



# Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #200 - December 2023



Help Manual



This PC



Trash



User Files



## Kubuntu & Linux Lite REVIEWS

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# HowTo



Python p.23



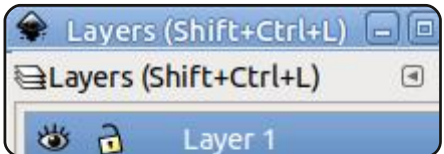
Stable Diffusion p.26

```
\pagestyle{empty}
\begin{tcolorbox}[enhanced,
0.6, watermark stretch=1.0]
\begin{center}
```

Latex p.29



... p.XX



Inkscape p.34

# Graphics

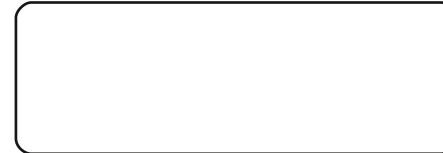


# Full Circle

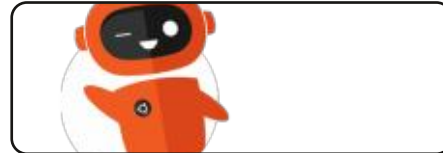
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```
#An alias to make the ls
command more detailed
alias ls = "ls -la --
color=always --classify"
```

Command & Conquer p.21



... p.XX



Ubuntu Devices p.45



The Daily Waddle p.38



My Opinion p.48



Letters p.59



Q&A p.60



Micro This Micro That p.40



Linux News p.04



Everyday Ubuntu p.XX



Review p.56



Review p.52



Ubuntu Games p.64



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## WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

Once again we bring you some Python and Micro stuff, some Latex, some Inkscape, and some Stable Diffusion. We also have the next in Adam's 23.10 reviews, and a couple of other reviews thrown in for good measure.

Well, I hope your holiday season has been better than mine. I could feel a cold creeping up on me over the Christmas weekend and it hit me right, smack bang, on Christmas day. For me, Christmas day didn't exist. I didn't even get dressed. I was either drinking Lemsip or napping. As I write this, I think I'm over the worst of it.

Anyway, enough of my whining and self pity. Enjoy issue #200 and here's to more in 2024!

Don't forget: we have a Table of Contents which lists every article from every issue of FCM. Huge thanks to **Paul Romano** for maintaining: <https://goo.gl/tpOKqm> and, if you're looking for some help, advice, or just a chinwag: remember that we have a **Telegram** group: <https://t.me/joinchat/24ec1oMFO1ZjZDc0>. I hope to see you there. Come and say hello.

**All the best for 2024!**

Ronnie

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## NVK SUPPORTS VULKAN 1.0:

20/11/2023

The Khronos consortium has reached full compatibility of the open NVK driver for NVIDIA video cards with the Vulkan 1.0 specification. The driver has successfully passed all tests from the CTS (Khronos Conformance Test Suite) and is included in the list of certified drivers. Certification has been completed for NVIDIA GPUs based on the Turing microarchitecture (TITAN RTX, GeForce RTX 2060/2070/2080, GeForce GTX 1660, Quadro RTX 3000-8000, Quadro T1000/T2000). The tests were performed in an environment with the Linux kernel 6.5, X.Org X Server 1.20.14, XWayland 22.1.9 and GNOME Shell 44.4. Obtaining the certificate allows you to officially declare compatibility with graphics standards and use the associated Khronos trademarks.

The NVK driver was built from scratch by a team including Karol

Herbst (Nouveau developer at Red Hat), David Airlie (DRM maintainer at Red Hat), and Jason/Faith Ekstrand (active Mesa developer from Collabora). When creating the driver, the developers used official header files and open kernel modules published by NVIDIA. The NVK code used some basic components of the Nouveau OpenGL driver in some places, but due to the differences in the names in the NVIDIA header files and the reverse-engineered names in Nouveau, direct borrowing of the code is difficult and for the most part many things had to be rethought and implemented from scratch.

<https://www.collabora.com/news-and-blog/news-and-events/nvk-reaches-vulkan-conformance.html>

## FEDORA 40 PLANS TO ENABLE SYSTEM SERVICE ISOLATION:

20/11/2023

The Fedora 40 release suggests enabling isolation settings for systemd system services that are enabled by default, as well as services with critical applications such as PostgreSQL, Apache httpd, Nginx, and MariaDB. It is expected that the change will significantly increase the security of the distribution in the default configuration and will make it possible to block unknown vulnerabilities in system services. The proposal has not yet been considered by the FESCo (Fedora Engineering Steering Committee), which is responsible for the technical part of the development of the Fedora distribution. A proposal may also be rejected during the community review process

<https://lists.fedoraproject.org/archives/list/devel-announce@lists.fedoraproject.org/thread/ICCQ4GTH74UCR4LY3LWL0TTKW3RWKBMX/>

## RELEASE OF FREEBSD 14.0:

21/11/2023

Two and a half years since the publication of the 13.0 branch, the devs released FreeBSD 14.0. Installation images are prepared for the architectures amd64, i386, powerpc, powerpc64, powerpc64, powerpc64le, arm64, armv7, aarch64 and riscv64. In addition, builds for virtualization systems (QCOW2, VHD, VMDK, raw) and cloud environments like Amazon EC2, Google Compute Engine and Vagrant are prepared. FreeBSD 14 will be the last to support 32-bit platforms. FreeBSD 15 will have only 64-bit support, but it will be possible to build 32-bit programs and use the COMPAT\_FREEBSD32 mode to run 32-bit executables in a 64-bit environment.

<https://www.freebsd.org/releases/14.0R/announce/>

**ROCKY LINUX 9.3:**

21/11/2023

Rocky Linux 9.3 aimed at creating a free build of RHEL, capable of taking the place of the classic CentOS, is presented. The distribution is binary compatible with Red Hat Enterprise Linux and can be used as a replacement for RHEL 9.3 and CentOS 9 Stream. Support for the Rocky Linux 9 will be available until May 31, 2032. Installation of Rocky Linux iso's are prepared for x86\_64, aarch64, ppc64le and s390x (IBM Z) architectures. Additionally they offer live-builds with GNOME and Xfce desktops, published for the x86\_64 architecture (live-builds with KDE is delayed).

The Rocky Linux distribution is being developed under the auspices of the Rocky Enterprise Software Foundation, which is registered as a public corporation, not aimed at making a profit. The owner of the organization is Gregory Kurtzer, founder of CentOS, but the management functions under the charter are delegated to the board of directors, to which the community is elected by the participants involved in the

work on the project. For the development of advanced products based on Rocky Linux and support of this distribution, there is a commercial company Ctrl IQ, which received \$26 million in investment. Companies such as Google, Amazon Web Services, GitLab, MontaVista, 45Drives, OpenDrives and NAVER Cloud have joined the development and financing of the project.

<https://rockylinux.org/news/rocky-linux-9-3-ga-release/>

**RELEASE OF OWNCAST 0.1.2:**

21/11/2023

The release of Owncast 0.1.2, developing a server for streaming video and chat, has been published. The server runs on the user's equipment and unlike Twitch, Facebook Live and YouTube Live services, allows you to fully control the broadcasting process and set your chat rules. Management and interaction with users is carried out through a web-interface. The project code is written in Go and under the MIT license.

To upload video to the server, you can use any software that

supports the RTMP protocol, for example, OBS, Streamlabs, Restream, Zoom and Jitsi. You can broadcast live with the capture of video from a web camera or HDMI-port, using FFMpeg. The server receives the original video stream, converts it depending on the settings and segments it for transfer to end users using the HLS (HTTP Live Streaming) protocol. You can generate several streams with different quality and transfer them with an adaptive bitrate. To optimize bandwidth, video can be transmitted to users using storage services compatible with Amazon S.3 as intermediaries.

The new version has added support for user exit events from the chat; there is log of requests from IP addresses with unaccepted keys; users are prohibited from using the displayed names, registrations for chatbots are via the API; a modal dialog for the confirmation request is implemented.

<https://github.com/owncast/owncast/releases/tag/v0.1.2>

**ENDEAVOUROS 23.11:**

21/11/2023

A new release of the EndeavourOS project 23.11 "Galileo," which replaced the Antergos distribution, was launched, the development of Antergos was discontinued in May 2019 due to the lack of free time in the remaining maintainers to maintain the project at the proper level. The size of the installation image is 2.4 GB (x86\_64, the build for ARM develops separately).

Endeavour OS allows the user to install Arch Linux with the chosen desktop without unnecessary complications, bog standard DE, offered by the developers of the selected desktop, without additional pre-installed programs. The distribution offers a simple installer to install the Arch Linux base environment with the KDE desktop by default and the ability to install one of the standard desktops based on Mate, LXQt, Cinnamon, Xfce, GNOME, Budgie, from the repos, as well as mosaic, i3, BSPWM and Sway window managers. Work is underway to add support to Qtile and Openbox window managers, UKUI, LXDE and

Deepin desktops.

<https://endeavouros.com/news/slimmer-options-but-lean-and-in-a-new-live-environment-galileo-has-arrived/>

## NEW VERSIONS OF CLAWS MAIL 3.20.0 AND 4.2.0:

22/11/2023

After one and a half years of development, the releases of the easy and fast Claws Mail (3.20.0 and 4.2.0) e-mail client were published, which separated from the Sylpheed project in 2005 (from 2001 to 2005). The projects were developed jointly, Claws was used to test the future Sylpheed innovations. The Claws Mail interface is built using GTK, the code is distributed under the GPL license. The 3.x and 4.x branches

are developed in parallel and differ in the version of the GTK library used: GTK2 is used in the 3.x branch, and in 4.x - GTK3.

<https://lists.claws-mail.org/pipermail/users/2023-November/032391.html>

## RELEASE OF ARCHINSTALLER 2.7:

23/11/2023

Archinstaller 2.7 has been published, which since April 2021 as an option is part of the installation of Arch Linux. Archinstall works in console mode and can be used instead of the default manual distribution mode. Separately the implementation of the graphical interface of the installation is, but it is not included in the Arch Linux installation

images and has not been updated for more than three years.

Archinstall provides a dialog (guided) and automated modes. In the dialog mode, the user is consistently asked questions, covering the basic settings and actions from the installation manual. In the automated mode, you can use scripts to deploy typical configurations. The installer also supports installation profiles, for example, the "desktop" profile for the desktop selection (KDE, GNOME, Awesome) and the installation of the packages necessary for its operation, or, for instance, a "webserver" or "database" profiles to select and install the web server and DBMS.

<https://github.com/archlinux/archinstall/releases/tag/v2.7.0>

## QT CREATOR 12:

23/11/2023

The release of an integrated development environment, Qt Creator 12.0 designed to create cross-platform applications using the Qt library has been published. Both the development of classical programs in the C++ language and the use of the QML language, which uses JavaScript to define scripts, and the structure and parameters of the interface elements are set by CSS-like blocks, are supported. There are finished builds for Linux, Windows and macOS.

<https://www.qt.io/blog/qt-creator-12-released>

## THE OPENSUSE PROJECT CHOOSES A NEW LOGO:

23/11/2023

The developers of the openSUSE distribution announced they are not accepting any more applications for the logo contest in which anyone can participate. The voting will last until December 10 and will allow you to choose new logos for the entire openSUSE project and for the distributions



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developed in its ecosystem, like Tumbleweed, Leap, Slowroll and Kalpa. In the competition, 36 logos openSUSE, 18 - Kalpa, 24 - Slowroll, 21 - Leap and 32 - Tumbleweed were accepted.

<https://news.opensuse.org/2023/11/23/selecting-the-new-face-of-os-is-underway/>

## RELEASE OF PROXMOX VE 8.1:

24/11/2023

Proxmox Virtual Environment 8.1, a specialized Linux distribution based on Debian GNU/Linux, aimed at deploying and maintaining virtual servers using LXC and KVM, and capable of replacing products such as VMware vSphere, Microsoft Hyper-V and Citrix Hypervisor, is out. Installation size of the install iso 1.2 GB.

Proxmox VE provides means to deploy a fully finished system of virtual servers at industrial level with a web-based interface designed to manage hundreds or even thousands of virtual machines. The distribution has built-in tools for backing up virtual environments

and for clustering, out-of-box support available, including the ability to migrate virtual environments from one node to another without stopping work. The web-interface features: support for secure VNC consoles; control of access to all available objects (VM, storage, nodes, etc.) role-based; support for various authentication mechanisms (MS ADS, LDAP, Linux PAM, Proxmox VE authentication)

<https://forum.proxmox.com/threads/proxmox-ve-8-1-released.136959/>

## RELEASE OF MPV 0.37:

25/11/2023

A new version of the MPV 0.37 video player was released. The MPV focuses on developing new features and ensuring the constant transfer of innovations from MPlayer repositories, without worrying about maintaining compatibility with MPlayer. The MPV code falls under the LGPLv2.1+ license, some parts remain under the GPLv2, but the process of transition to the LGPL is almost complete and the remaining GPL

can be used to disable the option "-enable-lgpl."

<https://github.com/mpv-player/mpv/releases/tag/v0.37.0>

## RELEASE OF RADIX CROSS LINUX 1.9.226:

25/11/2023

The latest version of the Radix cross Linux 1.9.226 distribution, built using the own Radix.pro builder, that simplifies the formation of distributions for embedded systems, is available. Downloadable builds are available for devices based on RISC-V, ARM/ARM64, MIPS and x86/x86\_64 architectures. The installation of the system does not require connection to the Internet. The build system code is distributed under the MIT license.

The release of 1.9.226 is supplemented by GRUB and EDK II for the Orange Pi 5 device based on RK3588s SoC. The EDK II (orange-pi5.spi-flash.image) image is available in the orange-pi5 directory and can be written with U-Boot or mtdutil-s. If you install the system using the Setup utility on

the NVMe disk (/dev/nvme0n1), then EDK II will be written automatically and then you can work with the board the way you are used to working with ordinary PCs and installing various OSs from external media.

It is also worth noting that the release includes an image for the VisionFive2 SBC with the RISC-V architecture. For this architecture, a toolkit has been created that allows you to grab programs that use GNU Libc and programs for microcontrollers like GD32VF103 and many others. The tools can be found in the toolchains directory for all popular architectures.

<https://radix.pro/platform/install/>

## RELEASE OF OPENMANDRIVA Lx 5.0:

25/11/2023

After one and a half years of development, the release of the OpenMandriva Lx 5.0 distribution is presented. The project is being developed by the community after Mandriva S.A. transferred the project to the non-profit organization "OpenMandriva

Association." Live-bulds are offered for downloading; x86\_64 architecture with KDE (full 3.0 GB, 2.5 GB abbreviated and optimized for AMD Ryzen, ThreadRipper and EPYC), GNOME and LXQ processors. Separately, server builds and images for boards based on the ARM64 (Raspberry Pi 4) architecture will be published in the near future. Users of the continuous updated OpenMandriva ROME branch, which provided access to the innovations developed for the OpenMandriva Lx branch, have already received all the necessary updates (no distribution required separately).

<https://www.openmandriva.org/en/news/article/openmandriva-lx-5-0-released>

## PIPEWIRE REACHES 1.0.0:

26/11/2023

There was a release of the Multimedia Server PipeWire, which was marked as the first stable release, which also marks the maturity of the project. At the API and ABI level, version 1.0 is backwards compatible with the 0.3 branch. PipeWire is positioned as a

server that replaces the PulseAudio sound server and differs from it by the addition of means to work with video streams, the ability to process the sound with minimal delays and a new security model to manage individual devices access levels and threads. The project is supported in GNOME and already by default, is used in Fedora Linux, RHEL, Ubuntu, Debian, SUSE/openSUSE and many other Linux distributions. The project code is written in C and under the LGPLv2.1 license.

PipeWire provides opportunities for processing any multimedia streams, is able to mix and redirect streams with video, it can be used to control video sources, such as video capture devices, web cameras or the content of the screen displayed by applications.

PipeWire can also act as a sound server that provides minimal latency and provides functionality that combines PulseAudio and JACK capabilities, including taking into account the needs of professional sound processing systems that PulseAudio could not claim. In addition, PipeWire offers an advanced security model that allows you to manage access at individual devices level and specific

streams, and simplifies the organization of sound and video from isolated containers and to them. One of the main goals is to support applications in Flatpak format and work in a graphical stack based on Wayland.

<https://github.com/PipeWire/pipewire/blob/master/NEWS>

## DELTA CHAT 1.42:

27/11/2023

A new release of Delta Chat 1.42, working without specialized servers and using email as a transport (chat-over-email, a specialized mail client working as a messenger) is available. The application code is distributed under the GPLv3 license, and the base library is available under the MPL 2.0 (Mozilla Public License). The release is available in Google Play and F-Droid, as well as in builds for Linux (ApplImage, pacman, rpm, deb), Windows and MacOS.

Delta Chat does not use its own servers and can work through almost any mail server that supports SMTP and IMAP (Push-IMAP technician is used to quickly

detect new messages). Encryption using OpenPGP and end-to-end encryption is supported using the Autocrypt or SecureJoin decentralized protocols. The traffic is encrypted using TLS in the implementation of regular system libraries.

Delta Chat is fully controlled by the user and is not tied to centralized services. No registration in new services are required - an existing email can be used as an identifier. If the correspondent does not use Delta Chat, he can read the message as a regular letter. The fight against spam is carried out by weeding messages from unknown users (by default, only messages from users from the address book and those who previously sent messages, as well as responses to their own messages are displayed. One can display attachments like attached images and videos.

<https://delta.chat/en/2023-11-23-jumbo-42>



**RELEASE OF INCUS 0.3:**

27/11/2023

The third edition of the Incus project is presented, in which the Linux Containers community is developing a fork of the LXD container management system, created by the old development team that once created LXD. The Incus code is written in Go and under the Apache 2.0 license.

The Linux Containers community oversaw the development of LXD before Canonical decided to develop LXD alone as a corporate project. The goal of the fork is to provide an alternative to the LXD project, controlled by the company, LXD. As part of the Incus project, they also plan to eliminate some conceptual errors made during the development of LXD, which previously could not be corrected without breaking backward compatibility.

Incus (Company) provides funds for centralized management of containers and virtual machines deployed on both one host and in a cluster of several servers.

<https://discuss.linuxcontainers.org/t/incus-0-3-has-been-released/18351>

**COMENTARIO 3.0.0:**

28/11/2023

After seven months of development, the Comentario 3.0.0 project was released, developing a free comment server for web pages, which was forked from the now-abandoned Comment server. Comentario allows you to quickly embed the ability to leave comments to your site or blog, by just adding a JavaScript file, comentario.js to the page, at the size of about 20 KB. They support tree layout of discussions, the use of the Markdown format, authentication through social networks, the task of the rules of moderating, the connection of external services for blocking violations and management through an administrator interface. The server code of the project is written in Go, and the client code in JavaScript using the Angular framework. Developments of the project are distributed under the MIT license. You can freely assess the capabilities of the engine, like

test and the admin panel.

<https://docs.comentario.app/en/about/features/>

**RED HAT TO REMOVE X.ORG SERVER AND RELATED COMPONENTS FROM RHEL 10:**

28/11/2023

Red Hat has published a plan to terminate support for the X.org server in the Red Hat Enterprise Linux 10 distribution. Initially, X.org Server was declared obsolete and scheduled for removal in the future RHEL branch a year ago- in the notes of the release of RHEL 9.1. The ability to run the X11 applications in the Wayland session provided with the XWayland DDX server will be saved. The first release of the RHEL 10 branch, which will terminate X.org Server, is scheduled for the first half of 2025.

The transition from the X Window System, which will turn 40 next year next year, to a newer Stage, based on Wayland. Red Hat is actively involved in developing Wayland from the very beginning.

Over time, it became clear that the X11 protocol and the X.org server have fundamental problems that need to be solved, and Wayland has become that solution.

<https://www.redhat.com/en/blog/rhel-10-plans-wayland-and-xorg-server>

**TAILS 5.20:**

28/11/2023

A new release of the specialized distribution Tails 5.20 (The Amnesic Incognito Live System), based on Debian and designed for anonymous access to the internet, was announced. Anonymous access to Tails is provided by the Tor system. All connections, except traffic over the Tor network, are blocked by the default packet filter. Encryption is used to store user data in between launches. You can download the iso-image, capable of working in Live mode, measuring 1.2 GB.

[https://tails.net/news/version\\_5.20/index.en.html](https://tails.net/news/version_5.20/index.en.html)

**PEERTUBE 6.0:**

29/11/2023

The decentralized platform for video hosting and video broadcasting, PeerTube, has a 6.0 version out. PeerTube offers an independent alternative to YouTube, Dailymotion and Vimeo, an independent of individual providers, using a content distribution network based on P2P communications and linking visitors browsers. The project is distributed under the AGPLv3 license.

<https://framablog.org/2023/11/28/peertube-v6-is-out-and-powered-by-your-ideas/>

**RELEASE OF ARMBIAN 23.11:**

30/11/2023

Armbian 23.11 has been released, providing a compact system environment for various single-board computers with processors based on ARM, RISC-V and x86 architectures, including various models of Raspberry Pi, Odroid, Orange Pi, Banana Pi, Helios64, pine64, Nanopi and Cubieboard based on Allwinner,

Amlogic, Actionsemi, Freescale / NXP, Marvell Armada, Rockchip, Radxa and Samsung Exynos processors.

Debian and Ubuntu packages are used to generate builds, but the environment is completely rebuilt using its own build system, including optimizations to reduce size, increase performance and apply additional security mechanisms. For example, the /var/ log partition is mounted using zram and stored in RAM in compressed form with data flushed to the drive once a day or upon shutdown. The / tmp partition is mounted using tmpfs. ZSWAP is used for swapping.

The project supports more than 30 Linux kernel builds for different ARM and ARM64 platforms. To simplify the creation of your own system images, packages and distribution editions, an SDK is provided. When logging in via SSH, an option is provided to use two-factor authentication. The box64 emulator is included, allowing you to run programs compiled for processors based on the x86 architecture. Ready-made packages are offered for running custom environments based on KDE, GNOME, Budgie, Cinnamon, i3wm,

Mate, Xfce and Xmonad.

<https://translate.google.com/website?sl=auto&tl=en&hl=en-US&u=https://www.armbian.com/newsflash/armbian-23-11-topi/>

**RELEASE OF CRIU 3.19:**

30/11/2023

A release of the CRIU 3.19 (Checkpoint and Restore In Userspace) toolkit, designed to save and restore processes in the user's space, has been published. The toolkit allows you to keep the state of one or a group of processes, and then resume operation from a saved position, including after rebooting the system or on another server without breaking the already installed network connections. The project code falls under the GPLv2 license.

In the applications of CRIU technology, it is used to ensure the reboot of the OS without violating the continuity of the continuous execution of long-term processes, the Live-migration of isolated containers, the acceleration of the start of slow processes (you can

start working with the state saved after initialization), the implementation of kernel updates without restarting services, the periodic preservation of the state of the refillable computational tasks for the resumption of work in the case of a crash, etc. CRIU is used in container management systems such as OpenVZ, LXC/LXD and Docker. The changes required for the CRIU operation are included in the main composition of the Linux kernel.

<https://github.com/checkpoint-restore/criu/releases/tag/v3.19>

**RELEASE OF CINNAMON 6.0 WITH INITIAL WAYLAND SUPPORT:**

30/11/2023

After 6 months of development, the release of Cinnamon 6.0 was announced. The Linux Mint distribution community develops a fork of the GNOME shell, Nautilus file manager and Mutter's window manager, aimed at providing an environment in the classic style of GNOME 2 with the support of interaction with GNOME Shell. Cinnamon is based on GNOME

components, but these components are supplied as a periodically synchronized fork not associated with GNOME external dependencies. Changing the number of the version to 6.0 is not associated with any particularly important changes, but only continues the tradition of using even decimal numbers to number stable versions (5.6, 5.8, 6.0, etc.). The new Cinnamon release will be proposed in the Linux Mint 21.3 distribution, which is scheduled to be released in December.

<https://github.com/linuxmint/cinnamon/releases/tag/6.0.0>

## RELEASE OF MESA 23.3:

30/11/2023

A release of the free implementation of the OpenGL and Vulkan API - Mesa 23.3.0 has been published. The first release of the Mesa 23.3.0 branch, has an experimental status - after the final stabilization of the code, a stable version 23.3.1 will be released.

In Mesa 23.3, support for the Vulkan 1.3 graphics API is available in the anv drivers for Intel GPUs,

radv for AMD GPUs, tu for Qualcomm GPUs, in the lavapipe software rasterizer (lvp), and in emulator mode (vn). Vulkan 1.1 support is implemented in the NVK driver (NVIDIA), and Vulkan 1.0 in v3dv (Broadcom VideoCore VI GPU from Raspberry Pi 4).

Mesa also provides full OpenGL 4.6 support for i965, iris (Intel), radeonsi (AMD), zink, llvmpipe, virgl (virgil3D virtual GPU for QEMU/KVM), freedreno (Qualcomm Adreno) and d3d12 (OpenGL layer over DirectX 12). OpenGL 4.5 support is available for AMD (r600) and NVIDIA (nvc0) GPUs.

<https://lists.freedesktop.org/archives/mesa-announce/2023-November/000740.html>

## FLOWBLADE 2.12:

01/12/2023

The multi-track system of non-linear video editing Flowblade 2.12, which allows you to compile movies and videos from a set of individual videos, sound files and images, is available. The editor provides a means for trimming clips with accuracy down to individual

frames, processing them with filters and multi-level layout of images for embedding in the video.

The project code is written in Python and distributed under the GPLv3 license. The builds are prepared in Flatpak format. The MLT framework is used for video editing. The FFmpeg library is used to process various video, sound and images formats. The interface was built using PyGTK. Mathematical calculations uses the NumPy library. PIL is used for image processing. It is possible to use plugins with the implementation of video effects from Frei0r, as well as sound plugins LADSPA and G'MIC image filters.

<https://github.com/jliljeb/flowblade/releases/tag/v2.12>

## REPIXTURE 3.11.0:

01/12/2023

A new version of Repixture 3.11.0, a deliberately simplified survival game in a sandbox, built on the Minetest engine, has been released. The main elements of the game are agriculture, animals and monsters, villages and residents,

achievements. The game uses its original crafting system. The project code is written in Lua and distributed under the LGPL-2.1 license.

In the new version, they added an API, rp\_music, replaced some music tracks, updated translations. In addition, a new API is under development, which should replace Mobs Redo. At the moment, mechanics as breeding, sounds, animation, etc. have been implemented. The API is developed in a separate branch "mobs\_new2."

<https://content.minetest.net/packages/Wuzzy/repixture/>

## RELEASE OF WARZONE

### 2100 4.4.2:

02/12/2023

The release of the strategic (RTS) game Warzone 2100 4.4.2, is out. The game was originally developed by Pumpkin Studios and released on the market in 1999. In 2004, the source code was opened under the GPLv2 license and the game continued to be developed by the community. Both single-player against bots and network games



are supported (PVE and PVP). Packages for Ubuntu, Windows and macOS.

The 4.4 branch is distinguished by two new modes of ground rendering: classic (original style from the first versions) and high-quality (soil textures with normals). The shadow render has been greatly improved, the model has been updated and the performance has also been improved. For multiplayer, they added "fast messages" and a command strategy selection menu. At the request of the community, the balance of the multiplayer game has been changed.

<https://wz2100.net/news/version-4-4-2/>

## LDL MULTIMEDIA LIBRARY OPTIMIZED FOR LOW-POWER SYSTEMS:

03/12/2023

The first edition of the LDL (Little DirectMedia Layer) multimedia library, developed with the goal of working on outdated equipment, is available. The library provides a simple cross-platform

API for working with 2D graphics, window and operating events management, suitable for the development of simple games and multimedia applications. The library is already used in the development of an alternative open game engine for the game Arcanum. The project code is written in C++ 98 and under the BSL 1.0 (Boost Software License).

The author pays great attention to optimizing the library for outdated platforms and creating a single portable C++ API, which can be used in various operating systems (the API is provided for programs written in C). It is supported in Linux (Debian 3+) and Windows (Windows 95+).

Support for rendering on the GPU using OpenGL 1.2 and OpenGL 3.0, as well as software rendering on the CPU (forced) is available. The rendering method can be changed dynamically during the application. Linux supports XLib, but Wayland support is also in development. Functions are provided for sound and loading of various image formats (bmp, png, tga, jpg).

In the future, they plan to add draw support using Direct3D

9/10/11, streaming sound, text output using the Freetype library, the API for working with streams and networking. They also plan to port to Android, iOS and macOS platforms.

<https://github.com/JordanCpp/Lib-LDL>

## DEBIAN 12.4 UPDATE:

11/12/2023

A bug-fix update of the Debian 12.4 distribution was published, that includes the accumulated package updates and added patches to the installer. The release includes 94 updates with the elimination of stability problems and 65 updates with the elimination of vulnerabilities. The release of Debian 12.3 superceded due to an error in the package with the kernel linux-image-6.1.0-14, which can cause data damage to the Ext4 FS.

Debian 12.4 comes with the linux-image-6.1.0-15 kernel based on kernel version 6.1.66 and including fixes. The changes in Debian 12.4 also include an update to the fresh stable versions of the

gnome-shell, mutter, nvidia-graphics-drivers, postgresql-15, qemu, system, xen, tbsync, gosa, lastpass-cli. They dropped the package gimp-dds, which is no longer required, as its functionality is now built into GIMP.

<https://www.debian.org/News/2023/20231210>

## LINUX KERNEL 6.6.6 UPDATE:

12/12/2023

Greg Kroah-Hartman, responsible for supporting a stable branch of the Linux kernel, published a landmark release of the core 6.6.6, which offers one change affecting the wireless cfg80211. The change rolls back the bug added to issue 6.6.5, which led to regressions due to the fact that, together with the correction to the kernel 6.6.5 from the 6.7 branch, another associated commit was not transferred. A similar rollback of the correction is proposed in version 6.1.67.

The regressive change led to mutual blocking in network managers working in the user's space. As a result, there was a

freezing of the processes of network managers during the reboot, completion of work or leaving in sleep mode. For example, the problem led to hanging when trying to stop NetworkManager, iwdd and wpa\_supplicant services after updating the kernel to version 6.6.5 or 6.1.66. This also happened, after the installation of the 6.6.5 core, there was a discontinuation of the Wi-Fi driver brcmfmac for wireless chips Broadcom.

<https://lkml.org/lkml/2023/12/11/226>

## RELEASE OF FREERDP 3.0: 12/12/2023

A new release of the FreeRDP 3.0.0 project, offering free implementation of the remote access protocol to the RDP (Remote Desktop Protocol), developed, based on Microsoft specifications, has been announced. The project provides a library to integrate RDP support into third-party applications and a client that can be used for remote connection to the Windows desktop. The project code under the Apache 2.0 license.

<https://github.com/FreeRDP/FreeRDP/releases/tag/3.0.0>

## CANONICAL HAS TRANSFERRED THE LXDM PROJECT TO THE AGPLV3 LICENSE: 13/12/2023

Canonical has published a new version of the LXDM 5.20 container management system, which is notable for changing the license for the project and the introduction of the need to sign on the transfer of property rights to the code when accepting changes in LXDM. The code license added to LXDM by Canonical employees has been changed from Apache 2.0 to AGPLV3, and the code of third-party members, to which Canonical has no property rights, remains under Apache 2.0. Since Canonical does not have the ability to change the license for the entire LXDM code, the project will now be supplied under mixed conditions - part of the code under AGPLV3, and part under Apache 2.0. The transition to a new license is due to the desire to unify the license with other Canonical

server products, which use AGPLV3.

The code of the old versions remains available under the Apache 2.0 license, but all changes made to the overlicensed components will be published only under the AGPLV3 license, which will prevent Incus from fork to transfer changes from LXDM without transferring its code base to the AGPLV3 license. The Apache 2.0 and AGPLV3 licenses have one-sided compatibility, which boils down to the fact that the code under the Apache 2.0 license can be included in the code under the AGPLV3 license, but not the other way. The change means the complete termination of cooperation between the LXDM and Incus projects, since the transfer of changes from LXDM to Incus is hampered by a new license, and the need to sign a CLA agreement, which Incus developers do not intend to sign.

<https://discourse.ubuntu.com/t/lxd-5-20-has-been-released/40865>

## NOT SO FREE ARDOUR 8.2: 14/12/2023

The release of the supposedly free, but paid in real life, sound editor Ardour 8.2 designed for multi-channel recording, processing and mixing sound has been published. Ardour provides a multi-track timeline and an unlimited level of reverting changes throughout the file (even after the program is closed), support for a variety of hardware interfaces. The program is positioned as a 'free' (but costs a minimum of \$1 a month) analogue of professional tools ProTools, Nuendo, Pyramix and Sequoia. The code is distributed under the GPLv2 license. In the near future, ready-made builds for Linux will be formed.

<https://ardour.org/whatsnew.html>

## WILL THE LINUX KERNEL TRACK "HYPOTHERMIA" ?: 14/12/2023

Added initial support for cold and critical\_cold trip point. Many if not all hwmon and thermal device have normally trip point for hot

temperature and for cold temperature.

Till now only hot temperature were supported. Add support for also cold temperature to permit complete definition of cold trip point in DT.

Thermal driver may use these additional trip point to correctly set interrupt for cold temperature values and react based on that with various measure like enabling attached heater, forcing higher voltage and other specialized peripherals.

For hwmon drivers this is needed as currently there is a problem with setting the full operating range of the device for thermal devices defined with hwmon.

New control points THERMAL\_TRIP\_COLD and THERMAL\_CRP\_CRIT\_COLD can be added to the Thermal subsystem, allowing to call other functions.

<https://lore.kernel.org/lkml/20231212221301.12581-1-ansuelsmth@gmail.com/>

## THE OPENSUSE LOGO

### DEBACLE:

15/12/2023

Douglas DeMaio, SUSE manager in charge of marketing and engagement with the openSUSE community, has announced a decision to hold an additional vote on the logo's selection in response to the criticism of the voting process by participants in the draft process and the lack of an option to maintain the current logo. The logo contest was held taking the votes of everyone into account, regardless of the involvement in the development, including people who are not related to the openSUSE could participate in the voting, which did not fully take into account the collective identity of the developers.

As a result, it was decided to give the project participants the opportunity to express their opinion, for which a separate vote on the choice between the existing logo and the proposed new design will be held among the members of the openSUSE project.

<https://news.opensuse.org/2023/12/15/insights-from-the-os-logo-contest/>

## MANJARO LINUX 23.1

### RELEASED:

16/12/2023

Manjaro Linux 23.1 distribution, built on Arch Linux and focused on novice users, was released. The distribution is notable for the presence of a simplified and user-friendly installation process, support for the automatic identification of equipment and installation of drivers necessary for its operation. Manjaro comes as live-builds with KDE (3.7GB), GNOME (3.5 GB) and Xfce (3.5GB) graphics environments. With the participation of the community builds with Budgie, Cinnamon, Deepin, LXDE, LXQt, MATE and i3 are available.

To manage repositories in Manjaro, the BoxIt toolkit, designed like Git, is used. The repository is supported on the principle of continuous inclusion of updates (rolling), but new versions pass an additional stage of stabilization. In addition to its own repository,

there is support for the use of the AUR (Arch User Repository). The distribution is equipped with a graphical installer and a graphical interface for system configuration.

<https://forum.manjaro.org/t/manjaro-23-1-vulcan-released/153458>

## THE LINUX 6.8 KERNEL IS SCHEDULED TO INCLUDE THE FIRST NETWORK DRIVER IN RUST:

18/12/2023

The Linux 6.8 kernel, includes changes that add the initial Rust wrapper above the phylib abstraction level and the ax88796b\_rust driver that uses this wrapper, to the kernel, providing support for the PHY interface of the Asix AX88772A (100MBit) Ethernet controller. The driver includes 135 lines of code and is positioned as a simple working example for creating network drivers in Rust, ready for use with real hardware.

In terms of functionality, the Rust driver is completely equivalent



to the old ax88796b driver , written in C, and can be used with X-Surf 100 network cards equipped with the AX88796B chip. Both drivers, C and Rust, will co-exist in the kernel, and can be included depending on user preference. To enable the Rust driver, Kconfig provides the AX88796B\_RUST\_PHY setting, along with which you also need to enable the Rust binding over phylib using the RUST\_PHYLIB\_ABSTRACTIONS parameter.

<https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git/commit?id=d6beb085e8ff3d9547df8a5a55f15ccc7552c5d0>

## THE RADV MESA-DRIVER SUPPORTS VULKAN EXTENSIONS FOR H.265 VIDEO ENCODING:

19/12/2023

David Airlie, reported on the implementation in radv, delivered to the Mesa Vulkan-driver for AMD, on the possibility of using Vulkan extensions in hardware to speed up video encoding in the

DRM (Direct Rendering Manager) subsystem in the Linux kernel. For the video format h.265, the implementation is already passing all CTS (Compatibility Test Suite) tests successfully, and for the h.264 format one unpassed test remains. It is reported that the initial support for Vulkan to encode video in h.265 and h.264 video encoding is ready.

Addition: The Khronos Consortium, which is engaged in the development of graphic standards, presented the final version of the Vulkan extensions for video encoding in H.264 and H.265 formats (prepared only extensions for decoding, and the extensions for coding were in development). Ready to use video encoding extensions are included in the Vulkan 1.3.274 specification. In the future, they plan to develop similar Vulkan extensions for encoding and decoding video in AV1 format.

<https://airlied.blogspot.com/2023/12/radv-vulkan-video-encode-status.html>

## RELEASE OF QUBES 4.2.0 OS:

19/12/2023

After almost two years of development, the release of Qubes 4.2.0, which implements the idea of using a hypervisor for strict isolation of applications and components of the OS (each class of applications and system services work in individual virtual machines). For it to work properly, a system with 16 GB of RAM (minimum - 6 GB) and 64-bit Intel or AMD CPU with support for VT-x EPT/AMD-vc RVI and VT-d/AMD IOMMU technologies, preferably the presence of Intel GPU (GPU NVIDIA and AMD are not well tested). The size of the installation image is 6 GB (x86\_64).

Applications in Qubes are divided into classes depending on the importance of the data being processed and the tasks being solved. Each class of applications (for example, work, entertainment, banking operations), as well as system services (network subsystem, firewall, storage, USB stack, etc.), work in separate virtual machines running using the Xen hypervisor. In this case, these

applications are available within one desktop and are allocated (for clarity) a different color of the window frame. Each environment has access to read the base root FS and local storage, which does not intersect with the storages of other environments, to organize the interaction of applications, they used a special service.

<https://www.qubes-os.org/news/2023/12/18/qubes-os-4-2-0-has-been-released/>

## I-MAIL EXCHANGE PLATFORM ZULIP 8:

19/12/2023

The release of Zulip 8, a server platform for deploying corporate instant messengers suitable for communication between employees and groups of developers, is presented. The project was originally developed by Zulip and opened after its acquisition by Dropbox under the Apache 2.0 license. The server part code is written in Python using the Django framework. The client software is available for Linux, Windows, macOS, Android and iOS, and a built-in web-based interface is

also provided.

The system supports both direct messaging between two people and the conduct of group discussions. Zulip can be compared to Slack and considered as an intra-corporate analogue of Twitter, used for communication and discussion of working issues in large groups of employees. Meaning that means are provided to track the status and participate simultaneously in several discussions using a thread-seeding message display model, which is the optimal compromise between room binding in Slack and Twitter's single public space. The simultaneous thread-like display of all the discussions allows all groups to be covered in one place, while maintaining a logical separation between them.

<https://blog.zulip.com/2023/12/15/zulip-8-0-released/>

## DIETPI 8.25:

19/12/2023

A new release of a specialized distribution DietPi 8.25, designed for use on single-board PCs based on ARM and RISC-V

architectures such as Raspberry Pi, NanoPi, BananaPi, VisionFive etc, is out. The distribution is built on Debian and is available in builds for more than 50 boards. DietPi can also be used to create compact environments for virtual machines and conventional PCs based on x86\_64 architecture. Builds for boards are compact (average 130 MB) and take up less space on the storage, compared to the Raspberry Pi OS and Armbian.

The project is optimized for the minimum consumption of resources and develops several of its own utilities: the interface for installing DietPi-Software applications, the configurator DietPi-Config, the DietPi-Backup backup system, the mechanism for maintaining the temporal logs of DietPi-Ramlog (also supported by rsyslog), the interface for setting the priorities of DietPi-Services processes and the DietPi-Update update. Utilities provide a console user interface with a menu and whiptail-based dialogues whiptail. The mode of full automation of the installation is supported, allowing you to install on boards without the user's participation.

The new version has updated

the builds based on the Debian 11 and Debian 12 repositories. They added support for the Orange Pi 3B based on the ARM architecture and PINE64 STAR64 board based on the RISC-V architecture. They also added initial support for Raspberry Pi 5 board Improved support for Raspberry Pi and Quartz64 boards, for example, the Linux 6.6.7 and U-Boot 2023.

[https://dietpi.com/docs/releases/v8\\_25/](https://dietpi.com/docs/releases/v8_25/)

## USING SSH OVER A UNIX SOCKET INSTEAD OF SUDO TO GET RID OF SUID FILES:

20/12/2023

Timothee Ravier from Red Hat, a maintainer of the Fedora Silverblue and Fedora Kinoite projects, proposed a way to avoid using the sudo utility, which uses the suid bit to escalate privileges. Instead of sudo, for a normal user to execute commands with root rights, they propose to use the ssh utility with a local connection to the same system via a UNIX socket and verification of permissions based on SSH keys.

Using ssh instead of sudo allows you to get rid of suid programs on the system and enable the execution of privileged commands in the host environment of distributions that use container isolation components, such as Fedora Silverblue, Fedora Kinoite, Fedora Sericea and Fedora Onyx. To restrict access, confirmation of authority using a USB token, (like a Yubikey) can be used.

<https://tim.siosm.fr/blog/2023/12/19/ssh-over-unix-socket/>

## RELEASE OF THE ANONYMOUS I2P 2.4.0:

20/12/2023

Anonymous network I2P 2.4.0 and C++ client i2pd 2.50.0 was released. I2P is a multi-layered anonymous distributed network running on top of the conventional Internet, actively using end-to-end encryption that guarantees anonymity and isolation. The network is built in P2P mode and is formed thanks to the resources (passage) provided by network users, which allows you to do without the use of centrally managed servers (communications

within the network are based on the use of encrypted unidirectional tunnels between the participant and peer-s).

On the I2P network, you can anonymously create websites and blogs, send instant messages and emails, share files and organize P2P networks. For the construction and use of anonymous networks for client-server (sites, chats) and P2P (files, cryptocurrencies) applications, I2P clients are used. The basic I2P client is written in Java and can run on a wide range of platforms such as Windows, Linux, macOS, Solaris, etc. I2pd is an independent implementation of the I2P client in the C++ and is distributed under a modified BSD license.

<https://geti2p.net/en/blog/post/2023/12/18/i2p-release-2.4.0>

## RELEASE OF THE QEMU 8.2:

20/12/2023

A new release of the QEMU 8.2 project is presented. As an emulator, QEMU allows you to run a program assembled for one

hardware platform on a system with a completely different architecture, for example, to execute an application for ARM on an x86-compatible PC. In virtualization mode in QEMU, the performance of code in an isolated environment is close to the hardware system by directly executing instructions on the CPU and the use of the Xen hypervisor or KVM module.

The project was originally created by Fabrice Bellard to enable the launch of x86 Linux executables on architectures other than x86. Over the years, support for complete emulation for 14 hardware architectures has been added, and the number of hardware devices emulated has exceeded 400. During the preparation of version 8.2 they accepted more than 3200 changes from 238 developers.

<https://lists.nongnu.org/archive/html/qemu-devel/2023-12/msg02695.html>

## RELEASE OF ZORIN OS 17:

20/12/2023

Zorin OS 17, based on Ubuntu 22.04 is out. The target audience of the distribution are novice users, accustomed to working in Windows. To manage the design of the distribution, they offer a special configurator that allows you to give the desktop a new layout, typical of different versions of Windows and macOS, and includes a selection of programs close to programs that Windows users are accustomed to. The size of the iso-image is 3.5 GB.

As the basis of the desktop they used by GNOME with a set of own add-ons and a panel based on Dash to Panel and Dash to Dock. To integrate your desktop with your smartphone, the Zorin Connect application (based on KDE Connect) is available. In addition to deb and Ubuntu repositories packages, support for Flatpak, AppImage and Snap formats with the ability to install programs from the catalogs of the Flathub and Snap Store are enabled by default.

<https://blog.zorin.com/2023/12/20/zorin-os-17-has-arrived/>

## RELEASE OF RHINO LINUX 2023.4:

21/12/2023

The release of Rhino Linux 2023.4, which implements the Ubuntu version with a continuous update delivery model, which allows you to access the most recent versions of programs. The new versions are mostly carried from the devel-repos of Ubuntu repositories, which build packages with new versions of applications synchronized with Debian Sid and Unstable. Desktop components, Linux kernel, boot screensaver, design themes, Firefox browser and project-developed utilities are distributed through a separate Pacstall repository. Installation images that can run in Live mode are prepared for x86\_64 (2GB) and ARM64 (1.9GB) architectures, as well as for PineTab, PineTab2, PinePhone, PinePhone and Raspberry Pi architectures.

Package management is carried out with the help of its own package manager rhino-pkg (rpk), which implements a shim over APT, Pacstall, flatpak and snap. Rhino-



pkg allows you to use one universal utility to perform typical operations with different package formats, for example, to install, delete, update and search packages. To build the distribution, the LiveBuild toolkit from the Debian project is used with modifications borrowed from VanillaOS. The Calamares installer is used to install the distribution.

In the new version the user environment Unicorn is offered, with the function of automatic mosaic layout of windows. Rounded corners of the interface of running uLauncher programs. They also added the command "rhino-pkg cleanup" to clean damaged dependencies and unnecessary packages that are no longer used in other packages.

<https://rhinolinux.org/news-10.html>

## RELEASE OF TAILS 5.21:

21/12/2023

**A** new release of the specialized distribution Tails 5.21 (The Amnesic Incognito Live System), based on Debian and designed for an anonymous online use, was

formed. Anonymous access to Tails is provided by the Tor system. All connections, except traffic over the Tor network, are blocked by the default packet filter. Encryption is used to store user data between launches. For downloading they prepared an iso-image, able to work in Live mode, measuring 1 GB.

The new version provides a warning with the proposal to send a report with diagnostic data in the event of a failure when the system partition size changes during the first download. The navigation panel provides a localized date presentation. Updated versions of Tor Browser 13.0.7 and tools Tor 0.4.8.10. They Fixed problems with emergency shutdown of the browser when you click on the UBlock icon. Increased reliability of time synchronization. Improved backup functions in Tails Cloner.

[https://tails.net/news/version\\_5.21/index.en.html](https://tails.net/news/version_5.21/index.en.html)

## RELEASE LAZARUS 3.0 IDE:

22/12/2023

**A**fter almost two years of development, the release of

the integrated development environment Lazarus 3.0, based on the FreePascal compiler and performing tasks similar to Delphi, was published. The environment is designed to work with the release of the FreePascal 3.2.2 compiler. Ready-made installation packages with Lazarus are prepared for Linux, macOS and Windows.

<https://forum.lazarus.freepascal.org/index.php/topic,65612.0.html>

## RELEASE OF LABWC 0.7, COMPOSITE SERVER FOR WAYLAND:

22/12/2023

**A** new release of labwc 0.7 (Lab Wayland Compositor) project, is out, with a developmental composite server for Wayland with features resembling the Openbox window manager (the project is presented as an attempt to create an alternative to Openbox for Wayland). Features of labwc are minimalism, compact implementation, wide customization capabilities and high performance. The project code is written in C and distributed under

the GPLv2 license.

The wlroots library, developed by the developers of Sway and provides basic functions for the workings of the composite manager based on Wayland. The extended Wayland protocols are supported by wlr-out-management to customize output devices, layer-shell to work with the desktop shell and foreign-toplevel to connect your own panels and window switches.

It is possible to connect superstructures with the implementation of functions such as creating screenshots and displaying wallpapers on the desktop or placing the panel and menus. The animated effects, gradients and icons (except for window buttons) are not supported in principle. To launch X11-applets in the environment based on the Wayland protocol, the use of the XWayland DDX component is supported. The design theme, the basic menu and hotkeys are configured through xml configuration files. There is a built-in support for high pixel density screens (HiDPI).

In addition to the built-in root

menu, customizable via menu.xml, you can connect third-party implementations of the application menu, such as bemenu, fuzzel and wofi. You can use Waybar, sfwbar, Yambar or LavaLauncher as a panel. To control the connection of monitors and change their parameters, they propose to use wlr-randr or kanshi. The screen is locked with swaylock.

<https://github.com/labwc/labwc/releases/tag/0.7.0>

## RELEASE OF ENLIGHTENMENT 0.26:

24/12/2023

After a year and a half, the Enlightenment 0.26 user environment was released, which is based on a set of EFL (Enlightenment Foundation Library) libraries and Elementary widgets. The release is available in source code only, for now, the packages for distributions have not yet been built.

The work desk in Enlightenment comprises of components such as the file manager, a set of widgets, the application launch panel and a

set of graphic configurators. Enlightenment is very flexible in ricing to your taste: graphic configurators do not limit the user in the settings and allow you to configure all aspects of the way it works, providing both high-level tools (change of design, configuration of virtual desktops, fonts, screen resolution, keyboard layout, localization, etc.) and the ability to do low-level tuning.

To expand the functionality, they propose to use modules (gadgets), and for processing the appearance - themes for design. In particular, modules are available for displaying on the scheduler's desktop, like weather forecast, monitoring data, volume control, widget to evaluate the battery charge, etc. The Enlightenment components are not rigidly attached to each other and can be used in other projects or to create specialized environments, such as shells for mobile devices.

<https://www.enlightenment.org/news/2022-12-23-enlightenment-0.26.0>

## RELEASE OF DARKTABLE 4.6:

24/12/2023

Darktable 4.6, photo manipulator and organizer has been published, which is timed to the decade since the first version of the project. Darktable acts as a free alternative to Adobe Lightroom and specializes in non-destructive editing of raw images. Darktable provides a large selection of modules for performing all kinds of photo processing operations, allows you to maintain a database of original photos, carry out visual navigation on available shots and, if necessary, perform corrections of distortions and quality improvements, while maintaining the original image and the entire history of changes on it. The project code is written in C and distributed under the GPLv3 license. The interface was built using the GTK library. Binary builds are prepared for Linux (OBS, flatpak), Windows and macOS.

<https://www.darktable.org/2023/12/darktable-4.6.0-released/>

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

ISBN13 : 9781916119482

Amazon US link:

[https://www.amazon.com/dp/1916119484?  
ref=pe\\_3052080\\_397514860](https://www.amazon.com/dp/1916119484?ref=pe_3052080_397514860)

Amazon UK link:

[https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/1916119484/ref=sr\\_1\\_1?  
dchild=1&keywords=virtualbox+networking+primer&qid=1600253699&s=books&sr=1-1](https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/1916119484/ref=sr_1_1?dchild=1&keywords=virtualbox+networking+primer&qid=1600253699&s=books&sr=1-1)

Kobo:

<https://www.kobo.com/us/en/ebook/the-virtualbox-networking-primer>





# COMMAND & CONQUER

Written by Erik

We continue from our last issue – we are still talking docker, so you can get a containerized application on your webserver. Hopefully you got stuck on your homework or the last question and did some internet research.

The reason “nothing” happened is because there is no application to run. The purpose of docker is to run an application and exit. An operating system is not an application. This does not mean we cannot interact with it. We can do so by tacking on a command or invoking something like an interactive terminal.

To interact with it, we specify -it for interactive terminal (see below) and we need to give it a command,

like sleep, for instance. We will ask it to run bash, the command will run and you will be asked for your computer password. However, once typed in, you will be logged into a root prompt on the docker container. Notice the name change in the prompt. It now shows root@<container id> and not your machine name.

If we then run a command, it runs inside that container (see top right). Please also try this.

As you can see, I am running Ubuntu inside my docker container, inside Ubuntu Mate, inside VM (inception stuff, I know!!!). To exit from the container’s bash, simply type exit.

Though we specifically wanted

```

root@fadea1bc2c3e: /
File Edit View Search Terminal Help
ed@mate22:~$ sudo docker run -it ubuntu bash
[sudo] password for ed:
root@fadea1bc2c3e:/#

```

```

root@fadea1bc2c3e: /
File Edit View Search Terminal Help
ed@mate22:~$ sudo docker run -it ubuntu bash
[sudo] password for ed:
root@fadea1bc2c3e:/# cat /etc/*release
DISTRIB_ID=Ubuntu
DISTRIB_RELEASE=22.04
DISTRIB_CODENAME=jammy
DISTRIB_DESCRIPTION="Ubuntu 22.04.3 LTS"
PRETTY_NAME="Ubuntu 22.04.3 LTS"
NAME="Ubuntu"
VERSION_ID="22.04"
VERSION="22.04.3 LTS (Jammy Jellyfish)"
VERSION_CODENAME=jammy
ID=ubuntu
ID_LIKE=debian
HOME_URL="https://www.ubuntu.com/"
SUPPORT_URL="https://help.ubuntu.com/"
BUG_REPORT_URL="https://bugs.launchpad.net/ubuntu/"
PRIVACY_POLICY_URL="https://www.ubuntu.com/legal/terms-and-policies/privacy-policy"
UBUNTU_CODENAME=jammy
root@fadea1bc2c3e:/#

```

to access the terminal inside the container this time, most of the time we would not want to. A container is designed to come up and run one application until it completes, or crashes. So type: sudo docker run ubuntu sleep 5 - and start counting to five. The container launches and sleeps for five seconds, then exits. This is the expected behaviour. However, in that five seconds, you could not do anything in your terminal. If you have not tried it, please go ahead. If you want to free up your

terminal, you need to run the container in detached mode, and to no one’s surprise, you type “-d”. Now type: sudo docker run -d ubuntu sleep 30 and your terminal is free to type again. Yay! Now type: sudo docker ps - and look at the output. This behaves the same as typing the ps command in a terminal, only instead of running processes, you now get back running containers! I will use: ps -a so you can see all my containers, running or not.

```
ed@mate22: ~
File Edit View Search Terminal Help
ed@mate22:~$ sudo docker run -d ubuntu bash sleep 30
73ed002c30dedf807dafd7aec32476b4531cf7b939125114d94495652ed35e42
ed@mate22:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS
PORTS         NAMES
73ed002c30de  ubuntu   "bash sleep 30"         3 seconds ago Exited (126) 3 secon
ds ago        friendly_kalam
3013d48fc692  ubuntu   "bash sleep 30"         2 minutes ago Exited (126) 2 minut
es ago        gracious_clarke
d1a61f7c71aa  ubuntu   "bash sleep 30"         4 minutes ago Exited (126) 4 minut
es ago        amazing_lamarr
fadea1bc2c3e  ubuntu   "bash"                  29 minutes ago Exited (0) 19 minute
s ago        clever_kapitsa
19cf2acc8470  ubuntu   "bash"                  38 minutes ago Exited (129) 30 minu
tes ago        nifty_perlman
0be68a7dda52  ubuntu   "/bin/bash"             39 minutes ago Exited (0) 39 minute
s ago        cool_taussig
ed@mate22:~$
```

From the ps output (above), we can see the command we ran under the command column. I kept my terminal narrow to get a screenshot that is readable, but please make your terminal full screen. If you type: `sudo docker ps -a` and you get no output, it means that there are no running containers, they have completed their tasks and exited.

Let's say you typed some malformed command and now your docker container is running and eating up resources, or in the real world, your container encountered some error and you need to kill it and restart your application. Well, for that we have the stop command.

If I wanted to stop that top container, I could stop it by container id or friendly name. So in my case, I'd type: `sudo docker stop friendly_kalam`. I want you to run a container, with any command that will keep it alive and then stop it. Notice how long it takes. This is the power of containers. Since you already know how to remove a container, I want you to remove yours. (Practice makes perfect)

Say we were planning ahead, and we did not want to run an image from docker hub, but we want to use it later, we can simply pull the image. This creates the image on your computer for future use. Try typing `sudo docker pull nginx` - and once done type: `sudo`

docker images - then see what is there. So now, next time we want to run a nginx container, docker will look locally for the image and run it, instead of reaching out to docker hub and downloading the image first. If you pull an image you don't need, you simply type: `sudo docker rmi centos` - and my centos image is deleted, obviously you will substitute "centos" with your downloaded image name.

We covered the run command, the pull command, the stop command, the ps command, rm command, images command, the rmi command and yes I know they are not all commands, but it is easy to take stock this way. This means you have the basic skills to reach out to docker hub, grab an image, run it or interact with it, and remove it when you are done. I suggest that you grab images of topics you are interested in. Want to learn more about Redis? Then grab that image. It is important to note: This will get boring really fast if you are just doing this parrot fashion from my ramblings. I have given you the basic tools to get started. Try to grab "official" images of things like nginx or Redis, as you do not always know what changes have been made to

unofficial images. That said, I know there are some of you out there that would want to create your own images. We can look at that in the next issue and maybe even look at the docker registry. I don't want to dive too deep into this subject, as I am not sure what kind of interest there is out there.

If you would like to know more about the topic, you know what to do, ping me on Telegram, say something in our FCM Telegram group, or e-mail [misc@fullcirclemagazine.org](mailto:misc@fullcirclemagazine.org)



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



Greetings again, fellow Beings. First, I have to say how happy I am to be part of the 200th issue of Full Circle Magazine. I've been a part of the FCM family since issue 27 and I am still proud of it. Here's to another 100 issues!

How many times have you had a great idea for a program, but before you can really get it together, you found that you need some specialized data to actually get it properly programmed and tested? Data like user information, database records, sales data and so on? Sure, many of our programs and utilities can be tested with hand created data and that's good enough. But sometimes you need a data table with hundreds or thousands of records that have 10 or more fields of realistic data that would take days to create by hand.

Enter Faker, a library for Python that does most of the 'heavy lifting' for you.

Of course, you need to install Faker into Python and as usual, we can use pip to do this.

```
$ pip3 install Faker
```

Now that you've gotten it installed, let's look at how it can help you.

First, we need to import the library and then create an instance of Faker.

```
>>> from faker import Faker
>>> fake = Faker()
```

Now we can use the 'fake' instance to get some data. Let's say we want to get a fake name for a fictitious user.

```
>>> fake.name()
'Ruth Duarte'
```

How about an address for our new user Ruth?

```
>>> fake.address()
'19373 Amanda Manors Suite
530\nWest William, MD 04391'
```

Of course, Ruth will need a phone number and an email address, right?

```
>>> fake.phone_number()
'+1-888-264-9990x8524'
>>> fake.ascii_email()
'kristin03@yahoo.com'
```

And Ruth will need a credit card.

```
>>> fake.credit_card_full()
'VISA 16 digit\nKevin
Smith\n4731880480844912
04/29\nCVC: 849\n'
```

Let's not forget that Ruth will probably need to have a car, so we'll need to give her a license plate.

```
>>> fake.license_plate()
'780 VZD'
```

That's fantastic, right? So far, all of this information has been for the U.S. What if you need to have data for the UK? No problem. Just create an instance of Faker using the localization attribute.

```
>>> fakeUK=Faker('en_GB')
>>> fakeUK.phone_number()
'+44121 4960479'
>>> fakeUK.license_plate()
'NL09VVR'
```

What about people who need data for, let's say, Norway?

```
>>> fakeNorway=Faker('no_NO')
>>> fakeNorway.address()
'Sørensenkrenten 3, 6580
Andersstrøm'
>>> fakeNorway.address()
'Evensengjerdet 76, 3451
Torillø'
>>> fakeNorway.phone_number()
'94199271'
```

Remember, none of this data is meant to be any more realistic for anything outside of creating dummy data for testing your programs. However, if you are an author, who needs a number of new character names for your newest cozy mystery novel. Let's say we need 15 people.

```
>>> for cntr in range(15):
...     personname=fake.name()
...     print(personname)
Heidi Lucas
Catherine Davis
Andrea Williams
Sierra Carpenter PhD
Tammy Berg
Diane Johnson
Brandi Brown
Jeffrey Flores
Kevin Roy
Jennifer Leonard
Brian Mason
Joshua Herrera
Eric Mitchell
Kelly Park
Joseph Harris
>>>
```



We can also have Faker generate enums, booleans, dictionaries, floats, ints, lists and more by using the python provider. For example, say we need some data that looks and acts like US Currency values. That's really simple.

```
>>> fake.pyfloat(right_digits=2, min_value=200, max_value=10000)
722.58
```

The pyfloat method has the following syntax...

```
pyfloat(left_digits=None,
right_digits=None,
positive=False,
min_value=None,
max_value=None)
```

You can check the documentation for more detailed information on the python provider as well as all the "standard" providers as well as specialized providers provided by the Faker community.

So far, everything we've done has been in the Python terminal. But reality is that we will need to write a program to do some heavier data faking.

Let's assume we have to create a

```
def create_user(i):
    # global userdict
    fake = Faker()
    user = {}
    user_id = i
    email = fake.ascii_email()
    user_password = fake.pystr(min_chars=1, max_chars=20)
    user_name = fake.name()
    user_contact = fake.phone_number()
    available_balance = fake.pyfloat(right_digits=2, min_value=0, max_value=10000)
    frozen_balance = fake.pyfloat(right_digits=2, min_value=0, max_value=10000)
    user_status = random.choice(["normal", "blocked"])
```

user structure that has the following fields...

User ID, User Name, User Email, User password, User phone number, Available balance, frozen balance and a status flag.

In addition, we need to create, say 30 of these user data groups to test the program we are writing. Of course, we need to import Faker and a couple of things...

```
from faker import Faker
import pprint
import random
```

Now, let's create a function that will create our user data for us and return it as a dictionary (top right).

Now that we have all the data we need for this simple exercise, we'll create a dictionary (right) and return it.

```
user = {
    user_id: {
        "user_email": email,
        "user_password": user_password,
        "user_name": user_name,
        "user_contact": user_contact,
        "available_balance": available_balance,
        "frozen_balance": frozen_balance,
        "user_status": user_status,
    },
}
return user
```

Now, let's setup the structures and variables we will need to call our function.

```
userdict = {}
cntnr = 250
for counter in range(30):
    newuser = create_user(cntnr)
    userdict.update(newuser)
    cntnr += 1
```

And finally we'll use pprint to print out the data in the terminal window.

```
dat = pprint.pformat(userdict)
print(dat)
```

So, here (top right) is what the data looks like. I'll only show a couple of the user dictionary data sets instead of the 30 that we created.

You can find the Faker distribution homepage at <https://github.com/joke2k/faker> and the very nice documentation at <https://faker.readthedocs.io/en/master/>

That's it for this month. I hope your December has been nice and happy and your New Year will bring happiness and prosperity. May the best day of your 2023 be the worst day of your 2024!

**Until next time, as always; stay safe, healthy, positive and creative!**

```
275: {'available_balance': 6619.28,
      'frozen_balance': 4654.88,
      'user_contact': '5073270959',
      'user_email': 'durhamsteve@hall.net',
      'user_name': 'Eric Waller',
      'user_password': 'qPQxohAHhFWJFHC',
      'user_status': 'normal'},
276: {'available_balance': 1906.73,
      'frozen_balance': 849.98,
      'user_contact': '001-434-888-2864',
      'user_email': 'obennett@hotmail.com',
      'user_name': 'Judith Reid',
      'user_password': 'ZhYQIQFBp',
      'user_status': 'blocked'},
```



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



# HOW-TO

Written by Jon Hoskin

# Stable Diffusion Pt.10

As noted previously, I begin and end with prompts to show the ease of creating images. I normally create 20 images and choose what I deem the most appropriate. Using Automatic1111 the prompt is the

underlined text below and produces what would be a Christmas card although the prompt suggest it should perhaps be a New Year's Eve party card (text was added with Inkscape

([inkscape.org](https://inkscape.org)) using Z003 font):

cathedral,library,indoor,floor,fir  
eplace,armchair,couch,late  
evening,,champagne bottles and  
glasses,New Year's Eve,festive  
party ornaments, Steps:20,Sampler:  
Euler a,CFG  
scale:14,Seed:4156388239,Size:102  
4x1024,Model  
hash:31e35c80fc,Model:  
sd\_xl\_base\_1.0,Style Selector  
Enabled: True,Style Selector  
Randomize: False,Style Selector  
Style: base,Version: v1.5.1,Steps: 20,  
Sampler: Euler a, CFG scale: 7, Seed:  
232741013, Size: 1024x1024, Model  
hash: 31e35c80fc, Model:  
sd\_xl\_base\_1.0, Version: v1.5.1

Automatic1111 interface of Stable Diffusion 1.0. It is one extension you will use no matter how much or little experience you have. As the name implies, you can go back in time to look at all of your images – an impressive feat after wondering if you have hundreds or tens of thousands of created images. If that is not enough reason, you can search for specific images using a variety of parameters.

You can install IIB by selecting the Extensions tab in the Automatic1111 interface. As explained in the previous Part 8 and 9 of this series I always check for updates first and then Apply and Restart the UI. You can then find and install the IIB extension from the extension list of those not installed and restart the program. You will then notice the IIB tab (red arrow, next page top left) in the Automatic1111 interface as shown.

Upon selecting the IIB tab, you will need to let it search and index your images. You may need to select the appropriate directory for that to happen. It searches very

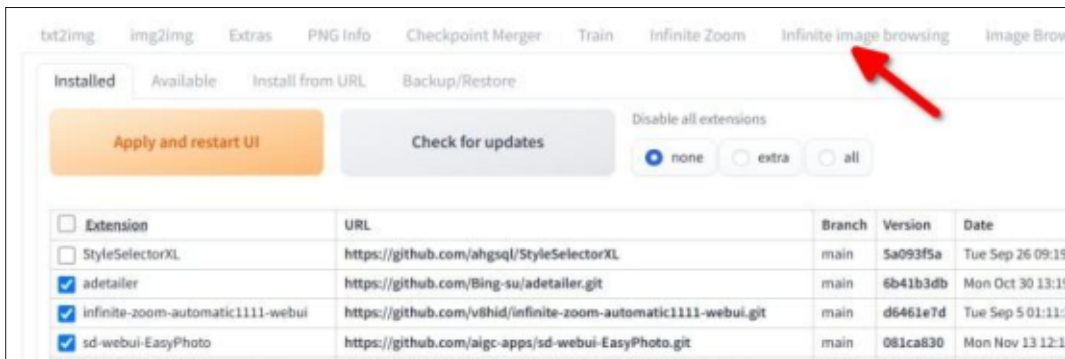
Borrow any prompt or portion to learn how to make better images. You may not want to make an exact copy of an image and different machines are unlikely to make the same image with the original prompt.

In part ten of An Introduction to Stable Diffusion, we will look the sd-webui-infinite-image-browsing extension (IIB) on the





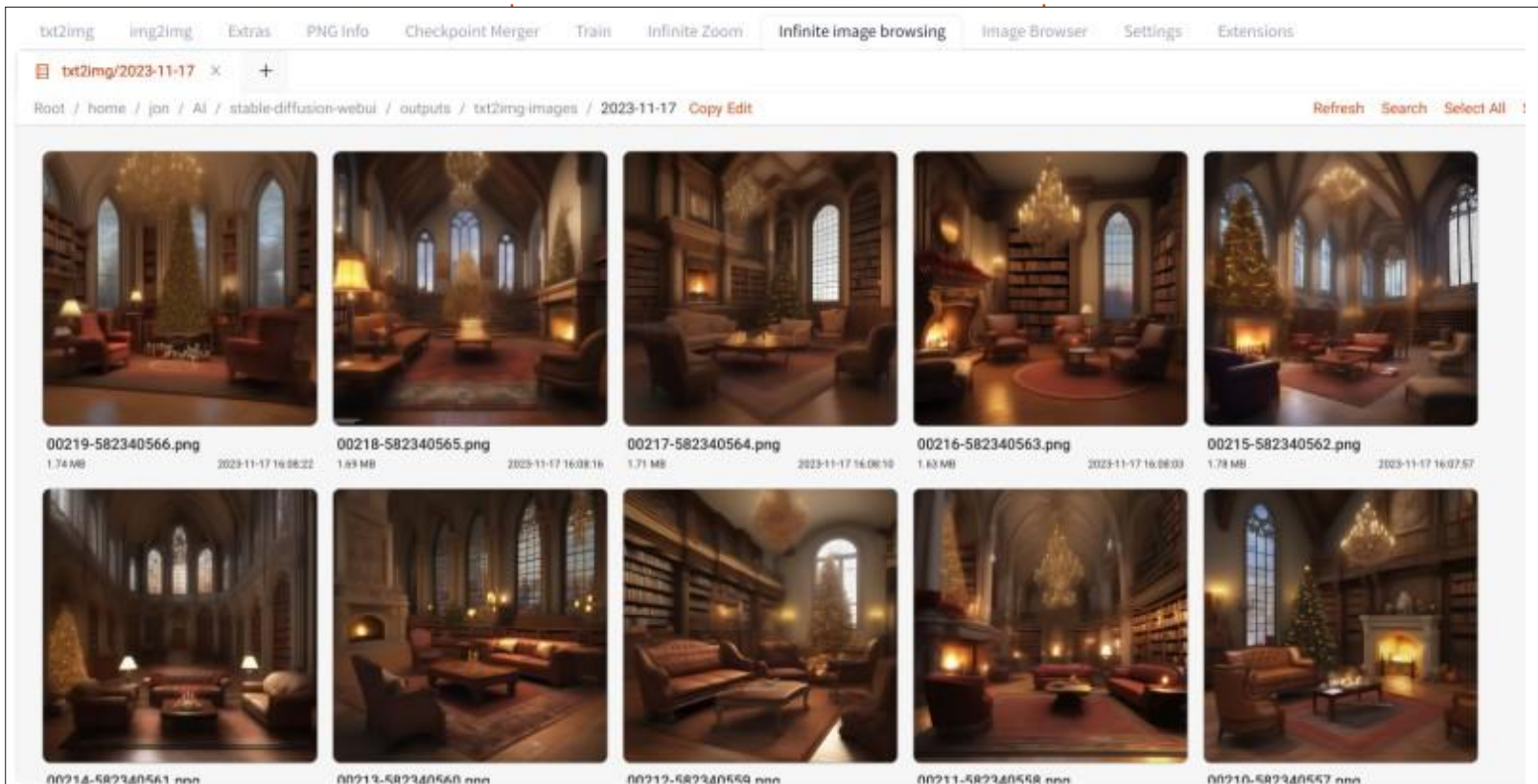
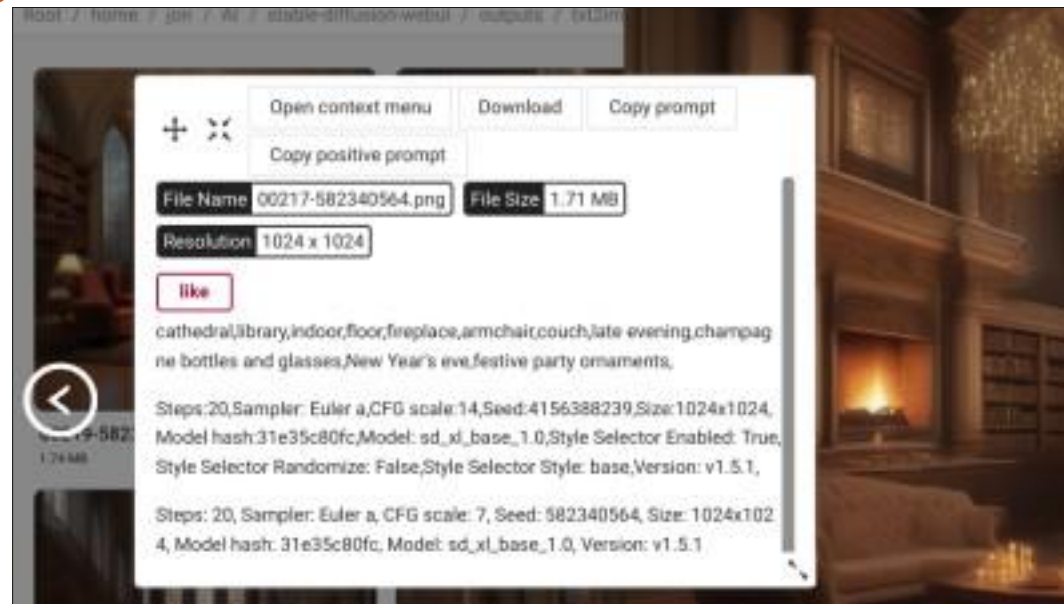
# HOWTO - STABLE DIFFUSION



quickly and should only take a few seconds unless you have hundreds of thousands of images. At that point you can scroll back through your images similar to what is shown (below).

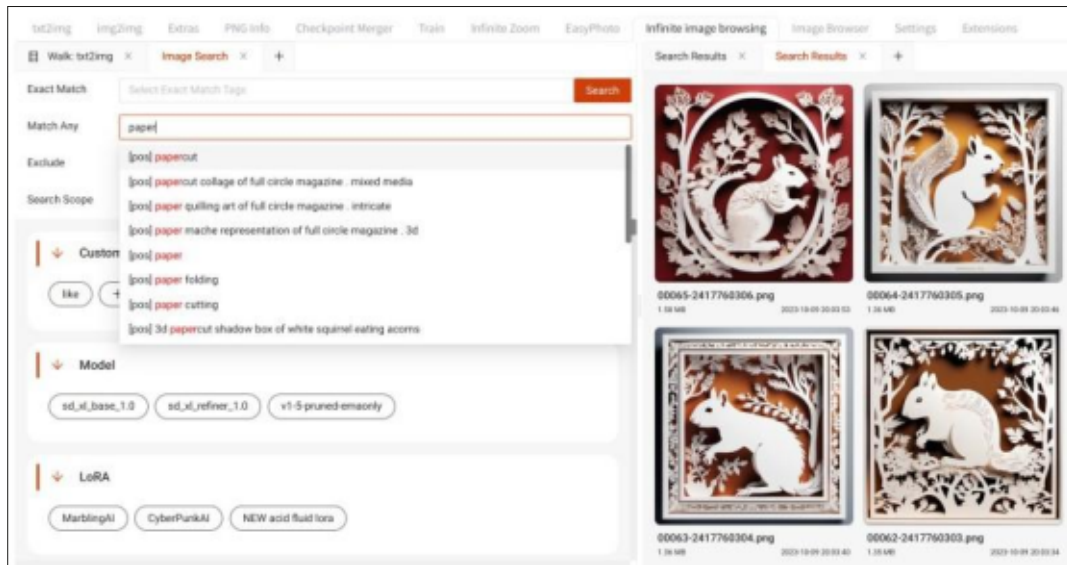
Selecting an image using IIB provides helpful information about the image as shown (top right).

Of course with many images, it



becomes tedious to search by scrolling and fortunately there is another helpful option. If you know something about the image in question, you can use the image search. In the example shown, I started typing in "papercut" in the Match Any input box, but it brought up papercut after inputting just paper. Exclude prompts can also help narrowing the search. You will then see images matching your criteria to the right. Ultimately as you create numerous images you might want to think about reorganizing images and image data into groups to make mental searching easier. Deleting or archiving unused images may also make sense as your image number increases.

# HOWTO - STABLE DIFFUSION



The final image (right) is produced using Easy Diffusion, It's a New Year's Eve party which can be made starting with a prompt of: "raucous new year's eve party in fancy club, lifelike, high resolution  
Negative Prompt: Christmas trees  
Seed: 3069753561 Stable Diffusion model: sd\_xl\_base\_1.0 Clip Skip: False ControlNet model: None VAE model: Sampler: euler\_a Width: 1024 Height: 1024 Steps: 25 Guidance Scale: 7.5 LoRA model: None Embedding models: None Seamless Tiling: None, Use Face Correction: None, Use Upscaling: None,







# HOW-TO

Written by Robert Boardman

# Latex Hypertext Links

Welcome to this special 200th issue of Full Circle! This is a very big milestone for any magazine, especially considering FCM is distributed electronically and for free. This issue should coincide with my twentieth Latex column. However I missed deadlines a couple of times so this is actually my eighteenth appearance in FCM. Happy 200th birthday to FCM. I look forward to receiving a copy every month. I encourage subscribers to support this project through Patreon or other means. I also encourage subscribers to write something relevant to the operating system and the many different software packages we use. A one-off article is welcomed by the editor and publisher. Do you play a game or use a particular bit of software regularly – write a review. Have you discovered a command line technique that saves you time or makes your system more secure or . . . and want to share it with others – write an article. Now on to Latex.

Our sample cookbook has a few

recipes, an index, a (very short) glossary. The Table of Contents and Bibliography have clickable links so readers can easily jump from one part of the PDF to another. This time we are going to make a cover so the cookbook look more professional. Then we should be done with this project and ready to

move to something else.

The current title page has the book title, the author (in this case the compiler) and the date the book was last compiled. Because this file uses the document class book there is default formatting attached to each of these

elements. The formatting includes font, font size, font style and leading (line spacing). This is the code that generates the page.

In the preamble there are two elements for the title page. These elements contain the values for author and title that are then used

```
1 \documentclass[letterpaper,11pt]{book}
2 %preamble
3 \usepackage{inputenc, cooking, cooking-units, makeidx, graphicx, pdfcomment,
  hyperref}
4 \usepackage[sfdefault]{noto}
5 \usepackage[skins]{tcolorbox}
6 \tcbset{colframe=black!25!white, colback=green!10!white, valign=center,
  align=center, width=15cm, height=15cm, arc=5mm}
7 \hypersetup{pdfborder=0 0 0, colorlinks=true}
8 \makeindex
9 \author{Robert Boardman}
10 \title{Favourite Chinese Recipes}
11
12 \begin{document}
13
14 \frontmatter
15 \include{cover}
16 \fontsize{11}{13}
17 \maketitle
18 \thispagestyle{empty}
19 \selectfont
20 \tableofcontents \label{toc}
```



by the instruction `\maketitle`.

```
\author{Robert Boardman}
\title{Favourite Chinese
Recipes}
Below the preamble:
\begin{document}
\frontmatter
\maketitle
```

`\frontmatter` is an element that can be used with `\documentclass{book}`. `\frontmatter`, `\mainmatter` and `\backmatter` are used by `\documentclass{book}` to divide a book into pieces. Each piece has its own default formatting. Each piece starts on a new page (right hand side page, odd-numbered page). The `\maketitle` command uses the author and title information in the preamble (plus the current date) to generate a plain, serviceable title page. I want to generate a cover page that will contain not only the title and author but also some element or elements that will be attractive and memorable. Initially this book will only be available as a PDF so the cover gives the reader their first impression. Since this book would be distributed freely, if a reader is not favourably impressed then the file can be easily deleted at no cost.

The best method is to generate a new file for the cover (which I called `cover.tex`). An independent file gives more freedom for formatting. It allows for formatting that is separate from the formatting for the other pages. If this were a printed book the `cover.tex` file would be printed separately and bound with the text.



For this generated PDF we can use a few instructions to make the cover file look like a printed cover. I will talk about these instructions after I talk about the issue of fonts in the document.

The fonts used by default are not what I would like to use in this document. There is nothing wrong

with how they look but they do not have the variety of options I like. I decided to use the Noto font family. It is an enormous family, it is Unicode compliant and it is free. (Noto is available from [goggle.com/fonts](https://www.google.com/fonts).) I downloaded and installed the Noto family as instructed on CTAN. I followed the instructions about rebuilding the font map so LaTeX could find the newly installed font using the `sudo texhash` command. I added the following line to the preamble. Then I recompiled the cookbook.

```
\usepackage{noto}
```

The compile generated an error. One font, a single version of one type of Noto Serif Bold, could not be found so the compile failed. I thought perhaps this font is available in one of the other Noto font downloads on CTAN. I downloaded and unzipped Noto Condensed and Noto Math. To install these I had to copy files from my download area to the relevant directories in the TeX installation. The compile continued to fail. When the compile fails there is no PDF generated.

I went on a hunt to find the missing file. After an hour or so I

## HOWTO - LATEX

was sent back to the original install page on CTAN. Obviously the missing font was not supposed to be missing. I decided to try again the following day. (I find this is often good practice when my level of frustration builds and builds.) After about half an hour of more searching I found the missing file listed as part of another zip. Could I download and install just the missing font? No. Could I download and install the zip it was in? No. However this zip was a package for Linux and could be installed using apt. Yeah!

```
apt install texlive-fonts-extra
```

Note: Texlive is said to be a quick and easy way to get up and running using Tex. It is one of the ways to get Tex installed and running on a Windows machine. In this instance all I installed was a set of fonts. I did not end up with two different installations of Tex in Linux.

This installation contained over 1GB of font files, some of them may have overwritten existing fonts. It did install the missing Noto Serif Bold file which was the aim of the search. Now when I compile

fcmmcover.tex it succeeds and a new PDF is generated. Since the file is a PDF which will be viewed on screen I decided to change the default font for the document to the sans-serif typefaces of Noto. I altered the use package instruction with an option.

```
\usepackage[sf]{noto}
```

The [sf] instructs Latex to use the sans-serif typefaces by default. The document on CTAN for installation of the Noto family say to use [sfdefault]. However that generated a new error which I did not spend any time to troubleshoot. The [sf] option did what I wanted. I will use the Noto sans-serif family for both the cover (the subject of this article) and the

rest of the book.

Here is the code for the cover page so far:

```
\begin{center}
\fontsize{36}{60}
\selectfont
Favourite Chinese Recipes

\fontsize{24}{48}
\selectfont
compiled by Robert Boardman
```

```
\pagestyle{empty}
\begin{tcolorbox}[enhanced, watermark graphics=steamer.pdf, watermark opacity=
0.6, watermark stretch=1.0]
\begin{center}

\fontsize{36}{60}
\selectfont
Favourite Chinese Recipes

\fontsize{24}{48}
\selectfont

\bigskip
\bigskip
\bigskip

compiled by Robert Boardman
\fontsize{24}{36}
\selectfont

from many sources
\end{center}
\end{tcolorbox}
```

```
\fontsize{24}{36}  
\selectfont  
from many sources  
\end{center}
```

I wanted the text of the cover page to be centred so I put it all in the center environment. The fontsize instruction requires two options: the size of the font and the size of the line spacing (the printer's term is leading). The selectfont instruction is required after every change in font instruction. This cover.tex file is included after the usepackage[sfdefault]{noto} instruction in the fcm200cover.tex file so it does not need to be repeated in the cover.tex file.

Note: The last font instruction in cover.tex is `fontsize{24}{36}`. The rest of the document will use this instruction until a new font instruction is issued followed by `selectfont`. After the include for cover.tex there is `fontsize{11}{13}` and then `selectfont`. This instruction sets the basic font size and line spacing for the rest of the document.

Now the text is where I want it and looks the way I want it. It is time to add a graphic that gives the

same message as the title. I want the graphic to flow behind the text. I changed the graphic I downloaded to shades of grey, adjusted its size and changed brightness and contrast. I want it to be visible but not obscure the text.

It took several hours of digging on CTAN and on other sites to find out how to do what I want – which is place a watermark behind the text. I will not bore you with the saga, I will just present the results. The secret turned out to be using a package called tcolorbox which is part of the regular installation of Latex. Then I had to sift through the 544 page manual for tcolorbox. Here is the final addition to the main file:

```
\usepackage[skins]{tcolorbox}  
\tcbset{colframe=black!25!  
white, colback=green!10!  
white, halign=center,  
valign=center, width=15cm,  
height=15cm, arc=5mm}
```

I do not know what the “skins” option does but it is necessary for the graphic to appear. Colframe and colback are colour instructions. The syntax is simple once you know what it is. Black!25!white means blend 25% black and 75% white. White is the default second colour

so this command can be shortened to `black!25`. (or `green!10`). Halign and valign should be obvious. Width and height control the size of the box, getting appropriate values can require some experimenting. Arc sets the diameter of the curve in the corners of the frame.

Here is the important new code from the cover.tex file.

```
\begin{tcolorbox}[enhanced,  
watermark  
graphics=steamer.pdf,  
watermark opacity=0.6,  
watermark stretch=1.0]
```

I discovered tcolorbox would only accept graphics in PDF format even though the manual shows PNG and other formats. Opacity refers to how transparent / opaque the image appears. Stretch determines the size of the image in the tcolorbox frame. The value “1” means it fills the frame. Values larger than 1 increase the size of the image but the size of the frame does not change so only part of the image is visible.

I have had a steep learning curve to complete this part of the cookbook. I have only learned very little of the capabilities of tcolorbox. I am just starting to learn

about font use in Latex. It has been both frustrating and fun to do this cover. Next time I hope the project will not require quite so much time. December is always a busy month in my house and with my family. I hope you have an enjoyable and relaxing month.

If you have any suggestions about a project that could perhaps be done in Latex, or if you have a project and are stuck at some point let me know. Perhaps we can solve the problem or build a project together.



# KILOBYTE MAGAZINE

Kilobyte Magazine is a fanzine for 8bit enthusiasts. It covers consoles, computers, handhelds and more, as well as new games for old systems. If you grew up with Commodore, Atari, Sinclair or Amstrad, this magazine is for you.

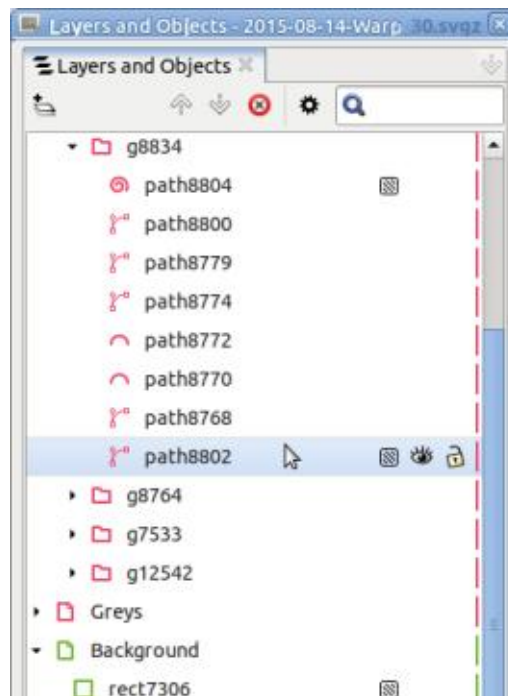
<https://retro.wtf/kilobytemagazine/>



For a long time users were crying out for Inkscape to have a single dialog that lists all the objects in a document. So the developers added one, back in version 0.92, but it did have an annoying side-effect of slowing the application down once the dialog was opened – even if you then closed it again! Quitting and restarting the application solved it (provided you didn't open the dialog again), but it was frustrating enough that this feature wasn't terribly useful on more complex projects, even though those were the ones that would most benefit from an Objects dialog. Meanwhile the long-standing Layers dialog was still performing its task admirably, but was obviously limited to showing a list of layers.

With version 1.2 both these older dialogs were removed, and their functionality combined into a single 'Layers and Objects' dialog. In order to avoid too much confusion for long-time users, it's available from both the Layer menu and the Object menu, so if you were used to opening either of the

older dialogs from the menu you'll still manage to find the new one. Similarly the old Layers button in the main toolbar will open the dialog, as will the Ctrl-Shift-L keyboard shortcut. One small annoyance, in my view, is that the tooltip on the toolbar button describes it simply as 'Open Objects' and doesn't mention layers at all. This is particularly jarring as the 'L' in the keyboard shortcut is a lot easier to remember if you think of it as the 'Layers and Objects' dialog.



The image below shows the dialog as it appears in version 1.3. The key features are present in version 1.2, but the later release adds a few extra bits that are worth discussing.

Every object, group or layer in the document gets its own line in this dialog, which shows the following items:

- An indicator to show whether the layer or group has been expanded
- A colored symbolic icon representing the type of object
- The label of the object
- An icon indicating the opacity and blend mode of the object
- An icon to indicate whether or not the object is visible
- An icon to indicate whether or not the object is locked
- A thin swatch whose color matches that of the symbolic icon

Item 1 only appears on layer or groups, and only those that contain other objects. Items 4, 5 and 6 are visible as you hover over a row with the mouse. Clicking on these three in order to change the defaults can

result in them remaining visible even when the mouse has moved away – I'll describe that in a bit more detail below.

- The colors assigned to each topmost layer are drawn from a palette of 8 values, based on the label of the object. Try creating layers named "1" to "8" to see what colors are used in your chosen theme – and throw in a "9" or a "0" if you want to prove there are only 8 in use. Here are the default colors on my system:
- |  |   |  |
|--|---|--|
|  | 1 |  |
|  | 2 |  |
|  | 3 |  |
|  | 4 |  |
|  | 5 |  |
|  | 6 |  |
|  | 7 |  |
|  | 8 |  |
|  | 9 |  |

The fact that these colors are assigned based on the label means that you may end up with identical colors next to each other. Changing one of the labels a little may fix that, but if it really bothers you then you can manually set the color by clicking on the thin swatch at the right of the row. More on that shortly.

Eagle-eyed readers will have

noticed that I said “the colors assigned to each topmost layer”, rather than to each object. The labels of individual objects and groups – and even of sub-layers – have no bearing on the initial color that is applied. That comes entirely from the color of the topmost layer for that part of the tree. This leads to all the objects within each top layer being given the same icon color, which can be a bit of a problem if you’re the sort of person who keeps the whole structure of your drawing inside a single top-level layer.

To help address this, it’s possible to override the default color for each item in the tree by clicking on the thin swatch at the right. This brings up a small color-picker dialog in which you can change the icon’s color. If you do this on a layer, sub-layer or group, any elements created within it will be given the new color for their icon. Any existing descendent objects will also be updated to the new color, unless they’ve been explicitly overridden (or they’re in a sub-layer or group that has). The dialog provides no way to remove an override and revert back to automatic assignment. If you really want to do that, it will require a trip

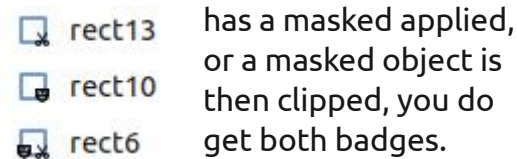
to the XML Editor to remove the ‘inkscape:highlight-color’ attribute.

+	Name	Value
⊗	inkscape:highlight-color	#ff422f
⊗	inkscape:label	en-GB
⊗	id	layer8
⊗	inkscape:groupmode	layer

One rather annoying aspect of the color-picker dialog is that it affects the row whose swatch was last clicked, not the currently selected row. So if you wish to change the icon color for several items you will need to do it one-at-a-time, clicking on the swatch for each one. You don’t have to close the dialog in-between each of them, but it’s still rather annoying if you want to set multiple items to have the same custom color. In practice I doubt many people bother setting custom colors anyway, so it’s not a huge problem – but it would be nice to be able to use some of the advanced features of the Find/Replace dialog to select multiple items, then set them all to something that stands out prominently in the list.

Let’s move past the color of the symbolic icon and onto its shape. The choice of icon reflects the type

of Inkscape object you’re looking at. The specific icons vary between themes but, on my system, layers and sub-layers appear with a page icon, groups with a folder icon, text with a “T”, and so on. If an object is clipped or masked, it also gains a small badge on the icon to indicate that state – and if a clipped object

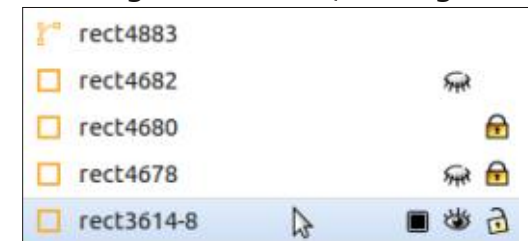


has a masked applied, or a masked object is then clipped, you do get both badges. It’s very important to note that the icon used reflects the current type of the object, which may not be how it was originally created. A rectangle that has been converted to a path, for example, will have a path icon, even if the label is still the default “rect1234” type of string.

Speaking of those labels, this dialog is perhaps a more useful place to set them than via the Object Properties dialog. Just double-click on a label to edit it in-place. Don’t forget that changing the label of a top-level layer may also change the color of its icon, and those of its descendants. Do note, however, that the label is an Inkscape-specific thing that is purely there for your convenience. I

tend to set the labels on layers and perhaps a few key groups or objects, but it’s rarely worth trying to set sensible labels on everything. It also doesn’t change the XML ID of the object, so JavaScript developers who want to use specific IDs for their code to reference will still need to open the Object Properties dialog or the XML Editor.

Moving on to the three icons that appear when you hover over a row, I’m going to skip the first one and come back to it shortly. The second and third are used to indicate the visibility and locked state of the object. The default for any object is for it to be both visible and unlocked, so Inkscape doesn’t bother to show the icons on rows where that’s the case. The only exception is the currently hovered row, where those icons also act as buttons to toggle the state. If you make the object invisible or locked, the corresponding icon remains visible even when you’re no longer hovering over the row, making it





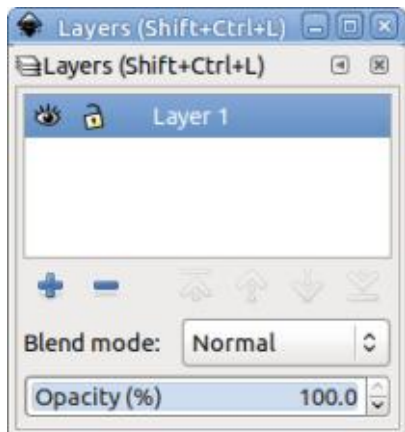
# HOWTO - INKSCAPE

easy to see which objects are in the non-default state.

If these icons are toggled on a layer or group, then the descendants gain a translucent version of the default icon, indicating that even though the defaults are used, their final appearance is being determined by the ancestor further up the tree:



Much like these two controls, the first icon of the three is also hidden when the object is in its default state, but this is not a simple on/off toggle like the others. This control is used to



indicate and change both the opacity of the object, and its blend mode. Before describing this in more detail, it's worth considering why such a control has been added, by taking a look at the Layers dialog from version 0.92:

At the bottom are convenience controls for selecting the layer's blend mode and opacity. To be honest, I would imagine that the blend mode popup was rarely used beyond a little experimentation. Blend modes can definitely have their uses, but although they can be used to great effect in a bitmap editor, I've hardly ever found a need for them in a vector graphics program. Nevertheless, having them there definitely made them far more discoverable to users than their other home inside the Filter Editor.

With the new dialog in 1.2 these controls didn't make the cut. The advice to users who wanted to use blend modes was to add them via the Filter Editor, while opacity could be set in the Fill & Stroke dialog, even for layers.

In 1.3 those controls have made it into the new dialog, in the form of that first control in the trio.

Personally I would have made it a quartet of controls, and kept the Opacity and Blend Mode as separate things but, instead, clicking on that icon presents a pop-up which combines both of them, looking like this:



As you can see, this pop-up allows you to adjust the Opacity using a slider, and choose the Blend Mode using a collection of radio buttons. Frustratingly there's no numeric input for the Opacity slider, so if you want a specific value you may have to manage it via the Fill & Stroke dialog anyway. Incidentally, if you need more information about blend modes, I

covered them well over a decade ago, in part 9 of this series (Full Circle Magazine #69) and aside from the change in UI the information there still holds true.

The default values for an object are 100% opacity and Normal blend mode. The icon will not appear for any row with those settings unless it's being hovered over. Reduce the opacity or change the blend mode, however, and an icon will be shown, even for non-hovered rows. Considering the states of both the opacity and blend mode, there are six possible combinations that can be shown. Here's how they appear with the theme I use:

- 100% Opacity, Normal Blend Mode
- <100% Opacity, Normal Blend Mode
- 0% Opacity, Normal Blend Mode
- 100% Opacity, Non-Normal Blend Mode
- <100% Opacity, Non-Normal Blend Mode
- 0% Opacity, Non-Normal Blend Mode

The first, a fully filled single square, is what you'll see when hovering over an object with the default settings. If you reduce the opacity to anything less than 100%, but greater than 0%, the second icon will be displayed. The third

## HOWTO - INKSCAPE

appears for objects with 0% opacity. I really do mean 0% - even a 0.1% opacity, despite appearing completely transparent to the human eye, will be displayed with the second icon.

If you change the blend mode, but leave the opacity at 100%, you'll get the fourth icon. The fifth is for a non-Normal blend mode and less than 100% (but more than 0%) opacity. There isn't a specific icon for a non-normal blend mode with 0% opacity, and the icon from row 3 is re-used. I guess this makes some sense, because a blend mode doesn't really have an effect on a fully transparent object, but I'd still prefer to see that state called out explicitly.

Each row in this dialog also has a right-click context menu that is identical to the one you would get when right-clicking on the same object on the canvas. One handy shortcut to remember is pressing '3' to zoom to fit the current selection in the window: just click on an object or layer in the dialog and press 3 to bring it into view.

The last thing to mention in this dialog is the toolbar at the top. Version 1.2 had a simplified version

of this, lacking the search box and settings button. But it did start with a toggle to switch between a view that includes all objects and one that shows only layers – the latter mode mimicking the Layers dialog from earlier releases for those users who never really found much need for a list of every object in the document (I'm one of them). This option is still available, but has been moved into the Settings pop-up, which unfortunately makes it a little less practical to switch back and forth between the two modes as the need arises.

The second button on 1.2, or the first on 1.3, is used to create a new layer, opening the same small dialog as we're used to from earlier releases. The Up/Down buttons shift the selected object(s) up and down the list – which also moves them up and down in the z-order. When multiple items are selected, each is moved relative to its siblings, but the entire operation is prevented if any one of them is unable to move any further. Then there's a delete button which will delete the selected object(s) or layer(s) immediately.

The Settings button has the 'Only show layers' option described

above, but also an 'Expand to display selection' option. I recommend leaving this one enabled, as it causes the dialog to automatically expand any layers, sub-layers and groups that are required to ensure the selected object is visible in the tree. Turning this off stops the tree from 'jumping around' so much, but can make it less obvious which object is selected.

Finally, version 1.3 introduces a search box. Typing something into this and pressing Enter will filter the list to show only objects that match the string. The search is case-insensitive and will match a substring, and the test is performed against not only the label, but also the ID. No other attributes or text nodes are searched, so you can't use this to filter by color or the contents of a text object, for example. To return to the complete list of objects, use the button in the search field to clear it – there's no need to press Enter in this case.

The addition of this feature is undoubtedly an improvement over the old Objects dialog, and it does make a lot of sense to have a single UI that shows both objects and layers. There are a few small design

choices that I might have made differently, but I definitely take my hat off to the Inkscape team for completely replacing the old dialogs in an effort to push the application forward.



**Mark** uses Inkscape to create comics for the web ([www.peppertop.com/](http://www.peppertop.com/)) as well as for print. You can follow him on Twitter for more comic and Inkscape content: [@PeppertopComics](https://twitter.com/PeppertopComics)

# The Daily Waddle

DANG, NOON ALREADY - I'VE  
BEEN DIETING SINCE 6AM ...  
AM I SKINNY YET??







BACK NEXT MONTH



### IT'S ABOUT REAL TIME

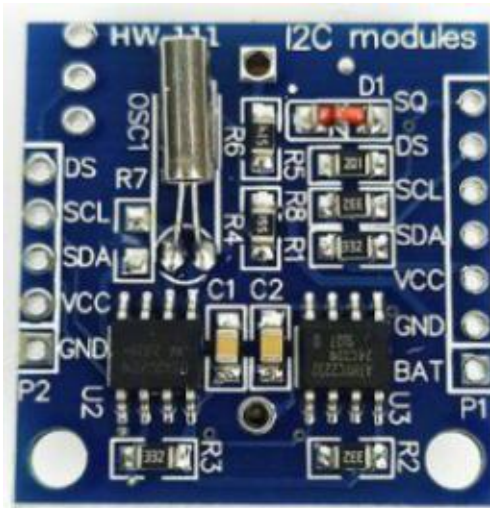
Greetings again, fellow Beings. Happy December and a better 2024 to you!

This month, we will look at real time clocks on our Microcontrollers and specifically on the RPi Pico/Pico-W. While the RPi Pico boards don't normally have a RTC built in, many newer third party Pico boards already have one on-board. Even if you are using an ESP-32 or ESP-8266, the general process is pretty much the same for all of them, especially if you are using MicroPython.

All of the boards have some sort of time keeping capability, even if it doesn't know what time it is when you power up the board. You can always set the date and time (grossly) in code at the start of your program and if your microcontroller is Bluetooth or WiFi capable, you should be able to connect to a

server, grab the time and then do what is needed.

For today, we'll skip that discussion, and move on to using a Real Time Controller chip. There are many versions out there, but the one I'm going to use is the DS1307 RTC I2C module. At the date of this writing, I was able to find them as low as \$0.88 USD in single quantities. Of course, the shipping on just one, would cost a TONNE, so look around locally and you will probably find one for less



than \$15.00 USD possibly with shipping included.

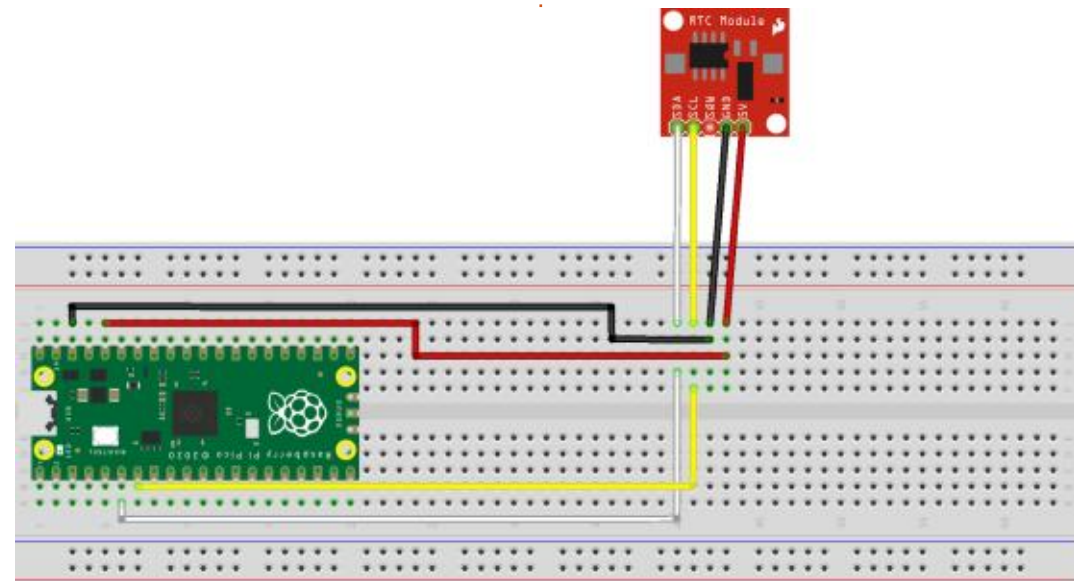
This is what mine looks like and as you can see, the left side has spots for 5 pins and the right side has spots for 7 pins. You can choose either side and for this project only use the Gnd, VCC, SDA and SCL pins. Since it's I2C, it will work on almost any Microcontroller, Arduino or Raspberry Pi board so your investment won't be wasted.

### BREADBOARDING IT

I need to repeat that there are MANY different boards that use the DS1307, so I'm going to give

generic instructions for the breadboard. Don't try to follow the image for anything other than the PICO pin positions. In fact, I'll give you a table instead. But take a look at the image below just to get an idea how small things can be.

If you want to use I2C(0) on the pico, Pins 6 and 7 are the suggested pins. If on the other hand you want to use I2C(1), the suggested pins are 9 and 10. In any event, the SDA on the Pico connects to the SDA on the DS1307 and the SCL on the Pico connects to the SCL on the



DS1307. The Head bone is also connected to the Neck bone and so on and so on.

Now we can get to our code.

## THE CODE

There is an added benefit in the code to include output to an OLED display using the SSD1366 I2C display. However, I've commented all of the code out, so you can run without it.

The DS1307 is (in this software) setup on I2C(0). If you want to include the OLED display, you could have it on the same I2C bus, but I've got the software to handle it on I2C(1).

Again, I've added the optional code for the OLED display. If you want to use it, just un-comment this part of the code and a few lines in the main while loop (top right).

While we can take the data directly from the `rtc.datetime()` function and the `time.localtime()` functions, it comes back as a tuple and if you just want to glance at the screen or display, it's somewhat hard (at least for this old guy) to grab the correct information out of 8 values out of the tuples.

The `rtc.datetime()` function returns its values as follows...

```
dt=(2023, 12, 9, 5, 9, 59, 41, 0)
```

```
# =====  
#   RTC demo with OLED driver.  
#   Written by G.D. Walters  
# =====  
  
from machine import I2C, Pin  
from ds1307 import DS1307  
# from ssd1306 import SSD1306_I2C  
# import framebuf  
import time  
import utime
```

Here we set up the DS1307 on I2C(0).

```
# Base setup for the RTC DS1307  
rtc_i2c=I2C(0)  
rtc=DS1307(rtc_i2c)
```

```
# # =====  
# # Base setup for the SSD1306  
# # =====  
# # Set the Width of the OLED Display  
# WIDTH = 128  
# # Set the Height of the OLED Display  
# HEIGHT = 32  
# oled_i2c = I2C(1)  
# oled = SSD1306_I2C(WIDTH, HEIGHT, oled_i2c)  
# oled.text("Starting up!", 5,8)  
# oled.show()  
# # =====
```

For the `rtc.datetime` tuple, it works out as:

```
Year, Month, Date, Day of  
Week, Hour, Minutes, Seconds  
and Subseconds.
```

On the other hand, for the `time.localtime()` values they come in this way...

```
dt=(2023, 12, 9, 9, 59, 41,  
5, 343)
```

Which at first glance seems to be the same format. However, it's not. It works out as...

```
Year, Month, Date, Hour,  
Minutes, Seconds, Weekday and  
Day of the Year
```

```
Local Time: 12/09/2023 -  
09:59:41
```

So, taking all that into

consideration, I created a little function that takes in the tuple from either `rtc.datetime()` or `time.localtime()` and a second parameter that specifies which one the data is coming from. 0 for `rtc.datetime` and 1 for `time.localtime`. It returns two values: date and time. The date value returns a string in the format of MM/DD/YYYY and the time value is a string in the format of HH:MM:SS. If you want to change the formats of the returned data, it is really simple. I'll show you where below. First let's look at the start of the function (next page, top right).

The first line in the function simply copies the incoming data from "d" to `dtin`, which makes more sense. I also wanted to have a value that could be examined easily, rather than just name the



parameter dtin.

As you can tell, the year is handled the same, whether the data is coming from rtc or timer, so all we do here is step through of the first three items in the tuple, assign them to temporary values, then zero pad them on the left to make sure that 7 minutes after 11 shows like "11" "07" with whatever separator you decide you want.

Now we handle the time portion. If we are dealing with the rtc data, we skip (for this project) the fourth item in the tuple (remember it's zero based so it is actually designated as dtin[3]), since it's the Day of Week. Then we pull each data item and, as we did with the dates, zero pad the item (top right).

If, however, we are dealing with the time.localtime structure (a '1' in the second parameter), we only need to pull in the next three items in the tuple and as above, we convert them into zero padded strings (bottom right).

Now (top middle) is where we use the f-string feature to format the strings. So you can easily see that it would be simple to change

```
# Change the date format to your liking...
dateS=f"{monS}/{dayS}/{year}"
timeS=f"{hrS}:{minS}:{secS}"
return dateS,timeS
# =====
```

the separators or move the items around.

That's it for the formatting function.

Finally, we can code the main portion of the program. It's really very simple. We instantiate the machine.RTC object as rtc. Then we get what the board thinks is the correct date and time. We then send that structure to the ConvertDT function and a 0, since the data is directly from the rtc

```
rtc=machine.RTC()
dt=rtc.datetime()
print(f"{dt=}")
d,t=ConvertDT(dt,0)
print(f"RTC: {d} - {t}")
dt=time.localtime()
print(f"{dt=}")
d,t=ConvertDT(dt,1)
print(f"Local Time: {d} - {t}")
loop=True
while loop:
    # oled.fill(0)
    d,t=ConvertDT(time.localtime(),1)
    print(f"Local Time: {d} - {t}")
    #time.sleep(1)
    # oled.text(t, 5,8)
    # oled.show()
    time.sleep(1)
```

object. Once we get it back, we print it out. Next we get the local time from the time module and send that to the ConvertDT function with a parameter of 1. Finally we start a loop, making a call to time.localtime, convert it and print it. The program sleeps for 1 second and repeats forever (see below).

One other thing I should tell you about. If you use Thonny as your IDE, you might notice that for some reason whenever you check the

```
if which==0:
    dow=dtin[3]
    hr=dtin[4]
    if hr < 10:
        hrS=f"{hr:02d}"
    else:
        hrS=str(hr)
    min=dtin[5]
    if min < 10:
        minS=f"{min:02d}"
    else:
        minS=str(min)
    sec=dtin[6]
    if sec < 10:
        secS=f"{sec:02d}"
    else:
        secS=str(sec)
    ss=dtin[7]
```

```
else:
    hr=dtin[3]
    if hr < 10:
        hrS=f"{hr:02d}"
    else:
        hrS=str(hr)
    min=dtin[4]
    if min < 10:
        minS=f"{min:02d}"
    else:
        minS=str(min)
    sec=dtin[5]
    if sec < 10:
        secS=f"{sec:02d}"
    else:
        secS=str(sec)
    ss=dtin[6]
```

time on your Pico through the IDE, it is correct. Why would that be?

From what I understand, whenever you connect a

## MICRO THIS MICRO THAT

Microcontroller to Thonny, one of the first things that happens is that Thonny pulls the date/time information from the local computer and then sets the date/time of the Microcontroller for us.

Remember, however, if you connect your Microcontroller directly to power without connecting to your computer, the date and time probably won't be anywhere close to reality. At that point, you can call Doctor Who for a "wibbly wobbly timey wimey sort of thing", or you can use a DS1307 RTC module.

I've created a repository on Github for the code for this month at <https://github.com/gregwa1953/MTMT-FCM-200>.

Until next time, **HAPPY NEW YEAR** and, as always; 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](http://www.thedesignedgeek.xyz).



# Linux on Your iPad

For as low as \$4.95, you can have your own personal Linux cloud computer in minutes on any device.







We are happy to announce the release of Ubuntu Touch 20.04 (aka Focal) OTA-3! Ubuntu Touch 20.04 OTA-3 will become available for the following supported Ubuntu Touch devices over the next week:

- Asus Zenfone Max Pro M1 Pro1-X
- Fairphone 3 and 3+
- Fairphone 4
- Google Pixel 3a and 3a XL
- JingPad A1
- Oneplus 5 and 5T
- OnePlus 6 and 6T
- PinePhone (beta)
- PinePhone Pro (beta)
- PineTab (beta)
- PineTab2 (beta)
- Sony Xperia X
- Vollaphone
- Vollaphone X
- Vollaphone 22
- Vollaphone X23
- Xiaomi Poco M2 Pro
- Xiaomi Poco X3 NFC / X3
- Xiaomi Redmi 9 Pro, 9 Pro Max and 9S

OTA-3 is the first Ubuntu Touch based on Ubuntu 20.04 LTS that will become available for the PinePhone, the PinePhone Pro and also the PineTab and PineTab 2. We consider 20.04 OTA-3's state of the PinePhone adaptation a beta release. For now you still need to

flash the Pine{Phone,Phone Pro,Tab,Tab2} upstream images as usual.

Please test and give feedback to our developers. A great thanks goes to Oren and Luigi for working on the 20.04 Pine {Phone, Phone Pro, Tab} ports and especially fixing the sensor dependent rotation of the Lomiri shell and bringing back the Location Service (GPS et al.) support from Ubuntu Touch 16.04 (aka Xenial).

## NEW FEATURES

- First Ubuntu Touch 20.04 system image release for PinePhone, PinePhone Pro and PineTab (consider this beta-status rather than stable)
- content-hub API change and security fix
- hfd-service / lomiri-system-settings: Restore the ability to disable vibrations from notifications and other applications, which has been broken since we upgraded to Focal.
- Switch primary APN database provider to lineageos-apndb (from

mobile-broadband-provider-info). This allows more users to have their mobile data and MMS work out of the box.

- location-service: (Re-)Add gpsd provider (forward port from UT 16.04, required for PinePhone mainline Linux devices)
- location-service: Expose ClientApplications D-Bus property to be queried by the Lomiri shell, so location-service clients can be granted some computation time for updating location data
- lomiri-keyboard: Keyboard layouts added / improved (Avro, Bengali traditional, Persian)
- system settings: Rework UI and menu structure of security/privacy page(s)
- system settings: Reflect channel selection change on update settings page
- Preliminary Snap support
- messaging-app: Implement search within conversations
- Morph Browser: Remove Peekier search engine provider from list of available search engines, handle fallback to browser's default search engine (DuckDuckGo) provider gracefully; toggle switch for mobile/

desktop mode added; checkbox for autoLoadImages added to settings; upgrade QtWebEngine to 5.15.15

- QtMir: Add support for DSI as an internal display option (fixes shell rotation on PinePhone devices); re-enabled support for content-hub based clipboard (resolves copy+pasting between apps)
- waydroid/QtMir: Adjust calculation of available display size for Android apps (don't cut off the bottom navigation buttons)
- Prevent Lomiri & lomiri-system-compositor from dying when running out-of-memory
- usb-moded: Extend tethering detection to CDC-{NCM,ECM}, adds support for USB tethering to e.g. the Fairphone 4
- Translation updates (a huge thanks to all i18n contributors over on hosted.weblate.org, big thanks also to the providers of the hosted weblate service)
- FP4 and P3a specific enablements of Halium QSG. Halium QSG and schedtune enablement on the Pixel 3a and Fairphone 4 result in up to 10x performance improvements during GPU texture uploads

# The Daily Waddle

I'M SORRY, I JUST CAN'T BE  
FRIENDS WITH SOMEONE WHO  
USES MICROSOFT EDGE...

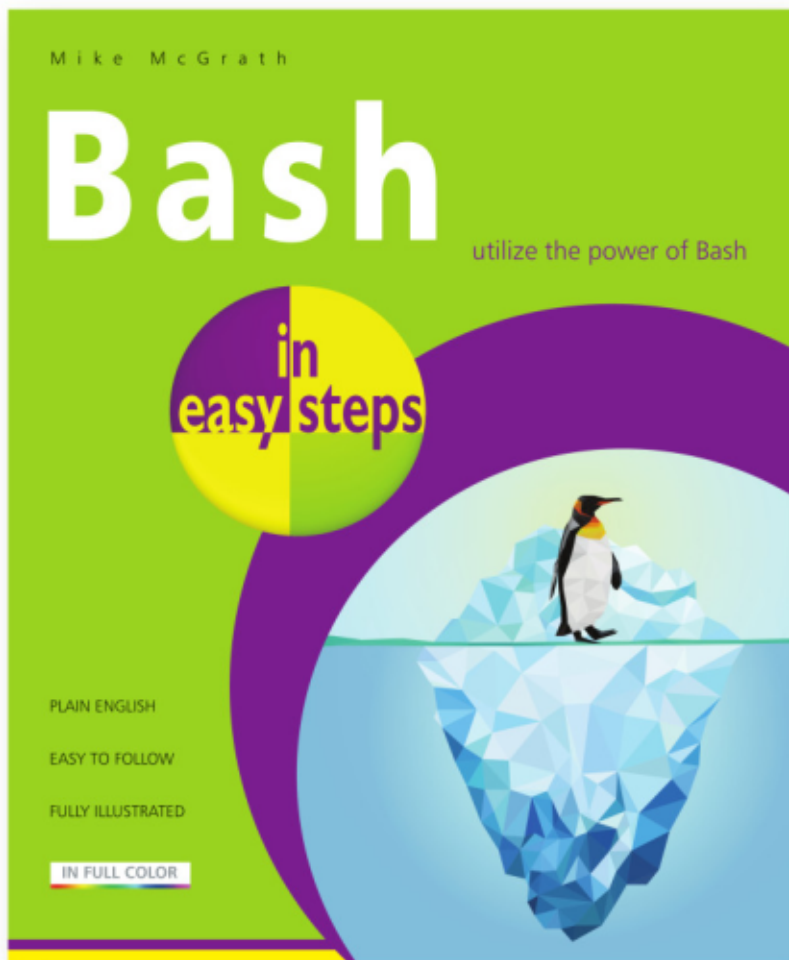




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The love, the hate, the controversy, like sands through the hourglass, these are the days of our lives...

From the snapcraft page: "Snapcraft - Snaps are universal Linux packages Canonical Snapcraft The app store for Linux Pre-built apps C/C++ Java Node.js Electron Flutter Ruby MOOS ROS 2 Snaps are easy to discover and install. Millions of users can browse and install snaps graphically in the Snap Store or from the command-line. Snaps install and run the same across Linux." So what did we get from this? I got universal Linux packages and a waste of my time reading it.

Let me see if I can find out more and share it with our readers. Self contained packages are nothing new in the world of software. If you have ever used MacOS you would be familiar with them. I intentionally did not use the term universal package when talking about MacOS as that refers to something slightly different, but in essence, Snap packages are a

universal package format for Ubuntu. OK, but what does that mean? That means that the application and all of the bits-n-bobs, that it needs to execute (run), are all in one convenient package. (They say it is inspired by mobile applications.) Basically a self contained application. On Windows you may have encountered "portable apps", that is similar and indeed, Snap packages are portable. Because they contain more than just the application, they are not managed by your distribution's package manager and you need a separate tool to manage them. Let us dig a little deeper into the subject as it has so much contention at the moment.

As a user, with a modern computer, Snaps may just be another way for you to get apps. One cannot argue with the fact that Snap packages bring lots of software to Linux that wasn't previously available and this is great. Snap packages also support channels, meaning you could have software from a stable or nightly channel, all great. Because Snap

packages are self-contained, it means that it has to first unpack and load all those bits-n-bobs when it executes, if you have the same version in your memory, or not, resulting in longer load times and more memory consumed. Again, not a major issue if you have a modern computer. But ... If we look at this from the perspective of someone who bought an Asus i3, 1.8Ghz with 4GB of memory and 80GB, 5400rpm slow spinning rust, ten years ago, more hard drive space wasted, more memory wasted, more CPU cycles wasted, makes no sense, specially if you wanted to "save" your laptop and not let it end up in landfill. You now have redundant data all over as each snap uses the same resources, but in its own little world. On top of this, imagine you are using your cellphone to tether for internet connection. You'd be out of pocket so fast, it will make your head spin. (Contrast this to Ubuntu 5.10 where I had 10MB of data a month and my updates were in kilobytes, and it was enough!) I do not have a fear that Canonical are doing nefarious things with Snaps, unlike MS, but

Linux Mint is kicking against snaps like crazy.

Ref: <https://hackaday.com/2020/06/24/whats-the-deal-with-snap-packages/>

The thing that irks me about Snap packages is that people are "snapping" things that you would not need a Snap for, (eg, VIM) wasting space and time, sort of like Microsoft is doing with their store, FORCING people to use it. Do you want your sound card control panel or Nvidia control panel, that was conveniently shipped with your drivers? HA! No more!! Microsoft now has that exclusively in their store. Why? Probably so they can add more spyware to them and mine you for more data to sell. Let's look at the software store page of Firefox. You do not get the choice to install the .deb-file it's Snap or Snap. From a business perspective it makes sense, but not for a home user, as we like choice, I prefer faster apps to containerized ones, don't you? From a resource standpoint I would like the choice not to fill my drive with redundant

data. (I have to stress that not all Snaps are a waste of resources, I recall Blender being the same size Snap as a native install plus dependencies.)

There are lots of strides made to better Snaps and I am all for that. Previously if you did `df-h` you would end up with a scrolling screen of loop devices and you needed to modify the command with an alias. In the latest versions that has been fixed. The Firefox Snap now launches at a decent speed and so forth. There is undoubtedly a demand for a Linux universal package. However, if you do a `lsblk`, you will still see them (Snaps) as mounted file systems, when all you want to see is if your mounted drive is still there, for instance.

We have made so much forward strides in things like virtualization, saving on resources, just to go the opposite way with software. (my Windows 7 pre-release machine with less than half the power booted faster than my Windows 11 machine with a super fast SSD and four times the memory, as an example.) Even when Snap packages update, they download the complete thing, wasting bandwidth and writing lots of data

to your drive, and should you have an early SSD, shortening the life thereof by quite a margin.

The main point of contention for a lot of people is the single point of failure. If the Snap store goes down, say DDOS attack, so does your chance to get more software or updates. It is not open source, so you cannot run your own store on your own server, making it feel like Apple's walled garden. While you can have your own "store", so to speak, on Canonical's platform, you cannot have your own mirror.

**The good:** Applications are isolated, promising more security. Snap confinement describes the level of isolation of a snap on your system, you have strict, classic and dev mode. With 'strict' the application cannot access your system resources. This may be problematic when you need to say, save a file from your snap application onto a flash drive. In 'classic', the confinement level gives snaps the same access to system resources as traditional packages have. 'Devmode' is reserved for snap creators and developers. A snap with devmode confinement level runs as a strictly confined snap, but has full access to

system resources, and provides a debug output.' You can also revert to a previous version of software, if, for some reason you are unhappy with the update, you can revert (downgrade) easily. One Snap store also eliminates the use of lots of PPA's. It is a convenient way to find software for Ubuntu users.

**The Bad:** There have already been malicious apps in the store, as nobody really checks them and all you need is an account to publish an application on the store. (You don't have to be the author or maintainer.) There have been articles that argue that the isolated security is only skin deep. Snaps do not integrate with your theming, be it pointer or icons or colours. Then there are the forced updates, a main reason people leave Microsoft Windows and migrate to Ubuntu. Lots of package managers are also annoying people.

From a business perspective, it makes total sense and Canonical is a for-profit company, smooching up to businesses, even if it had got it's fame from home users. Thus, I think Snaps are here to stay. I do not have a crystal ball, but as someone in the IT industry, constantly having to comply with x,y and z, set in place

by Microsoft to exclude others, this is one way Canonical is clawing at that market.

## MY TWO CENTS

Here is where I think Canonical has to make a decision; be a business OS or support home users who want the same OS they have at work at home. Maybe it is time to follow Microsoft's example and split into a home and business edition, where you have choices in the home version and the business edition is rigid. Either way, snaps are only part of the bigger picture. Ubuntu is a Canonical product that is also a community project, with a benevolent dictatorship. It's really hard to maintain a balance between the needs of the community and that of a company. We have all witnessed the Red Hat fiasco the last few months...



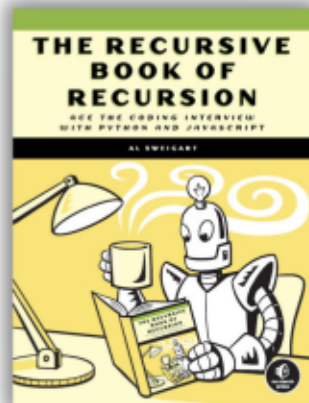
**Erik** has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.



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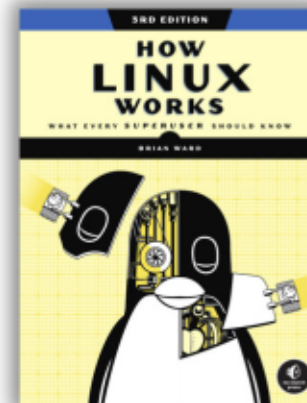
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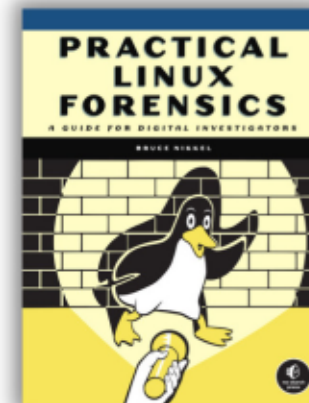
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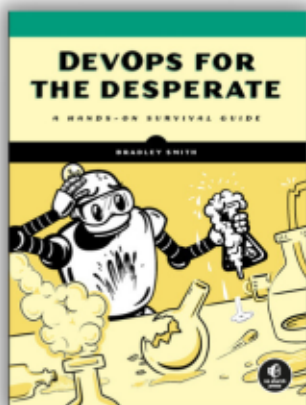
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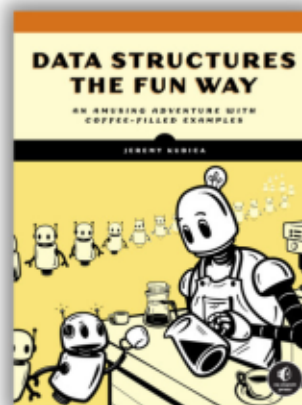
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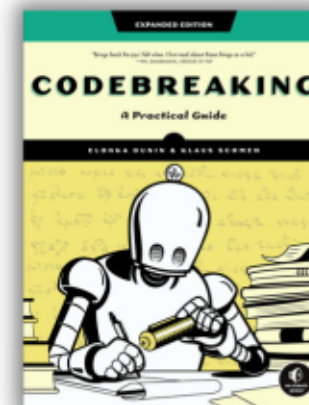
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# HOW-TO

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.

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## 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 23.10

The biggest news with the release of Kubuntu 23.10 is that there is not much news! I'll try to make the case that that is a good thing for Kubuntu fans.

This is the third and final release in this Kubuntu development cycle before the next long term support (LTS) version comes out, which will be Kubuntu 24.04 LTS, due on 25 April, 2024.

Kubuntu 23.10 was made available on 12 October, 2023, and, being an interim release, it is on a short leash and supported for just nine months, until July, 2024.

Kubuntu 23.10 tells us quite a bit about what to expect when that LTS does come out. This whole Kubuntu development cycle has introduced only a few small changes. Kubuntu is one of the most popular of the Ubuntu official flavors and it has a dedicated group of enthusiastic users. On the whole, they seem to like the way Kubuntu works and are not looking for a lot new. It seems the developers have received that message and are

giving the users what they want, just some bug fixes and minor updates.

This is the 38th Kubuntu release and the 17th one with the Qt toolkit-based KDE Plasma 5 desktop, so it is far from hyperbole to claim that this is a mature Linux distribution.

## INSTALLATION

I downloaded the Kubuntu 23.10 ISO file from the official source, using Transmission to get it via BitTorrent. After the ISO was

downloaded, I carried out a command-line SHA256 sum check to make sure the download was good.

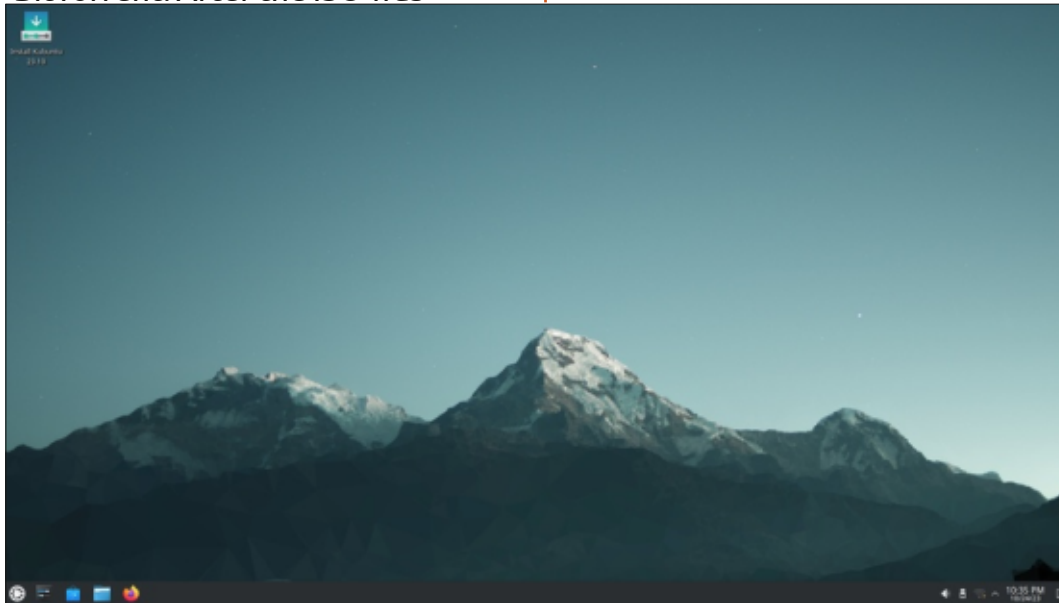
Most of the Ubuntu family of distributions have been quickly growing in download file size in the last few years, but Kubuntu 23.10 actually reverses that trend. It is 3.9 GB, whereas the last release, Kubuntu 23.04, was 5.0 GB. It is not clear where the 28% savings were found, as there doesn't seem to be anything missing and the release notes give no clue.

I tested this release by dropping the ISO file onto a USB stick equipped with Ventoy 1.0.96 and it booted up perfectly into a live session.

One live session Kubuntu anomaly is that after a few minutes of inactivity, the screen will lock and requires a password to unlock it. No other Ubuntu family live sessions actually lock the screen in a live session. Some other distributions, like MiniOS, will, but they give you the password at boot-up. A search shows that no one seems to know what the Kubuntu live session password is. This is not an issue with an installed version of Kubuntu, as you will have specified your own password during installation. In the live session, a locked screen means you will have to do a reboot and lose any work saved, like screenshots for a review. I know, I did.

## SYSTEM REQUIREMENTS

The recommended minimum system requirements for Kubuntu



# REVIEW

23.10 are the same as for Ubuntu and have not changed for this release:

2 GHz dual core processor

4 GB RAM

25 GB of hard-drive, USB stick, memory card or external drive space

Screen capable of 1024x768 pixel screen resolution

Either a CD/DVD drive or a USB port for the installation media

Internet access useful, but not essential

The recommended 4 GB of RAM is probably less than ideal for web browsing nowadays with 8 GB a more realistic minimum amount.

# NEW

Pretty much each new release of Kubuntu has had a fresh default wallpaper, but not 23.20. It displays the same wallpaper on boot up as 23.04 did, "Mountain" by Andy Betts. It is a nice wallpaper and innocuous enough that it is hard to object to, but it oddly feels like the developers are saying, "we haven't changed anything in this release".

A total of 35 wallpapers are included, many from recent releases, so it is hard to complain. You can use your own wallpaper, of course. The code name for this release is "Mantic Minotaur" and while many Ubuntu family releases,

like Ubuntu, Lubuntu, and Ubuntu Unity, are sporting Minotaur and labyrinth wallpaper, Kubuntu offers none at all. Probably a good thing, ducking that cliché.

Kubuntu 23.10 is built with the Qt 5.15.10 toolkit. It includes KDE Frameworks 5.110, with updated applications from KDE Gear 23.08 and the KDE Plasma 5.27.8 desktop, which is mostly a bugfix update. KDE Plasma 5.27.8 does include some refinements to hybrid sleep and improved monitoring of NVIDIA GPUs on multi-GPU setups, using the Plasma System Monitor.

Plasma 5.27 will probably be the end of the line for the Plasma 5 desktop, as Plasma 6 is scheduled

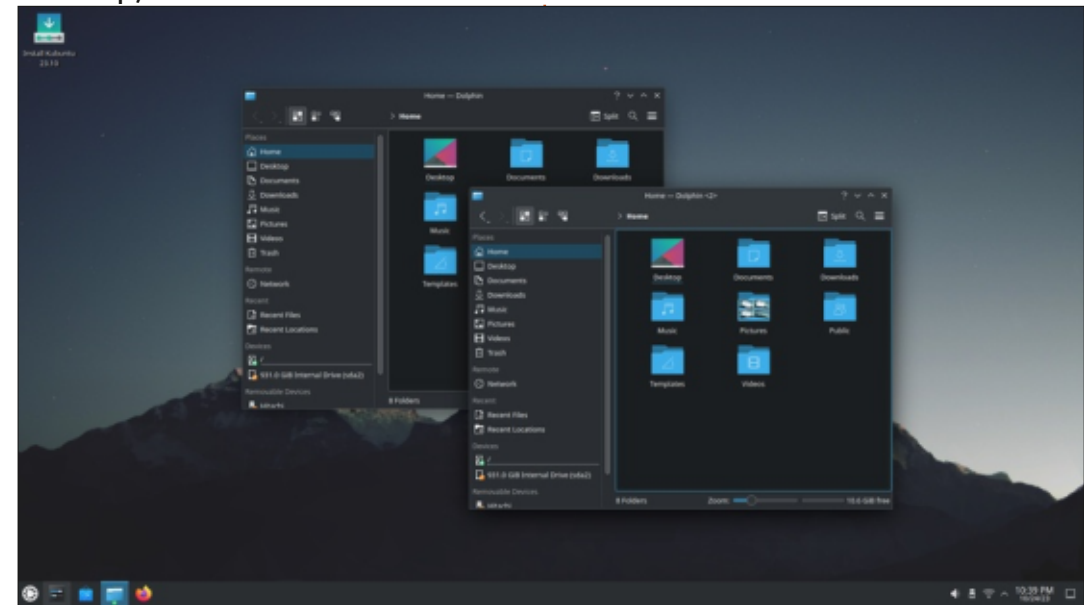
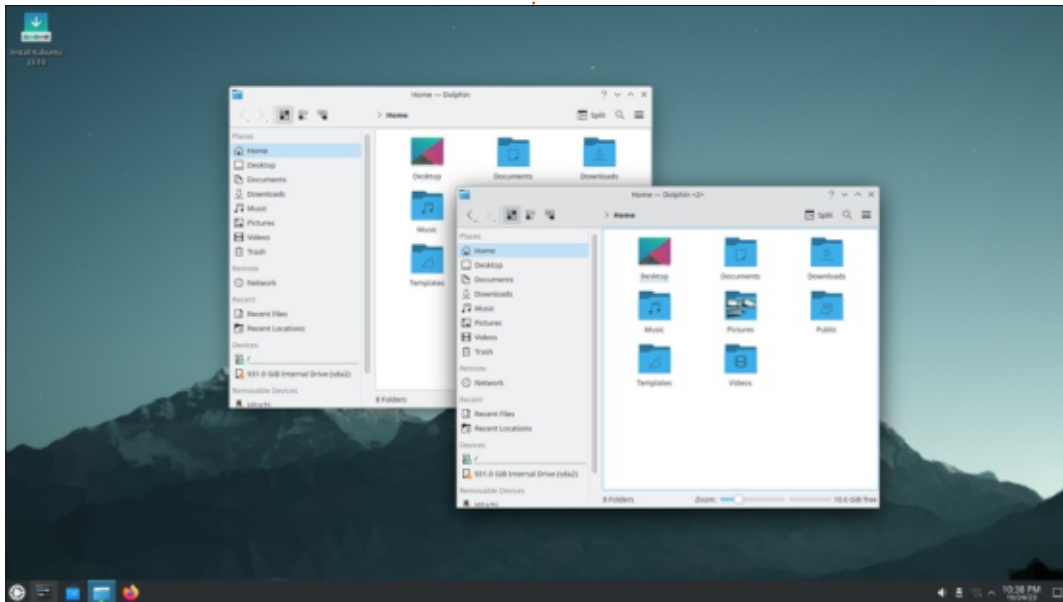
for release in February, 2024. It will be interesting to see which version lands in the April LTS release.

Like all of the Ubuntu 23.10 family of releases, Kubuntu 23.10 comes with Linux kernel version 6.5 and Systemd 253.5 as its initialization system.

Kubuntu still has Wayland on test and so this release continues to use the X.org display server. Wayland can be selected on boot-up. Plasma 6 will use Wayland by default.

# SETTINGS

Kubuntu is the most





# REVIEW

customizable of the Ubuntu-based Linux distributions. As has been the case for quite a few releases now, in Kubuntu 23.10 there are still four global themes, four application styles, six Plasma styles, five window colors, two window decoration styles, eight icon sets, and eight cursor styles. Those are just the list of installed options, as most of the settings pages have one-button downloads for lots more available. Kubuntu's high degree of user choice is certainly one of the factors in its enduring popularity. It is easy to change its appearance to suit you.

Kubuntu 23.10 also has 68 pre-installed desktop widgets, the same number as in the last release.

Widgets are small applications that can be added to your desktop to improve functionality, such as clocks and weather reports. Hundreds more can be downloaded with the only limitation being screen size and your personal tolerance for clutter.

## APPLICATIONS

Some of the applications included with Kubuntu 23.10 are:

- Ark 23.08.1 archive manager
- Discover 2.1.2 software store\*
- Dolphin 23.08.1 file manager
- Elisa 23.08.1 music player
- Firefox 118.0.1 web browser\*\*
- Gwenview 23.08.1 image viewer
- Haruna 0.12.1 video player

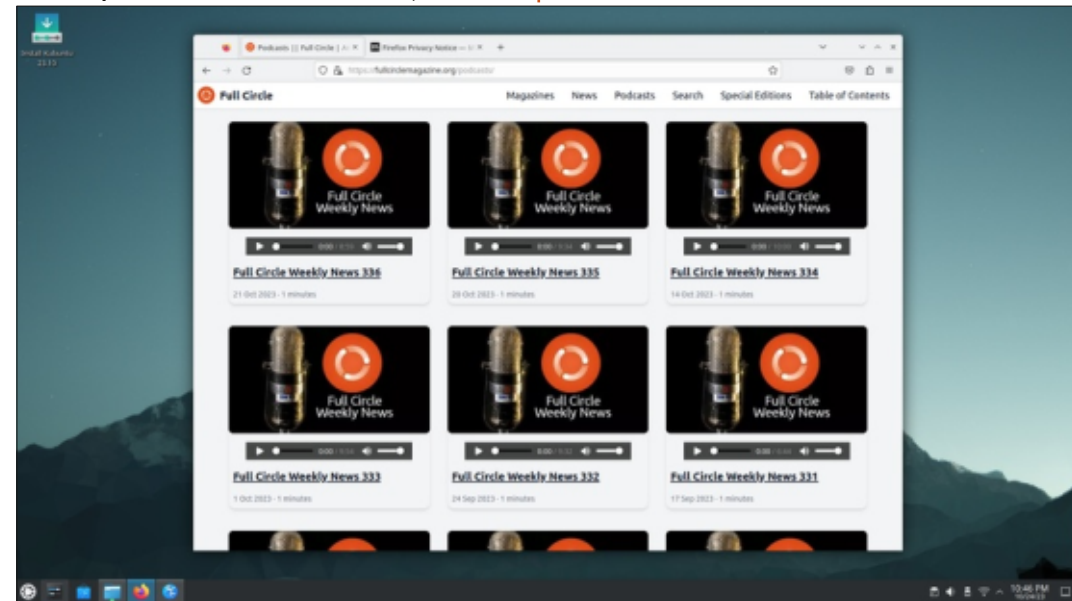
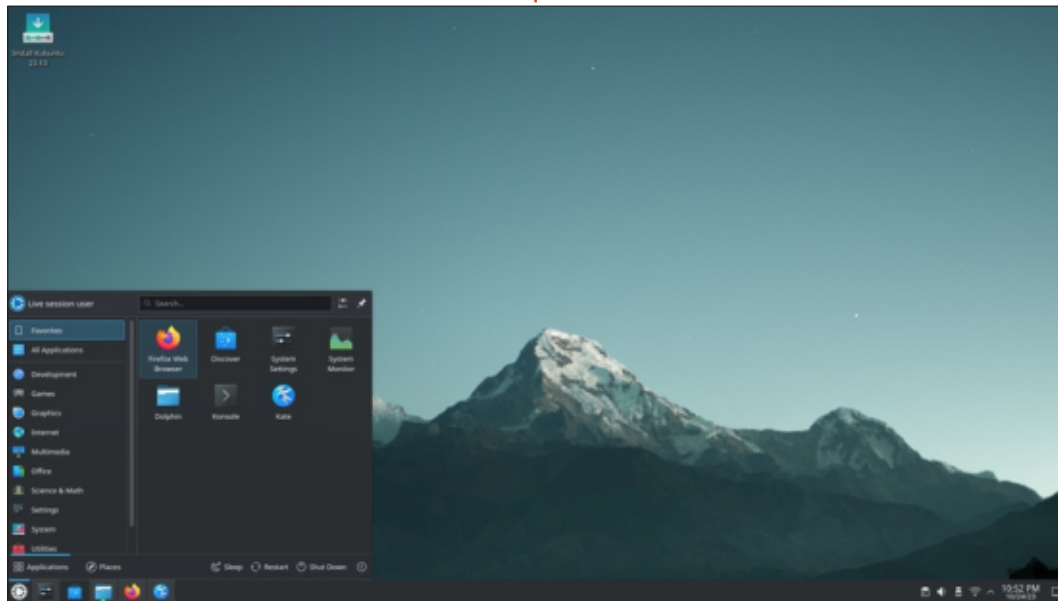
- Kate 23.08.1 text editor
- Kcalc 23.08.1 calculator
- KDE Partition Manager 23.08.1 partition editor
- Konsole 23.08.1 terminal emulator
- Kmahjongg 23.08.1 game
- Kmines 23.08.1 game
- Konversation 23.08.1 IRC client
- Kpatience 23.08.1 game
- Ksudoku 23.08.1 game
- Ktorrent 23.08.1 BitTorrent client
- LibreOffice 7.6.2 office suite, less only LibreOffice Base database
- Muon 5.8.0 package manager\*
- Okular 23.08.1 PDF viewer
- PipeWire 0.3.79 audio controller
- Plasma System Monitor 5.27.8 system monitor
- Skanslite 23.08.1 scanning utility
- Spectacle 23.08.1 screenshot tool
- Startup Disk Creator 0.3.17 (usb-

- creator-kde) USB ISO writer
- Thunderbird 115.3.1 email client

\* indicates same application version as used in Kubuntu 23.04  
\*\* supplied as a snap, so version depends on the upstream package manager

Kubuntu releases usually ship with new versions of applications and the list shows that almost all included in 23.10 are updated versions from KDE Gear 23.08.1.

One application improvement in this release is that the Gwenview 23.08.1 image viewer can now read the GIMP image editor's native .xcf file format.



# REVIEW

Starting with the 23.04 release, the new policy for all the Ubuntu official derivatives was to cease including Flatpak capabilities by default, instead standardizing on Deb and Snap packages. Kubuntu has complied with the policy, but the release notes once again provide instructions for how to enable Flatpak applications for anyone who wants them.

As in past releases, Kubuntu 23.10 does not include a webcam application, an image editor or video editor, by default, although there are many options in the repositories. KDE's Qt-based Kdenlive remains probably the best choice in a video editor.

LibreOffice 7.6.2 is, as usual, supplied complete, lacking only LibreOffice Base, the office suite's database application. Base is probably the least used component of the suite, but it can be added from the repositories if required.

## CONCLUSIONS

Kubuntu 23.10 is a pretty much flawless release, with only a few minor changes over 23.04. If you have new hardware and need the newest Linux kernel, or are seduced by better sound for your BlueTooth headset, then this may be a worthwhile upgrade.

Since most Kubuntu fans like

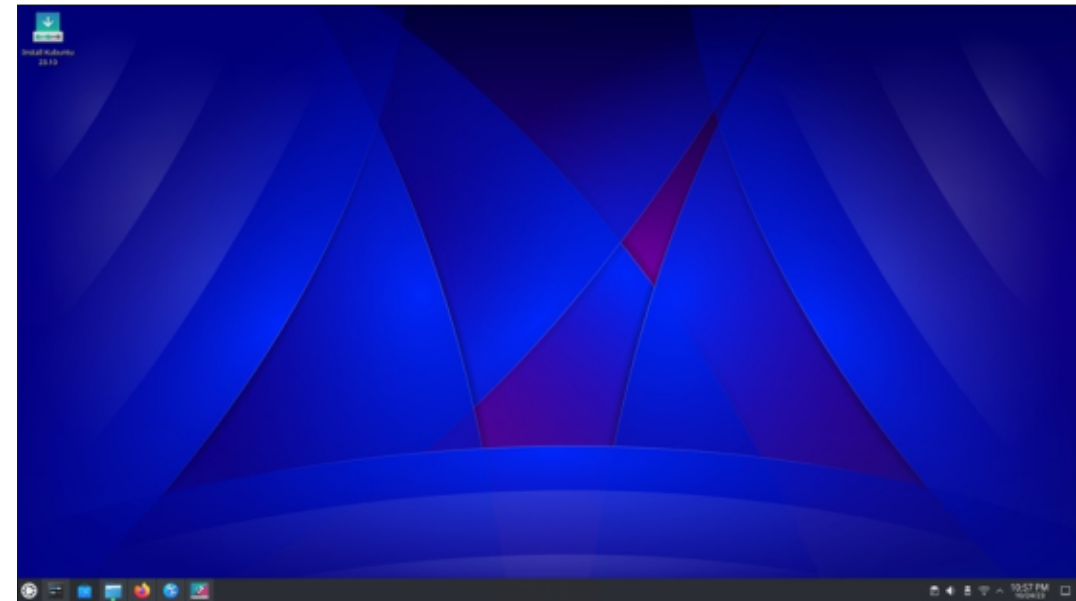
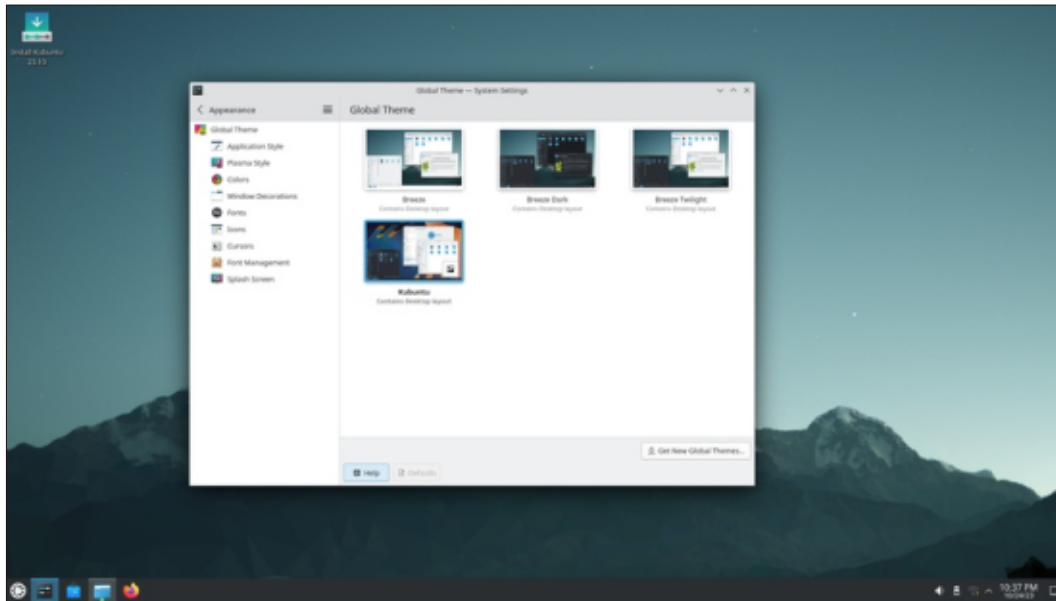
how the distribution looks and works, I think the fact that this version has only a few minor upgrades and some bug fixes will be welcome news for users. It also points to Kubuntu 24.04 LTS, due out on 25 April, 2024, as being very similar to this release, just with three years of support. Perhaps it will get a new wallpaper design, though?

## EXTERNAL LINKS

Official website:  
<https://kubuntu.org/>



**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

Website: <https://www.linuxliteos.com/index.html>

Price: Free

Blurb: *"Linux Lite is a 'gateway operating system'. Your first simple, fast and free stop in the world of Linux. Our ongoing mission is to make the transition from Windows to Linux Lite, as smooth as possible. Linux Lite is a free operating system based on the Ubuntu LTS (Long term Support) series of releases."*

Linux Lite is one of the few distributions that do not ship with Snaps. For people with older laptops or those with limited hard drive space or memory, this is the one I would recommend. This is easy for Windows converts to pick up. That said, the 6-series was plagued by bugs galore. I was an early adopter of version 6, so I feel your pain if you grabbed that. Version 6.2 fixed a lot of the "weird" and version 6.4 addressed paper-cuts. Up to this point, I would not have told anyone to install it. I am currently on 6.4 and it still will

not open the Vivaldi browser on start-up, yet it will open all the other programs that were open when I shut it down...

I'm glad to report that version 6.6 is on the ball. Things that did not work for me in prior releases are all OK now, meaning they have been hard at work fixing bugs. I suppose I'll buy some merchandise to show support as they are not taking donations. I do have LinuxLiteOS on metal as well as Virtualbox and it is good enough

for a daily driver. That does not mean there aren't things that can be improved – for instance, in the 6.6 edition, installing Firefox still wants to install snaps. Why? New users who want Firefox will get saddled with what they came to avoid. That needs to change, but it is easy to add a PPA and get the deb version of Firefox.

The release boasts a big update on supported languages, but my local vernacular version is like listening to a drunk telling you his

# Linux Lite 6.6

life's story. It's VERY hard to follow! (I leave it on English by default.) It is so bad, using archaic versions of words not spoken in a hundred years and using full descriptions, like instead of just saying "manual", it will be "users help manual" and then there are direct translations where things are reversed, slapping an -ing on the end of the verb, very sloppy. You can see it is crusty old professors ruling the roost. I tried helping out with translations before, but it is like a Mexican guy telling a Greek guy how to speak his own language using Google translate as reference. (This actually happens in the translation community!!) I don't care – Google is wrong. Though the language change changes quite a bit, my menu categories were still in English. It was nice to see that they are trying to be more inclusive with a broader selection of language options, even if it was flawed.

Let's quickly talk about the other thing that was amiss, I recall reading on one of the Linux blogs that 6.6 would include a free AI chatbot – not that I care, I do not





# REVIEW

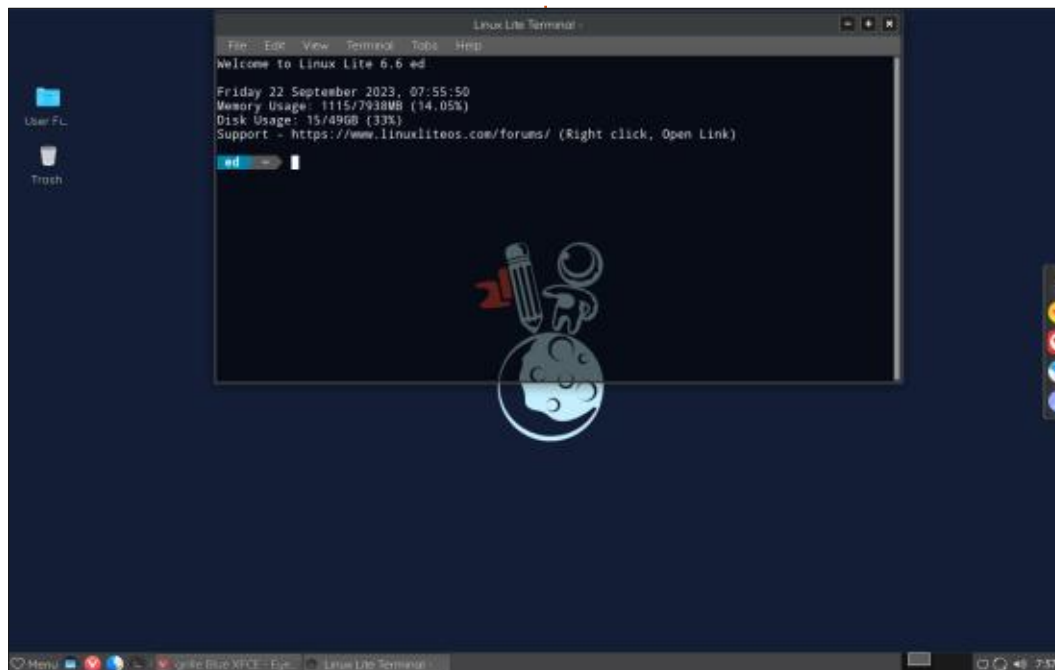
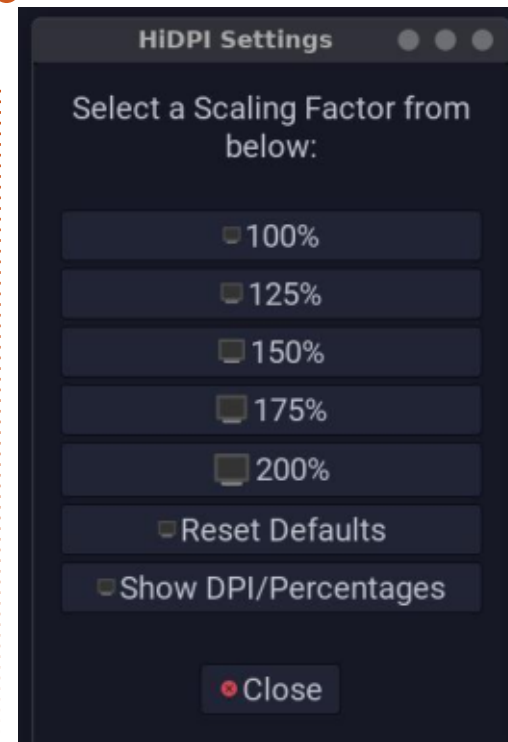
care to talk to machines, but some people will. I do not see this feature, there is nothing on the welcome screen and typing “ai” or “chat” in the menu gets you no results.

The defaults are actually quite sane on LinuxLiteOS, and that has not changed in version 6.6. I think I added Pulsar and Geany and removed 3 apps. I will still remove catfish and replace it with Fsearch, but that is just me. When I say sane, I mean there will be programs like hardinfo for GUI users and a whole slew of terminal options, for terminal jockeys. It does not ship with Krita and half of KDE installed. (this is actually where I like Snaps, Appimages and Flatpaks, when you need other desktop environment’s guts to be installed) Here’s looking at YOU Linspire!

What I like about Linux Lite are their applications. Lite Auto logins, Lite Desktop, Lite Info, Lite Network Shares, Lite Software, Lite Sounds, Lite Sources, Lite Sysinfo, Lite Tweaks, Lite Upgrade, Lite User Manager, Lite Welcome and Lite Widgets. All of the applications have that “liteness” and simplicity. My only wish would be that they are all together in one place, like

the welcome application, to make it easier to navigate the “Lite apps”. (Or their own category in the menu?) This covers basically all your bases and you do not need to install something like Gnome-extensions. I found their HiDPI application very handy with my 4K screen, as the scaling is in percentages, as opposed to the standard display setting giving me 1x and 2x where 2x actually scales you down. Should that not be 0.5 then?

They also have you covered in the little things, like inxi, etc are all installed by default and your terminal is pimped out with powerline and so forth. These small



touches make the distribution feel like it has a personal touch and not just re-skinned. Ubuntu did not have a boot-up sound for a long time and even here LinuxLiteOS has you covered.

Linux Lite focusses more on stability, so things like Thunar will still be on 4.16, even though the current version is 4.18. The reason I bring this up is that there is little difference between Thunar 4.16 and 4.18, but there was an issue with a memory leak that was fixed in 4.18. Though this did not affect me, (I think?) but I’d rather be safe than sorry when it comes to things like memory leaks.

That Linux Lite is based on Ubuntu is a good thing – meaning more software support, and even though there is no AUR, the stuff that do not go into the AUR – i.e. proprietary programs & games, will be better supported. I can see from our download statistics on some of our applications that no matter how much the haters hate, Ubuntu is still the most widely used Linux OS. (For example – a lottery program has 300k downloads for the Ubuntu version and 4k downloads for rpm distro’s, despite being originally developed as a

## REVIEW

SUSE application. This trend seems to follow most applications).

Speed-wise Linux Lite is in the same camp as other Ubuntu distro's, not feeling "fast" regardless of being installed on a SSD. Systemd-analyze blame puts the blame on networking at over 2minutes and apt-daily service at a minute and logrotate at 2 min and so forth. We are living in 2023 not 2013! Grrr... I mitigated some by disabling nmbd, etc, but your mileage may vary. Though this is an Ubuntu issue and not Linux Lite – I think if they put their efforts there for the next release, this distribution may shine like a diamond.

As I said before Linux Lite 6.6 is now my daily driver, and I am happy with it.

For those TL;DR people here is a quick summary:

### PRO'S:

- Hardware database – you can quickly see if your machine is supported.
- Lite applications – This makes using Linux and XFCE much simpler.

- Simple UI – The UI is similar to Windows and nice for converts to Linux. This is great for older people too. Easy to use and customize.
- Sane applications – With the inclusion of useful programs such as LibreOffice and Paint, this distro is suited for home users as well as business users.

- Low resource use: Without Snaps eating all your memory & disk space, it performs reasonably well on older hardware.

### CON'S:

- Lack of a proper editor – There is no "Development" category, I added Geany and Pulsar, but even

- Notepadqq would have been nice.
- Translations are not on track – it is there, but flawed.(From my perspective anyway)
- No font manager – Only a font viewer. Never saw the point in a font viewer.





# LETTERS

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



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

Congratulations to you and the team on reaching such an amazing milestone. Two hundred issues of an all volunteer publication is an awesome achievement and one that should be a source of great pride for all those currently involved, as well as all the contributors of years gone by. I salute you all!

In your Editorial of issue 199 you asked for input on how readers came to find the magazine. I do not remember exactly how I came across Full Circle, but I do know it was in the second half of 2015 because the first issue I downloaded was number 100. It was not long before FCM 100 that I had finally got a linux running to the standard I wanted in a daily driver, with the first release of Ubuntu MATE. All the other distros I had tried until then had issues of one kind or another for me that I could not get past, but with the MATE edition I had a distro that 'just worked'. I remember becoming aware of Ubuntu MATE from listening to the sadly now defunct Ubuntu Podcast, so it's quite likely I

heard about FCM there as well. I am glad I did.

Ubuntu MATE stayed as my daily drive until 16.10 - that edition broke 'name resolution' on my network, and it took me a very long time to identify the cause. In the meantime I needed a linux installation that worked for me, and the openSUSE folk had released the first version of their Leap distro. That served as my everyday linux for many years, through about 5 version upgrades until a recent hard disk failure. I thought I would try a rolling release and installed openSUSE Tumbleweed. As much as I liked TW it just got too many updates. Debian 12 was released around then and now I happily use that with a KDE desktop. Along the way I looked at many, many distros, but didn't encounter one that gave sufficient reason to move on from what I was using at the time.

Ever since my original FCM issue 100 I look forward to each monthly edition of the magazine. While not every article/series is exactly to my taste I very much appreciate the

time and effort all of your contributors put into their articles, and of course the work done at FCM central to compile and publish, on time, every month. I particularly enjoy the comprehensive news round-up and the Q&A section, and I like that you review some non-Ubuntu distributions.

Again, my congratulations on your amazing achievement of 200 issues, and my sincere thanks to all who mesh together to produce FCM. I look forward to another 200 issues.

**BruceG**

Kudos to Paul Romano for shouldering the Herculean task of indexing nearly 4,000 (and counting) Full Circle articles. This is a really valuable resource for all we Full Circle readers. Thanks Paul!

**R E Brinson**

## 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](mailto:questions@fullcirclemagazine.org), and Erik will answer them in a future issue. Please include as much information as you can about your query.

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

Sorry, but today is a rant, rather than a thought provoking or funny story. The 'boycott Russia' thing is getting really ridiculous. I check German, Russian and Indian sources when compiling the news. (It is usually where you find interesting nuggets) My rudimentary understanding of the languages lets me read the articles, but I rely on Firefox translations to translate them so I can turn them into articles. To my surprise this week, (yes, you will only see this in December and this is mid

November) the site - <https://www.linux.org.ru/news/> - did not translate any more. The message was that Russian was not supported yet. This is the same plugin/extension I have been using for six months plus, to auto translate the site with. Luckily Librewolf has a built-in translator, so I'm not dependent on Firefox Translate, but it is flawed and does not work if, say the first letter of the article is simply a "B" and you cannot open a translation in a new tab. This means I will have to wash some articles through the abortion that is Google direct translator, meaning I need to get used to the wrong translations again. Not to mention the wasted time and me trying to be free of Google as much as possible. This means I now have to keep two tabs open, one for the translation and the original to be able to copy the page link. Can tech not be free of politics??? It feels like for every step forward humanity takes, as soon as politics gets involved, we take two steps back. Am I the only one?

**Q** : I just installed oh my giraffe from the app store. Nothing happens when I run it. Can one do a traceback in the terminal for Snaps? Ubuntu 22,04 64Gb memory, 1TB SSD i9. Should be more than enough? Snaps are supposed to be universal and it worked fine on Ubuntu 16.04.

**A** : I also installed it on vanilla Ubuntu, to test and it does not run. You can open a terminal and type `snap run ohmygiraffe` and see the output. For me it is some libGL error. You should be able to grab the source code and run it with Love2d. <https://github.com/2439905184/oh-my-giraffe>

**Q** : I just installed yt-dlp on Ubuntu 22.04. It is broken. I then checked Github and saw it is out of date. I did a `yt-dlp -U`, but it is disabled in Debian based builds. Any idea as to the way forward?

**A** : Here's what you do. Go here: <https://launchpad.net/ubuntu/+source/yt-dlp> and grab the latest .deb-file even if it is from

"noble" and install that. I just tested it here: `yt-dlp --version 2022.04.08 ; ed@IT1:~$ yt-dlp --version 2023.11.16 -as` you can see it works on 22.04

**Q** : I was cleaning up ubuntu, removing packages I don't use and when I was done, Ubuntu has only a login option for command interface. What can I do to fix it? I tried BingAI, but I think I am asking the wrong questions. Oh and I use 22.04 Gnome.

**A** : Without knowing what you have done, I cannot really help. Try:  
`sudo apt install ubuntu-desktop`

Reboot

**Q** : My laptop's brightness changes automatically the whole time and it is driving me nuts. I read up on it and it senses via the camera. My camera's in-use light is off, so how is it seeing? Is this a privacy issue with my Dell or is it Ubuntu??

**A**: Usually there is a light sensor \*next to your laptop camera that does the sensing, but you can turn that off in the Ubuntu settings under power.

**Q**: I am trying to install Ubuntu on my sister's laptop, but she dropped it and now her USB ports are not working. I used Balena Etcher to write the image to a SD card I had lying around, but I cannot seem to get it to boot. I have checked the integrity of the SD card on my laptop, so I know it is good. I have now tried with Ubuntu, Kubuntu and Ubuntu Mate, no luck so far. Can you help?

**A**: Some machines just do not have the ability to boot from SD card. You can go through the BIOS settings with a fine-toothed comb and see if you find anything, (maybe update it) but if there is nothing, there is no way to make it boot from SD card, regardless of OS.

**Q**: Something weird on my Ubuntu 22.04.03 that I just noticed. It says; model hp-color-laserjet-pro , driverless. I have

printed on it before without issue. How come it went driverless?

**A**: Ubuntu has generic drivers for a lot of printers. If yours works fine as is, I suggest leaving well enough alone. Linux drivers for printers, even from manufacturers, are notoriously out of date and even cause segfaults. Unless there is something your driver does, that the kernel cannot do, be happy and carry on.

**Q**: I installed Ubuntu 22.04.01 and my laptop has a funny screen, 1440x900. Ubuntu only shows 800x600, so not making it properly. I watched a youtube show xrandr, but I couldn't fix. This is problem for me. Two times I make install and two times it make 800x600. I am recovering from Windows 7. I edit file /etc/X11/xorg.conf.d, still not working.

**A**: OK, right after install, if Ubuntu cannot identify your display it goes to 800x600 as not to damage older screens. I suggest updating first and then only trying to change your display properties, after rebooting it. The path you are editing files in is for X11-sessions, so if you boot into Wayland , as is

the default, it will have no effect. Please give a bit more details if you have a question, it helps with identifying the problem. Also, try using 22.04.03 when installing, it fixes some errors.

**Q**: I want to rename my /home folder to /users as it is not intuitive, but I can't. I'm new to Ubuntu so explain it slowly.

**A**: Don't. You will break your desktop session. Too many things rely on /home.

**Q**: When I watch Youtube on my Ubuntu laptop (my bf loaded it as Windows7 was getting slow), my mouse is in the way. Someone suggested I scoot it out of the way off screen, but mine reaches the end and stays there. I don't want my bf to say I'm a dumb blond, so I'm not going to ask him. Please tell me how? This also happens when I connect it to my TV with the HDMI cable.

**A**: The mouse cursor only stays on screen if pushed to the top or the left. Try right hand side or bottom.

**Q**: I have loaded Ubuntu on my Raspberry Pi. In the pi OS, you run vcgencmd on the command line for temps. I am new to Ubuntu and in Ubuntu I get command not found.

I installed lmsensors as per the internet, but It is only a snapshot, it does not update. Is there a better way?

**A**: I don't know a better way, but you can use "watch" to keep it looking at those temperatures. Open a terminal and type: watch sensors

**Q**: I am doing a course and I need to install Ubuntu 18.04. When I go to ubuntu.com downloads all I see is the latest versions. Is there a way to get it?

**A**: Dude!! It is literally the first result in Google when I search. <https://releases.ubuntu.com/18.04/>

**Q**: I find that when I remove a snap package from Ubuntu 22.04/23.04 I get a blank Icon and the name is still visible in the gnome search options. Is there a

## Q&A

way to remove it?  
<removed>

**A**: When you uninstall a Snap package, use the --purge option.

**Q**: I was trying to find out what wifi card I have in my old laptop. Ip add just shows wlpxxx, which means nothing to me. Is there a way I can see which I have as the manufacuter lists 5 different models for my laptop. If I run lshw, it says I need to run it as superuser, but I can't. I will only reinstall once I know what I am dealing with. This time I want to do things right.

**A**: OK if you cannot install anything I suggest trying lspci like so: lspci -nnk|grep -iA3 network -Just look for "network controller" if you have multiple entries.

**Q**: In stock Ubuntu 22.04, when I'm watching a youtube video, and I check something in my gnome-extensions quickly, the sound in the video continues to play, but the motion stops at the point of me fiddling . I have to go back to the video in Firefox and skip backwards a bit for the video to

continue. It's driving me wild.

**A**: I have seen this before, and 9/10 times it was the FireFox Snap, especially if you have customized pointers and themes installed. I haven't gotten to the bottom of it, but you can fix it by installing another browser that is \*not a Snap, like Librewolf and keep the Snap browser closed.

**Q**: I'm having trouble figuring out how to run xpenguins on Ubuntu 22.04. I am using a X-session, not Wayland. I Have an i9 with 32GB of memory and a dedicated gfx card that is 3 years old. Ubuntu is updated to the nines, no issues there. I installed a gfx card switcher, and tried on both, but still no penguins appear.

**A**: Wow, just wow. I recall getting xpenguins from Tucows back in the day. I suspect it is like twenty years old and probably written for GTK2. I did find this though: <https://unix.stackexchange.com/questions/429606/why-is-xpenguins-not-generating-any-penguins-on-my-desktop>

**Q**: I want to install the latest version of Ardour 7, but the repositories only have version 6. Everywhere it is advertised as "free", but everywhere I go to get 7, even on the main page, they want lots of money. Where is the free?

**A**: Wait until you see version8 next month, I read somewhere it will be paid only. I really \*hate it when people say free, but it is not. (Windows loves that, saying "free download" the download is free, but the program is not, but the second part is never mentioned.) Anyway, digging a little, I found this via Ubuntu Studio: <https://help.ubuntu.com/community/UbuntuStudio/BackportsPPA>



**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.





# TABLETOP UBUNTU

Written by Josh Hertel



BACK NEXT MONTH



Josh Hertel is a husband, father, mathematics educator, tabletop gamer, techie, and geek.

<https://twitter.com/hertelj1>



# UBUNTU GAMES

Written by Ronnie Tucker

# Tiny Life

Price: £13  
Available on Steam - **EARLY ACCESS**

If you're as old as I am, you'll know Little Computer People. That Commodore64 tape game (yes, I'm that old) where you took control of a little digital person's daily life. Well, if you liked LCP, then you'll probably like Tiny Life.

## MOVING IN

When you start a new game you can choose from an easy, medium

or hard start. The hard start is where you pick some land, build a house, and create your little tinies (as they're called). In medium, you pick a house, and create your tinies. In easy, you pick an existing house with residents and start playing.

## CONTROLS

One unusual thing here is that you can rotate the camera with the C key. While the game is entirely 2D, it's a nice touch as you can also show/hide walls – which helps with the rotation of the house.

Top-right of the screen are the controls for building items, notifications, settings, showing/hiding walls, etc. Bottom-right is where you control the speed of the game. Bottom-left is the main panel showing the residents, their portrait, and some tabs. The tabs display all the usual Sims-style stuff like mood, hygiene, if they have a job, what their skills are, and so on.

You can click on their small portrait at the bottom-left to select a resident. You can then check their tabs and start clicking on things in the house, or on other people, to

have them do things. The couple I started with had a female wanting to learn cookery skills and the guy wanting to build several items and use them. It's important to keep an eye on their stats, and the time, as sometimes they'll go to bed early then be up at 3am when they have work at 8am until 4pm. Then come home moaning that they're tired. So, yeah, it's like real life.

## OUTSIDERS

Quite often you'll get other tinies turning up at your door. You can invite them in for a chat if you



# UBUNTU GAMES

like. I had to end up tossing some out for using the computer, making lunch, and getting comfy at 10pm when we had work at 8am. The idea is that the more you ask them, the more you find out about them.

The map also has things like a park and gym available for keeping your tinies mentally and physically active.

## CONCLUSIONS

I believe this is made by a one man team. If so, it's impressive stuff. There's plenty to do. Chatting with your neighbours, maybe having a couple try for a baby, sending them to work, making

items to use/sell to get TinyBucks to buy things. You can remodel the house, you can move and rotate furniture. Maybe get moody with people and burn bridges. It's a 2D Sims.

I have to drop it a point as the tutorial could be a bit better. It describes what to do, but I feel it would have been better to highlight what I should do.

If you like Sims (and the like), then it's definitely worth a try.







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The current site was created thanks to **Arun** (from our Telegram channel) who took on the task of completely rebuilding the site, from scratch, in his own time.

The Patreon page is to help pay the domain and hosting fees. The money also helps with the new mailing list.

Several people have asked for a PayPal (single donation) option, so I've added a button below.

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



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## FCM#201

### Deadline:

Sunday 07th Jan 2024.

### Release:

Friday 26th Jan 2024.



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Our thanks go to Canonical, the many translation teams around the world and **Thorsten Wilms** for the FCM logo.

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