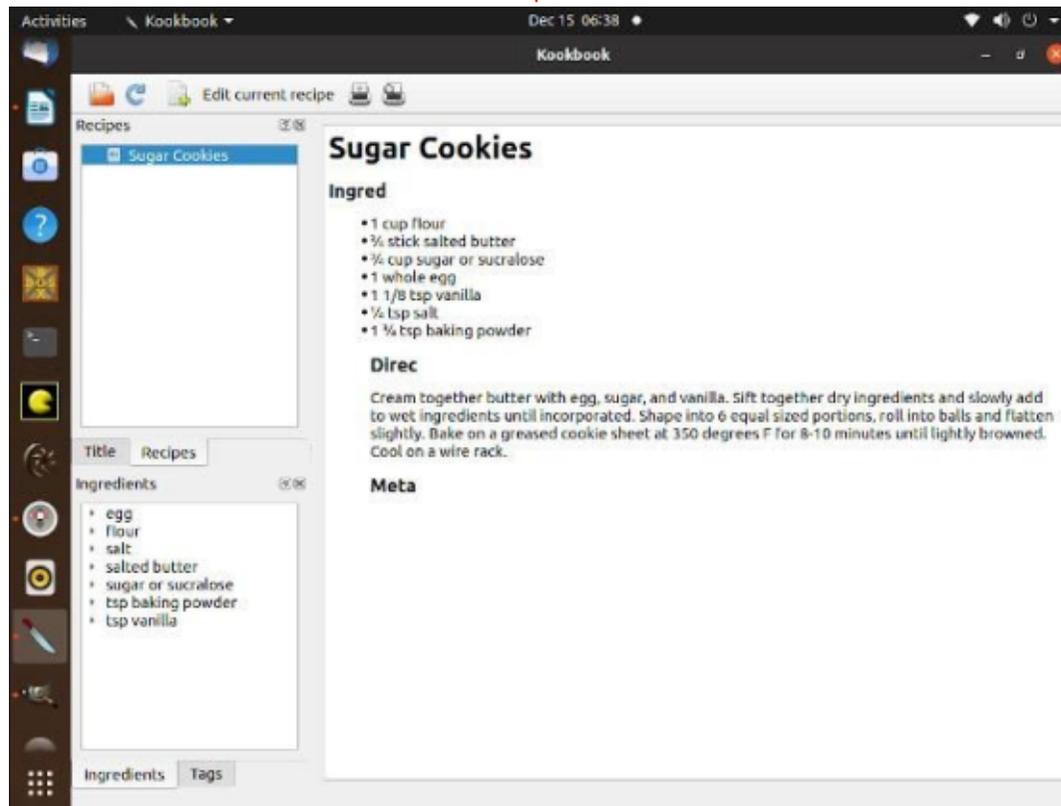
I have to say, for something you would hope would be a simple task, and user friendly, I have to rate this as a fail. It works, after a fashion, but it needs considerable

refinement if the everyday user is to have much hope of getting effective results.

Next month: We'll try something else for recipe management.



Richard 'Flash' Adams spent about 20 years in corporate IT. He lives in rural northwest Georgia, USA, with his adopted 'son', a cockatiel named Baby who now has a little brother, a dusky-headed conure named Skittles.





UBPORTS DEVICES

Written by UBports Team

Ubuntu Touch is the privacy and freedom respecting mobile operating system by UBports. Today we are happy to announce the release of Ubuntu Touch OTA-15, our fifteenth stable update to the system! OTA-15 will be available for the following supported Ubuntu Touch devices over the next week:

- LG Nexus 5*
- OnePlus One*
- FairPhone 2*
- LG Nexus 4*
- BQ E5 HD Ubuntu Edition*
- BQ E4.5 Ubuntu Edition*
- Meizu MX4 Ubuntu Edition*
- Meizu Pro 5 Ubuntu Edition*
- BQ M10 (F)HD Ubuntu Edition*
- Nexus 7 2013 (Wi-Fi and LTE models)*
- Sony Xperia X*
- Sony Xperia X Compact*
- Sony Xperia X Performance*
- Sony Xperia XZ*
- Sony Xperia Z4 Tablet*
- Huawei Nexus 6P*
- OnePlus 3 and 3T*
- Xiaomi Redmi 4X*
- Google Pixel 3a*
- OnePlus Two*
- F(x)tec Pro1 / Pro1 X*
- Xiaomi Redmi Note 7*

The Pine64 PinePhone and PineTab are updated independently of the rest of these devices. The stable channel for the PinePhone and PineTab will not receive an update labeled "OTA-15".

NEW DEVICES THIS CYCLE

With this update we have new devices officially joining the release cadence! This means that these devices will now have a "Stable" update channel available in System Settings -> Updates -> Update Settings -> Channels. You can install Ubuntu Touch on these devices using the UBports Installer: *Google Pixel 3a by Alfred*, *OnePlus Two by Vince*, *F(x)tec Pro1 / Pro1 X by "Danct12", "NotKit", Marius, F(x)tec, and friends*, *Xiaomi Redmi Note 7 by Danct12*, *Samsung Galaxy Note 4 (Sprint/T-Mobile/No Carrier) by "Tygerpro"*

If you're a device maintainer and your device is not on this list, this may be because it has not been added to the UBports Installer or it

does not yet have a "stable" update channel. We are working on a new set of standards which will allow device maintainers to receive a "Stable" update channel for their devices; please stay tuned.

WHAT'S NEW?

If you were around during the time of Ubuntu for Devices, developed by Canonical, you've probably heard of OTA-1 through OTA-15 before. OTA-N was the naming we adopted from Canonical for our updates, and for some reason we decided to start again at "one". Canonical's OTA-15 fixed a few High and Critical priority issues, but it was widely regarded as a "hotfix" release. It arrived on February 7, 2017 and was the final update shipped by Canonical for Ubuntu for Devices. Our OTA-15 arrived on December 16, 2020 and we don't plan on stopping any time yet!

ANDROID 9 DEVICE IMPROVEMENTS

The Volla Phone is shipping to new users and we wished to give them the best possible experience. To that end, we've fixed some longer-standing bugs in Ubuntu Touch when run on devices with an Android 9 hardware compatibility layer.

We (re)discovered a kernel configuration change that must be made to allow smooth audio playback and applied it to the Volla Phone. This solves a problem where audio frequently dropped out or made popping sounds.

A configuration issue in oFono which prevented the system from auto-configuring mobile data APN settings was fixed. Any users who have already used a SIM in their Volla Phone but would like to auto-configure their APNs may select the "Reset All APN Settings..." button in Settings -> Cellular -> Carrier & APN -> APN.

Pictures taken with the Volla Phone's front camera are now rotated correctly.

UBPORTS DEVICES

Finally, sending USSD codes — which are used to check phone tariff status or provide other carrier-specific services — has been fixed in this update.

MORPH BROWSER

The Morph web browser gained some new tricks and interface refinements in this update however everyone will likely notice its shiny new icon first.



Once the initial awe of that experience (courtesy of Joan "Cibersheep") has passed, you may swipe up from the bottom of the screen to switch tabs and notice that the feelings are coming back for round two.



Daniel Kutka has completely redesigned the tab switching interface to allow tabs to be swiped away rather than closed with the small "X" touch area. These changes also fixed the tab preview interface, enabling you to see the tab that you are switching to before it's opened.

Additionally, Chris made some fixes to Morph to fix technical debt, reorder the "Domain Settings" interface by the most recently used domain, and allow JavaScript to access the Ubuntu Touch clipboard.

MMS ERROR REPORTING

From the time that the Nuntium MMS receiver was created, it has been a bit flaky at best. Work is ongoing to fix Nuntium's many problems with the aim of enabling perfect reception of MMS messages, but we realized that we need to enumerate its problems fully. To aid this, Lionel Duboeuf and "jEzEk" have implemented an error handling routine between Nuntium and the messaging service to report faults around MMS reception.

We understand that

experiencing any such errors is not ideal, especially for users who do not have the technical expertise to troubleshoot them. However, we believe that notifying an error condition is better than letting it silently fail as we've done before. With the error reported, it is possible at least to know that someone tried to send you a message, so you can let them know you didn't receive it.

Watch the MMS space in our coming releases, as "jEzEk" and Lionel are still working on the lost MMS story with new updates from that sub-project weekly. Hopefully we will see stable MMS reception in Ubuntu Touch soon!

MORE IMPROVEMENTS

That's not all, of course. We also have diverse changes throughout the system which we know you'll love.

Ratchanan finally got fed up with the "Redial last called number" button not working on his Bluetooth headset and fixed it. Now it is possible to dial calls from Bluetooth devices, including some car infotainment systems which

provide an interface to browse your phone's contacts. Unfortunately, whilst dialing calls was fixed, the subsequent call audio is still broken. Some devices will still have trouble connecting two-way audio, and some have even reported adverse effects when trying it. For example, the Nexus 5 may play loud static over the Bluetooth headset instead of the caller's audio. Please try a test call (while you are in a safe place!) and report the result back to us before trying to take a call while driving.

Ratchanan also added a Thai input method to our on-screen keyboard. It does not have autocorrection, but this is an excellent addition for our Thai users. Thank you, Ratchanan!

If you are using a device with an arm64 build of Ubuntu Touch, you may have noticed that missed calls were reported by the caller's number rather than by their contact name. This issue has also now been fixed.

Joan "Cibersheep," Mateo Salta, Michele "mymike00", and Kugi Eusebio have continued their work to make the default Ubuntu Touch

system more cohesive and beautiful (with a slant towards improving the dark theme).

Joan also created the mascot for this release, the Tangram Goat.

Thank you, translators!

We don't often get to thank our hearty team of translators, which is bad of us. Ubuntu Touch is available for use in 50 languages and dialects thanks to your efforts. You make it possible for people who don't have a knowledge of any of the languages used by our core developers to nevertheless make full use of Ubuntu Touch along with the rest of us.

If you'd like to join our excellent translation team, please check out the relevant documentation at docs.ubuntuports.com.

WHAT'S NEXT?

THE FOCAL FOSSA

When we upgraded Ubuntu Touch from Ubuntu 15.04 to Ubuntu 16.04, we unavoidably kicked a number of cans down the road. That included decisions to

row back on or simply not implement a number of projects that Canonical had lined up for their move to 16.04 before dropping the project. This made it easier for us to upgrade that time, but will make it more difficult next time. Some preparations have been made for the move to a newer base (see the Qt 5.12 section below), but there are some kicked cans yet to be retrieved...

Now we are preparing for the transition from 16.04 to a 20.04 base, knowing of course that 16.04 only has 4 months of non-ESM support left. It is unlikely we will be able to complete the transition in that time, which will mean releasing stable Ubuntu Touch 16.04 updates after its official end-of-life date. We appreciate that this is not ideal, but we prefer to be up front about it.

During the transition from 16.04 to 20.04, you may see the pace of improvements to Ubuntu Touch slow. The UBports Foundation paid Ubuntu Touch project team will continue to review and merge work from our community, but our direct effort on the project will be more and more directed towards that transition over coming months.

Again, stable Ubuntu Touch updates will continue, but they may lack headlining new features and they will be based on a by then unsupported upstream Ubuntu release. Just as when we were using 15.04, we'll be on our own for a while.

As always, if you have questions about Ubuntu Touch or our plans, you can find us on forums.ubports.com, @ubports on Telegram, and #ubports:matrix.org through Element or your preferred Matrix client.

QT 5.12 (FOR REAL THIS TIME)

If our work on this over the past few months finally comes to fruition, OTA-16 will mark the update where we upgrade fully from Qt 5.9 to 5.12. This will improve app startup times and memory use; make it easier to provide smaller and faster packages for apps and system software, and finally bring us in line with our next targeted Ubuntu release ~ Ubuntu 20.04. With matched components upgrading from our current 16.04 base

becomes much simpler.

We had intended the full Qt 5.12 update for OTA-15, but more urgent priorities got in the way of a timely and properly tested release, so we held off until OTA-16.

GOODBYE, OXIDE!

App developers please note: there are changes coming to Ubuntu Touch in OTA-16 that you must prepare for! OTA-16 will be the first release of Ubuntu Touch without the old, outmoded Oxide web rendering engine. If you have an app which uses Oxide, it will no longer work as from OTA-16!

Users of old apps beware: the removal of Oxide may affect you too. Many apps from the Canonical app store used Oxide directly. These include closed-source apps like Cut the Rope. If you're a user of one of these very old proprietary apps, now is the time to request that the app developer update it. If they don't, you will need to find an alternative.

The removal of Oxide is the end of an era, but much-needed; the engine hasn't seen an official

update since 2017! It is simply unsafe to continue using the engine on the untrusted web, and it has only been kept around for those offline rendering applications which relied on it, such as Dekko 2 and the Notes app. Most of these offline applications have migrated away from Oxide, so it is time to say goodbye.

Based on our 6-8 week release cycle, OTA-16 should arrive between the last week of January and the middle of February 2021.



THE DAILY WADDLE

I MADE A WEBSITE,
ADHD.SQUIRREL - FOR
PEOPLE WITH ATTENTION
OOH SHINY!



GOOD BYE

E



MY OPINION

Written by Erik

Recently, we had a customer who was targeted by a phishing campaign. Even after telling them NOT to click on links or open attachments, the staff still did, then calling IT a few days later after their PC's had been fully ransacked to report it. By then, it is too late. Sometimes one has to wonder how these people infiltrate your organization. Part of this particular case was due to the owner and his son buying new luxury vehicles and everything else in the company got slashed, including the IT budget. His response to IT was, he did everything by pen and paper 30 years ago, he can go back to that at any moment. In IT, you need policies and procedures from the top down. Slashed budget meant they could not afford new laptops if they broke down. They bought old laptops from Cash Crusaders that already contained Windows and Office (legality be damned), and wanting to save money on IT, they put those laptops to work without sanitizing them.

At the moment we have them

blaming IT for the "hacking" (!!!). "Why can't IT make the hacking stop?" It is too late; IT can now only block the domain squatting, etc, on a retroactive basis. Once blocked, the adversaries just create another domain name and spoof the client's mail again. They already have all your emails, all your contacts and are using your emails to get your contacts to click on malicious links.

SAFETY STARTS WITH YOU.

Let's look at the fishing campaign. The sales people were the culprits who clicked on links and opened attachments, even after they were told not to. My first question was, why did you click on the link. Salesperson1 – but it was from my customer! Salesperson2 – it was an accident! I just did a preliminary investigation. Me to salesperson1 – but I thought you said it was a customer of yours, this is not even in the country? Salesperson1 – but I thought it was! Me to salesperson2 – How do you 'accidentally' click on a zipped file, unzip it, click the link and bypass the Firefox warning? Salesperson2

– yes it was by accident. * Shakes head *

Just a little bit more prodding and I came to the answer. Their sales targets were raised and they were desperate to make their targets so they could afford their lifestyles. Desperate to keep up with the Joneses, they click everything for a sale. Sales first, everything else last.

Now I examined the email. The subject line contains "from trusted sender". They have never received emails that had that in the subject line. That should immediately raise a red flag. The body of these messages all have urgency stipulated: Your account will be deactivated in 24 hrs. Fill this form in to avoid being arrested. Respond immediately! Account on hold, payment overdue! Account confirmation, URGENT! Unusual activities detected on your account. Sign-in attempt blocked, respond immediately. I have hacked your email and ...blah (spoofed your email address).

Protect Yourself

Now that everyone has the company's emails, the criminals are taking messages verbatim, adding a line stating: the password to the attachment is:43yu3i3 or whatever, and adding another malicious attachment to see what they can gain.

If you are unsure if you would have clicked on any of these, take the Google phishing quiz: <https://phishingquiz.withgoogle.com/> (Gizmodo had an article on it last year).

The guys are getting smarter, the link points to a file transfer server where he/she/it leaves the payload: <https://t.mycloud.ch/c/9xQivLs5rCr3C2XXXX> (last characters removed so you don't click it accidentally).

Quick 'n dirty rules to email safety:

1. If you can, block whole countries in your blacklists, eg: "*@*.cn or *@*.tk"

MY OPINION

2. Never click a link. Copy and paste it into a notepad and look at it.

3. If you don't know the person or never dealt with them, file that email into a folder where you can examine it at your leisure.

4: Ignore any urgency indicators. If it is urgent, they will call you.

5. If your email client allows it, turn on headers.

6. If you use windows, turn ON file extensions. Pay attention to the time email arrives, your friends / work colleagues do not send email at midnight.

7. Do not open compressed / zipped attachments, unless you KNOW what it is.

8. Have a work email and a personal email and a junk email. Keep these separate.

9. Do not reply to junk email (that goes for phishing emails too).

10. Make sure your password is long enough.

Here is a chart for password cracking on a modern machine.

number of Characters	Numbers only	Upper or lower case letters	upper or lower case letters mixed	numbers, upper and lower case letters	numbers, upper and lower case letters, symbols
3	Instantly	Instantly	Instantly	Instantly	Instantly
4	Instantly	Instantly	Instantly	Instantly	Instantly
5	Instantly	Instantly	Instantly	3 secs	10 secs
6	Instantly	Instantly	8 secs	3 mins	13 mins
7	Instantly	Instantly	5 mins	3 hours	17 hours
8	Instantly	13 mins	3 hours	10 days	57 days
9	4 secs	6 hours	4 days	1 year	12 years
10	40 secs	6 days	169 days	106 years	928 years
11	6 mins	169 days	16 years	6k years	71k years
12	1 hour	12 years	600 years	108k years	5m years
13	11 hours	314 years	21k years	25m years	423m years
14	4 days	8k years	778k years	1bn years	5bn years
15	46 days	212k years	28m years	97bn years	2tn years
16	1 year	512m years	1bn years	6tn years	193tn years
17	12 years	143m years	36bn years	374tn years	14qd years
18	126 years	3bn years	1tn years	23qd years	1qt years

Key:

k – Thousand (1,000 or 10^3)

m – Million (1,000,000 or 10^6)

bn – Billion (1,000,000,000 or 10^9)

tn – Trillion (1,000,000,000,000 or 10^{12})

qd – Quadrillion (1,000,000,000,000,000 or 10^{15})

qt – Quintillion (1,000,000,000,000,000,000 or 10^{18})

What you need to remember is, that these values can be halved and halved again if computer clusters are used. It is from 2016, so I would assume 21 characters should be the minimum password length, not 18.

So my old password “(NEVER.share.your-p@ssw0rdz!!)” would now need something like a date added to it. Memorable passwords do not have to be difficult.

Now please go take that Google quiz mentioned above and if you do not get 8/8, you need to be more careful.

Disagree with us? Let us know on misc@fulcirclemagazine.org



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



HOW-TO

Written by Ronnie Tucker

Write For Full Circle Magazine

GUIDELINES

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

RULES

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

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

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

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

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

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

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

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

TRANSLATIONS

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

REVIEWS

GAMES/APPLICATIONS

When reviewing games/applications please state clearly:

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

HARDWARE

When reviewing hardware please state clearly:

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

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



REVIEW

Written by Adam Hunt

Kubuntu 20.10

Kubuntu users are well-known for their dedication to the distribution and for some very good reasons, too.

This fresh release of Kubuntu came out on 22 October, 2020. This is the distribution's 32nd release and the 11th one with the KDE project's Qt-based Plasma 5 desktop so it was reasonable to expect it to be very refined and, indeed it is.

Being a "standard" release, Kubuntu 20.10 is supported for nine months, until July 2021. There will be two more standard releases, out in April and October 2021, before the LTS.

As I have noted in other recent reviews, the first standard release after a long term support (LTS) release in the Ubuntu universe often tells us a lot about the developers' plans for this development cycle that is all leading to the next LTS release, which in this case will be Kubuntu 22.04 LTS, due out in April 2022.

This Kubuntu release was accompanied by the usual "release announcement", but there were no "release notes", the document that usually details the changes in each new version. The Kubuntu developers indicated that the release notes were "not available due to wiki login problems". I presume this was due to the migration of release documentation from wiki.ubuntu.com to discourse.ubuntu.com. Hopefully this problem will be solved by the next Kubuntu release in April, as the release notes are of great

value to both users and software reviewers.

SYSTEM REQUIREMENTS

The Kubuntu recommendations for system requirements have not changed with this release. They remain the same as for Ubuntu: a dual core 2 Ghz processor, 4 GiB of RAM and VGA video of at least 1024 x 768 pixels, plus a CD/DVD drive or a USB port for the installation media.

BOOTING IT UP



I made up a Kubuntu USB installer using the Ubuntu Startup Disk Creator and tested it in a series of live sessions. As with all the other Ubuntu flavors, booting to the USB stick results in an automatic file system check, which is good, to ensure that the USB stick is error-free.

Kubuntu runs easily and fast from the USB stick, a far cry from running it from a DVD, which can be very slow. The USB gives very similar performance to an actual installed version.

NEW

Unlike Xubuntu 20.10, which introduced no changes at all, Kubuntu 20.10 brings a number of careful, incremental improvements.

This version of Kubuntu is being promoted as "Cloud Ready", including "access to cloud and container technologies". The release also includes a new and

REVIEW

striking default hexagon-themed wallpaper, by Sandra Smukaste, named "Flow". If that is not to your taste there are many alternate wallpapers provided, all of them quite beautiful, or you can use your own, of course.

This release incorporates the Plasma 5.19.5 desktop, an upgrade from Kubuntu 20.04 LTS's Plasma 5.18. This release also includes the Applications 20.08 collection, a change from 20.04 LTS's 19.12. While not the very latest versions, these both include a lot of incremental improvements that together make the KDE desktop even better. Most of the changes are hidden away in the menus, but some, like global menus being no

longer the default, are obvious as soon as the applications are opened.

Kubuntu's main menu system, which I noted in 20.04 LTS was cumbersome and clunky, seems to run much more smoothly in 20.10. There is also the option of a "simple menu" as well as the Application Dashboard widget which provides a full screen application menu, much like Ubuntu's, with the touch of one desktop button.

APPLICATIONS

The Kubuntu KDE desktop has its own collection of Qt-based

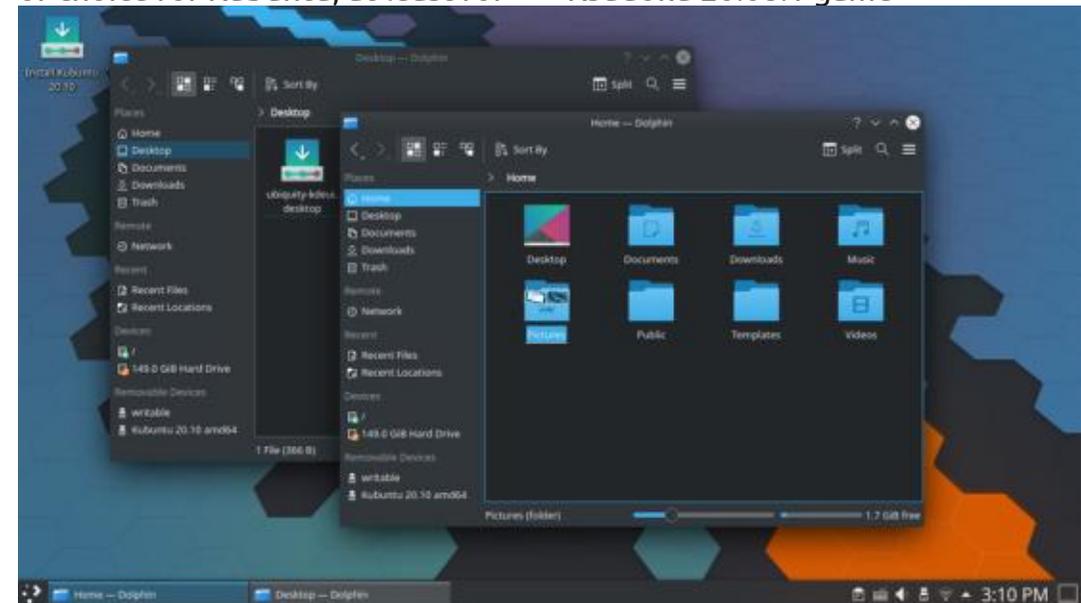
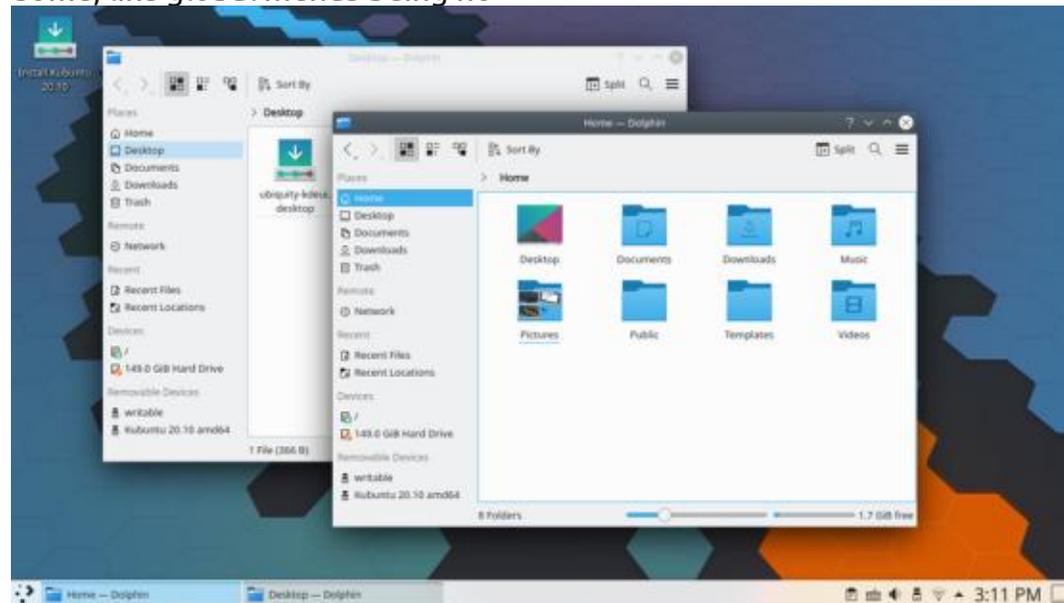
applications, including the Qt version of LibreOffice. The one exception remains the Firefox web browser, which is GTK-based. GTK applications run fine on Kubuntu but they may not integrate as well in terms of themes or menus.

The KDE project has a Qt-based browser, Falkon, in its collection of applications, but it seems to be not quite ready for operational use yet. My tests of the current version showed that it can be a RAM hog and lacks spellchecking. Falkon development seems to have stalled too, with the last release still at version 3.1.0, a year and a half old, released on 19 March, 2019. As a result, Firefox remains the browser of choice for Kubuntu, at least for

the time being.

Some of the applications included in Kubuntu 20.10 are:

- Ark 20.08.1 archive manager
- Discover 2.1.2 software store*
- Dolphin 20.08.2 file manager
- Elisa 20.08.2 music player
- Firefox 82.0 web browser
- Gwenview 20.08.2 image viewer
- Kate 20.08.2 text editor
- Kcalc 20.08.1 calculator
- KDE Partition Manager 4.1.0 partition editor*
- Konsole 20.08.2 terminal emulator
- Kmahjongg 20.08.1 game
- Kmines 20.08.1 game
- Konversation 1.7.5 IRC client*
- Kpatience 20.08.2 game
- Ksudoku 20.08.1 game



REVIEW

KsysGuard 5.19.5 system monitor
Ktorrent 5.2.0 bit torrent client*
LibreOffice 7.0.2 office suite, less
only LibreOffice Base database
Muon 5.8.0 package manager*
Okular 20.08.2 PDF viewer
PulseAudio 13.99.2 audio
controller
Skanlite 2.2.0 scanning utility
Spectacle 20.08.2 screenshot tool
Startup Disk Creator 0.3.8 (usb-
creator-kde) USB ISO writer
Thunderbird 78.3.2 email client
VLC 3.0.11.1 media player

* Indicates the same software
version as used in Kubuntu 20.04
LTS

KDE Applications 20.08 brings
some changes to the core KDE
applications. For example, the
Dolphin file manager includes new
preview capabilities, now able to
create thumbnails for more types
of files than before. Also, when
Dolphin is re-opened, it displays
the same folder it was showing
when it was last closed.

As has been the case for the last
few releases, Kubuntu 20.10 does
not include a default CD/DVD
burning application, a logical move
since optical drives have not come
with new computers for many

years now. If needed, the KDE
standard CD/DVD burner, K3B, or
an alternative such as the GTK-
based Brasero or Xfburn, can
always be installed from the
repositories.

By default, Kubuntu 20.10 does
not come with a webcam
application, an image editor or
video editor. However, if needed,
there are several applications of
each category available in the
repositories.

SETTINGS

Kubuntu probably has the
widest range of user-controllable
settings of any Ubuntu-based

distribution and perhaps of any
Linux distribution anywhere. There
are so many setting parameters
available, that Kubuntu can be
customized to fully meet user
preferences.

For example, there are:

- Three global themes: Breeze,
Breeze Dark, Kubuntu
- Six Plasma styles: Air, Breeze,
Breeze Dark, Breeze Light, Kubuntu
and Oxygen
- Four application styles: Breeze,
Fusion, MS Windows 9x and
Oxygen
- Two window decoration themes:
Breeze and Plastik
- Six colour schemes: Breeze,
Breeze Dark, Breeze High Contrast,
Breeze Light, Oxygen and Oxygen

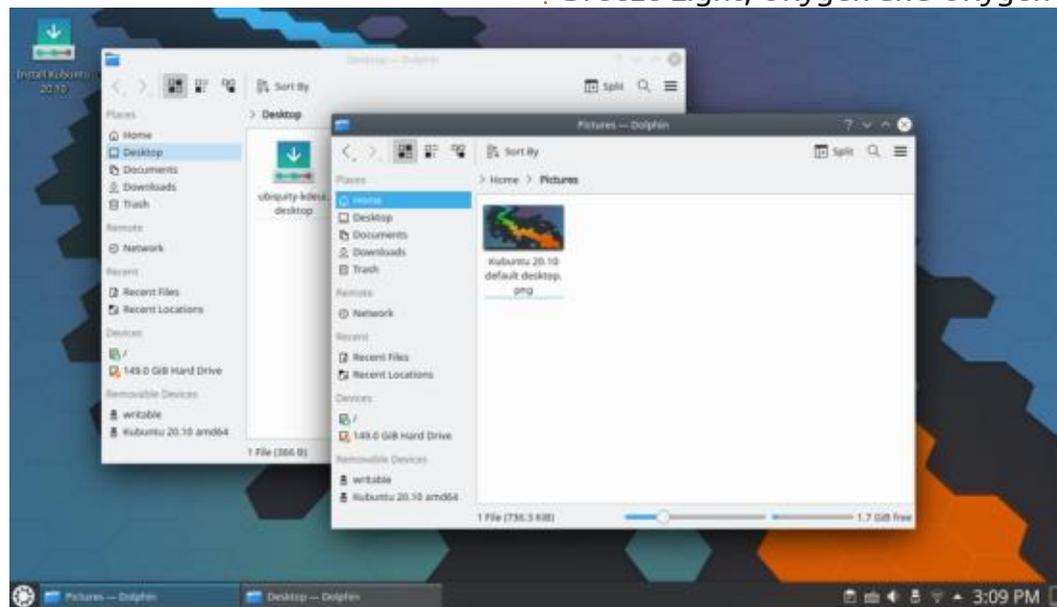
Cold

- Eight icon sets: Adwaita, Breeze,
Breeze Dark, Humanity, Humanity-
Dark, LoginIcons, Ubuntu-Mono-
Dark and Ubuntu-Mono-Light
- Three emoticon sets: Breeze
EmojiOne and Konqi
- Two cursor styles: Breeze and
Breeze Light

And these are just the options
that come installed in Kubuntu by
default. Most of the setting pages
also offer one-button download
and installation of many, many
more alternative themes, icon sets,
cursors, etc.

Kubuntu 20.10 also offers a
choice of 66 pre-installed desktop
widgets. These are small
applications that can be added to
the desktop to improve
functionality. For instance the
Application Dashboard widget
provides a large, full screen
application menu launched from a
desktop button. There are also
widgets for an analog desktop
clock, weather reports, and a CPU
monitor. In addition to the 66
widgets provided by default,
hundreds more that can be
downloaded.

The Kubuntu user philosophy is



REVIEW

the diametric opposite of Ubuntu. Ubuntu feels like an enterprise desktop designed for office use, with very limited user customization options available, whereas Kubuntu feels like a distribution for developers, with almost unlimited customization. A Kubuntu installation can quickly be configured to look like anything and I am sure that no two are alike.

I think the biggest danger with all these options is that users could spend a lot of time tweaking the themes, functionality and appearance. I am not sure how a dedicated Kubuntu user would duplicate their previous desktop on a new installation, unless they had a very good checklist.

CONCLUSIONS

Considering that this is the 32nd release of Kubuntu and the 11th one with the Plasma 5 desktop, it really is a mature Linux distribution with very little need for big changes. If the directions charted by the developers in 20.10 are any indication, then we can expect just slow, incremental and carefully-considered changes to be introduced during this development cycle, with each release just a little bit better than the last.

Kubuntu's main appeal seems to be it's almost infinite customization options, allowing the user to start from the default desktop and make it look and work any way they want. Add in the integrated, Qt-based applications suite (except perhaps for Firefox) and the result is a smooth user experience that can

be easily made to feel very personally theirs. That has to engender the kind of loyalty that Kubuntu users are known for.

Most Kubuntu users will probably stay with the 20.04 LTS release until the next one, 22.04 LTS, but Kubuntu 20.10 actually has enough improvements to entice some Kubuntu users to upgrade, even given its short, nine month support period.

kubuntu



Adam Hunt started using Ubuntu in 2007 and has used Lubuntu since 2010. He lives in Ottawa, Ontario, Canada, in a house with no Windows.



Lubuntu 20.10 was released on 22 October, 2020 and marks the beginning of the development cycle that will lead to the next long term support (LTS) release, Lubuntu 22.04 LTS, scheduled for release in April 2022.

Being a “standard” release, Lubuntu 20.10 is supported for nine months, until July 2021.

Lubuntu 20.10 is the fifth release with the LXQt desktop and the 22nd overall Lubuntu release.

Even if most users will not install Lubuntu 20.10 and instead stick with 20.04 LTS for its longer support period, this release is a bit of a bellwether to see what priorities and directions the Lubuntu developers set for this cycle, so it is worth a look.

SYSTEM REQUIREMENTS

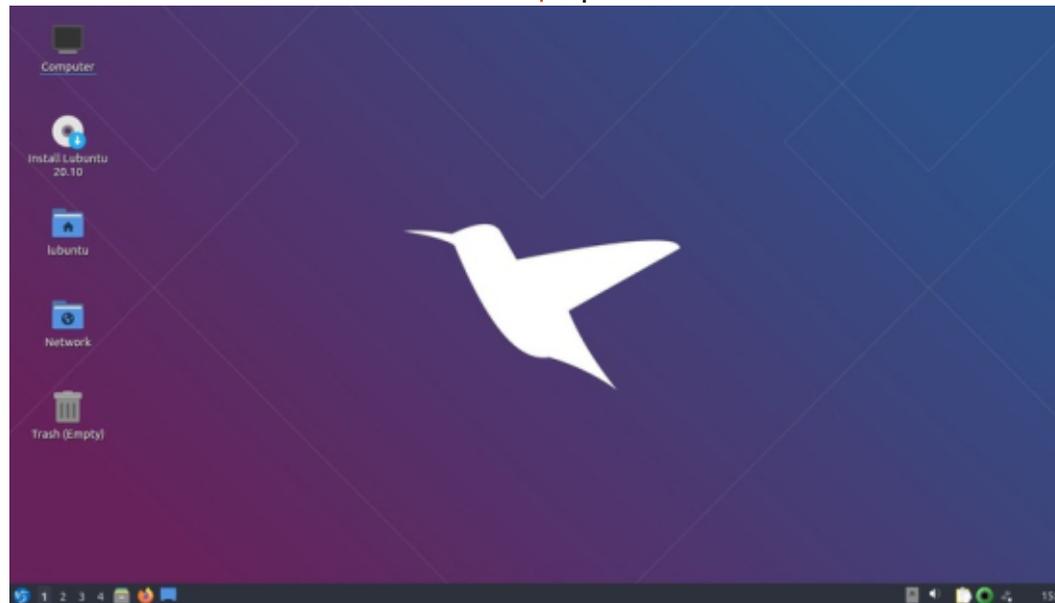
The Lubuntu developers no longer make recommendations for the minimum hardware to run Lubuntu, but I tested Lubuntu

20.10 on my 2011 vintage System 76 Pangolin Performance laptop. That computer has 4 GiB of RAM with dual core/four thread 2.30GHz Intel Core i5-2410M CPUs and Lubuntu 20.10 ran very well on it.

BOOTING IT UP

I downloaded Lubuntu 20.10 from the Lubuntu website via bit torrent, ran a SHA256 sum check to make sure the download was good and made up a USB installer using the Ubuntu Startup Disk Creator.

I booted to Lubuntu 20.10 in a



series of live sessions, a process that now starts off with an automatic file system check to make sure the USB stick is written correctly. In this case, my first write attempt with Startup Disk Creator resulted in one error being found, so I rewrote the USB stick and re-tested it, getting “no errors found” on the second try, so it is worthwhile letting the test run.

NEW

Surprisingly, there is very little new in this release. The Lubuntu Update Notifier now includes a

“tree format” list of updates to be installed and there is a new Plymouth boot splash screen. Both are nice additions, but really very minor tweaks.

What is not new is the wallpaper. This version of Lubuntu includes exactly the same wallpaper selection as 20.04 LTS did, with a different one, Lubuntu Solid Hummingbird, chosen to be the new default. The wallpapers supplied are all winners chosen from the 20.04 LTS wallpaper design contest and all are attractive artwork.

If the developers’ directions for this release can be taken as indicative of what we can expect over the rest of the development cycle, then just small tweaks are predicted. I actually think that is a good thing. Lubuntu 20.04 LTS is the best operating system I have ever used. I believe that there are very few things needed to improve it and so small changes are the best approach, rather than large-scale initiatives.

REVIEW

APPLICATIONS

Some of the applications included with Ubuntu 20.10 are:

2048-qt 0.1.6 simple lightweight game*

Ark 20.08.1 archive manager

BlueDevil 5.19.5 bluetooth connector

Discover Software Center 5.19.5 package management system

FeatherPad 0.12.1 text editor*

Firefox 82.0 web browser

K3b 20.08.4 CD/DVD burner

Kcalc 20.08.1 calculator

KDE partition manager 4.1.0

partition manager*

LibreOffice 7.0.2 office suite, Qt

interface version

Lubuntu Update Notifier 0.3 software update notifier

LXImage-Qt 0.15.0 image viewer and screenshot tool*

Muon 5.8.0 package manager*

MPV 0.32.0 video player*

Noblenote 1.2.0 note taker*

PCManFM-Qt 0.15.0 file manager*

Qlipper 5.1.2 clipboard manager*

qPDFview 0.4.18 PDF viewer*

PulseAudio 13.99.2 audio controller

Qtransmission 3.00 bittorrent client, Qt interface version*

Quassel 0.13.1 IRC client*

ScreenGrab 2.0.1 screenshot tool

Skanslite 2.2.0 scanning utility

Startup Disk Creator 0.3.8 (usb-creator-kde) USB boot disk maker

Trojita 0.7 email client*

VLC 3.0.11 media player

Wget 1.20.3 command line

webpage downloader*

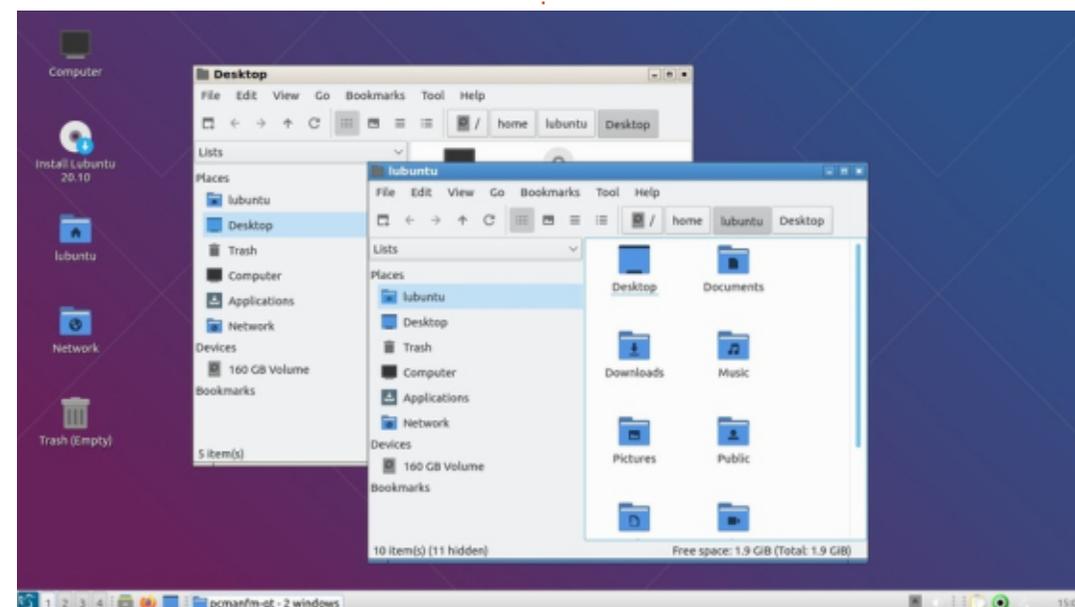
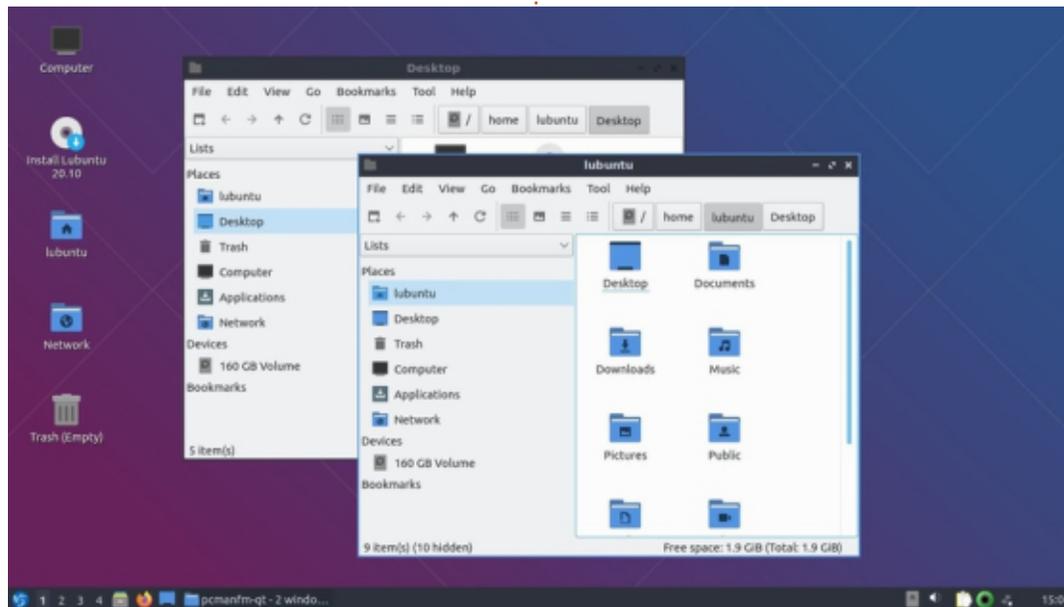
XScreenSaver 5.42 screensaver and screen locker*

* Indicates the same version as used in Ubuntu 20.04 LTS

As in all the LXQt versions of Ubuntu so far, 20.10 lacks applications for webcam, photo editing and video editing, although these can be installed from the repositories if needed.

There are some good arguments for keeping the default installation fairly minimal, so as not to use up space with applications

that users may not need and instead allow them to install applications as desired. Of course, that doesn't really explain why Ubuntu 20.10 by default still comes with the KDE CD/DVD burning application, K3b. Optical drives have not been included in new computers for many years now and CD or DVD media for burning are getting pretty hard to source. In 2020, CDs and DVDs are on their way to the same place where the floppy disks are kept, so it may be time to leave a CD/DVD burning application out of the default Ubuntu installation, as the mainstream Ubuntu has already done for several releases now.

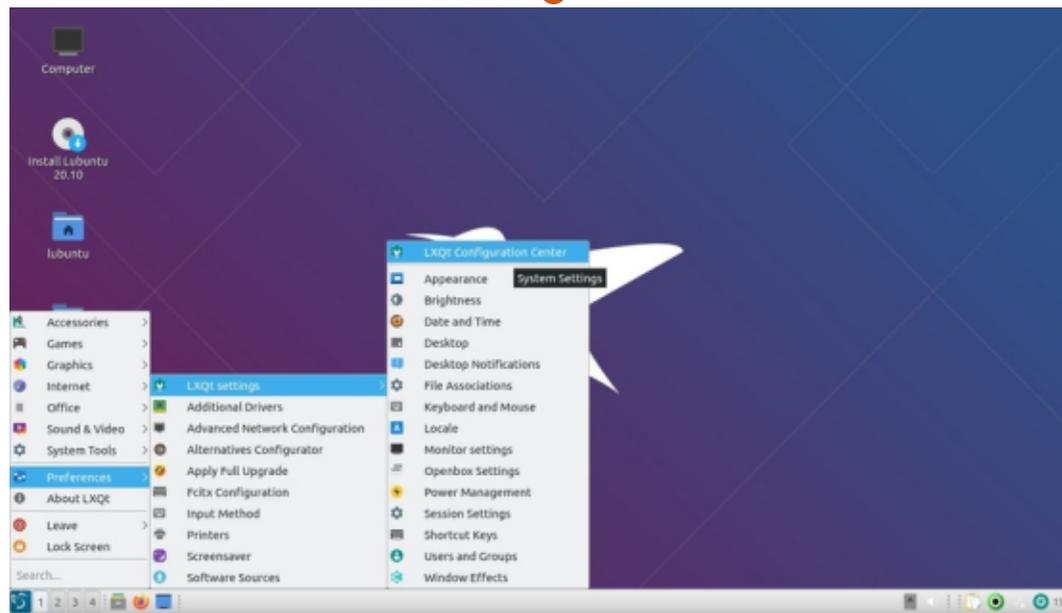


REVIEW

As far as applications go, the inclusion of FeatherPad 0.12.1 is an oddity. This version of my favorite text editor was already four versions out of date when Lubuntu 20.10 was released. The current FeatherPad version is 0.15.0, which was released on 22 August 2020. It could easily have been included if the Ubuntu repositories had been updated with it. Hopefully that will happen before April's release of Lubuntu 21.04, as the application is under active development and newer versions incorporate some desirable improvements.

SETTINGS

Nothing has changed in the settings menus for Lubuntu 20.10. They are still well laid-out and easy to use, with lots of choices for icons, window themes and color



schemes, far more than Ubuntu has.

This release still uses “Lubuntu-Arc” as the default window and LXQt theme. It is a very dark theme, which is, of course, very popular these days. If it is not to

your liking there are lots of options provided, including seven LXQt themes and 21 window themes, so you can make Lubuntu look almost any way you want.

CONCLUSIONS

Lubuntu 20.10 introduces very little that is new over 20.04 LTS. I actually think this is a good sign, as 20.04 LTS is a superb operating system and doesn't really need much improvement. If this development cycle leads to the next Lubuntu LTS version having just a few minor improvements over 20.04, then, personally, I will be very happy with the results. An updated version of FeatherPad would be nice by then, however.

Lubuntu



Adam Hunt started using Ubuntu in 2007 and has used Lubuntu since 2010. He lives in Ottawa, Ontario, Canada, in a house with no Windows.



REVIEW

Written by Erik

Goggles Music Manager

Website: <https://gogglesmm.dev/>

Price: Free!

Blurb: "Goggles Music Manager is a music collection manager and player that automatically organizes your music files based on artist, album, and song. It supports gapless playback and features easy tag editing."

NOTE: see elsewhere this issue for an interview with the developer

INSTALLATION VIA PPA

<https://launchpad.net/~s.jansen/+archive/ubuntu/gogglesmm>

```
sudo add-apt-repository
ppa:s.jansen/gogglesmm
```

```
sudo apt install gogglesmm
```

So why should you choose GogglesMM over another player? Or why GogglesMM has become my favourite player in the shortest possible time.

My audio files range from MP3-FLAC-M4A-OPUS-OGG and more.

Though I like Sayonara Player, it does not play all the formats. While VLC on the other hand, does, it does not theme properly or compress enough for my 1366 screen, or theme the way I want. Clemintine also had its own issues, so I kept looking. After the loss of exaile, I have not found a player that suited me 100%. To be fair, I tried GogglesMM before and the interface put me off (looked like every other three pane player), but I admit to not giving it a chance.

So imagine my surprise, seeing a Mint guide saying it had LastFM

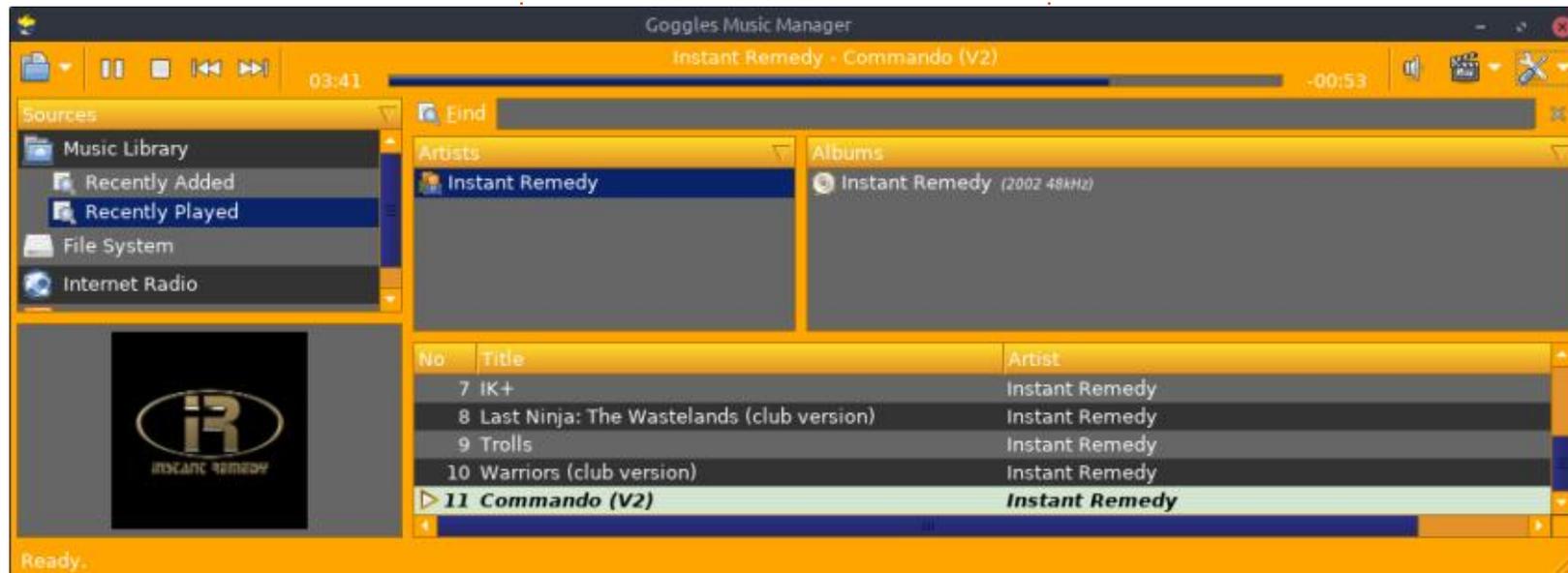
support. <https://mintguide.org/audio/728-goggles-music-manager-music-player-for-linux-mint.html>

I had to give it another go!

A quick word on LastFM / LibreFM support – you need to be logged into your account, under settings -> Applications, to add the player. You just need to tick scrobbling and then play an album. Accept GogglesMM as a trusted player and 'Bob is your uncle'.

GogglesMM does not require a

middleman; it interfaces with ALSA directly. What I mean by this, is that there is no gstreamer interference. This does not mean that you cannot use PulseAudio, etc, you just need to look in the settings. I have an external DAC that I use as well, so I want CD Quality output and GogglesMM gives me that. Part of the reason I glanced over GogglesMM in the past, was because the Wiki is bare. The website is kind of ancient-feeling too. So if you are a budding web designer, why not offer them a hand? If I can, I will try to contribute with decent icons, as it looks a bit



dated.

Let me start with what I did not like – no program is perfect. When I minimize the application, it does not sit in my taskbar (I use XFCE). I would have liked taskbar integration, for those times that I need all my screen real estate. Also, other than just sitting in my dock, it does nothing; what I mean is, a play or pause would have been great, not just a launcher. When opening your “radio stations” tab, it may have been nice to include one or two. Also right-clicking inside the main window of the radio station main window, does not give you the option to add a station right there. Neither does the “podcasts” tab. Mouse-wheel scrolling on the volume button would have been nice. Do not click the “maximize” button while in mini mode. *cringe.

This is not to say these things cannot be accomplished, but it could be easier.

What I liked. Ctrl + M. So many players today do not have a mini mode, it’s a crime! Though with goggles, being able to resize it to almost nothing, I almost do not need it. There are a few themes



built in, but GogglesMM also offers you the option of customizing those. Double-clicking on any of the color blocks will bring up a color wheel and you can go nuts. Scrobbling worked without needing to put my user or password into the application. It has a sleep timer. I do not often use playlists, but that option is also offered for those of you who do. You also do not need to use the “radio” or “podcast” option with a simple “play file or url” option. I tested this by pasting the following in, and it worked without hiccups. (http://n0d.radiojar.com/myw9vhzbnan.mp3?rj-ttl=5&rj-tok=AAABdJ_Spb0AFmapXpJX4UymSq)

The tagging option also worked directly by right-clicking a song. Adding your own custom covers is also just a simple right-click away,

and “find cover” actually launches your favourite browser & search engine for the job. Everything else works as advertised, without making you feel overwhelmed by information overload. I am a simple guy who, when I need a music player, I need a music player, not a washer, dryer, chicken deboner with RGB lighting. The nice thing about it playing directly to ALSA, is that I can stream it to my output devices, say in the kitchen whilst doing dishes. When I use it on my laptop, it is sometimes nice to be able to see the time played, as well as the time remaining, as I use it as a crude timer, which I prefer to the either/or approach of other players.

So far, GogglesMM ticks most of my boxes, it plays everything, it scrobbles, it connects directly to ALSA, so my OS volume control and

GogglesMM volume control are one and it has a mini mode. The performance hit on my potato laptop is tiny. I am sure this will play fine on a raspberry pi 1! The shortcut keys are actually very handy and intuitive. Ctrl+P is play, for instance. (Don’t worry, we will fill you in on those afterwards).

Now obviously, if you need milkdrop visualizations, need to keep an eye on the VU meter at all times, play tunes by mood, or need to know the bit rate at all times, this is not for you... But for everything else, there is mastercard, right?

Did we miss anything? E-mail us at: misc@fullcirclemagazine.org



INTERVIEW

Written by Erik

Goggles Music Manager Dev

Website: <https://gogglesmm.dev/>

If you don't know what GogglesMM is, see our review this issue.

I asked Sander for an interview and he very kindly accepted to answer my questions.

Q: How did you get involved with programming, and why a music player?

A I'm a software engineer currently working for Baron Weather (<https://www.baronweather.com>). I grew up in Europe and currently reside in the United States. In previous jobs, I used to do a lot of C/C++ work (UI, Visualization), hence why gogglesmm is written in C++. The UI library (www.fox-toolkit.org) gogglesmm uses was the same one we used at work. But nowadays I tend to program mostly in Python, so there's a lot less overlap with work and hobby.

At the time, I wasn't running the fastest computer or with the most memory. Even though there were

plenty of music players available, there wasn't one with a library manager that was both lightweight and easy to use that suited my needs. You had either `easy and take all my system ram`, or `lightweight and no functionality`. I was trying to get to a happy medium. Especially in the early days I did a lot of optimization to make sure everything ran super smooth without taxing the system too much. Another goal was to make sure the player wouldn't `touch` my files without my explicit permission. I definitely encountered Photo and Music managers in the past that would start automatically moving/renaming files.

Q: Who would you imagine is GogglesMM user base (mostly?), and why did you decide on open source?

A I don't know how accurate these are, but my impression is either a) users running on older hardware and b) audiophile users who simply want `passthrough` playback without having to worry

about sample/rate conversions.

Open Source is simply a no brainer. My goal was never to make any money off this, but simply to write a player I'm happy to use myself. By making it open source, the hope was that others would find it useful as well.

Q: What would you say to users coming from other music managers? And would GogglesMM be the right one to start with and why?

A I certainly hope that people will give it a try. I'm sure it won't be the be-all and end-all of music players, but it has a good feature set and performance.

Q: What do you think of the current trends in music managers?

A Now with dozens of streaming services available, the days of music managers in my mind are over and I suppose more of a niche, similar to people that still like to play records.

As phones have taken over as primary portable playback devices, it's much less work to set up a Spotify than to transfer your music collection to your phone.

Q: Can you describe your personal music playing setup?

A It highly depends on where I am. When I'm at work, gogglesmm is usually running in the background. At home, I have a mini-pc attached to my home-entertainment system which also runs gogglesmm. In other situations when I'm out and about, I usually use my phone for playback (GoneMAD Music Player, although not written by me, I highly recommend). Another tool I have written is Audioconvert. It allows me to easily `sync` my music in different formats depending on the target platform. So, for my work laptop and phone, I have my music in the Opus format. At home, it's in the original FLAC format. Occasionally I have a copy in MP3 format to playback over my car stereo from USB drive.

INTERVIEW

Q: The GogglesMM web page is a little sparse; would you accept help in getting it more modern?

A: I'd call it functional. At the end of the day, it's just a web page. I'm not sure how many people really look at a web page before installing a piece of software. I tend to find software through the package manager myself. That said, as it is an open source project, I'd value any contribution.

Q: What would your advice be for our budding open source developers?

A: I'd consider open-source a hobby, so, first, work on something you need yourself. That's the best motivation to keep working on it.

Q: Where to from here? Any surprises waiting in the wings? Any projects we should be aware of?

A: There are a couple features implemented and pending a release when I find the time and motivation. Most notably an optional cross-fader that would

work well when playing random music. I'm also a bit behind on the ubuntu packages, and need to update these for the latest ubuntu releases. Some translation updates as well.

Q: What is the best part of writing GogglesMM, what did you learn?

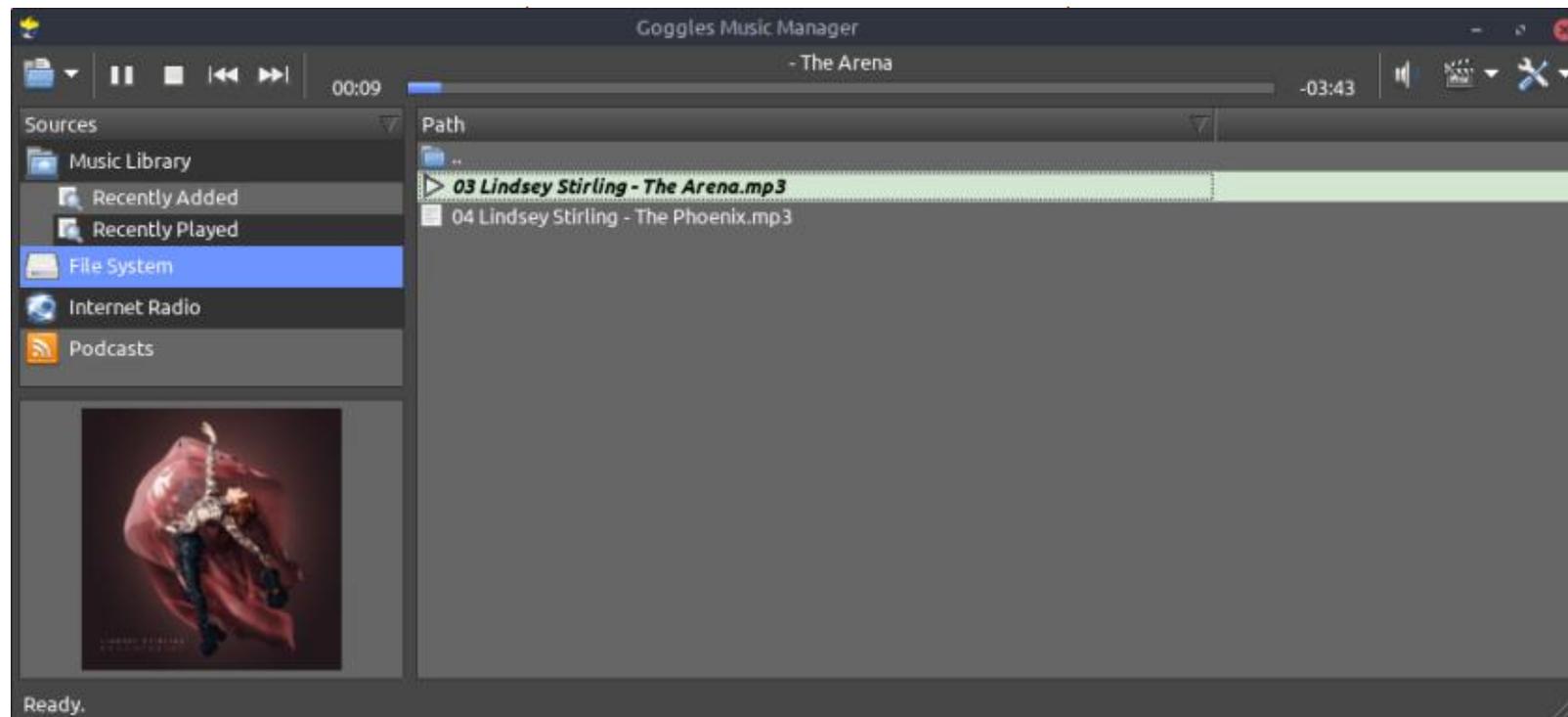
A: Being able to listen to your own music collection in your own player! A few years ago, I replaced the xine backend (<http://xine.sourceforge.net/>) with my own playback engine. That ended up

being a lot of fun, and I learned a lot about multi-threading and the various file formats. The best part is hearing back from people who happen to stumble upon my player.

Q: What would be the "killer feature" if you had time and money to implement it?

A: Not sure... Windows support? That should get me a large user base, right? All kidding aside, the code is written in a portable way, and at some point I had something partial running under Windows (VMware, very slow). This is more of a lack of motivation issue (I have no need for it myself), but it would certainly be interesting to make it work.

Many thanks to Sander for taking the time to answer our questions.





CORRECTION

Regarding the article "Command & Conquer: Demystifying Nmap Pt.1" by Erik: page 20 in FCM#162 has an error in the link/URL <https://www.geeksforgeeks.org/tcp-3-way-andshake-process/>. The 'h' before 'andshake-process' is missing; so the correct link/URL is: <https://www.geeksforgeeks.org/tcp-3-way-handshake-process/>

Thanks to Erik for his article; looking forward to next month to read on.

Big thanks to everyone who makes FCM possible!

postkasten2

SAMPLE PHOTO LINK

I tried downloading the sample photo in the RawTherapee article of FCM#155, but get a unsecure connection error. Tried it with Brave and Firefox. Tried with shields up and shields down and

got no joy.

Mike White
(and **Berny Marsden**)

Ronnie Says: *Yes, sorry about that. The site hosting seems to have gone offline. We're now hosting it on FCM at: <https://bit.ly/2WNVfPf>*

PLOP BOOT MANAGER

Reading the Q&A chapter in the [then] latest FCM#154, I came across the part where a user couldn't boot from USB. There's a tiny utility that I use in that case: Plop Boot Manager: <https://www.plop.at/en/bootmanager/download.html>

In the most recent version (5.0.15), you'll find (in the Install folder) plpbtin.iso – which fits on even the smallest CD, and plpbtin.img which is a floppy boot image.

Both let you boot from a bootable USB stick, allowing a

much quicker install than using a full DVD and bypassing the size limitation of a possible CD-only optical drive.

Nero Tux

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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.



Q&A

Compiled by EriktheUnready

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

Welcome back to another edition of Questions and Answers! In this section, we will endeavour to answer your Ubuntu questions. Be sure to add details of the version of your operating system and your hardware. I will try to remove any personally identifiable strings from questions, but it is best not to include things like serial numbers, UUID's or IP addresses. If your question does not appear immediately, it is just because there is such a lot, and I do them 'first-come-first-served'.

I knew someone, while at school, her brother was one of those big boys, and obviously needed more food than he was getting for lunch. The variety of sandwich fillings back then was not too great, and when it came to spreads, you would get, like one of four or five things. This boy would approach his sister and tell her that her bread was filled with boil juice / pimple juice, whenever a certain spread was used, and he would then gain her sandwiches. He did not ask to share her sandwiches and make

sure his sister got food; he would take it all. The point I am getting at here is not everyone has your best interests at heart. When someone tells you to type something into the terminal, don't just accept it and type. Even if it is family. I get so many messages saying, 'my brother told me to type something into the terminal now I can't get my computer back up'. Man pages may not be the best when it comes to newbies understanding them, but at least they will tell you what a command does. You can also install yelp, bro pages, cheat, TL;DR pages, etc. (If you opened a terminal and typed 'man alternatives', good for you, but not what I meant.)

Q : How do I scrobble with VLC? Will it work if I run it minimally from the terminal? How will you see?

A : The scrobbling options for VLC only show up in advanced view in the settings, but it works. I checked it with open snitch and nethogs, and it seems to want to

connect, to scrobble. I am assuming we are talking about cvlc.

Q : How can I get new packages from the library to my PC at home without the internet?

A : Instead of using apt, install darktable, for instance, use apt download darktable and copy it to your external drive to take home. You can also copy the files out of another computer's apt cache and install them manually on yours.

Q : I used to use movie-renamer to bulk rename my movies. The website is gone and the GIT page was updated 10 years ago for some reason. I now have to start an old XP machine to rename my stuff with an old version of filebot. I'd rather do it on Ubuntu. Thanks. Your pal Waqar Ali.

A : I can not vouch for any of these, but it seems they have Linux installs. BTW, Filebot has a Linux install? (Or is it that you have to pay monies for it?). There is TV

renamer or Almovies renamer?

Q : I want to install ubuntu-20.04.1-desktop-amd64.iso, I have windows 10 intel gen 10 processor. I install AMD LTS processor, will it make any problem for me?

A : I am going to assume you mean the name in the .iso file. It is only named amd64 because AMD was the first to 'coin the phrase' 64bit CPU, so their name is attached to it. The ISO works on both Intel and AMD processors.

Q : MikeyMike, [19.08.20 01:49] Why don't you answer some questions on askubuntu? You seem to know your stuff?

A : The 'reputation club'. I cut toxic people out of my life immediately. When you answer a question before one of the 'reputation hoarders' can, they go and mark your answer as not being the answer, even if you can prove it

Q&A

is. There are also those who chip in with things not asked, "but if you do it that way...". Virtual 'rewards' mean nothing to me, so I don't care and I don't need that negativity in my life.

Q: Pet3r, [04.09.20 18:38]

How do I add the Ubuntu repositories to MX linux? What lines do I need to change to make it work?

A: Simple, you can not. The two are incompatible even if they both share a common ancestor.

Q: My question is not so much about ubuntu, but my laptop. Does the charging of my smartphone from laptop or pc with usb data cable have any side effects on phones?

A: It may take longer to charge. It has to do with the voltage and amps your phone gets. <https://www.maketecheasier.com/usb-power-delivery-explained/>

Q: I want to install Fedora on the same hard disk where Ubuntu

is installed. How will this affect Ubuntu? Will grub2 give me the choice to select between OSes upon boot?

A: You can, of course, just make sure that each OS is on its own partition. If you are afraid to mess up, do a backup of your drive first. You learn by doing. Grub will list all the OSs installed. We have readers who have lots of OSs side-by-side.

Q: Here is the scenario. I have a server set up that my friends and I use on a regular basis. How can I see exactly what has been happening on the server? I am the owner and the superuser, but I am too new to Linux to know how. I am not young, just new. Also I don't know if just my friends are logging on or if other people are logging on.

A: May I suggest Auditd? See here: <https://security.blogoverflow.com/2013/01/a-brief-introduction-to-auditd/>

Q: Hllw. I grab anki from website:- <https://apps.ankiweb.net/> then I install on Ubuntu 20.04. No problem on

18.04. Error is: Qt fatal: This application failed to start because no Qt platform plugin could be initialized. I do not understand make / cmake. Need anki for learning. Can you help me?

A: Grab Anki from your software centre or launchpad or snap or flatpak or appimage. As you did not give me info on how you built it, I cannot help you troubleshoot.

Q: My friend; it is a problem with Ubuntu and Printer. Help me. I connect with VPN to office and printer Samsung SL-M4080fx. If no VPN then scan is working. When VPN, scan is not working. Network is 192.168.1.10 and printer is 192.168.1.20. Ping working. Printer error cannot access.

A: I suspect the issue will be routing of some sort. What happens is when you connect to a VPN, you get a new IP address, usually on another subnet. Your printer does not know what your new address is, unless you tell it. If you can use your router to do the VPN for you, your printer will move to the new subnet with you, unless you are using static IP addressing. But, if only your Ubuntu pc / laptop

goes, the printer is on another "network" than your pc / laptop.

Q: My PC is a blackbox special and I fresh installed Ubuntu 20.04 on it. I would like it to go to sleep at night and I can resume in the morning. BUT – when I do, it goes off and comes back on. It did not do this in Windows? The only thing that works is if I choose turn off display in the power manager. So what do I do?

A: First things first, you need a swap partition to do so. Make sure you have a partition that is larger than the amount of memory you have as it all needs to be dumped there. If that is in place and it still does not work, let me know and we can troubleshoot further.

Q: It may sound weird, but is smartmontools still a thing with SSD's? I am just asking as I don't want to install something I can't use in the end.

A: Actually that is a good question. I don't actually know. I tried looking at the smartmontools wiki, but I do not

Q&A

see anything. If there is a reader out there who knows, let us know on: misc@fullcirclemagazine.org

Q: Am I hacked? I was looking at users and groups and right at the bottom there is "whoopsie." <Screenshot_2020-04-19_15-41-09> Then I looked further and saw a "shadow" also. How can I unhack?

A: It is good that you looked. However, those are standard groups. You can learn a bit more about groups here: <https://www.howtoforge.com/howto/36845/the-beginners-guide-to-managing-users-and-groups-in-linux/>

Q: I don't like or want Kali any more, how can I change it into Ubuntu?

A: Back up your personal files and install Ubuntu by choosing "use entire disk", so it overwrites Kali completely. The two are not interchangeable.

Q: I am struggling with Apache and my webpages. I have changed the folder permissions to

777 to make it work. Only thing is other people can now delete my files, but if I don't use 777, my stuff does not work.

A: I am going to stop you right there. You NEVER give 777 permissions to anything web facing. Repeat that 50 times and go here: <https://linuxhandbook.com/chmod-command/> Understand this first, before attempting web pages on Apache. If it is web facing, it will be scanned, multiple times an hour.

Q: Any idea how I can get my Chroma keyboard working properly in Ubuntu?

A: You can try: <https://openrazer.github.io/>

Q: I can't get Ubuntu 18.04.01/02/04 to boot from a USB stick once I have made a persistent partition, so I can save some files.

A: It's a bug: <https://bugs.launchpad.net/ubuntu/+source/casper/+bug/1489855>

Q: Sooo weird. I am trying to make a bootable USB with Rufus of Ubuntu. It is not working with Ubuntu 20.04 / 18.04 / 16.04. I have tried different USB sticks, so I know it's not that. The error simply is: Format error: Access to the device is denied

A: Disable your security suite / Antivirus until you are done.

Q: I am not sure what the issue can be. I have an old samsung galaxy s7 phone that I connect to my ubuntu PC. I click on the folder, then the phone asks me to allow, but nothing happens in my file manager. I have tried different cables, all my USB2 and USB3 ports, and still it just sits there.

A: It's to do with the way Linux udev works. You see, it talks to your phone and detects it, but your phone is denying it until you click accept. Now you need to click your file manager into another folder and then come back, as it needs to refresh. So just click any other folder, like home, and then go back and it will see your phone. See: <https://www.linux.com/news/udev-introduction-device-management-modern-linux-system/>

Q: My Ubuntu is very old, don't judge, it is the last version to support my ancient nvidia video card. I don't have money for a new one, but as it stands, it does everything, including playing my games. I am trying to better myself by learning PHP. Problem is that I can't install the version my course wants, it is stuck on a much older version. What am I to do?

A: You will have to find a PPA that back ports it for your version. Otherwise, you can always try with your version, things inside PHP did not change that much in the last year or two.



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



UBUNTU GAMES

Written by Erik

BACK NEXT MONTH?



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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

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



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Full Circle Team



Editor - Ronnie Tucker

ronnie@fullcirclemagazine.org

Webmaster -

admin@fullcirclemagazine.org

Editing & Proofreading

Mike Kennedy, Gord Campbell, Robert Orsino, Josh Hertel, Bert Jerred, Jim Dyer and Emily Gonyer

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