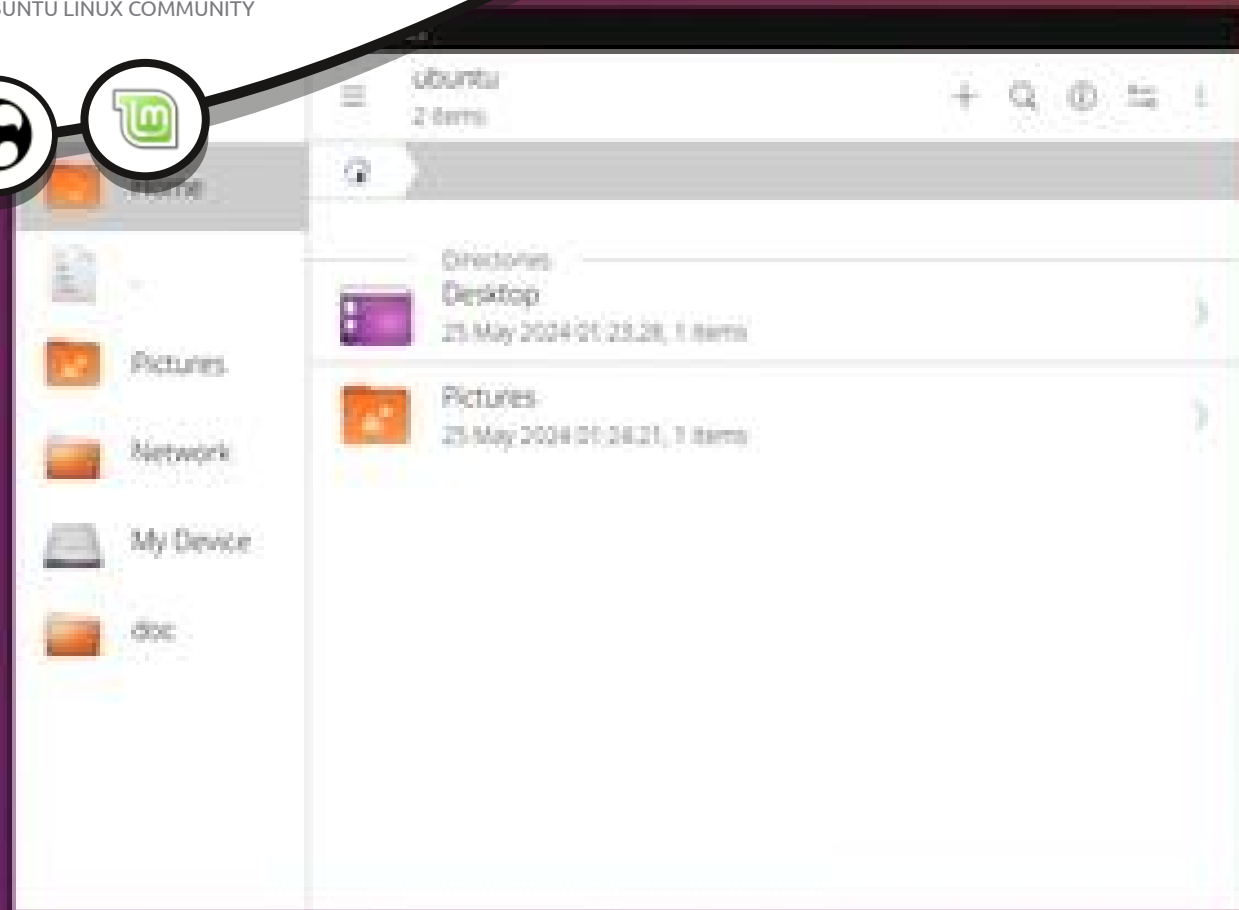
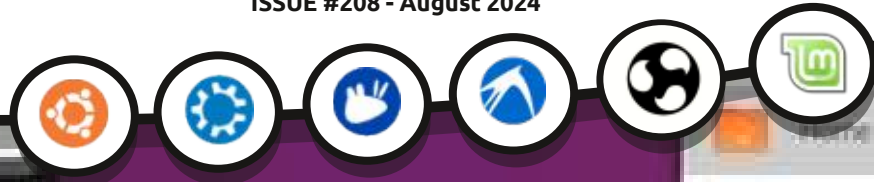




# Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #208 - August 2024



## BUDGIE & UNITY AND A QUICK LOOK AT LOMIRI



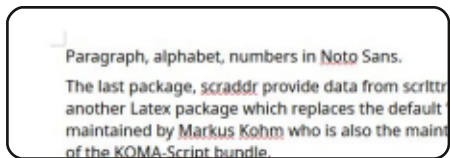
## HowTo



Python p.26



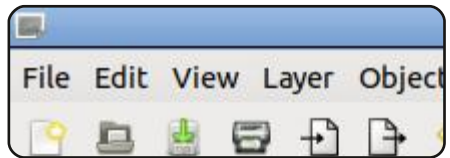
Stable Diffusion p.28



Latex p.30



... p.XX



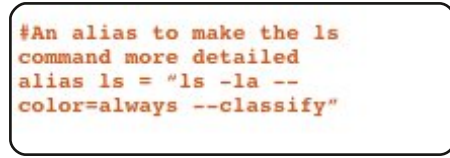
Inkscape p.34

## Graphics

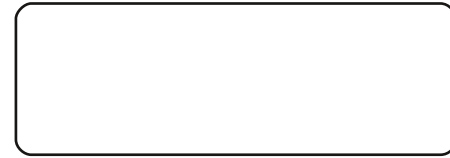


# Full Circle

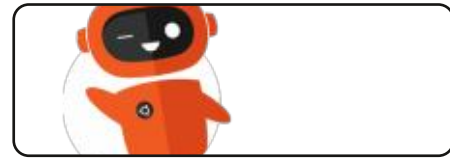
THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY



Command & Conquer p.24



... p.XX



Ubuntu Devices p.42



The Daily Waddle p.38



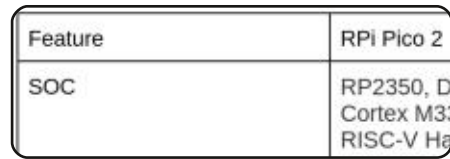
My Opinion p.45



Letters p.XX



Q&A p.60



Micro This Micro That p.39



Linux News p.04



Review p.56



Review p.53



Review p.49



Ubuntu Games p.63



The articles contained in this magazine are released under the Creative Commons Attribution-Share Alike 3.0 Unported license. This means you can adapt, copy, distribute and transmit the articles but only under the following conditions: you must attribute the work to the original author in some way (at least a name, email or URL) and to this magazine by name ('Full Circle Magazine') and the URL [www.fullcirclemagazine.org](http://www.fullcirclemagazine.org) (but not attribute the article(s) in any way that suggests that they endorse you or your use of the work). If you alter, transform, or build upon this work, you must distribute the resulting work under the same, similar or a compatible license.

**Full Circle magazine is entirely independent of Canonical, the sponsor of the Ubuntu projects, and the views and opinions in the magazine should in no way be assumed to have Canonical endorsement.**



## WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

This month, we bring you Python, Micro This Micro That, Latex, Stable Diffusion and Inkscape.

And it wouldn't be an issue without reviews and this month Adam looks at Ubuntu Budgie then Ubuntu Unity and Lomiri. What's Lomiri? It's the next version of Unity. It's still in early testing.

I actually used some old knowledge in a useful way last month. I started by designing a little box and lid using good old fashioned pencil and paper then, before building it, I got carried away and ended up using FreeCAD to actually make the thing. I'm rather proud of my little box.

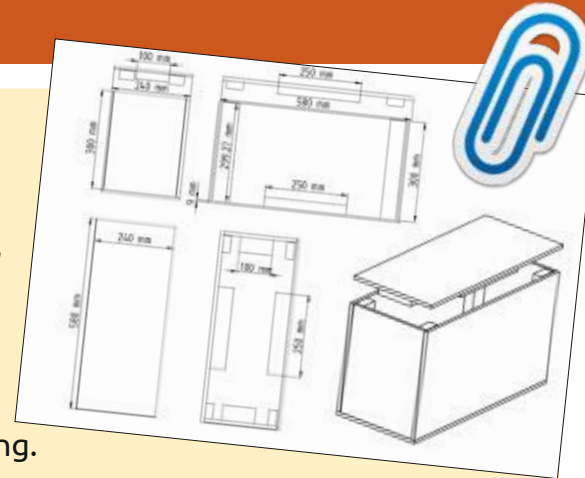
In podcasting news: **Spotify** is finally back! I've also managed to get the podcast feed on **YouTube**. Links to both are at the bottom right of this page, and also on the last page.

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!

Ronnie

[ronnie@fullcirclemagazine.org](mailto:ronnie@fullcirclemagazine.org)



This magazine was created using :



## Find Full Circle on:



[facebook.com/fullcirclemagazine](https://facebook.com/fullcirclemagazine)



[twitter.com/#!/fullcirclemag](https://twitter.com/#!/fullcirclemag)



<https://mastodon.social/@fullcirclemagazine>

## Weekly News:



<https://fullcirclemagazine.org/podcasts/index.xml>



<https://open.spotify.com/show/6JhPBfSm6cLEhGSbYsGarP>



<https://www.youtube.com/playlist?list=PLnv0U8wOzXu487qi5I2Isf-rQjEvKPAif>



**FCM PATREON:** <https://www.patreon.com/fullcirclemagazine>



## OPENBSD ADDS VA-API SUPPORT:

22/07/2024

OpenBSD has adopted changes that add the libva 2.22.0 library to the Xenocara X11 stack, used in OpenBSD to create a graphical environment and based on modified versions of X.Org 7.7, X Server 21.1.11, freetype 2.13.0 and Mesa 23.1.9. The libva library allows you to use the VA-API (Video Acceleration API) for hardware acceleration of video encoding and decoding in various formats.

Hardware acceleration has been tested with drivers for Intel and AMD GPUs using the Firefox browser and mpv video player. The necessary drivers for Intel GPUs are offered in the graphics/intel-media-driver and graphics/intel-vaapi-driver ports, while standard components from Mesa are used to work with AMD GPUs.

<https://marc.info/?l=openbsd-cvs&m=172139969119269&w=2>

## RELEASE OF NXS-DATA-ANONYMIZER 1.9.0:

22/07/2024

Nxs-data-anonymizer 1.9.0 is out - a tool for anonymizing PostgreSQL and MySQL/MariaDB/Percona database dumps. The tool is written in Go and released under the Apache License 2.0.

The program supports data anonymization based on templates and functions of the Sprig library. Nxs-data-anonymizer can be used via unnamed pipes on the command line to redirect a dump from the source database directly to the target database with the necessary transformations. The anonymization process can be indexed - data on the progress of the operation is displayed at specified intervals. Thanks to external commands, by adding the "type: command" column to the value, you can set the value of the fields.

Depending on the type of entities in the security settings, the

tool anonymizes columns for tables with the rules described in the filters section. If the table does not contain any rules, the anonymizer will not include it in the resulting dump.

In the new version, a "Link" block has been added to the column filter, which you can link the anonymization of database entities in different tables. This block stores the rules by which the tool anonymizes related columns in tables specified by the configuration throughout the database. Thus, cells in certain columns that had the same values before anonymization will have the same values after anonymization.

<https://github.com/nixys/nxs-data-anonymizer>

## RELEASE OF HOSTAPD AND WPA\_SUPPLICANT 2.11:

23/07/2024

After two and a half years of development, hostapd/wpa\_supplicant 2.11, a suite of IEEE 802.1X, WPA, WPA2, WPA3 and EAP wireless protocols, has been released. The set includes the wpa\_supplicant application for connecting to a wireless network as a client and the hostapd background process to ensure the operation of the access point and authentication server, which includes components such as WPA Authenticator, RADIUS authentication client/server, EAP server. The source code of the project is distributed under the BSD license.

<https://lists.infradead.org/pipermail/hostap/2024-July/042847.html>



## RELEASE OF THE MIDNIGHTBSD 3.2:

23/07/2024

MidnightBSD 3.2 was released, based on FreeBSD with elements ported from DragonFly BSD, OpenBSD and NetBSD. The basic desktop environment is built on Xfce (optionally, you can install the GNUstep + Window Maker + GWorkspace combination). Unlike other FreeBSD desktop builds, MidnightBSD was originally developed as a fork of FreeBSD 6.1-beta, which was synchronized with the FreeBSD 7 codebase in 2011 and subsequently absorbed many features from the FreeBSD 9-12 branches. For package management, MidnightBSD uses the mport system, which uses a SQLite database to store indexes and metadata, or the Ravenports toolkit. A 949 MB installation image (i386, amd64) has been prepared for download.

<https://www.justjournal.com/users/mbsd/entry/33985>

## RESTRUCTURING THE OPENSLL PROJECT:

24/07/2024

The developers of the OpenSSL cryptographic library have announced a complete transformation of the structure and methods of project management. To support the mission of the project, two equal divisions have been created - the non-profit organization OpenSSL Foundation and the commercial company OpenSSL Corporation, focused on the interests of the non-profit community and commercial enterprises. Both divisions operate completely independently and have separate decision-making processes.

The project's mission embraces values such as the importance of community, commitment to an open source development model, respect for privacy, and open and transparent governance practices. The previously existing OpenSSL Management Committee (OMC) has been abolished, and decision-making is entrusted to the joint boards of directors elected separately in the OpenSSL Foundation and OpenSSL

Corporation. Both organizations have 10 voting members.

In addition, the OpenSSL Foundation and OpenSSL Corporation elect oversight committees from community representatives and interested commercial companies - the Technical Advisory Committee (TAC) and the Business Advisory Committee (BAC), which can directly represent the interests of the community in the development of plans. The BAC will be formed at the end of October 2024 and the TAC at the end of April 2025.

The project is no longer limited to the OpenSSL library and is open to other cryptography-related projects. The first two projects to join were Bouncy Castle (a crypto API for Java and C# APIs) and cryptlib (a high-level API for making it easier to add encryption and authentication to programs), which will now be developed under the auspices of the OpenSSL Foundation and OpenSSL Corporation.

<https://mta.openssl.org/pipermail/openssl-announce/2024-July/000313.html>

## RELEASE OF LINUX MINT 22:

24/07/2024

A new release of the Linux Mint 22 distribution has been presented, switching to the Ubuntu 24.04 LTS package base. The distribution is fully compatible with Ubuntu, but differs significantly in the approach to the user interface and the selection of default applications. Linux Mint developers provide a desktop environment that follows the classic canons of desktop layout, which is more familiar to users who do not accept the new methods of building the GNOME 3 interface. DVD builds based on the MATE 1.26 (3 GB), Cinnamon (3 GB) shells and Xfce (3 GB) are available for download. Linux Mint 22 is classified as a long-term support (LTS) release, for which updates will be generated until 2029.

<https://blog.linuxmint.com/?p=4731>

## SELECTEL HAS BEGUN PUBLIC BETA TESTING OF ITS OWN LINUX SERVER DISTRIBUTION: 25/07/2024

Selectel has begun open beta testing of its own Linux server distribution Selectel OS, built on Debian GNU/Linux 12. The installation iso image is prepared for x86\_64 architecture and occupies 420 MB.

The distribution is intended for installation both on new equipment and on existing servers, both inside and outside the Selectel infrastructure. Currently, builds are only available for processors with x86 architecture, but in the future they plan to add support for other hardware architectures. During testing, Selectel plans to work out the process of migrating current users to the new distribution in

order to prepare the product for commercial launch, which is planned for the end of 2024. One of the features of the product is the SLA support guaranteed by Selectel.

[https://selectel-ru.translate.google.com/about/newsroom/news/selectel-anonsiroval-otkrytoe-beta-testirovanie-servernoj-operacionnoj-sistemy-sobstvennoj-razrabotki/?x\\_tr\\_sl=auto&x\\_tr\\_tl=en&x\\_tr hl=en-US&x\\_tr\\_pto=wapp](https://selectel-ru.translate.google.com/about/newsroom/news/selectel-anonsiroval-otkrytoe-beta-testirovanie-servernoj-operacionnoj-sistemy-sobstvennoj-razrabotki/?x_tr_sl=auto&x_tr_tl=en&x_tr hl=en-US&x_tr_pto=wapp)

## RELEASE OF MULTIPASS 1.14: 26/07/2024

Canonical has published the release of multipass 1.14, a toolkit designed to simplify the installation of different versions of

Ubuntu in virtual machines running on Linux, Windows and macOS virtualization systems. Multipass allows a developer to launch the desired version of Ubuntu in a virtual machine with one command without additional settings, for example, for testing the operation of an application. To run a virtual machine in Linux, KVM or VirtualBox is used, in Windows - Hyper-V, and in macOS - HyperKit. The project code is written in C++ and distributed under the GPLv3 license. A snap package has been prepared for quick installation of multipass in Ubuntu.

Multipass independently extracts the required operating system image and keeps it up to date. Cloud-init can be used for configuration. You can mount disk partitions in a virtual environment (the "multipass mount" command) and transfer individual files

between the host system and the virtual machine (the "multipass transfer" command). Full integration of the installed virtual machine with the main desktop is supported (application icons, system menus and notifications are added).

<https://discourse.ubuntu.com/t/announcing-the-multipass-1-14-0-release/46668>

## RELEASE OF OPNSENSE 24.7: 26/07/2024

OPNsense 24.7 has been published, which 9 years ago separated from the pfSense project in order to develop a completely open distribution that could have functionality at the level of commercial solutions for deploying firewalls and network gateways. Unlike pfSense, the project is positioned as not controlled by one company, developed with the direct participation of the community and has a completely transparent development process, as well as providing the opportunity to use any of its developments in third-party products, including



# DistroWatch.com

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

commercial ones. The source code of the distribution components, as well as the tools used for building it, are distributed under the BSD license. The assemblies are prepared in the form of a LiveCD and a system image for Flash drives (488 MB).

The distribution is based on FreeBSD. Among the features of OPNsense are a completely open build toolkit, the ability to install in the form of packages on top of regular FreeBSD, load balancing tools, a web interface for organizing user connections to a network (Captive portal), the presence of mechanisms for tracking connection states (stateful firewall based on pf), setting bandwidth limits, traffic filtering, creating a VPN based on IPsec, OpenVPN and PPTP, integration with LDAP and RADIUS, support for DDNS (Dynamic DNS), a system of visual reports and graphs.

The distribution provides tools for creating fault-tolerant configurations based on the use of the CARP protocol and allowing you to launch, a failover to the main firewall, that will be automatically synchronized at the configuration level and will take over the load in

the event of a failure of the primary node. The administrator is offered a modern and simple interface for configuring the firewall, built using the Bootstrap web framework and Phalcon MVC.

<https://forum.opnsense.org/index.php?topic%3D41700.0>

### ZULIP 9: 27/07/2024

The release of Zulip 9, a server platform for deploying corporate instant messengers suitable for organizing communication between employees and development teams, is available. The project was originally developed by Zulip and opened after its acquisition by Dropbox under the Apache 2.0 license. The server-side code is written in Python using the Django framework. Client software is available for Linux, Windows, macOS, Android and iOS, and a built-in web interface is also provided.

The system supports both direct messaging between two people and group discussions. Zulip can be

compared to Slack and considered as an internal corporate analogue of Twitter, used for communication and discussion of work issues in large groups of employees. It provides tools for tracking status and participating in multiple conversations simultaneously using a threaded message display model that is the optimal compromise between being tied to Slack rooms and the single public space of Twitter. By simultaneously threading all discussions, you can capture all groups in one place while maintaining a logical separation between them.

Zulip's capabilities also include support for sending messages to the user in offline mode (messages will be delivered after appearing online), saving the full history of discussions on the server and tools for searching that archive, the ability to send files in Drag-and-drop mode, automatic highlighting syntax for code blocks transmitted in messages, built-in markup language for quickly creating lists and text formatting, tools for sending group notifications, the ability to create closed groups, integration with Trac, Nagios, Github, Jenkins, Git, Subversion, JIRA, Puppet, RSS, Twitter and

other services, as well as tools for attaching visual tags to messages.

<https://blog.zulip.com/2024/07/25/zulip-9-0-released/>

### RELEASE OF LINKS 2.30: 29/07/2024

A minimalistic web browser, Links 2.30, has been released, supporting both console and graphical modes. When working in console mode, it is possible to display colours and use the mouse, if supported by the terminal. Graphics mode supports image output and font smoothing. In all modes, tables and frames are displayed. The browser supports the HTML 4.0 specification, but ignores CSS and JavaScript. There is also support for bookmarks, SSL/TLS, background downloads and menu system management. When running, Links consumes about 5 MB of RAM in text mode and 20 MB in graphic mode.

The new version improves the build using GCC 14, solves problems with displaying the window title in kwin-based environments, and disables asynchronous DNS

operations on the Windows platform to work around some bugs in Cygwin.

<http://links.twibright.com/download.php>

## RELEASE OF SysVINIT 3.10: 29/07/2024

The classic init system, SysVinit 3.10, which was widely used in Linux distributions in the days before systemd and upstart, now continues to be used in distributions such as Devuan, Debian GNU/Hurd and antiX, had a new release. The code is written in C and distributed under a GPLv2 license. The versions of the insserv and startpar utilities used in conjunction with sysvinit have not changed. The insserv utility is designed to organize the boot process, taking into account dependencies between init scripts, and startpar is used to ensure the parallel launch of several scripts during the system boot process.

The new release of SysVinit adds processing of the SIGRTMIN+4 signal and triggering the "shutdown -hP now" command to

shut down when this signal is received. Processing the SIGRTMIN+4 signal was required because it is generated by systemd when the user executes the "machinectl stop" command to shut down the system. In addition, the new version fixes an issue in the bootlogd process that causes it to go into a loop when opening a device for writing without performing a write operation.

<https://lists.nongnu.org/archive/html/sysvinit-devel/2024-07/msg00016.html>

## FIRMWARE RELEASE FOR UBUNTU TOUCH OTA-5 FOCAL:

30/07/2024

After six months of development, the UBports project, which took over the development of the Ubuntu Touch mobile platform after Canonical pulled out, presented their OTA-5 Focal (over-the-air) firmware. This is the fourth release of Ubuntu Touch, based on the Ubuntu 20.04 package base. The project is also developing an experimental port of the Unity 8 desktop, which has been renamed

Lomiri.

The Ubuntu Touch OTA-5 Focal update will be released in the coming days for Asus Zenfone Max Pro M1, F(x)tec Pro1 X, Fairphone 3/3+/4, Google Pixel 3a/3a XL, JingPad A1, OnePlus 5/5T devices / 6/6T, Sony Xperia X, VollaPhone X/ 22/X23 and Xiaomi Poco X3 NFC / X3. Compared to the previous version, builds for OnePlus One, Samsung Galaxy S7, Xiaomi Redmi Note 9/9 Pro/9 Pro Max/9S and Xiaomi Poco M2 Pro devices will not be generated. It is noted that the release is mainly focused on bug fixes.

<https://ubports.com/en/blog/ubports-news-1/post/ubuntu-touch-ota-5-focal-release-3933>

## SUPER GRUB2 DISK 2.06s4, PUBLISHED:

31/07/2024

Five years after the publication of the last release, a new release of a specialized boot image Super Grub2 Disk 2.06s4 is presented, designed to boot any systems in situations where the user is faced with a damaged

bootloader, the inability to boot the system, or overwriting the main bootloader in systems with multiple OSes. A menu-based console interface is offered to manage and search for bootable systems. Partitions with LVM and RAID, encrypted partitions (LUKS1, LUKS2 and geli), booting from EFI, iee1275 and CoreBoot are supported. Recovery modes are provided for various Linux distributions, FreeBSD, FreeDOS, macOS, GNU/Hurd, ReactOS and various versions of Windows (starting with Windows 98). The size of the boot image for USB Flash drive is 97 MB.

The new version [uses] the GNU GRUB 2.06 bootloader. They also added support for the LUKS2 disk encryption format, the BTRFS file system, booting Linux from the / boot partition, and working with disk partitions using labels. Support for loading the ReactOS operating system and Debian and Arch builds based on the GNU/Hurd kernel has been implemented. The ability to boot Debian and Ubuntu in UEFI Secure Boot mode is provided.

<https://www.supergrubdisk.org/2024/07/30/super-grub2-disk-2-06s4-released/>



## FUNTOO LINUX GOING TO THE BIG SERVER IN THE SKY:

31/07/2024

Daniel Robbins, the founder of the Gentoo distribution who stepped away from the project in 2009, announced the end of development of the Funtoo Linux distribution, which he had been developing since 2006, as a project to further improve the technologies available in Gentoo. Loss of interest and a desire to devote one's time to other things are cited as reasons for closing the project. There was no worthy candidate in the community to transfer control to, so it was decided to simply shut down the project, but those who wish, can continue its development by creating a fork.

<https://forums.funtoo.org/topic/5182-all-good-things-must-come-to-an-end/>

## PLAN TO END SUPPORT FOR OLDER ARM PROCESSORS IN THE LINUX KERNEL:

01/08/2024

Arnold Bergmann, in charge of kernel packages at SUSE, posted on the Linux kernel developer mailing list a plan to strip the GCC-based kernel and build tools of code to support older ARM CPUs and their associated ABIs, instruction sets, and kernel capabilities. The plan is still at the RFC stage, i.e. posted for community discussion. If the plan is approved, the removal of old ARM processors is proposed to begin in the Linux kernel 6.12, which is expected to be released in December. The first candidates for removal are ARMv4 (without removing ARMv4T), iWMMXt, BE32 and OABI.

The cessation of support for old ARM CPUs in the kernel intersects with the cessation of their support in GCC - some of the CPUs submitted for removal are no longer supported in the latest branches of GCC, and some are planned to be removed in future releases, which will simplify the modernization and implementation

of new features in the compiler. Removing support for an architecture in GCC will require removing support for it from the kernel if the minimum version of GCC supported by the kernel is increased (currently, at least GCC version 5.1 is required to build the kernel).

<https://lkml.org/lkml/2024/7/31/1242>

## AZURE LINUX 3.0:

02/08/2024

Microsoft has published the first stable update of the new branch of the Azure Linux 3.0, which was previously distributed under the name CBL-Mariner. The distribution is being developed as a universal base platform for Linux environments used in cloud infrastructure, edge systems and various Microsoft services. The project is aimed at unifying the Linux solutions used in Microsoft and simplifying the maintenance of Linux systems for various purposes up to date. The project's code is distributed under the MIT license. Package builds are generated for aarch64 and x86\_64 architectures.

The installation image size is 740 MB.

[https://github.com/microsoft/azurelinux/releases/tag/3.0.20240727-3.0?changelog\\_tagCFD0C5CECEC5D4](https://github.com/microsoft/azurelinux/releases/tag/3.0.20240727-3.0?changelog_tagCFD0C5CECEC5D4)

## AMAROK MUSIC PLAYER

### 3.1.0:

03/08/2024

After three months of development, a new release of Amarok 3.1.0 was published, which was very popular during the times of KDE 3 and KDE 4. After the release of KDE 5, the project was abandoned, but this year it was revived and ported to Qt5 and the KDE Frameworks 5 libraries. The project code is written in C++ and is distributed under the GPLv2 license.

Amarok provides a three-panel mode for displaying information (collection, current song and playlist), it allows you to navigate through your music collection, tags and individual directories, it supports dynamic playlists and quick creation of your own playlists, it can automatically generate



recommendations, statistics and ratings of popular songs, it supports downloading lyrics, covers and information about compositions from various services, and makes it possible to automate actions through scripts.

<https://blogs.kde.org/2024/08/02/amarok-3.1-tricks-of-the-light-released/>

## OPEN HOMOMORPHIC ENCRYPTION LIBRARY:

03/08/2024

Apple has announced the creation of an open library that implements homomorphic encryption methods in the Swift language. The library allows you to create applications that process data that is only available in encrypted form, without intermediate decryption at any stage of the calculations. The output produces an encrypted result, which is similar to encrypting the result of performing the same calculations on the original unencrypted data. The project code is distributed under the Apache 2.0 license. The implementation is based on the

BFV (Brakerski-Fan-Vercauteren) scheme, which in turn is based on a ring-fault learning (RLWE) problem protected from cryptanalysis by quantum computers. Low-level encryption primitives are used from the Swift Crypto library.

Working with data with homomorphic encryption comes down to the fact that the user encrypts the data and without disclosing the keys, transfers it to an external server for processing. The server performs the stated calculations and generates an encrypted result, without being able to determine what data it is working with. The user, using his keys, decrypts the issued data and receives the result in clear text. Homomorphic encryption can be used in cloud services for confidential computing, implementation of electronic voting systems, organizing work with encrypted data in a DBMS, and confidential training of machine learning systems.

<https://www.swift.org/blog/announcing-swift-homomorphic-encryption/>

## MANJARO LINUX ATOMICALLY UPDATED VERSION:

04/08/2024

The developers of the Manjaro Linux distribution, built on Arch Linux and aimed at novice users, announced the start of testing, of a new experimental build "Manjaro Immutable". It is notable for delivering the base system in the form of a single monolithic image, mounted in read-only mode and updated entirely in atomic mode. The boot image size is 1.7 GB. Only booting in UEFI mode is supported on both x86\_64 hardware and virtualization and emulation systems such as VirtualBox and QEMU. After testing is completed, they plan to give the build the status of an official version of Manjaro.

The team proposes to install programs as packages in Flatpak format and use environments created using Podman and Distrobox. You can disable blocking changes in the root partition and use the standard pacman package manager, but packages installed in this way will be lost after the next system update and will have to be

installed again.

<https://manjaro.org/news/2024/manjaro-immutable-testing>

## RELEASE OF GNU BINUTILS 2.43:

05/08/2024

The GNU Binutils 2.43 set of system utilities is out, which includes programs such as GNU linker, GNU assembler, nm, objdump, dlltool, readelf, size, strings and strip. The project is also developing the debuginfod service for dynamically loading debugging symbols from an external server.

<https://www.mail-archive.com/info-gnu@gnu.org/msg03314.html>

## RELEASE OF THE NITRUX 3.6.0:

05/08/2024

The Nitrox 3.6.0 distribution, built on Debian, KDE technologies and the OpenRC init system, is out. The project offers its own desktop, NX Desktop, which is an add-on to KDE Plasma. It is

based on the Maui library, where a set of standard user applications are being developed for the distribution that can be used on both desktop systems and mobile devices. To install additional applications, AppImages are being promoted. The full boot image is 3 GB in size. The project's code is distributed under free licenses.

The NX Desktop offers a different style, its own implementation of the system tray, notification center and various plasmoids, such as a network connection configurator and a multimedia applet for adjusting the volume and controlling the playback of multimedia content. Applications built using the MauiKit framework include the Index file manager, the Note text editor, the Station terminal emulator, the VVave music player, the Clip video player, the NX Software Center and the Pix image viewer.

<https://nxos.org/changelog/release-announcement-nitrox-3-6-0/>

## VORTEX 2.2 IS AVAILABLE:

07/08/2024

A new release of the Vortex 2.2 project has been published, developing an open GPGPU based on the RISC-V instruction set architecture, designed to perform parallel computing using the OpenCL API and the SIMT (Single Instruction, Multiple Threads) execution model. The project can also be used in research in the field of 3D graphics and in the development of new GPU architectures. Schemes, descriptions of hardware blocks in Verilog language, simulator, drivers and accompanying design documentation are distributed under the Apache 2.0 license.

The core of GPGPU is a generic RISC-V ISA, enhanced with some additional instructions needed to support GPU functionality and thread control. At the same time, changes in the RISC-V instruction set architecture are kept to a minimum and, whenever possible, existing vector instructions are used. Additional instructions include: "tex" to speed up texture processing, vx\_rast to control rasterization, vx\_rop to handle

fragments, depth and transparency, vx\_imadd to perform multiply and add operations, vx\_wspawn, vx\_tmc and vx\_bar to activate instruction edges and threads in them (wavefront, a set of threads executed in parallel by the SIMD Engine), vx\_split and vx\_join.

The evolving GPGPU supports 32- and 64-bit RISC-V RV32IMF and RV64IMAFD instruction set architectures, and can include optional shared memory, L1, L2 and L3 caches, and a configurable number of cores, warps and threads. In turn, each core has the ability to include a configurable number of ALUs, FPUs, LSUs and SFUs. FPGAs that can be used for prototyping are Altera Arria 10, Altera Stratix 10, Xilinx Alveo U50, U250, U280 and Xilinx Versal VCK5000. Verilator (Verilog simulator), RTLsim (RTL simulation) and SimX (software simulation) can be used to simulate the operation of the chip .

For application development, a toolkit is offered, including variants of PoCL (compiler and runtime OpenCL), LLVM/Clang, GCC and Binutils adapted for working with Vortex . The project supports the OpenCL 1.2 specification and,

through translation to OpenCL, supports the intermediate representation of SPIR-V shaders. For graphics based on Vortex technologies, an open GPU Skybox is being developed that supports the Vulkan graphics API. The Skybox prototype, created, based on the Altera Stratix 10 FPGA and including 32 cores (512 threads), made it possible to achieve a fill performance of 3.7 gigapixels per second (29.4 gigatransactions per second) at a frequency of 230 MHz.

<https://github.com/vortexgpgpu/vortex/releases/tag/v2.2>

## RELEASE OF PUPPETEER 23:

07/08/2024

A new release of the JavaScript library Puppeteer 23, designed to automate the testing and management of web browsers, is out. The library is suitable for automatically performing standard operations with a browser, as well as for testing browsers and simulating user work. The project code is written in TypeScript using Node.js and is distributed under the Apache 2.0 license.

For example, Puppeteer allows you to create a script that launches the browser, sets the desired window size, opens a specific page, sets focus on a given search field, enters data into the field and sends a request, then follows a link to the first result in the list and saves the resulting page. The library also provides capabilities for downloading the latest version of the selected browser, simulating the selected hardware device (for example, on the Pixel 5 smartphone), and processing authentication forms. In the process, you can monitor, intercept, modify or block network requests and responses, as well as manipulate HTTP headers and execute your scripts in the context of the pages being opened.

The release of Puppeteer 23 is notable for providing official support for the Firefox browser, in addition to the natively supported browsers based on the Chromium engine (the Puppeteer project is supported by the developers of the Chrome Browser Automation extension). The CDP (Chrome DevTools Protocol) and WebDriver BiDi protocols are supported for interaction with browsers. By default, browsers launch in

headless mode. It is noted that the stabilization in the new version of support for Firefox and WebDriver BiDi allows using Puppeteer as a universal tool for automating testing of web applications in different browsers.

<https://hacks.mozilla.org/2024/08/puppeteer-support-for-firefox/>

## FIRST ALPHA RELEASE OF THE COSMIC DESKTOP ENVIRONMENT:

08/08/2024

After nearly two years of development, System76, the developer of the Linux distribution Pop!\_OS, has unveiled the first alpha release of the COSMIC desktop environment, written in Rust (not to be confused with the old COSMIC, which was based on GNOME Shell). Two iso images with COSMIC were generated - for systems with NVIDIA (3 GB) and Intel/AMD (2.6 GB) GPUs, built on a test build of the Pop!\_OS 24.04 distribution. Pre-built packages are also available for Fedora, NixOS, Arch Linux and Serpent OS.

The shell is being developed as a

universal project, not tied to a specific distribution and meeting the Freedesktop specifications. To build the interface, COSMIC uses the Iced library, which uses safe types, modular architecture and a reactive programming model, and also offers an architecture familiar to developers familiar with the Elm declarative interface building language. Multiple rendering engines are provided, supporting Vulkan, Metal, DX12, OpenGL 2.1+ and OpenGL ES 2.0+. Developers are offered a ready-made set of widgets, the ability to create asynchronous handlers and use adaptive layout of interface elements depending on the size of the window and screen. The project is also developing a composite server, cosmic-comp, based on Wayland.

The alpha release marked the completion of a minimum core set of features that define a working product suitable for everyday use and is the basis for final honing of functionality and improved usability, taking into account feedback received from users. Distributions are given the opportunity to create customized versions of COSMIC, supplied with their own color scheme, applets,

settings and theme.

<https://system76.com/cosmic>

## LIBRECUDA PROJECT TO RUN CUDA CODE ON NVIDIA GPUs WITHOUT PROPRIETARY RUNTIME:

09/08/2024

The LibreCUDA project is developing an open implementation of the CUDA driver API, which allows you to run CUDA code on NVIDIA GPUs without using the proprietary CUDA Runtime. Operation without Runtime is achieved by directly accessing the hardware, using driver-provided ioctl calls and manipulating the command queue via MMIO (Memory-mapped I/O). The project code is written in C and is distributed under the MIT license.

The project is still at an early stage of development and is marked as not ready for use in production systems. Features include support for loading CUDA executable files in ELF format into the GPU, launching CUDA kernels through a command queue,

allocating and freeing memory in the GPU, as well as mapping GPU memory for access from code executed on the CPU.

<https://github.com/mikex86/LibreCuda>

## UBUNTU IS MOVING TO THE LATEST KERNEL VERSIONS IN UPCOMING RELEASES:

09/08/2024

Kernel package maintainers from Canonical (Canonical Kernel Team) have announced changes to the Linux kernel version selection process, for upcoming Ubuntu releases. It was decided to supply the distribution with the latest Linux kernel at the time of release. Accordingly, stabilization and preparation of kernel packages in the process of preparing new versions of Ubuntu can now be carried out not only assemblies of an existing kernel release, but also on the basis of published release candidates.

Until now, the kernel version for the next Ubuntu release was chosen based on the stable kernel release that already existed at the

time the functionality of the future Ubuntu release was frozen. Taking into account the fact that new kernel branches are formed every 2-3 months, a situation often arose when the previous kernel branch was included in the Ubuntu release, despite the publication of a new stable branch shortly before the Ubuntu release, which caused dissatisfaction among users who wanted to get the latest kernel with up-to-date functionality and hardware support.

The new version selection process allows the selection of a kernel that is in the Ubuntu feature freeze phase, accepting changes or early release candidates. To approve the kernel version by the time the beta version is formed (about a month before the release of Ubuntu), the kernel must be at the release stage or late release candidates (rc4 and later). In the latter case, the kernel release will be released shortly before the release of Ubuntu, and the package with the kernel for Ubuntu will be tested based on preliminary versions, which after 4 release candidates are generally quite workable and include only bug fixes. For example, the October release of Ubuntu 24.10 plans to

ship not the already available 6.10 kernel, but the 6.11 kernel, which is expected to be released at the end of September.

<https://discourse.ubuntu.com/t/kernel-version-selection-for-ubuntu-releases/47007>

## LADYBIRD BROWSER MOVES TO SWIFT:

10/08/2024

The developers of the experimental Ladybird browser have announced their intention to use the Swift programming language as the main language for their project. Inclusion in Swift code is planned to begin in the fall, after the release of Swift 6. Thanks to the ability to combine code in C++ and Swift, Swift will be implemented gradually without rewriting existing code.

Swift was chosen due to a number of advantages, including memory-safe practices, protection against race conditions, modern syntax, and ergonomics. Of particular importance to the Ladybird team is Swift's object-oriented nature, which allows it to

more accurately model web specifications and browser internals. The developers also note improving Swift support for non-Apple platforms and active work on compatibility with C++, which paves the way for the gradual introduction of the language into the project. Despite Swift's historical ties to Apple, the language is becoming increasingly independent, as evidenced by, for example, moving its repository to a separate organization on GitHub.

Andreas Kling, founder of the Ladybird project, shared his thoughts on Rust. According to Kling, while Rust has an impressive ecosystem, it is less suitable for developing long-lived programs with large, complex object graphs. Additionally, Kling described the Rust community as "toxic."

<https://x.com/awesomekling/status/1822236888188498031>



## FIREFOX PORTED TO HAIKU OS:

10/08/2024

After more than a year of development, the first working port of the Firefox browser has been prepared for the open operating system Haiku, which continues the development of BeOS's ideas. It is noted that the port is not yet suitable for the average user, as it has not been fully tested and does not operate stable enough. Ready-made installation builds are not published; those who want to test Firefox in Haiku are encouraged to build from source code. Until now, Haiku has offered WebPositive, Epiphany and Falkon browsers, which have been difficult due to some websites being too suspicious of them.

According to one of the Haiku developers, in the early 2000s, BeOS OS enthusiasts became one of the inspirations for the creation of Firefox. At that time, within the framework of the Bezilla project, a port of the Mozilla Suite package for the BeOS OS was being developed. Since the package was too bloated, the BeOS community

tried to create a lightweight version of it, which left only the browser and removed all other components, such as the email client and web page editor. Developers from Mozilla considered the idea worthy of attention and released their own stand-alone version of the browser under the name Phoenix, later renamed Firebird due to overlap with the trademark, and then again renamed Firefox due to overlap with the name of the free DBMS.

<https://discuss.haiku-os.org/t/progress-on-porting-firefox/13493/143>

## WCURL HAS BEEN ACCEPTED INTO THE CURL PROJECT:

12/08/2024

Daniel Stenberg, author of curl, announced the adoption of the wcurl utility into the project. The wcurl utility is now recognized as an official curl project, but its development will be continued by the original maintainers in a separate repository, independent of curl. The utility is developed by one of the Debian maintainers who maintains the curl package. In Debian Testing, Debian Unstable

and Debian 12 backports, the wcurl utility is already supplied as part of the curl package. The wcurl utility code is written in Shell and distributed under the Curl license (a variant of the MIT license).

The new utility is a wrapper over curl that implements a simplified interface for downloading files, reminiscent of the launch principle of the wget utility and relieving the user of the need to remember specific parameters for launching curl (for example, many people find it easier to install wget than to type "curl -L -O -" every time C --remote-time"). Unlike curl, wcurl allows you to specify multiple download links at once, automatically handles redirections, and retries downloads if failures occur.

Instead of outputting to standard stream, wcurl saves the downloaded information into files whose names are chosen based on the content of the specified links or the name returned by the server, and the file modification time is set to the value that the server returns in the Last-modified HTTP header. If a file with the chosen name already exists, wcurl does not overwrite it, but rather adds an extra digit to the name. When specifying several

links, their parallel loading is ensured.

The utility also disables processing of "{}" and "[]" substitutions in URLs and allows the use of spaces in links, independently replacing them with the "%xx" format. Using the "--curl-options" option, the user is given the opportunity to set any curl options, and through the "--dry-run" option, defining a line to run curl without actually performing the operation.

The announcement also mentions the trurl utility, which was created by the author of curl last year and complements curl with URL parsing and manipulation capabilities. Using the trurl utility, you can quickly perform actions in scripts such as replacing the host name, pages and individual parameters in a link, extracting a host and path from a link, converting a URL into a separate representation of elements in JSON format. The trurl code is written in C and Perl, and is distributed under the Curl license.

<https://daniel.haxx.se/blog/2024/08/08/curl-welcomes-wcurl-to-the-team/>



**RELEASE OF FRIGATE 0.14:**

12/08/2024

A new release of the Frigate 0.14 project is available, providing tools for creating network video recorders (NVR, Network Video Recorder) that analyze video transmitted from IP surveillance cameras in real time, as well as detect and record changes and objects. For example, the system can save images of people passing by the camera. To identify objects, a machine learning model is used, executed on the local system without accessing external services. The platform code is written in Python and is distributed under the MIT license.

OpenCV and Tensorflow are used to process images transmitted from the camera and identify objects. The system is optimized for minimal resource consumption and uses a multi-process model launch model. To reduce the load, object detection is performed only in conjunction with change and movement detection. Integration with various home automation systems that support the MQTT (Message Queuing Telemetry

Transport) protocol, such as Home Assistant and OpenHab, is possible. Control is carried out via a web interface, which can be integrated directly into the Home Assistant interface.

<https://frigate.video/>

**RELEASE OF HYPRLAND 0.42:**

12/08/2024

A new release of the composite server Hyprrland 0.42, using the Wayland protocol, has been published. The composite server is focused on tiling window layout, but also supports classic random placement of windows, grouping of windows in the form of tabs, pseudo-tiling mode and full-screen windows. Elements for creating visually appealing interfaces are supported, such as gradients in window frames, blurs, animation effects and shadows. Plugins can be connected to expand functionality, and socket-based IPC is provided for external operation control. The code is written in C++ and distributed under the BSD license.

To improve gaming

performance, it is possible to disable vertical synchronization (VSync) with a vertical damping pulse, used prevent tearing. Configuration is carried out via a configuration file, changes are picked up on the fly without restarting. Features also include support for dynamically created virtual desktops, two built-in modes for arranging elements on the screen, and a global hotkey processing system.

The new release is notable for completely getting rid of the connection to the wlroots library in favor of its own release of the Wayland protocol and the aquamarine rendering library, which implements backends for Wayland, DRM (Direct Rendering Manager) and working without a screen (Headless). The new version also adds support for the "explicit sync" mechanism, which makes it possible to reduce latency, get rid of artifacts and eliminate stutters when outputting graphics on systems with NVIDIA GPUs.

<https://hyprrland.org/news/update42/>

**REBECCABLACKOS 2024-08-12:**

13/08/2024

RebeccaBlackOS 2024-08-12 distribution has been released, aimed at introducing the latest developments related to Wayland support in various desktop environments and applications. The distribution is built on Debian and includes fresh builds of the Wayland libraries (cut from the master branch), a Weston composite server and the KDE, GNOME, Wayfire (with MATE components), Sway, LXQt and Xfce environments pre-configured to work on top of Wayland. The environment is selected through the login manager menu, and you can launch a shell from an already running environment in the form of a nested session. A 1.7 GB iso image is available for download.

The distribution includes the latest versions of the Clutter, SDL, GTK, Qt, FreeGLUT, GLFW, KDE Frameworks and Gstreamer libraries, compiled with Wayland support, and the Xwayland component, which allows you to run regular X applications in an environment created using the

Weston composite server. The distribution also includes versions of the mpv media player and KDE applications compiled as Wayland clients. To configure udev and the parameters of multiseat configurations, where several people with their own keyboards and mice can simultaneously work at the same desktop (each user has their own independent cursor), a special graphical configurator is provided. Weston includes RDP support. The delivery includes the waypipe utility for remotely launching Wayland-based applications.

<https://sourceforge.net/projects/rebeccablackos/files/2024-08-12/>

## RELEASE OF TAILS 6.6:

13/08/2024

A release of a specialized distribution, Tails 6.6 (The Amnesic Incognito Live System), based on Debian 12, supplied with the GNOME 43 desktop and designed for anonymous access to a network, has been created. Anonymous access to Tails is provided by the Tor system. All connections other than traffic

through the Tor network are blocked by the packet filter by default. Encryption is used to store user data, saved between runs. An iso image capable of working in Live mode, 1 GB in size, has been prepared for download.

The new version updates Tor Browser 13.5.2, Thunderbird 115.14.0 email client, and firmware packages. They improved support for new graphics cards and wireless adapters and you are allowed to enable multiple network interfaces simultaneously. The maximum waiting time before displaying an error when persistent storage cannot be unlocked has been increased to 4 minutes. They improved reliability of creating persistent storage when launching for the first time from a USB drive, as well as resolved an issue with connecting to the Tor network using the default set of bridge nodes.

[https://tails.net/news/version\\_6.6/](https://tails.net/news/version_6.6/)

## RELEASE OF MINETEST

### 5.9.0:

14/08/2024

After nine months of development, a release of Minetest 5.9.0 has been published, a free cross-platform sandbox game engine that allows you to create games in the style of Minecraft, using various voxel blocks for players to jointly form various structures and buildings that form a semblance of a virtual world. The gameplay provided by the engine is entirely dependent on a set of mods created in the Lua language. The engine is written in C++ using the 3D library IrrlichtMt (fork of Irrlicht). The Minetest code is licensed under LGPL, and game assets are licensed under CC BY-SA 3.0. Ready-made builds are generated for various distributions of Linux, Android, FreeBSD, Windows and macOS.

<https://blog.minetest.net/2024/08/12/5.9.0-released/>

## RELEASE OF MESA 24.2:

15/08/2024

After three months of development, a release of the free implementation of the OpenGL and Vulkan API - Mesa 24.2.0 was published. The first release of the Mesa 24.2.0 branch has an experimental status - after that, a stable version 24.2.1 will be released when ready.

Mesa 24.2 supports the Vulkan 1.3 graphics API in anv for Intel GPUs, radv for AMD GPUs, NVK for NVIDIA GPUs, tu for Qualcomm GPUs, lavapipeline software rasterizer (lvp), emulator mode (vn) and v3dvl (GPU Broadcom VideoCore for Raspberry Pi 4+). Vulkan 1.0 support is implemented in the dzn driver (Vulkan implementation on top of Direct3D 12).

Mesa also provides full OpenGL 4.6 support for iris (Intel Gen 8+ GPUs), radeonsi (AMD), Crocus (older Intel Gen4-Gen7 GPUs), zink, llvmpipeline, virgl (Virgil3D virtual GPU for QEMU/KVM), freedreno drivers (Qualcomm Adreno), d3d12 (a layer for organizing OpenGL work on top of DirectX 12) and asahi (AGX GPU used in Apple M1 and M2 chips).

OpenGL 4.5 support is available for AMD (r600) and NVIDIA (nvc0) GPUs. OpenGL 3.3 support is present in the softpipe (software rasterizer) and nv50 (NVIDIA NV50) drivers.

<https://www.mesa3d.org/news/releases/mesa-24-2-0-is-released/>

## DEBIAN 11 HAS BEEN MOVED TO LTS

### MAINTENANCE STAGE:

15/08/2024

The Debian project has announced the end of full-time support for the Debian 11 "Bullseye" distribution, which was released three years ago. Going forward, vulnerability updates for Debian 11 will be released through the Extended Support (LTS) program, which will last until August 31, 2026. Regular support of the current Debian 12 branch will last until June 10, 2026, after which LTS updates will be released for this branch until June 30, 2028.

The release of updates for the LTS branch is carried out by a separate group of developers, the LTS Team, formed from enthusiasts

and representatives of companies interested in long-term delivery of updates for Debian. The LTS Team will take over from the Debian Security Team and will continue to support Debian 11 without interruption. Updates will only be released for i386, amd64, arm64 and armhf architectures.

<https://www.debian.org/News/2024/20240814>

## RELEASE OF DEEPIN 23:

15/08/2024

A new release of Deepin 23 has been published, developing its own Deepin Desktop Environment (DDE), as well as about 40 user applications, including the DMusic music player, the DMovie video player, the DTalk messaging system, the installer and the Deepin Software Center. The project was founded by a group of developers from China, but has transformed into an international project. The distribution repository includes more than 8,000 packages. All developments are distributed under the GPLv3 license. The size of the boot iso image is 3.3-5 GB (amd64, arm64 and loongarch64, in

the process of preparing an assembly for RISC-V).

Desktop components and applications are developed using C/ C++ and Go languages. The graphical interface is built using the Qt library. The key feature of the Deepin desktop is the panel, which supports multiple operating modes. In classic mode, open windows and applications offered for launch are more clearly separated, and the system tray area is displayed. Effective mode is somewhat reminiscent of Unity, mixing indicators of running programs, favorite applications and control applets (volume/brightness settings, connected drives, clock, network status, etc.). The program launch interface provides two modes - viewing favorite applications and navigating through the catalog of installed programs.

<https://www.deepin.org/en/deepin-v23-is-officially-released/>

## OUTERTALE GAME OPEN

### SOURCE:

16/08/2024

The Outertale project is now open source, developing a fan interpretation of the game Undertale, which placed the previous story in the vastness of space. The game is cross-platform and is distributed in versions for Linux, Windows, macOS and Android, as well as as a web application for browsers. Scene data is stored in JSON files. The game engine is written in TypeScript and distributed under the ISC license. Standalone builds use the Electron framework.

<https://spacey-432.itch.io/outertale>

## RELEASE OF GODOT 4.3:

16/08/2024

After eight months of development, the free game engine Godot 4.3, suitable for creating 2D and 3D games, has been released. The engine supports an easy-to-learn game logic language, a graphical environment for game design, a one-click game deployment system, extensive

animation and simulation capabilities for physical processes, a built-in debugger, and a system to identify performance bottlenecks. The code of the game engine, game design environment and related development tools (physics engine, sound server, 2D/3D rendering backends, etc.) are distributed under the MIT license.

The engine was open sourced in 2014 by OKAM, after ten years of developing a professional-grade proprietary product that has been used to create and publish many games for PC, game consoles and mobile devices. The engine supports all popular desktop and mobile platforms (Linux, Windows, macOS, Wii, Nintendo 3DS, PlayStation 3, PS Vita, Android, iOS, BBX), as well as game development for the Web. Ready-to-run binaries have been created for Linux, Android, Windows and macOS.

<https://godotengine.org/article/godot-4-3-a-shared-effort/>

## OUTWIKER 3.3 RELEASED:

16/08/2024

A new stable version of the program for storing notes, OutWiker 3.3, has been published. A special feature of the program is that notes are stored in the form of directories with text files, an arbitrary number of files can be attached to each note, the program allows you to write notes using various notations: HTML, wiki, Markdown (if the appropriate plugin is installed). Also, by using plugins, you can add the ability to place formulas in LaTeX format on wiki pages and insert a block of code with colorized keywords for various programming languages. The program is written in Python (wxPython interface), distributed under the GPLv3 license and available in builds for Linux (snap and flatpak) and Windows.

<https://github.com/Jenyay/outwiker/releases/tag/3.3.0-stable>

## RUSSIAN OPEN OS CHALLENGE 2024:

17/08/2024

The first stage of the open system software competition has started - Open OS Challenge 2024, which is conducted by the community of developers of the Linux distribution OpenScaler, the company Sberbank Technologies (SberTech) and the ANO Center for the Development of Innovative Technologies "IT Planet". The competition is aimed at popularizing systems development and open source software. Participants will be offered tasks related to programming, administering and using the OpenScaler Linux distribution, compatible with Red Hat Enterprise Linux. The prize fund of the competition is one million rubles (1st place - 400 thousand rubles, 2nd place - 300 thousand rubles, 3rd place - 200 thousand rubles, 4th and 5th places - 50 thousand rubles). Five winners will also have the opportunity to attend the OpenAtom developer conference in China in December.

Both professional engineers and programmers who actively use

open source in their work, as well as amateurs, enthusiasts and students, at least 18 years old, studying system programming and administration based on Linux, can participate in the competition. Registration for participation in the competition is open from August 15 to September 22, 2024 inclusive. Event period from August 15 to October 27, 2024.

<https://translate.google.com/website?sl=auto&tl=en&hl=en-US&client=webapp&u=https://openscaler.braim.org/>

## RELEASE OF LABWC 0.8.0:

17/08/2024

A release of the labwc 0.8.0 project (Lab Wayland Compositor) has been published, a composite server for Wayland with capabilities reminiscent of the Openbox window manager (the project is presented as an attempt to create an Openbox alternative for Wayland). The features of labwc include; minimalism, compact implementation, extensive customization options and high performance are mentioned. Animated effects, gradients and



icons, with the exception of window buttons, are not supported at all. The project code is written in C and is distributed under the GPLv2 license.

The basis is the wlroots library, developed by the developers of the Sway user environment and providing basic functions for a composite manager based on Wayland. You can connect add-ons to implement functions such as creating screenshots, displaying wallpaper on the desktop, placing panels and menus. To run X11 applications in an environment based on the Wayland protocol, the use of the XWayland DDX component is supported. The theme, basic menu and hotkeys are configured through configuration files in xml format. There is built-in support for high pixel density (HiDPI) screens.

In addition to the built-in root menu, configured through the menu.xml file, you can connect third-party application menu implementations, such as bemenu, fuzzel and wofi. You can use Waybar, sfwbar, Yambar or LavaLauncher as a panel. To manage connecting monitors and changing their parameters, they

suggest you use wlr-randr or kanshi. The screen is locked using swaylock.

<https://github.com/labwc/labwc/releases/tag/0.8.0>

## RELEASE OF MINIOS 3.3.4: 17/08/2024

A new release of MiniOS 3.3.4 is available, a lightweight modular live Linux distribution designed for use on removable USB drives and developed by an author from Russia. The project was founded in 2009 and was initially based on Mandriva Linux, but after the liquidation of Mandriva it switched to using Debian as a base. A special feature of the distribution is the ability to add or remove modules to create a live environment that meets your own needs. Fluxbox, LXQt and Xfce are supported as custom shells. There are various ISO image options available for download. Depending on the build option, the distribution takes up 350-1660 MB of disk space.

<https://github.com/minios-linux/minios-live/releases/tag/v3.3.4>

## A CATCHY UPDATE: 19/08/2024

CachyOS, based on Arch Linux and developed within the framework of a continuous update delivery model is updated. The distribution is notable for its inclusion of optimizations to improve performance and the ability to install different desktop environments. In addition to the base KDE-based environment, GNOME, XFCE, i3WM, Wayfire, LXQT, OpenBox, Cinnamon, Cosmic, UKUI, LXDE, Mate, Budgie, Qtile, Hyprland and Sway are available for installation. The size of the installation iso image is 2.6 GB.

Btrfs, zfs, ext4, xfs and f2fs can be used as file systems. By default, the BORE task scheduler is enabled, optimized to reduce desktop latency and increase the priority of interactive processes. The kernel and packages are built to include LTO optimizations and use instructions available in processors based on x86-64-v3, x86-64-v4 and Zen4 microarchitectures. When assembling basic packages, PGO (Profile-Guided Optimization) or BOLT (Binary Optimization and

Layout Tool) optimizations are additionally used. The distribution comes with the Cachy-Browser web browser, based on Firefox and including changes to enhance security and improve performance, as well as patches from the Librewolf project.

<https://cachyos.org/blog/2408-august-release/>

## COCKROACHES CLOSE UP SHOP: 19/08/2024

CockroachDB has announced a change in licensing policy, discontinuation of the Core version of its DBMS and a significant limitation of free options. The changes will be applied starting with release 24.3, scheduled for November. The CockroachDB code will continue to be available, but under a restrictive license (the "code available" model). Until now, the company has offered two DBMS options: the free CockroachDB Core, which offers basic functionality, and the paid CockroachDB Enterprise, which includes advanced features and optimizations related to fault



tolerance, scaling and information protection.

The free version of CockroachDB Core is now being discontinued and instead, two new Enterprise editions are offered for deploying CockroachDB on your servers, which contain all the advanced features, but have restrictions on use: the CockroachDB Enterprise Trial, which can only be used for 30 days, and CockroachDB Enterprise Free, which has no time limit but can only be used by individual developers, students, and companies with less than \$10 million in annual revenue.

<https://www.cockroachlabs.com/blog/enterprise-license-announcement/>

## MINUET IN ALLEGRETTO:

20/08/2024

The MenuetOS 1.53 operating system has been released, where the core is developed entirely in assembly language. MenuetOS builds are prepared for 64-bit x86 systems and can be run under QEMU. The system build occupies 1.4 MB and is created in

the form of a floppy disk image and an iso image for burning to CD (running in VirtualBox is supported). The source code of the Menuet64 project is distributed under a restrictive license requiring approval for any commercial use, and Menuet32 is licensed under the GPL.

The system supports preemptive multitasking, booting on UEFI systems and SMP on multi-core systems. The project also develops its own X server and provides a built-in graphical user interface with support for themes, Drag&Drop operations, UTF-8 encoding and switching keyboard layouts. For developing applications in assembly language, it offers its own integrated development environment.

The operating system includes a network stack, drivers for Ethernet and USB 2.0, AC97 and Intel HDA (ALC662/888) audio codecs. The project develops a simple HTTPC web browser, mail and ftp clients, a VNC client, ftp and http servers, applications for viewing images, editing texts, working with files, watching videos, playing music. To navigate through files, they suggest using the NDN (Necromancer's Dos

Navigator) file manager, ported for MenuetOS. It is possible to run a DOS emulator and games such as Quake and Doom.

Recent changes to MenuetOS include the inclusion of the MPlayer multimedia player, a new design of the interface and menu system, support for executable files in the ELF format, and the provision of components for compatibility with Linux. Compatibility with Linux is ensured by a POSIX base layer that allows you to create GUI applications that can run on Menuet and Linux/X11, as well as a native X server written in assembly language, to which you can redirect the output of an application running on an external system with Linux, to display its interface in MenuetOS.

<http://www.menuetos.net/index.htm>

## A SHIP NAMED SOLARIS:

20/08/2024

Oracle has published the Solaris 11.4 operating system release SRU 72 (Support Repository Update), which offers a series of

major changes and improvements for the Solaris 11.4 branch. To install the fixes offered in the update, simply run the 'pkg update' command. Users can also take advantage of the free Solaris 11.4 CBE (Common Build Environment) edition, which is developed using a continuous release model.

<https://blogs.oracle.com/solaris/post/announcing-oracle-solaris-114-sru72>

## OFFICE FREEDOM:

22/08/2024

The Document Foundation presented a new release of LibreOffice 24.8. Ready-made installation packages are prepared for various Linux, Windows and macOS distributions. 166 developers took part in preparing the release, of which 108 are volunteers. 57% of the changes were made by 49 employees of the three companies overseeing the project - Collabora, Red Hat and Allotropia, 20% - by eight employees of The Document Foundation, and 23% of the changes were added by 115 independent enthusiasts.

The LibreOffice 24.8 release is labeled "Community", will be supported by enthusiasts and is not aimed at enterprise use. LibreOffice Community is available free of charge to everyone without exception, including corporate users. For enterprises that need additional services, products of the LibreOffice Enterprise family are being developed separately, for which partner companies will provide full support, the ability to receive updates over a long period of time (LTS) and additional functions such as SLA (Service Level Agreements).

<https://blog.documentfoundation.org/blog/2024/08/22/libreoffice-248/>

## GEAR'D UP: 23/08/2024

After four months of development, the August consolidated update of the KDE Gear 24.08, applications developed by the KDE project is presented. This is the third major update to the suite of applications published as part of the KDE 6 branch and after

the transition to using the Qt 6 library. The suite contains releases of 250 programs, libraries and plugins. Information about the availability of Live builds with new application releases can be obtained on this page. New versions of individual applications can be downloaded from the Flathub and SnapCraft stores.

<https://kde.org/announcements/gear/24.08.0/>

## GIMP FREEZE: 23/08/2024

The developers of the graphics editor GIMP announced that they are moving the GIMP 3 branch to the string data freeze stage, which stops making changes to the text strings shown in the interface. Freezing these strings is one of the final stages of release preparation and is done to give time (at least a month) to the teams involved in translating the interface into various languages to complete their work, so that they are not distracted by tracking changes in already translated elements. An exception is made only when correcting typos and errors that

lead to changes in lines.

It is assumed that all functionality planned for a future release is already ready and the remaining tasks will not require line changes. The next stage will freeze the API from making changes. Before the final release, a release candidate (GIMP 3.0.0-RC1) will also be generated and work will be carried out to identify and correct errors identified in it. Depending on the test results, a second release candidate may be published. The timing of freezing the API and generating release candidates has not yet been determined.

The GIMP 3.0 branch offers improvements such as a transition to GTK3, native support for Wayland and HiDPI, basic support for the CMYK color model (late binding), significant cleanup of the codebase, a new API for plugin development, render caching, support for selecting multiple layers (Multi-layer selection), editing in the original color space, initial implementation of non-destructive editing mode.

<https://discourse.gnome.org/t/gimps-master-branch-string-freeze/22895>

## TWELVE BELLS, CO: 24/08/2024

After seven months of development, the console file manager Midnight Commander 4.8.32 has been released. It has been developed since 1994 and providing a two-pane interface in the style of Norton Commander. Midnight Commander features things like mouse support, a built-in file viewer and text editor with syntax highlighting, the use of virtual files for navigation within archives, packages and network storage (SFTP, SSH), connecting handlers for various file types, and a quick transition to terminal mode to run commands, use bookmarks to navigate to frequently used places in the file system, flexible search tools. The project code is written in C and is distributed under the GPLv3+ license.

<https://github.com/MidnightCommander/mc/releases/tag/4.8.32>

**PHANTASMAGORICAL NEWS:**

24/08/2024

The SurrealEngine project develops the open implementation of the first versions of the Unreal Engine game engine and aims to provide the ability to run games using maps from the original Unreal Tournament (UT99) game released in 1999, without using the original proprietary engine. In addition to Windows, the project supports Linux using the SDL2, waylandpp and libasound2 libraries. The project is written in C++ and distributed under the zlib open license.

At the current stage of development, the SurrealEngine engine can load and draw maps, and also supports almost all the capabilities of UnrealScript scripts (only arrays and some networking capabilities have not yet been implemented). It supports detection of resources from the following games based on the Unreal Engine 1: Unreal Tournament, Unreal, Unreal Gold, Deus Ex, Klingon Honor Guard, NERF Arena Blast, TNN Outdoors Pro Hunter, Rune Classic, Clive

Barker's Undying, Tactical-Ops: Assault on Terror and Wheel of Time. Most are still crashing though.

<https://github.com/dpjudas/SurrealEngine>

**CACHING BEES:**

24/08/2024

When discussing the next batch of fixes proposed for inclusion in the 6.11-rc5 kernel by the author of Bcachefs, Linus Torvalds wrote that he was beginning to regret that he had accepted the Bcachefs file system into the kernel. Torvalds' dissatisfaction is due to the fact that Kent Overstreet, the author of Bcachefs, at the stage of final release candidates, sends too voluminous fixes, which, in fact, not only correct errors, but also continue to develop functionality, despite the fact that functional changes are allowed only at the initial stage of development of a new branch, and at the rc5 stage only individual small fixes are accepted, the size of which should preferably not exceed 100 lines of code.

The patch sent for Bcachefs, which added 1309 lines and deleted 671 lines in 39 files, included two significant changes in addition to bug fixes: support for a new data structure for managing the list of free elements in the cache and the ability to transform hash tables for the cache. A new structure has been added to eliminate unnecessary cache locks and avoid situations that could lead to lock contention in multi-threaded workloads.

This is not the first time that major fixes for Bcachefs have been pushed after the push window, nor is it the first time that simple bug fixes have been pushed to include heavier feature additions through push requests in the final stages of a new branch's development.

<https://lore.kernel.org/lkml/sctzes5z3s2zoadzldrpw3yfycauc4kpcsbpidjcrew5hkz7yf@eejp6nunfpin>

**SAVING THE BEST FOR LAST:**

25/08/2024

On August 25, 1991, after five months of development, 21-year-old student Linus Torvalds announced on the comp.os.minix

newsgroup the creation of a working prototype of a new Linux operating system, for which the completion of ports, of bash 1.08 and gcc 1.40 was noted. The first public release of the Linux kernel was announced on September 17th. Kernel 0.0.1 was 62 KB in size in compressed form and contained about 10 thousand lines of source code. The modern Linux kernel has more than 35 million lines of code.

Linus originally thought of calling the kernel Freax, from the words "free", "freak" and X (Unix). But the name "Linux" was given to the kernel thanks to Ari Lemmke, who, at Linus's request, posted the kernel on the university's FTP server, naming the directory with the archive not "freax," as Torvalds requested, but "linux." Enterprising businessman William Della Croce registered the Linux trademark and wanted to collect royalties over time, but later changed his mind and transferred all rights to the trademark to Linus. The official mascot of the Linux kernel, Tux the penguin, was chosen as a result of a competition held in 1996. The name Tux stands for Torvalds UniX.

<http://www.cs.cmu.edu/~awb/linux.history.html>



# It's time to party!

Why you should organize Software Freedom Day!

## Because it's fun!

So... what's your favorite piece of Free Software? How do you feel like thanking the developers for all the effort? Software Freedom Day is the ideal opportunity to thank all those volunteers and professionals for sharing us their skills.

So here's what you do! Gather some friends and organize a party. Invite a bunch of people and tell them about your favorite software projects. Tell them about Software Freedom and explain those 4 freedoms of GPL:



0. RUN



1. STUDY



2. SHARE



3. IMPROVE

At the end of the day, you'll have made new friends, rich encounters and probably discovered things about Software Freedom you didn't know yet!

Sat. 21 September 2024



## Because it matters!

In 2004 Matt Oquist first started the project because he noticed how CDs in magazines only contained commercial software, and he saw how Free Software was *up to standards*.

Later on, we learned how Software Freedom was important to know what an application was actually doing. Only by having *access to the code*, you could prevent getting viruses or spyware. That's when Frederic Muller founded the Digital Freedom Foundation.

Nowadays, we keep getting confronted with *cloud services disappearing* on their users, pushing us into expensive plans for the same service.

## Global event



[digitalfreedoms.org/sfd](https://digitalfreedoms.org/sfd)



@dff@fosstodon.org



#SoftwareFreedomDay:matrix.org

## Because you can!

Software Freedom Day has existed since 2004. Communities all over the world have organized Software Freedom Day in universities, libraries, hackerspaces, LUGs, shopping malls, an office space at work, or even just a local pub!

We all have some FOSS projects we're passionate about. Basically all we're doing is sharing our passion with friends (and sometimes strangers).

## Some examples:

- Linux install party
- Introduction into Inkscape
- Battle of Wesnoth LAN party
- Presentation on the 4 freedoms
- Program a robot

## 7 easy steps

1. Gather a small **team**
2. Decide **what** you can do
3. **Register** (or not) on [digitalfreedoms.org](https://digitalfreedoms.org)
4. **Spread the word** in your region and online
5. Find **volunteers**
6. **Prepare** the event
7. **Party!**



Digital Freedom Foundation





Last issue we looked at SAMBA basics and getting a test VM running. If you are planning on writing LPI, know that for some reason, the “weight” on SAMBA is more than others, meaning you are likely to get more questions based thereon. If I remember correctly, it features in all three of the LPIC exams. I’m looking at my old notes here while I write this, so while everything should be technically correct, there may be some things that may be out of date. It has been a while since I taught students and versions do change. However, I generally find that if you know the origins of something, you understand it better.

Just in case you forgot where we are, fire up your VM and let’s take a look. Quick recap, (also helps me get my train of thought in-line)

SAMBA is an amalgamation of three daemons:

1. smbd
  - resource locking
  - user authentication
  - data sharing via SMB protocol

- printing
  - file sharing
- (Mnemonic RUDE PF - as in PF sense firewall fill in your own word for the E or remember it is silent)

2. nmbd
  - NETBIOS translator
  - Windows browser (like Network neighbourhood)

3. winbindd
  - Windows USER and GROUPS translator.
  - Via: PAM, NSS RPC
  - Maps windows users onto Linux

NOTE: Samba cannot use /etc/pwd or /etc/shadow to authenticate users directly!

In your VM, make sure SMB is still there:

```
ps aux | grep smb
```

```
ps aux | nmbd
```

```
sudo smbstatus
```

## HAPPINESS?

Let’s quickly cover the other basics as well, I’ll put them here, as I have them in \*my notes, which my help you remember things easier. At any point, feel free too grab an LPIC book lying about or check on the latest LPIC objectives: <https://www.lpi.org/our-certifications/lpic-2-overview/>

As I said before things change (but the more they stay the same?)

Please also check out: <https://socradar.io/what-are-smb-ports/>

Because our VM server is a blank slate, you may need to install the

net-tools package if you want to tun commands such as netstat.

```
sudo apt install net-tools.
```

In the last issue, we just set up as this page: <https://ubuntu.com/tutorials/install-and-configure-samba#3-setting-up-samba>, but we did not talk about it. On your freshly created VM, type:

```
man smb.conf
```

It is one of the better man pages. It is intense, I know, but I want you to make a bit of an effort and go through it at least once, more if you need to. So if anything went wrong in the previous issue for you, you need to look here. Parameters are in the format of NAME = VALUE

You may have realised from my

```
File Machine View Input Devices Help
edd@learn1:~$ ps aux | grep smb
root      838  0.0  1.2 90296 25728 ?        Ss   05:52   0:00 /usr/sbin/smbd --foreground --no-process-group
root      842  0.0  0.3 87820  6600 ?        S    05:52   0:00 smbd: notifyd .
root      843  0.0  0.3 87812  6088 ?        S    05:52   0:00 smbd: cleanupd
edd      1242  0.0  0.1  6544  2176 tty1    S+   06:15   0:00 grep --color=auto smb
edd@learn1:~$ _
```



list that we do not have SAMBA users. Now just as we were blindly following the Ubuntu SAMBA page, in the previous issue, we will continue, there is a part four there. The problem is they do not say much and a newbie may get caught here. Let's expand.

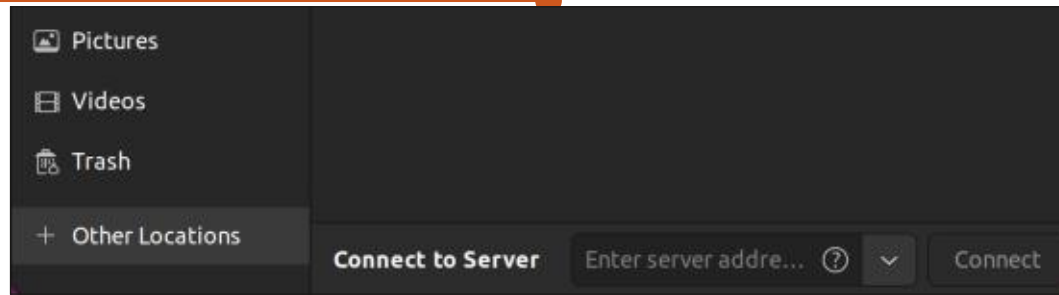
We start by adding a generic SMB user, the name is up to you.

```
File Machine View Input Devices H
edd@learn1:~$ sudo useradd smbuser99
[sudo] password for edd:
edd@learn1:~$ smbpasswd -a smbuser99
When run by root:
```

```
File Machine View Input Devices Help
edd@learn1:~$ sudo smbpasswd -a smbuser99
New SMB password:
Retype new SMB password:
Added user smbuser99.
edd@learn1:~$ _
```

At this stage you should know how to add a user. You can use 'smbpasswd' to add a password for the newly created user. You cannot use smbpasswd to create and set a password for a user, the user must already exist.

Your homework lies here: <https://ubuntu.com/server/docs/introduction-to-samba> Please read this at least once. [That will lead us here: https://ubuntu.com/server/docs/samba-as-a-file-server](https://ubuntu.com/server/docs/samba-as-a-file-server)



But how do we access this SMB share from another Ubuntu computer?

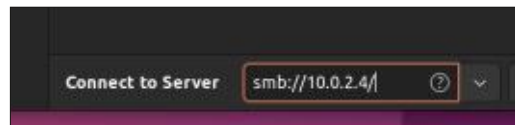
Where my friend was looking in "Windows shares" originally, I suspect a lot of newbies my look here, but it is not in the "windows" part. (though it reports Windows shares once connected) Your eyes need only travel to the bottom of the finder window. (that part only appears when you click on other locations)

"Connect to Server" (see image above) – type :

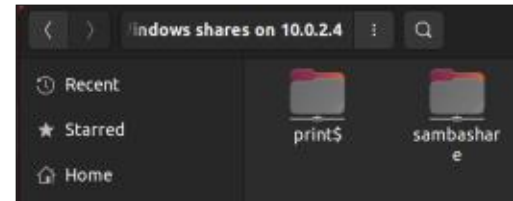
`smb://<ip address of SMB server>`

A quick demonstration in pictures:

1. my server we have been faffing on: my IP address is: 10.0.2.4
2. On my workstation side:



3. I click connect.



4. Once you know what the names of the shares are, you can "map" them.

The say a picture is worth a thousand words, so I hope every newbie knows how to make and connect to SAMBA shares now. For the more salted Ubuntu users, I know this is time consuming, but I'd like to have everyone on board before moving forward. The concepts are simple, you just need to make sure you edit your files correctly.

OK now on the server side, if you wish to end the share, you can use systemctl, like so: systemctl stop smb nmbd -and obviously replace stop with start to do the

reverse.

Last bit of reading I'm going to ask you to do on your own machine today:

`man smbcontrol`

You may see there is says winbindd as well. We did not talk about that, but that is because winbindd is independent and can run on its own. However, I think it is a big enough chunk for this issue, more and you will probably not absorb it all. If I'm going too slow or too fast, please let us know and we can try to adjust accordingly.

As always:  
[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.



## VIRTUALLY PYTHON

Greetings again fellow Sentient Lifeforms. Things here at landing pad 2997 on Terra still haven't calmed down yet. Hopefully, by the end of the month, I'll see things starting to calm down as we begin to transition to Autumn.

I have to make an apology to all of you. A few months back (FCM 204 and 205), I was discussing Sphinx and how to use it. When I explained the process of installing Sphinx, I showed how to create a virtual environment and how to activate, but I failed all of you by leaving it at that. Not only did I not show how to deactivate it, I failed to show how to reactivate it. I also failed all of you by not going deeper into virtual environments in general. In fact, I've never really discussed Virtual Environments before. I intend to fix those points now. We'll be discussing all things Virtual this month.

## WHAT IS A VIRTUAL ENVIRONMENT?

According to the Python official documentation, a Virtual environment is *"a self-contained directory tree that contains a Python installation for a particular version of Python, plus a number of additional packages."*

Basically, when you use a Virtual environment, you create a special 'version' of Python that has no packages installed except pip and setuptools. Any packages you install, usually via pip, will only be available in the Virtual environment, not your normal Python installation. This can actually be a good thing. From the Python.org documentation site, you can see the main reason for wanting to do this...

*"This means it may not be possible for one Python installation to meet the requirements of every application. If application A needs version 1.0 of a particular module, but application B needs version 2.0,*

*then the requirements are in conflict and installing either version 1.0 or 2.0 will leave one application unable to run."*

I'll be perfectly honest with you. I'm the world's WORST when it comes to just throwing a new library into my Python's installation without using a virtual environment. And I'll even admit that I've been bitten by the conflicts that put me behind the "8 ball" more times than I would be willing to admit. I'm trying to be better, really I am.

## DO YOU REALLY NEED TO USE A VIRTUAL ENVIRONMENT?

Strictly speaking, no, you don't NEED to use a Virtual environment. If you never intend to use any third-party libraries, and the basic Python "built in" libraries are all you will ever need, then you don't need to worry about Virtual environments.

However, in the real world, you will eventually need some package

that needs to be 'installed' via pip. Every time you install a third party package, you run the risk of having a version conflict.

So you can take the risk and just keep adding libraries to pip, or you can start using virtual environments. Just don't say that I didn't warn you.

## DEALING WITH A VIRTUAL ENVIRONMENT

So, how do we get started with Virtual environments? You have to create the virtual environment folder before you can use it, and then you need to activate it.

## CREATE THE VIRTUAL ENVIRONMENT

The syntax to create a Virtual environment is pretty simple...

```
Python -m venv {path/to/new/virtual/environment}
```

Normally, you will want to create the folder to hold the virtual

# HOWTO - PYTHON

environment named either `venv` or `.venv` in the project folder. You can also create a container directory that will hold many virtual environments like `~/virtualenvs`. When I get around to remembering to use a virtual environment, I always create the folder within my project folder as `.venv`. Having that hidden folder there reminds me that I've got to activate it before I can work on the project.

Assuming you want to create the Virtual environment in your project folder (which I suggest is the best way to do things), then, in a terminal window from your project folder, type...

```
$ python -m venv .venv
```

Once you've created the environment, you need to activate it:

```
$ source .venv/bin/activate
```

You should see your terminal prompt change to remind you that you are using a virtual environment.

```
(venv) greg@Earth2:~/Desktop/MyProject/test$
```

As long as you are using the terminal to create commands, you

will be using the virtual environments. However, if you do something outside of that terminal, you are using the default Python instance for your system and will not properly handle your project.

When you are done, use the `deactivate` command to release the virtual environment.

Just type...

```
deactivate
```

in the terminal and go on your merry way.

It's always a good idea to deactivate the virtual environment before you close the terminal window. It should never break anything, but it's better to tidy up behind yourself.

## USING VIRTUAL ENVIRONMENTS WITH PYENV

If you are using `pyenv` to handle your Python versions, you can simply use the instructions above, but `pyenv` does have a special way to handle virtual environments directly.

When you installed `pyenv`, it should have installed the `virtualenv` addon. The syntax would be

```
pyenv virtualenv {python version} {project name}
```

So let's say that you have installed the following versions of Python into your `pyenv`...

```
3.8.10,  
3.9.10,  
3.10.10,  
3.10.12,  
3.11.4,  
3.11.7,  
3.12.0,  
3.12.2
```

Further, let's say that you want to use 3.11.7 for this project and you want to name the virtual environment "project1". Your terminal command line would be...

```
pyenv virtualenv 3.11.7 project1
```

Once you get the command-line prompt back, activate it by typing

```
pyenv activate project1
```

Your command line prompt will now change to

```
(project1) greg@Earth2:~/
```

```
Desktop/MyProject/test$
```

However, unlike using straight Python, what doesn't happen is you don't get a dedicated folder for the environment in your project folder. In actuality, this can be better or worse, since you don't have the folder to remind you that there is an environment already there for you (or anyone else who needs to know).

To deactivate the `pyenv` version of the environment, simply do a '`pyenv deactivate`'.

```
(project1) greg@Earth2:~/Desktop/MyProject/test$ pyenv deactivate
```

Remember that when you create the `pyenv` virtual environment, you need to remember that the version you tell it is one that you already have added to your `pyenv` library of versions. Otherwise, you will get an error. I like to keep a list somewhere that I can look at of all the python versions. It just keeps me going in the correct direction.

Well, that's about it for this time. Until next time, as always; stay safe, healthy, positive and creative!



# HOW-TO

Written by Jon Hoskin

# Stable Diffusion Pt.17

Again a diversion from my initially planned article but I think it's beneficial for all. A simpler way to install many AI applications is via Pinokio (<https://pinokio.computer/>). "Pinokio is a browser that lets you locally install, run, and automate any AI on your computer." A couple of clicks and it's done although it may take some time. (But a single click is all that is required to delete an installed application.) All applications run locally and are free according to the Pinokio web-page. Currently Pinokio 2.1.17 is available but it does automatically update when started.

Applmage, Rpm and Deb versions are available so if one doesn't work with your OS you can try another. (Windows, aarch64, arm64 and Mac versions also exist). I had problems installing on updated Ubuntu OSes although Mint seems to be very stable thus far. (Previously the Nvidia drivers seemed to be unstable but not a problem with Mint 2.2 thus far.) Installation requires downloading the desired version (the deb

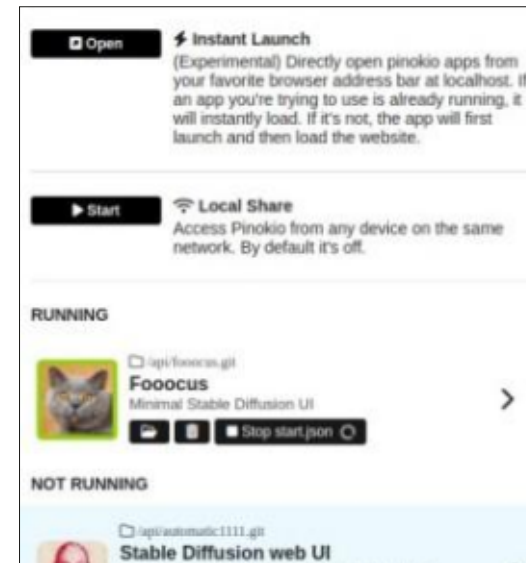
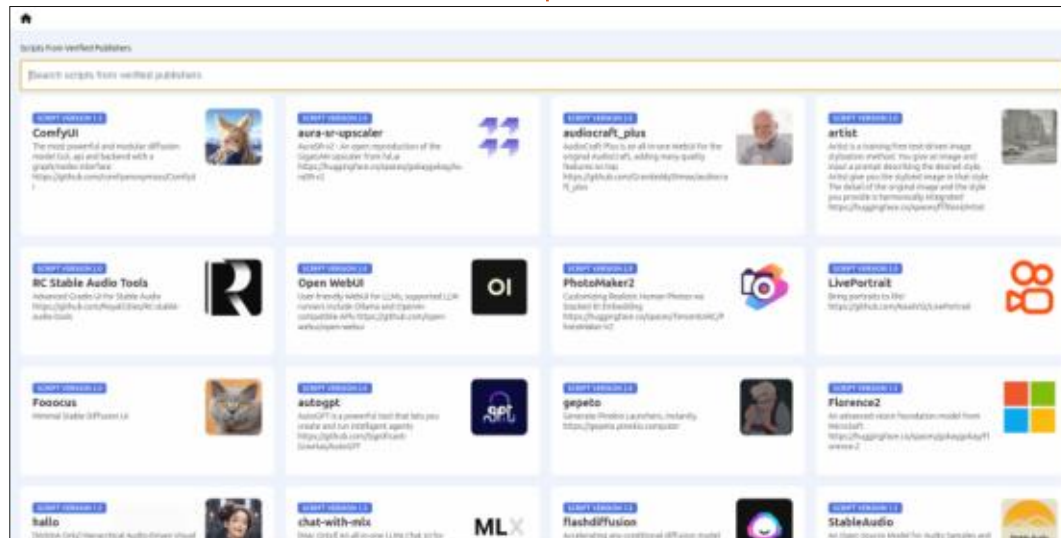
version worked for me) and giving it execute rights. You will need to install Pinokio once the option pops up.

Before we get into the installation of the applications process, take a look at the screen shot of some of the available installs. You will notice ComfyUI, Fooocus and unseen Automatic1111 among the over 100 Verified scripts. View the list by going to the Pinokio web page and selecting the discover button. Additionally there are 25 Community scripts which are also available but not verified. I haven't seen a need to try any of them at

this point, in fact there are too many options if you are relatively new to the Stable Diffusion program concept. I think it would be helpful if a short description was added so the newbie and everyone else could determine the program purpose with perhaps a link to additional information.

Once installation of Pinokio is complete, and you start the program (located in the Pinokio/opt/Pinokio folder), you will notice a small Home icon on the top left. Further to the right are icons for Discover and Community and you will want to look at the Discover options first. Assuming you want to

install Fooocus, select its icon then select Download and then again as the Save as, location pops up or change the name as needed. Finally select install and then you need to wait until all the files are downloaded and installed which may take some time as with any non-Pinokio installs. Ultimately the started Pinokio interface will look something like what I have with Fooocus, Stable Diffusion web UI and ComfyUI options visible. The first time you run any application it checks for updates and loads whatever is required. Unneeded or unused applications can simply be removed using the Trashcan button.





# HOWTO - STABLE DIFFUSION

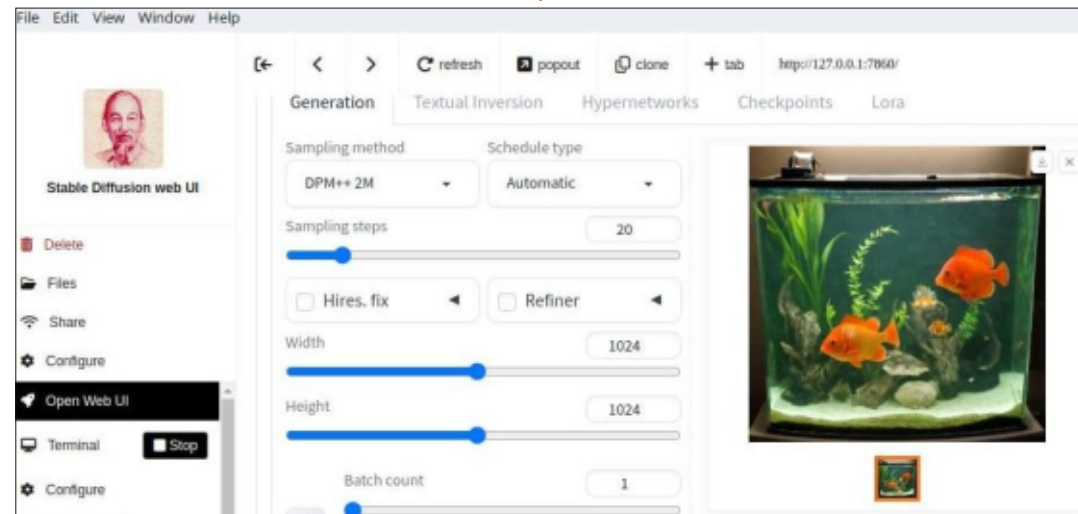
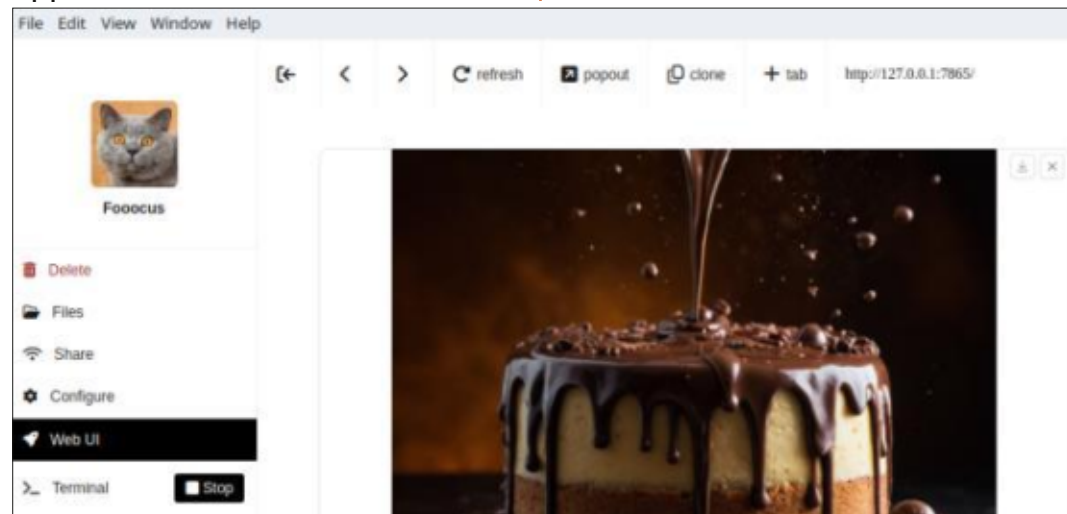
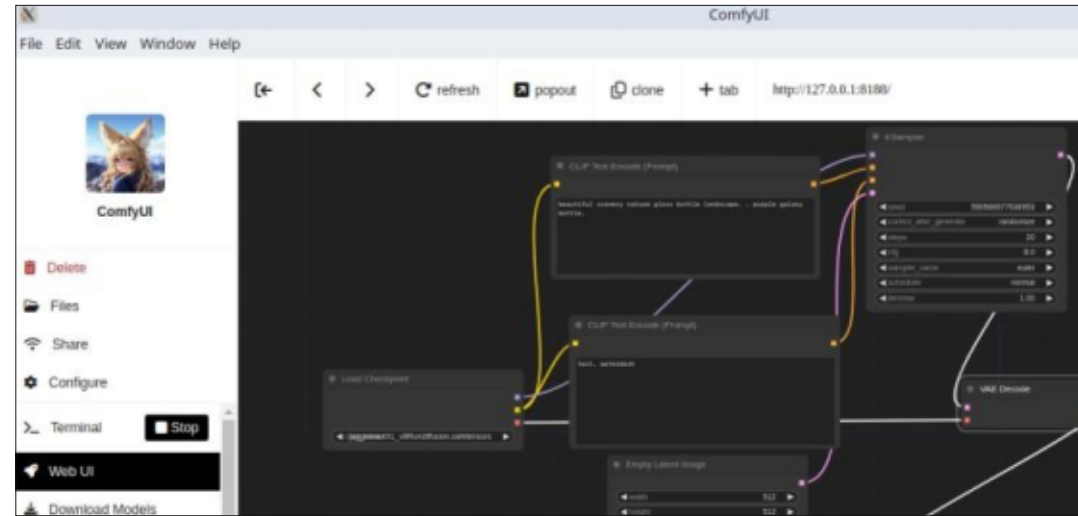
You can then start the program by selecting the Web UI or appropriate button and the familiar interface is visible within the Pinokio environment. Using a chocolate cake prompt found on CivitAI produced the image shown. (The screenshots of applications are meant to show the difference from the otherwise typical normal installation given they have been shown in previous articles.) Everything looks familiar with the exception of the standard Pinokio button options. There is a consistency that is welcome given that each application generally has a different user interface.

Installing the Stable Diffusion web UI is the same as with all other applications. It also looks familiar.

The Fishtank image is the default prompt and it again looks like the standard interface for SD web UI. Likewise the ComfyUI Pinokio install has the same look and feel.

Thus far, DeFocus is not available via Pinokio but I still plan to write a quick review. I have also added a variety of other applications via Pinokio which includes Forge, also soon to be reviewed. The majority of them seem to fill specific niches like upscaling or comics. Some build upon what has previously been available. There are video and audio options as well which I will eventually try. Note that some are specifically requiring Nvidia graphic cards or require a Mac. Nevertheless, this is a very hot development area and I suspect I

will continue to modify my plans in an attempt to keep relatively up-to-date.





# HOW-TO

Written by Robert Boardman

# Latex - CTAN

In these columns I have said several times there are many packages available for Latex at CTAN.ORG. I have also said these packages can do a wide range of typesetting chores. I think I mentioned there are over 2,000 of them in a standard installation of Latex in Linux. With this issue, I am going to browse through the CTAN site and tell you about some of the packages that catch my interest. I will start with the “A” topics and work my way through the English alphabet to the “W” topics over several columns. (There are no “Y” or “Z” topics, and only one “X” topic which is not relevant to my installation of Latex.)

In “A” there are several topics for support for various languages: Albanian, Amharic, Arabic, Armenian, Azerbaijani. There is support for lots of languages in many CTAN topics. I will write a column about language support later in this series unless someone asks for a description of what is available for a specific language.

The first “A” topic of interest is

“accessible”. Selecting this topic presents a list of eight packages: accessibility, accsup, atkinson, axessibility, glossaries-accsup, hamnosys, Latex2Nemeth, tagpdf. I discuss them in alphabetical order.

Accessibility helps with building tagged and structured PDF files. As of 2020 the author requests people to no longer use this package. He is / was looking for an interested developer to rewrite the package. So do not use it.

Accsup boasts better accessibility support. However the latest version is from 2019. The author said then it is an experimental package. So do not use it.

Atkinson supports the Atkinson Hyperlegible family of fonts. “This package provides LaTeX, pdfLaTeX, XeLaTeX and LuaLaTeX support for the Atkinson Hyperlegible family of fonts, named after Braille Institute founder, J. Robert Atkinson. What makes it different from traditional typography design is that it focuses on letterform distinction to

increase character recognition, ultimately improving readability.” (from CTAN.ORG). The most recent upgrade is 2024 April. This package is worth investigating particularly if you generate files that should be accessible to people with low or limited vision.

The Atkinson package provides the Atkinson sans serif font files which must be installed following the instructions in the README file in the downloaded zip file. The original opentype fonts are also available at <https://brailleinstitute.org/freefont>. The download includes four faces: regular, italic, bold, and bold italic. These are for “printed” documents (PDFs are included in printed documents). It also includes fonts suitable for use on web pages. See the example in the image accompanying this text.

Axessibility: PDF documents containing formulas are usually not accessible by assistive technologies for visually impaired people and people with special educational needs (i.e., by screen readers and

Braille displays). Screen readers are reasonably useful for regular text. Math, chemistry, physics, and other formulas are difficult or impossible for screen readers. The axessibility package manages this issue, allowing a user to make a PDF document where the formulas can be read by these assistive technologies, since it automatically generates hidden comments in the PDF document (by means of the / ActualText attribute and/or suitable tags) in correspondence to each formula. (from ctan.org)

Glossaries-accsup works with glossaries. It is an interface between the accsup package and the glossaries package. It is distributed with the glossaries package and has been in use since 2009. Since accsup is not recommended for use I suggest you avoid this package as well.

Hamnosys is a font for sign languages. The Hamburg Notation System, HamNoSys, is a system for the phonetic transcription of signed languages. This package requires an installation of either XeLaTeX or

LuaLaTeX. Hamnosys will not work with regular installations of Latex.

Latex2Nemeth converts Latex source to Braille with math in Nemeth. This “transcription” works in Greek and English. OpenOffice / LibreOffice and the odt2braille macro package are required for embossing. This package supports amsmath as well as the unicode-math package. The package includes four fonts for “printed” Braille as well as fonts suitable for web pages.

Probably the needs of most people with low or limited vision can be satisfied with screen readers and /or suitably enlarged fonts. For those people who use formulas which cannot be read by machines, the axessibility package is worth trying. For people who require printed documents in Braille, latex2nemeth is recommended.

Tagpdf works with LuaLatex and pdfLatex. I do not have either of those on my machine so I will not discuss them.

The next “a” topic of interest is “addr-list”. It has four packages listed: directory, koma-script, phonenumber, scraddr.

The directory package name gives away its purpose. It will build an address book-like database file using Latex and Bibtex. You will need to have Bibtex installed before you can use this package. The version available at ctan is 1.2 from 2004. It allows for directories in English, German, and French. One (of several) installation options

allows for months to be expressed as names instead of numbers. There is a long list of possible fields presented in the documentation for the package. A basic understanding of the Bibtex commands would be useful, perhaps even required, to take advantage of the directory package.

The phonenumber package makes it possible to typeset telephone numbers according to different national conventions. German, Austrian, French, British, and North American phone numbers are supported. Support for phone numbers from other countries is rudimentary. Country calling codes can be included with phone numbers. The package is

Paragraph, alphabet, numbers in Noto Sans.

The last package, scraddr provide data from scrlltr2's address files. Scrlltr2 is another Latex package which replaces the default “letter” document class. It is maintained by Markus Kohm who is also the maintainer of KOMA-Script. It is part of the KOMA-Script bundle.

ABCDEFGHIJKLMNOPQRSTUVWXYZ 1 2 3 4 5 6 7 8 9 0

Same paragraph, alphabet and numbers in Atkinson Hyperlegible

The last package, scraddr provide data from scrlltr2's address files. Scrlltr2 is another Latex package which replaces the default “letter” document class. It is maintained by Markus Kohm who is also the maintainer of KOMA-Script. It is part of the KOMA-Script bundle.

ABCDEFGHIJKLMNOPQRSTUVWXYZ 1 2 3 4 5 6 7 8 9 0

In particular in Atkinson note the wider kerning (letter spacing) between I and J, the difference between O and 0 and the difference between I and l and 1 (upper case I, lower case l, number 1). These paragraphs are in 11 point type. The differences become more apparent at larger type size.



able to check if a phone number is valid according to the national rules. It also allows linking phone numbers if used with the `hyperref` package. The package is dated 2022.

Documentation for the `phonenumbers` package is 129 pages. There is a separate chapter for each phone number type (each “country”), as well as separate appendices for the area codes in each block of phone numbers, and a list of valid country codes. Here in Canada, area codes have been added in various metropolitan centres in the last ten years. The date of the package becomes important when trying to validate phone numbers.

The KOMA-Script bundle provides replacements for the standard article, report, and book document classes, with emphasis on typography and versatility. There is also a letter class (see `scraddr` below). KOMA-Script is a bundle of packages available on sourceforge as well as ctan. It also has its own domain: `komascript.de`. Even though I have said it twice, I emphasize that KOMA-Script is a bundle of packages. Some of the included packages can be used

independently as packages (see `scraddr` below). Of course, each package has its own version and date; as a whole the package is dated 2023.

The PDF documentation for KOMA-Script is 567 pages in English. The first twenty-five pages are dedicated to calculating page layouts. The next one hundred pages deal with the three document classes: book, report, article. Then the developer deals with the letter document class and the `scrlltr2` package. There are four pages dealing with the `scraddr` package. There are many more pages on various other included packages. KOMA-Script is a comprehensive package dealing with many facets of document production. For some users it may be the only set of packages they require.

Obviously a package with so many parts and so many features requires in-depth study and practice. There is much in it to understand and learn. I may decide to dedicate several articles to KOMA-Script in the future. Let me know if you are interested.

The last package for this column

is `scraddr` which provides data from `scrlltr2`'s address files. `Scrlltr2` is a Latex package which replaces the default “letter” document class. It is maintained by Markus Kohm who is also the maintainer of KOMA-Script. It is part of the KOMA-Script bundle.

As I am sure you can tell, there are many things to explore in the topics presented in ctan. Already I have discovered packages that make printed files more accessible to people with limited or no vision, packages that help format and use names, addresses and phone numbers. I have also uncovered a package which seems to offer options for many parts of the document making process. Next month will have another dip into the resources at `ctan.org`



# 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/>



# HOW-TO

Written by Mark Crutch

## Inkscape - Part 148

I've looked at using clipping paths in Inkscape on several occasions in this series. This time, I'm going to hark all the way back to part 32, which appeared in FCM #92 in December 2014! In that article, I looked at some clipping techniques that could be applied to any type of object, but which were particularly suited to bitmap images. I used this familiar lady as my subject.

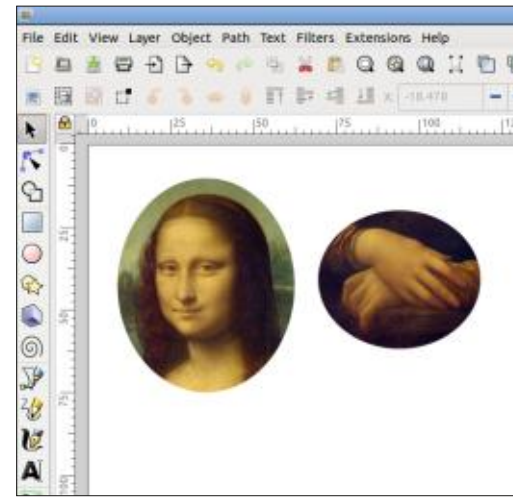


The highest resolution version

of this file weighs in at nearly 90MB, so it's not the sort of thing you'd want to embed into an SVG file – especially not multiple times. One solution to this is to link the image into your Inkscape document rather than embed it, but there are occasions when embedding is the better option. The classic example of this is when you want to share the file with somebody else. Inkscape will also sometimes use absolute rather than relative paths when embedding images, which makes them less practical to move between systems. You can manually edit the paths to make them relative, which helps the situation a lot, but you're still left with an Inkscape document that actually consists of two or more files that have to be moved as one. Embedding images solves all these problems, but this comes at the cost of a larger file, since it now contains a copy of the bitmap data in a text-based encoding that bloats it even further.

The main subject of part 32 was therefore how to avoid embedding multiple copies of an image in your

document when you need to reference different parts of it. The example provided was of an information leaflet that contains clipped images of La Gioconda's head and hands.



Despite appearances, the document in this screenshot contains only a single copy of the original image file. The secret is well known to Inkscape veterans, but is perhaps the single most useful tip I can provide when working with clipping paths (or masks): the content to be clipped is placed inside a group.

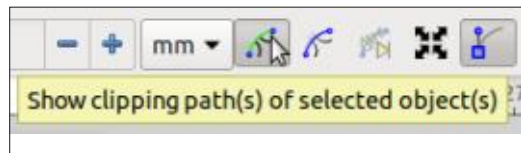
That alone isn't enough to get

this effect, but it's a prerequisite that makes for a good tip in general. With the clipping path applied to the group rather than the image itself, you can still double-click to enter the group, then move the image within it to change the point of focus. What you can also do is clone the image within the group, then cut it to the clipboard, exit the group, and paste it somewhere else (even on another layer). Because you've cloned the image itself, not the clipped group, you get a complete copy of the image that can be further manipulated. In this case, the requirement was to clip the clone to show only the hands, and position it beside the head.

While we're on the subject of clipping tips, another useful tip is to always convert your clipping shape into an actual path if it's not already one. That means any rectangles, ellipses, stars, or regular polygons, that you want to use as a clipping path, should generally be converted using the Path > Object to Path menu entry before you apply the clip. The reason? It means that the



path can be edited using the Node tool (F2) without unclipping first, which is not only a time-saver but also gives you a more representative view of how the final clipped object will look while you're editing the path. Note that this capability can be toggled on and off when the Node tool is selected, by using this button in the toolbar; so make sure it's enabled if necessary.

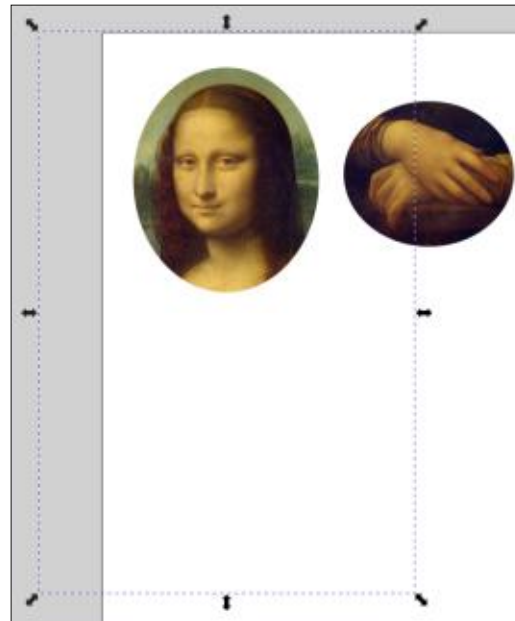


This is all well and good, but this month's column isn't really about repeating some tips from a decade ago, no matter how useful they still are. Instead, I want to talk about a new feature in Inkscape 1.3 which might make the previous approach redundant... at least in some cases.

Looking back at the original requirement, the aim was to cut out two sections from the original image which could then be moved around and manipulated independently. Although the group-and-clone technique achieved this visually, it didn't really "cut out" the sections at all. The final pieces were just clipped

versions of the full-sized image – which becomes very obvious when you look at the bounding box when I select one.

Obviously there's at least one



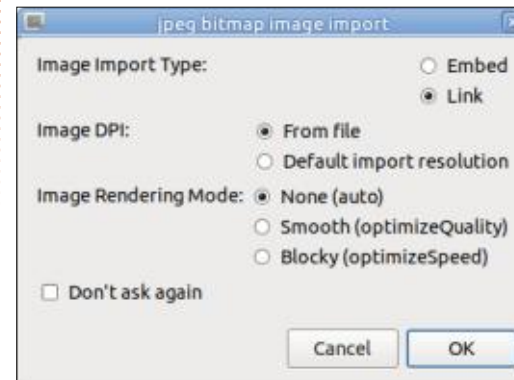
copy of the entire image embedded into the Inkscape document, even though the vast majority of the pixels don't appear in the final output. All those invisible pixels still contribute to the file size.

The most obvious way to avoid this is to edit the original image using a bitmap editor such as The GIMP or Krita, but that assumes you know how to use such programs to slice your image into individual parts, and save them as separate

files. Wouldn't it be nicer if Inkscape could take care of this for you, using the tools you already know? Well now it can.

To demonstrate I'm going to drag and drop my image into the Inkscape window. By default, you will be prompted as to whether you wish to link or embed the file, and I'll choose to link it.

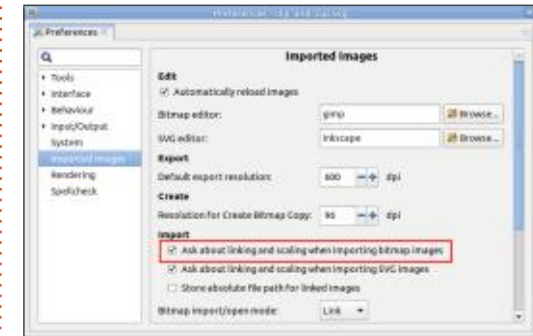
If you don't see that dialog then



you likely clicked the "Don't ask again" checkbox on a previous occasion. It doesn't really matter too much whether the image is linked or embedded at this point (it will end up embedded by the end anyway), but I prefer to link it to avoid bloating the SVG file when I save incremental work-in-progress copies of the file. If you do want to reinstate this dialog, then open the Inkscape preferences (Edit > Preferences), select the "Imported

Images" entry on the left, and ensure that you check the "Ask about linking and scaling when importing bitmap images" option.

In this particular case, I want to



use two sections of this image, but this technique is just as applicable to a single clipping path on a single image, should you want to remove the extraneous pixels that take up space in your SVG file. But, for two sections, I need two copies of the image: not clones this time, but real copies. Selecting my imported image and duplicating it (Ctrl-D) does the job. If you embedded the image, then saving at this point will result in a very large file, with the content of your image stored twice in the SVG file. If you linked the file there will be no such concerns, and your SVG file remains almost as svelte as ever.

Now I'll create the clipping paths that mark out the sections of the

## HOWTO - INKSCAPE

images that I want to keep. The tip about converting any primitive objects to paths still applies. Here's how my document looks so far with my clipping paths given a bright green stroke as is my usual preference.

The next step is to select one image and its associated clipping path, and apply the clip. I usually right-click and select 'Set Clip' from the context menu, but Object > Clip > Set Clip does the same thing if right-clicking isn't practical for you. Repeat for the other image and

path.

This is the time to get the shape, position and size of your clipping paths absolutely perfect. We didn't group the image first, so the trick of double-clicking to move the focus won't work here. But we can switch to the Node tool and move the entire clipping path if necessary – just select all the nodes (Ctrl-A will do the job) and you can drag the entire thing around. Of course you can also edit individual nodes to change the shape of the path. If you need to change its size, but not

its shape, select all the nodes and use the '<' and '>' keys. '[' and ']' will similarly rotate the path.

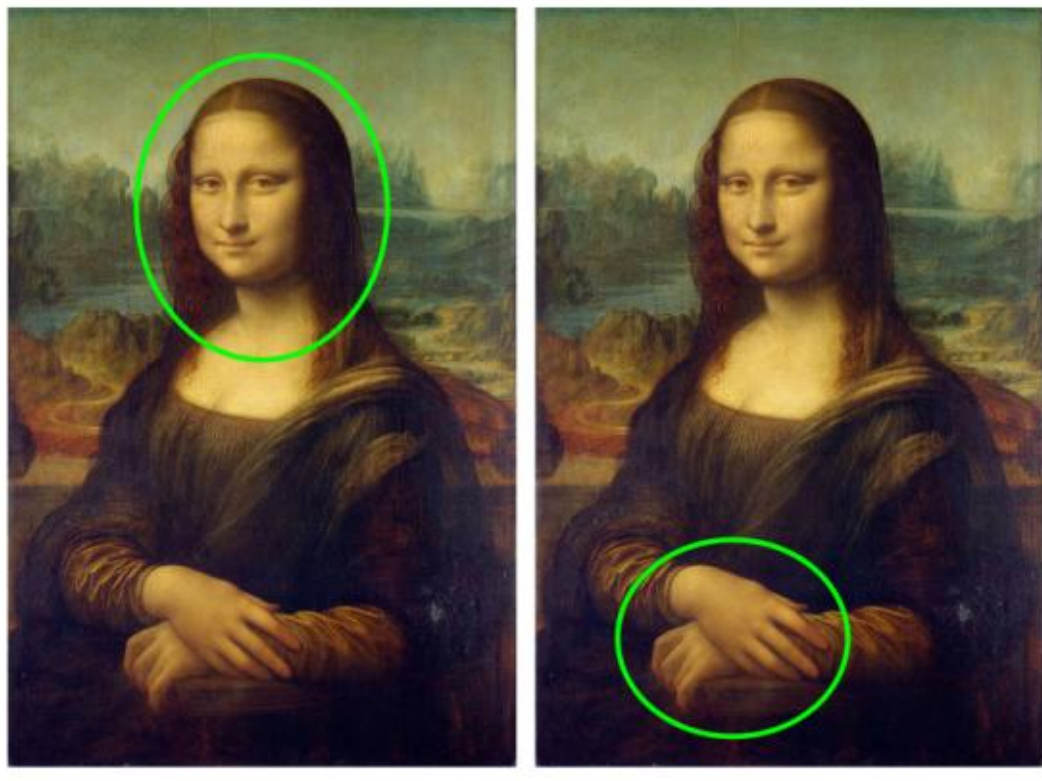
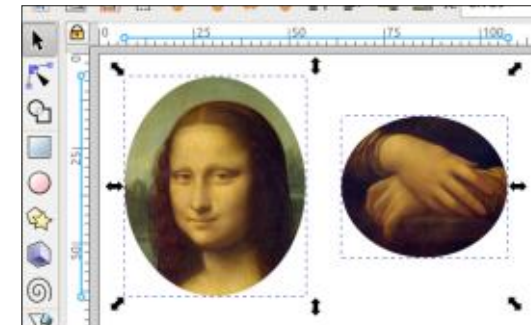
Right, are you happy with the clipping? Make sure you are, because once you take the next step, Inkscape will throw away much of the original image, so there's no turning back. (Okay, Ctrl-Z works to undo as usual, but what I mean is that this is a destructive change that can't be undone once you've closed and reopened the file later).

Right-click on one of the clipped images and you should find a new entry in the context menu: "Crop Image to Clip". Select that, and Inkscape will throw away the hidden pixels... sort of. The reason for that caveat is that there aren't any widely used bitmap formats that support non-rectangular images, so in the case of a non-rectangular clipping path, you'll still find that some hidden pixels remain (you can remove the clip to see them). But for all practical purposes, your image has been reduced to just the clipped area, even if a few extraneous pixels are technically still present in the corners.

Now it would be a big problem if Inkscape clipped a linked image in this way. You wouldn't want Inkscape to destructively modify your original image. What happens if that same image is linked into another document, perhaps in a completely different application? For that reason, Inkscape embeds the destructively edited image file if it was originally linked. In the case of our example document, therefore, this means we've embedded two small images – one of the head and one of the hands – but the combined size of those two pictures is still likely to be significantly less than our single embedded file using the previous approach.

Our final cropped and clipped images can now be positioned and manipulated as normal, with the advantage that the bounding boxes look a lot more sensible.

This new feature will be useful





## HOWTO - INKSCAPE

in a lot of cases where users want to use Inkscape to clip or crop bitmap images, but it's not a panacea, and needs to be used with consideration for its merits and its drawbacks. Where your clipping path encompasses most of the image – just removing a small amount from around the edges – it's probably not worth using this technique. The savings in file size will be minimal, and the destructive nature of the editing means you'll lose some ability to tweak and refine your clipping path or image position later on.

The example I used here does make sense... but if we'd wanted larger areas, or boxes that overlap the same part of the original image, the file size might not actually get much smaller. Each embedded cropped image carries some overhead, so it's even possible that taking multiple views in this way could result in a larger SVG file than if the entire original image was just embedded once.

The feature itself is not very discoverable. You have to have already applied a clip to an image directly (not an image in a group), and only then does it appear in the context menu. Why can't we have a

“Crop and clip” context menu entry that does both steps as one?

It's also worth noting that this applies to only bitmap images. For simple vector shapes, the equivalent method is to use the Boolean operations, but for complex groups of objects, there is no easy equivalent that will cut away the parts of objects that are not visible due to clipping. While the file size argument is less pressing with vector objects, there are times when it would be nice to be able to 'tidy up' an image in a similar way. I suspect there are too many edge cases for that to be an easy thing for the developers to achieve, though.

Overall I think this is a very useful addition to Inkscape's arsenal. It's just a shame that the lack of discoverability means that the people who will most benefit from it – the new users who also aren't comfortable with bitmap editors – are those most likely to miss it. If you know someone like that, point them in the direction of this article.

## IMAGE CREDITS

“La Gioconda” (aka “Mona Lisa”) by Leonardo da Vinci

[http://en.wikipedia.org/wiki/File:Mona\\_Lisa,\\_by\\_Leonardo\\_da\\_Vinci,\\_from\\_C2RMF\\_retouched.jpg](http://en.wikipedia.org/wiki/File:Mona_Lisa,_by_Leonardo_da_Vinci,_from_C2RMF_retouched.jpg)



**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

WHO CAN IT  
BE NOW?





### CYD AND RPI PICO 2???

Greetings again fellow Sentient Lifeforms. Things here at landing pad 2997 on Terra haven't calmed down at all since last month, instead they have gotten worse. Shipping delays and project timeline slippage seem to keep matters in a constant state of flux.

Anyway, let's talk about the news in the world of Microcontrollers.

### RPI PICO 2

First up is the news that just dropped on August 8 that the folks at Raspberry Pi Foundation have not only created a new Microcontroller named RP2350 and that will be the base chip on the new RPi Pico 2 that will retail for \$5.00 USD and available from a few select retailers (see <https://www.raspberrypi.com/products/raspberry-pi-pico-2/>). The downside for now is that the RPi Pico 2 currently doesn't have Wireless or

Bluetooth. That is coming probably before the end of the year. No price has been released for the wireless model at this point, but the speculation around the Internet is that it will probably be around \$10 USD. Add to that the board is the same size as the RPi Pico, it's pretty exciting stuff!

The good news is that the new chip is more powerful than the RP2040 (which was a pretty powerful device) and will bring some awesome specs. I'll try to

distill the specs down for you.

The Pico 2 has roughly double the RAM of its predecessor, and double the flash storage too. Flash storage is still kept separate from the SoC, but there is 8KB of on chip storage, reserved for the new Arm TrustZone feature. The stock CPU speed sees a 17 MHz boost over the original Pico, but you can overclock the Pico's CPU with just two lines of MicroPython. The real performance boost is in how the Arm Cortex M33 performs versus the older Cortex

M0+ and that still remains to be seen.

In addition to all of that, a number of vendors have announced that they have specialty boards based on the RP2350, including Sparkfun, Seeed Studios, Pimoroni, Invector Labs, Cytron, Adafruit, and many others.

We'll look at the RPi Pico 2 down the road. You can find the Micropython firmware at [https://micropython.org/download/RPI\\_PICO2/](https://micropython.org/download/RPI_PICO2/) and CircuitPython at <https://circuitpython.org/downloads>.

### CYD OR ESP32-2432S028R

If you haven't been watching the news for new Microcontroller boards and devices pretty closely, you might not know about the CYD or ESP32-2432S028R. What is it, why am I discussing it here, and what the heck does 'CYD' mean?

Just to get this out of the way,

Feature	RPI Pico 2	RPI Pico
SOC	RP2350, Dual-Core Arm Cortex M33 or Dual-Core RISC-V Hazard3 running at up to 150 Mhz	RP2040, Dual-Core Arm Cortex M0+ running at up to 133 MHz
SRAM	520 KB	264 KB
Flash Storage	4MB QSPI	2MB QSPI
Security	Arm TrustZone, 8KB OTP, Secure Boot	None
GPIO	26 x Digital IO	26 x Digital IO
	4 x 12-bit ADC (Analog pins)	3 x 12-bit ADC (Analog pins)
	2 x UART, 2 x I2C, 2 x SPI, 24 x PWM	2 x UART, 2 x I2C, 2 x SPI, 16 x PWM
Programmable IO	12 PIO State Machines	8 PIO State Machines



CYD stands for 'Cheap Yellow Display' (The board is yellow in the original device but some of the third party versions are more orange than yellow). Basically, (and you should be able to figure this part out from the part number) it's an ESP32 WROOM 32 chip, along with a 2.8-inch LCD TFT touchscreen, all on a single board, and with LOTS of goodies attached like a microSD card interface, an RGB LED, a photoresistor light sensor, and some GPIO exposed pins available to interface many sensors.

I'd love to show you some pictures, but due to shipment delays, I was unable to provide any pictures from my testing unit. So instead of "borrowing" pictures from someone's website, I'll suggest you take a look at the Random Nerds website at <https://randomnerdtutorials.com/cheap-yellow-display-esp32-2432s028r/>. They have a really good tutorial on how to get going with Arduino code, and some REALLY good pictures, to get you drooling.

If you are like me, you can immediately start to see some interesting and fun projects using this device. (My adult son wants us

to use the test device to make a "pip-boy" wearable wrist unit similar to the one they use in the Fallout series of games and in the TV Series of the same name – <https://gear.bethesda.net/products/fallout-series-pip-boy-die-cast-replica>. If you didn't get to watch it when Season 01 was released, you really need to see it! Season 02 is currently in production. I TRULY believe that he's more excited about this device that I am, if that's even possible.

Not only can you use Arduino to program the CYD device, it looks like you should be able to use the generic ESP-32 Micropython firmware and add a couple of modules to support the display and touchscreen interfaces.

As I have (constantly complained) not received the board yet (and today is the deadline for this article), I haven't been able to actually power up the board and try anything at all to this point. I am planning on creating a series of future articles that will detail using the CYD in Arduino AND Micropython.

Just to attempt to justify this whole thing, there is even a Driver

that should allow you to design GUI interfaces (seen in many Internet images of the CYD) that includes buttons, sliders, arcs, and other "widgets" – that I will try to test and provide future reports on as well.

In doing my 'early research', as I usually do before I get a new device, I ran across a YouTube video (<https://www.youtube.com/watch?v=0AVyvwv0agk>) by Brian Lough who has done a serious amount of work on using the CYD. He has also created a GitHub repository to hold most of the things that he talks about, as well as a Discord channel dedicated to the CYD.

The bottom line is this device seems to be a great addition to your Microcontroller parts box, and at the very least shows a tremendous amount of potential for things to come in the world of Micropython and Microcontrollers.

As I was wandering around the Internet looking for this, I noticed a number of larger displays, some with touchscreen and some without, but none (so far) with dedicated Microcontrollers onboard.

As to the "Cheap" portion of the

Cheap Yellow Display, when I went to the Internet looking for the ESP32-2432S028R and variants, I found that, depending on where you want to buy from and how fast you want it, you can find many versions of the board for less than \$20 USD. For a device that includes a 240 x 320 px display WITH Touchscreen, MicroSD card reader AND an ESP32 controller with Wireless and Bluetooth, I would say that getting one is pretty much a no brainer!

If you are considering buying the CYD board, the folks at MakerAdvisor have created a <https://makeradvisor.com/tools/cyd-cheap-yellow-display-esp32-2432s028r/>; it shows a number of boards, availability, and price, from some vendors (mostly Amazon and Aliexpress) – to get you started on your purchase.

Next time (I can't promise that it will be next month, since I'm STILL waiting on my test board to come in), I'll start the series with getting the board up on Arduino IDE (yes, Arduino!).

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



# Linux on Your iPad

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





# UBPORTS DEVICES

Written by UBports Team

Firstly, we are pleased to let you know that Lomiri is available with a quick- and-easy install, for testing on your Linux tablet or desktop without a VM. We are still talking very much about a testing, bug reporting, and contributing stage here, and not daily stable usage. To find out how, and join the conversation, check our Forum thread <https://forums.ubports.com/topic/10250/install-uninstall-lomiri-session-on-your-linux-desktop-tablet> for all the details. Give it a try and let us know how it goes in the thread conversation.

Who is Ubuntu Touch aimed at, who is all this time, effort, skill and pride the target for. The simple answer is you, and, of course, our community and users. Anyone who tries or uses UT is a very welcome part of, and member of, our community. Developers, enthusiasts and everyone looking for an alternative to the big two OS out there, you are all very welcome.

And that is the point. We want to be an alternative to them that everyone can use, not just

developers. That means we must make sure anyone can just pick up a UT device, use it, and love it – not just developers and linux experts, and that is what we are going to do.

Many people already use UT as their main daily driver and we want many more to do so. That means it all has to work without hassle or the need to use the terminal or any other (as it is seen by many) wizardry and dark arts. You just pick it, put your sim in, and off you go – make and get calls, messages, take photos, etc, always knowing you are not being tracked or having your data scraped, used, and profited from. Something that more and more people are becoming aware of.

Does this mean UT is not for those of a more traditional linux outlook, no of course not. This is FOSS after all, it's your device you can do and use it how you will and you are more than welcome to do so. However, so that as many people as possible can feel confident in using Ubuntu Touch, it will remain read and write. Want or

need to do more – then we are sure you will know how to "get in" and do whatever you please, and enjoy doing it.

We are proud that UT, as an OS, is aimed at the everyday user and we will continue to work hard in making that the reality.

While we are on this theme, another thing that is becoming popular among some mobile users is the feeling that being constantly connected to social media in all its forms, and always being on it and available, is not great for anyone. Want to change that, or know someone who does, then show them Ubuntu Touch. The standard install gives you all you may need for a quieter existence; calls, sms, camera, clock, and web browser, and you're all set. Anything else you can add if you wish, no reminders that this and the other are not set up, or that you have not added any social media accounts. The settings are there and the apps available from the OpenStore or increasingly snaps, it is purely up to you.

There is a video on the PinePhone Pro you may find of interest <https://www.youtube.com/watch?v=w9UaT3Q68Ag> More on all things UT and Pine coming up in the next few weeks, this should include news on recovery images and system image updates.

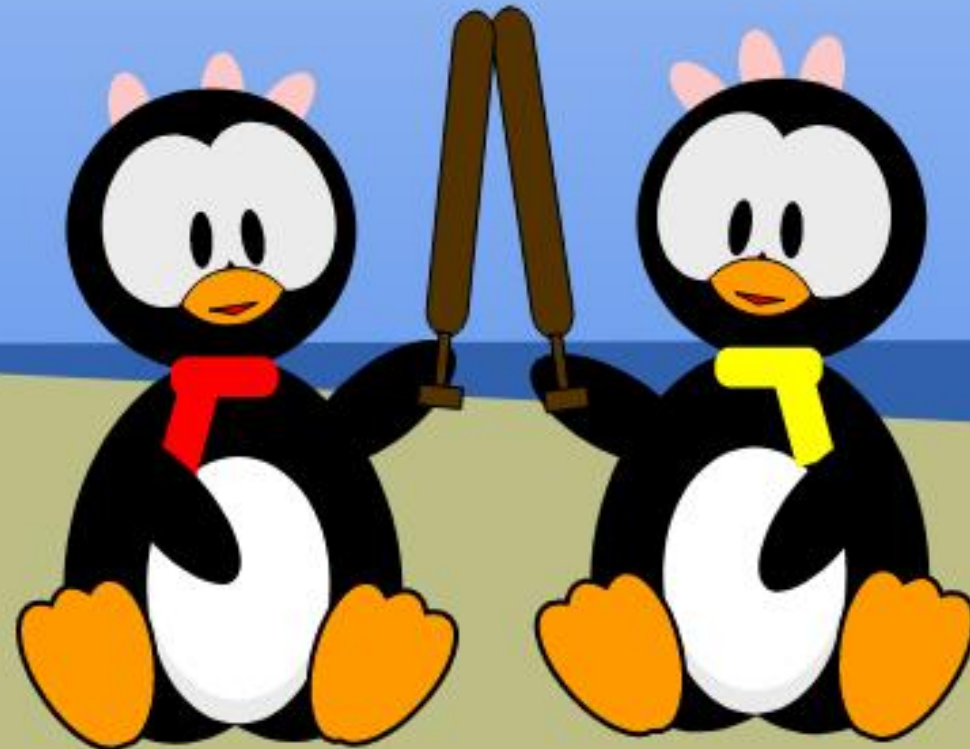
## WEATHER EXPERTS WITH TRANSLATION SKILLS NEEDED!

We have had a request from Mike Gabriel aka Sunweaver for some translation skills. Our weather app has been updated recently by Maciej Sopyło to a new weather provider resulting in some new translation work being required. If you want to help then please use this link from Mike <https://sunweavers.net/blog/node/147> where you will find all the details.



# THE DAILY WADDLE

AREN'T YOU GLAD WE HAD  
THIS CONFLICT RESOLUTION  
MEETING ?

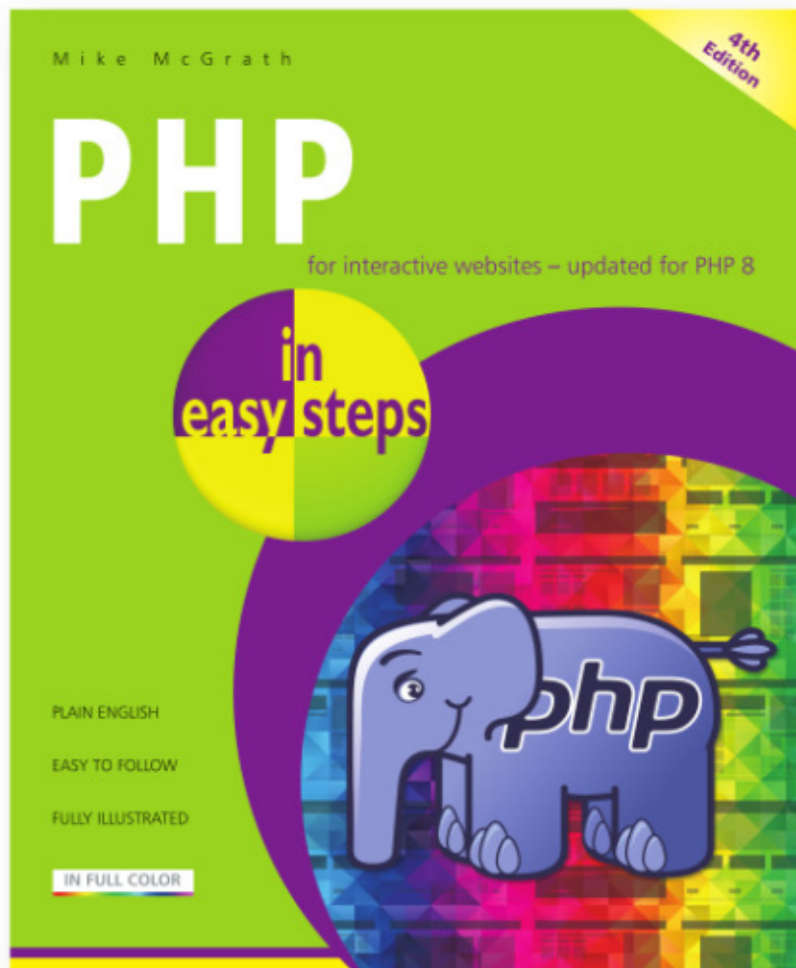




Clear and concise guides to help you learn with minimal time and effort!

Order direct from [ineasysteps.com](http://ineasysteps.com) and get **25% discount!**

Enter **FC25** in the Coupon Code box at the checkout.



**PHP in easy steps, 4th edition** is ideal for PHP newbies who want to quickly learn the fundamentals of server-side programming with PHP and create interactive web pages.

- Shows PHP language basics including variables, arrays, logic, looping, functions and classes.
- Covers how to install a free web server and the PHP interpreter to create an environment in which you can produce your own data-driven web pages.
- Shows how to write PHP server-side scripts; master PHP operators and control structures; process HTML form data; get cookies and session data; access Web Services APIs over HTTP... and much more!

**Updated for PHP 8**

**£11.99 / \$16.99** paperback (ebook version also available)

ISBN: 9781840789232 / 192 pages / By: Mike McGrath



# MY OPINION

Written by Erik

One of our readers sent us a letter (FCM#207) stating that you can no longer force fsck on Ubuntu, and honestly, it has been so long since I have used it personally, I thought it may be a good idea to refresh people's memory regarding fsck. (I did do this recently for my cousin over the phone, but he still uses 18.04). If you are a n00b, you will find this interesting, so stick around. We have been spoiled with journaling file systems, because they rarely need the fsck touch.

I suggest opening the fsck man page and looking at the exit codes. Mostly you need to know about 0,1,2,4.

Now fsck is like a blanket term, behind the scenes it invokes, say, fsck.ext4. Think of them as a family of commands, where you can specify what you need. For instance, I use ext4, so I can say:

```
fsck.ext4 /dev/sda1
```

or just:

```
fsck /dev/sda1
```

**Tip:** You can see them all by typing: `ls -l /usr/sbin/fsck*`

If you come from a Windows background, and most of you do, then think chkdsk. You used to run it with `-f` now `-p` (I think; I also have not done it in years). Just keep it in the back of your mind, we will touch on that again.

**For n00bs:** open your gnome-disks utility and look below the drive. You should see what file

system you are using, under "Contents" eg:

Reminder: **do not try to run fsck on mounted drives!**

**For n00bs:** to see if your drives are mounted, run `lsblk` (you can also use `df`, but `lsblk` is cleaner).

My disk has a mount point, so if I were to try fsck, it will warn me (see below)

As with Windows chkdsk, you can use `-p` to basically tell fsck to go ahead and automatically fix errors, without you having to click yes to

```

FSCK(8)                                System Administration                                FSCK(8)

NAME
    fsck - check and repair a Linux filesystem

SYNOPSIS
    fsck [-lsAVRTMNP] [-r [fd]] [-C [fd]] [-t fstype] [filesystem...] [--]
    [fs-specific-options]

DESCRIPTION
    fsck is used to check and optionally repair one or more Linux
    filesystems. filesystem can be a device name (e.g., /dev/hdc1,
    /dev/sdb2), a mount point (e.g., /, /usr, /home), or an filesystem
    label or UUID specifier (e.g.,
    UUID=8868abf6-88c5-4a83-98b8-bfc24057f7bd or LABEL=root). Normally, the
    fsck program will try to handle filesystems on different physical disk
    drives in parallel to reduce the total amount of time needed to check
    all of them.

    If no filesystems are specified on the command line, and the -A option
    is not specified, fsck will default to checking filesystems in
    /etc/fstab serially. This is equivalent to the -As options.

Manual page fsck(8) line 1 (press h for help or q to quit)

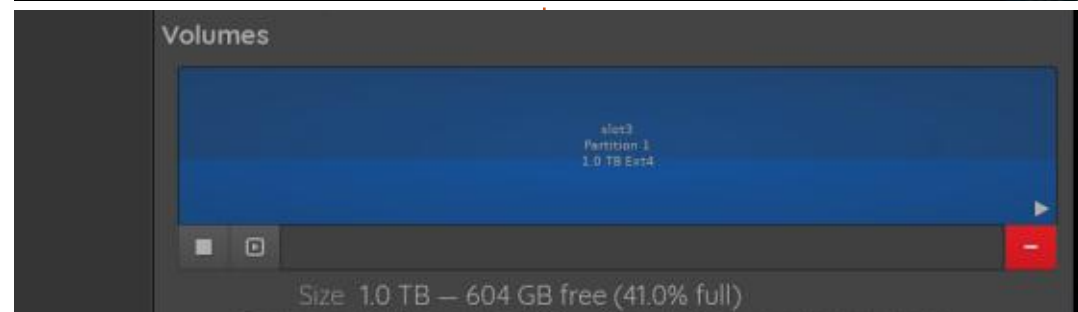
```

```

ed ~$ fsck.ext4 /dev/nvme1n1p1
e2fsck 1.46.5 (30-Dec-2021)
/dev/nvme1n1p1 is mounted.

WARNING!!! The filesystem is mounted. If you continue you ***WILL***
cause ***SEVERE*** filesystem damage.

```





# MY OPINION

each repair. (I'll have to check if this is still the case, as it is not listed in the man page.) Prior Windows used `chkdsk -f` (windows before NT, iirc) to check and fix the drive automatically, but in Linux, the `-f` is FORCE, so be very careful when tacking on an option. This forces a check, even if the file system is marked clean.

Other notable tacks are `-y`, `-n -c`: `-y` being "yes to everything", `-n` being "no to everything" and `-c` being "show completion bar".

## Example:

(I have an NVME in my laptop, but the process is the same for mechanical drives):

- list with `lsblk`
- unmount partition with `umount`
- confirm with `lsblk`
- check drive with `fsck` (you need to be root)

```
ed ~ umount /dev/nvme1n1p1
ed ~ lsblk
NAME        MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
nvme1n1     259:0    0 953.9G 0 disk
└─nvme1n1p1 259:1    0 953.9G 0 part
nvme0n1     259:2    0 953.9G 0 disk
└─nvme0n1p1 259:3    0   512M 0 part /boot/efi
   nvme0n1p2 259:4    0 953.4G 0 part /run/timeshift/backup
```

As you can see from my "exit code" that we talked about, right at the beginning, my drive is fine.

I know my drive is fine, so I expected 0 as an outcome. If you suspect errors on your drive, your desired outcome is 1. If you see 4, you need to worry.

Now, the mount root "/" is different.

In older versions of Ubuntu, you could type: `sudo touch /forcefsck` and reboot. You could also boot into recovery mode and select the `fsck` option.

Another way is to use `tune2fs`, or I should say the modern way, as `forcefsck` no longer works in Ubuntu from 20.04 onwards. (I'll add a link at the end of the article).

The man page for `tune2fs` is a

spaghetti jumble, that no new user should try and traverse, I just had a look and found the skeleton of a user from 2014 still stuck in there. `Tune2fs` is a great tool, but it is like a Swiss army knife when all we need is a flat head screwdriver.

If you did look at the man page, the only flag we are interested in is the first one, `-c` (count how many times a drive is mounted before checking). We are not going to dive in here, as I still have to sleep sometime. Armed with what you now know, you can run a check.

```
sudo tune2fs -c 1 /dev/nvme1np
```

(in my laptop)

```
sudo tune2fs -c 1 /dev/sda1
```

(in my old box)

The recipe for you is:

```
sudo tune2fs -c 1 /dev/<YOUR DRIVE>
```

Reboot.

Ok all fine and dandy, but how can you check to see when the last drive was checked?

```
sudo tune2fs -l /dev/nvme1n1p1 | egrep -i 'check|mount'
```

(replace `nvme1n1p1` with your drive – if I have to keep posting images, Ronnie will swear at me and you guys are a bright lot...).

## BONUS:

How to set up regular checks, with the `-i` flag: (interval)

"`sudo tune2fs -i 1w /dev/nvme1n1p1`" – this would set it to check every week (on my drive). You can replace that, say with `1m`, for every one month, `2w`, every two weeks and so on and remember to change the drive name to yours if you are copying from the magazine.

I hope we simplified it for you, (I think it is short 'n to the point) if not, look here: <https://askubuntu.com/questions/1352774/how-to-force-fsck-on-reboot-for-ubuntu-20-04>

Again, thanks to our wonderful readers for pointing out our mistakes, without you we would be Windows (L)users! :)

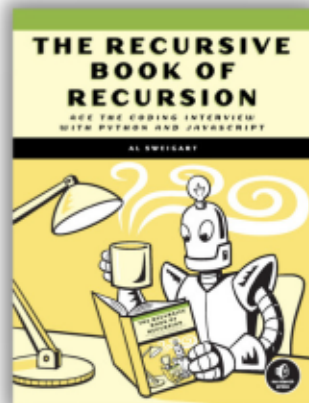
Let us know:  
[misc@fullcirclemagazine.org](mailto:misc@fullcirclemagazine.org)



# Tech Books Made Better



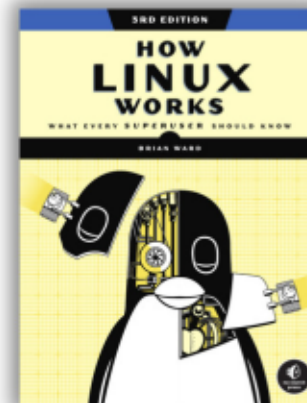
**Python Crash Course, 3rd Edition**  
9781718502703  
\$44.99 PB | 552 pages



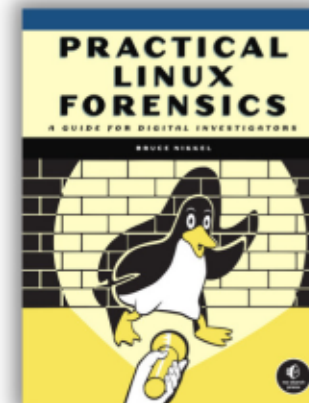
**The Recursive Book of Recursion**  
9781718502024  
\$33.99 PB | 328 pages



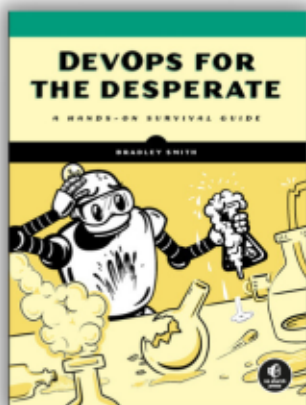
**Dead Simple Python**  
9781718500921  
\$59.99 PB | 752 pages



**How Linux Works, 3rd Edition**  
9781718500402  
\$49.99 PB | 464 pages



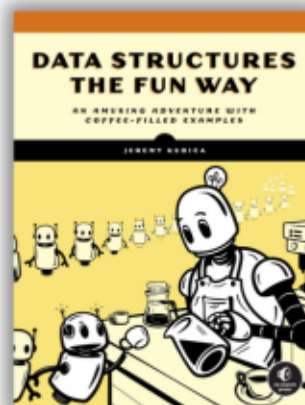
**Practical Linux Forensics**  
9781718501966  
\$59.99 PB | 400 pages



**DevOps for the Desperate**  
9781718502482  
\$29.99 PB | 176 pages



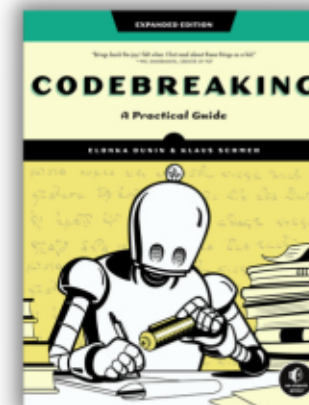
**The Rust Programming Language, 2nd Edition**  
9781718503106  
\$49.99 PB | 560 pages



**Data Structures the Fun Way**  
9781718502604  
\$39.99 PB | 304 pages



**Deep Learning**  
9781718500723  
\$99.99 PB | 776 pages



**Codebreaking**  
9781718502727  
\$29.99 PB | 488 pages

Get 25% off your order at [nostarch.com](https://nostarch.com) with code **FULLCIRCLE25**



# HOW-TO

Written by Ronnie Tucker

# Write For Full Circle Magazine

## GUIDELINES

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

## RULES

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

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

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

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

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

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

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

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

## TRANSLATIONS

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

## REVIEWS

### GAMES/APPLICATIONS

When reviewing games/applications please state clearly:

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

### HARDWARE

When reviewing hardware please state clearly:

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

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





# REVIEW

Written by Adam Hunt

# Ubuntu Budgie 24.04 LTS

On 25 April, 2024, Ubuntu Budgie 24.04 LTS is the latest long term support version of this Ubuntu-based Linux distribution. This release marks the 17th Ubuntu Budgie version and, as an LTS, it comes with three years of support until April 2027.

While this release does not introduce a lot new over the last one, Ubuntu Budgie 23.10, it is the culmination of a release cycle that had some ambitious aims set by the team, all of which seem to have been realized.

## INSTALLATION

I got the ISO file for Ubuntu Budgie 24.04 LTS from the official website via BitTorrent and carried out a SHA256 checksum on it from the command line to make sure the download was good.

This ISO file was a 4.1 GB download which is 200 MB bigger than Ubuntu Budgie 23.10.

I dropped the ISO file onto a USB stick equipped with Ventoy

1.0.98 and booted it up from there. Ubuntu Budgie is listed as officially supported by Ventoy and, unsurprisingly, it worked just fine.

## SYSTEM REQUIREMENTS

The recommended minimum system requirements for Ubuntu Budgie 24.04 LTS have changed since the last release and are now up to:

Processor speed: 2.4 GHz  
RAM: 4 GB  
Hard Disk space: 60 GB

Given today's realities, 8 GB of RAM is probably a better minimum, especially for web browsing use.

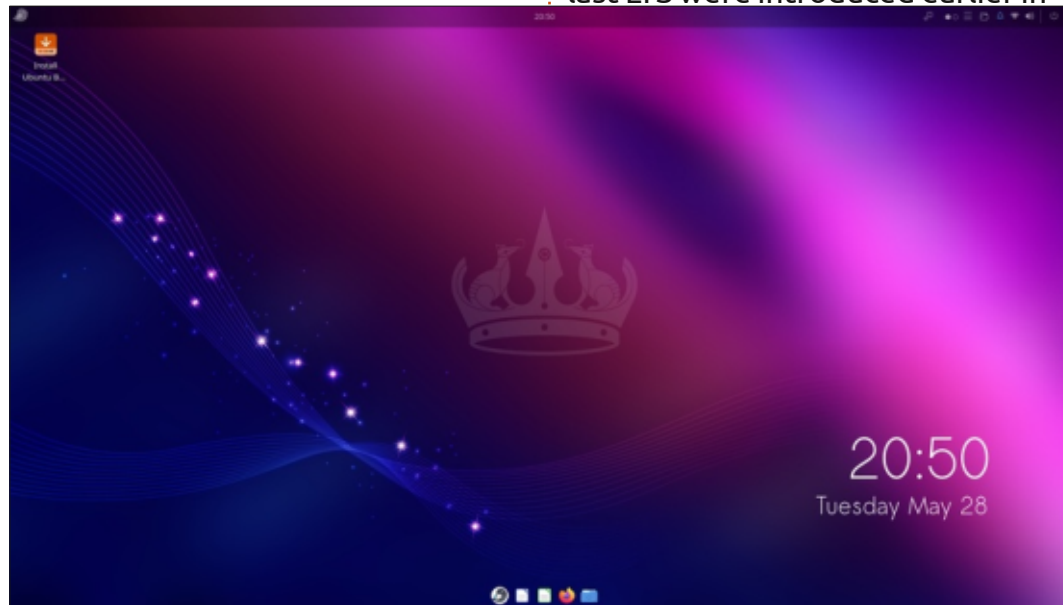
## NEW

There is not a lot new from Ubuntu Budgie 23.10 which is actually what you want to see in an LTS release. An LTS should feature stability, not innovations. That said, this release does bring an updated Budgie Desktop, bumped from version 10.8 to 10.9.

Most of the changes since the last LTS were introduced earlier in

the developmental cycle. Cumulatively, these now include improvements to several of the desktop applets, the window shuffler, the default user indicator, a new status notifier applet, updated hot corners, a new Budgie control center, a progressively updated Budgie Desktop with many interface improvements, the introduction of the Magpie window manager (which was forked from Mutter), redesigned Bluetooth and trash applets, privilege escalation dialog improvements, better performance and power modes in the battery status applet, a new Budgie welcome, updated and additional themes. In addition, the audio controller changed from Pulseaudio to Pipewire, changes to the list of default applications provided, a new Flutter-based installer was added, and there were many more small, detailed improvements.

In general, the movement in the default applications mix has been away from GNOME applications to avoid the GNOME use of libadwaita and its associated adwaita theme.



# REVIEW

So over this development cycle, many of the previously included GNOME applications have either been dropped entirely or replaced with others, often from the MATE desktop.

As in the recent past, this release's default wallpaper is a modified version of the standard Budgie spacey-looking wallpaper that has been standard since Ubuntu Budgie 19.04. For recent releases, the designers have been adding a motif representing the release's code name and so for this Noble Numbat, the Ubuntu numbat crown has been added to the spacey wallpaper. This release has 28 wallpapers, down from 35 included in the last release. There is

a second one with a numbat theme included although it may be a bit garish for some tastes.

## SETTINGS

This release only brings a few minor theme updates and changes over 23.10.

As in past releases of Ubuntu Budgie, there is a small dock at the bottom of the screen called Plank. It works fine if you like docks. It will hide if a window touches it. Settings for it can be accessed by right-clicking on the dock itself. One of the settings is "quit" which closes it, but then closing it also means you have no list of open

applications or access to minimized applications unless you use "alt-tab". It can be turned on again by just opening Plank Preferences and, bingo, it is back!

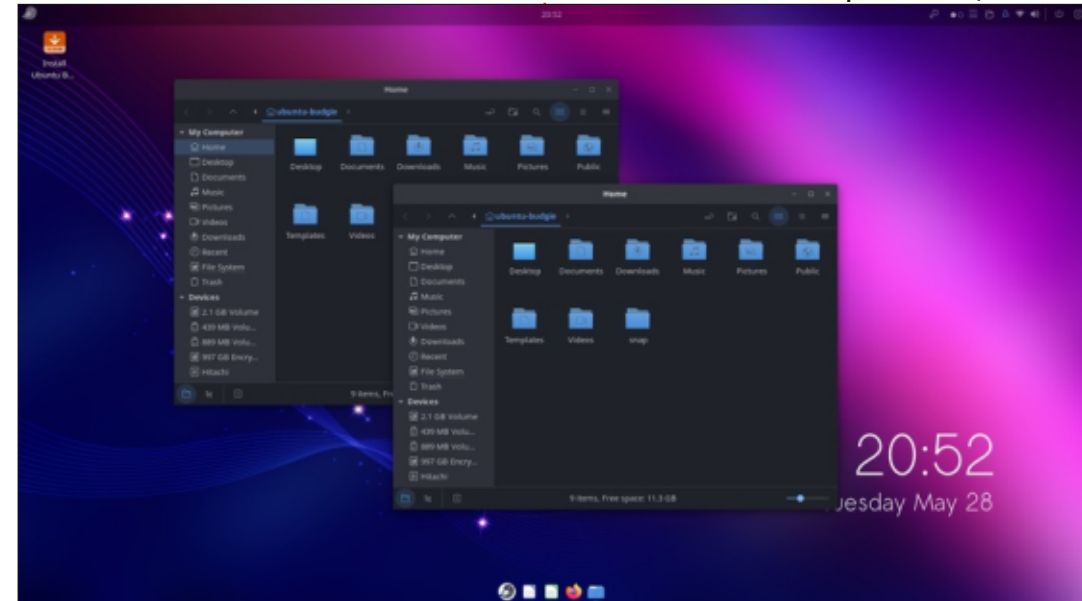
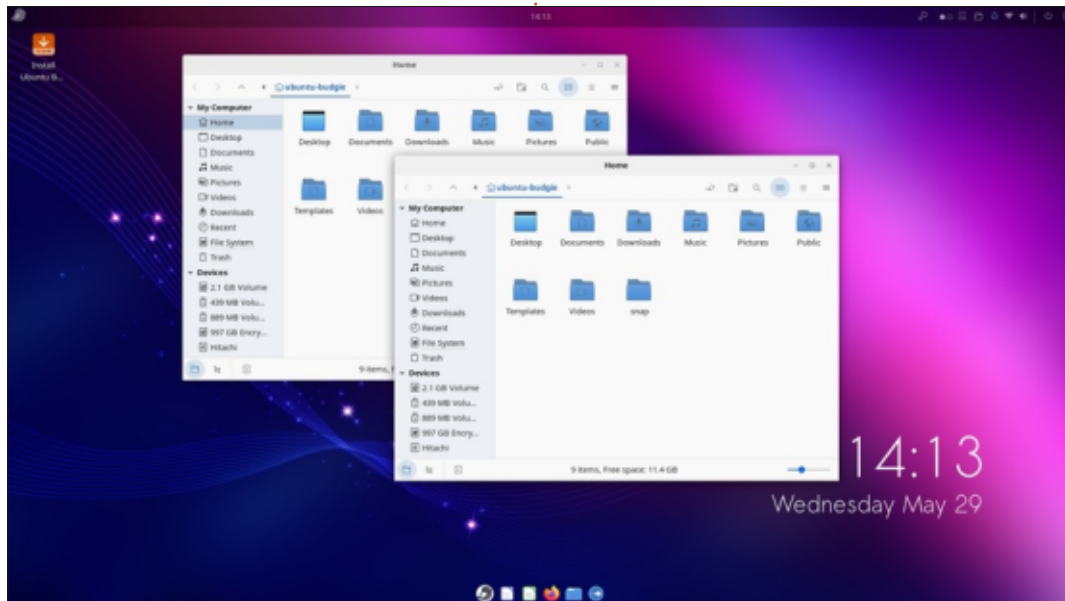
The Budgie main menu can be set to either show application tiles in alphanumerical order or icons by category. The menu is not resizable.

As has been the case for a while with Ubuntu Budgie, the user settings are widely scattered in many different places, are quite hard to find and also confusing. This is the one area where Ubuntu Budgie could really use some serious developmental work. Putting the settings all in one place would make life a lot easier for the

users, especially new users who are trying to figure out where everything is.

So, let's go over where everything is.

Budgie Desktop Settings is where you will find the window themes, oddly under Style - Widgets. There are 14 window themes provided, with the default one still Pocillo-dark, named for the unsweetened coffee drink. There are also some nice light themes provided including Pocillo-light. Also found here are styling preferences (light or dark); ten icon styles, with Pocillo as the default; three cursor styles and four notification screen positions, one in



# REVIEW

each corner with "top right" as the default.

Budgie Makeovers & Layouts is where you find complete "one button" wallpaper, window theme and icon packages (this time with ten to choose from, one more than in the last release). It is worth noting that only three of these are installed with the remaining ones available for download. I am guessing that this is an effort to keep the ISO file download size smaller. There are also eight desktop layouts. These include launchers and menus that mimic most desktop set-ups. They are named Ubuntu Budgie, Classic Ubuntu Budgie, Redmond, Eleven, Chrome, Traditional Budgie, The

One and Cupertino. They seriously change how the Budgie desktop looks and works.

The desktop applets are hidden away in Budgie Extras. This time around, there are 38 applets included, three more than in the last release. These programs add clocks, calendars, weather and other functions to the desktop. It seems we lack a common language, even in the Ubuntu world, as in Kubuntu these same sorts of programs are called "widgets".

The Budgie Control Center is a modified version of GNOME Settings. Here you can configure such features as WiFi, wallpaper, sound and power settings.

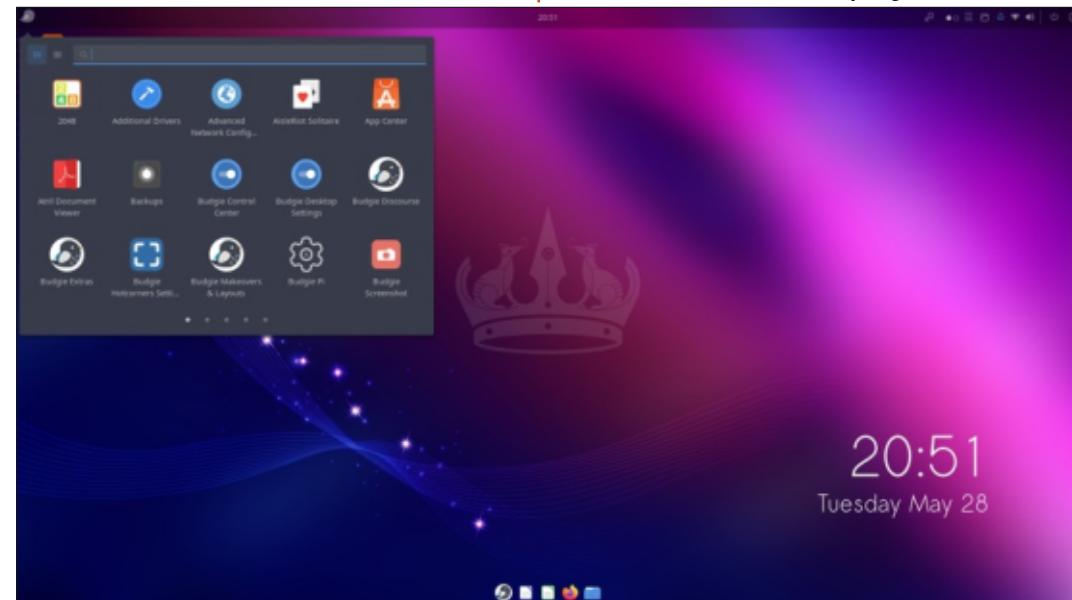
For any Budgie user, I would recommend you write your settings down when you find a combination you like so that you can duplicate them in future installations!

## APPLICATIONS

Some of the applications included with Ubuntu Budgie 24.04 LTS are:

- Archive Manager (File Roller) 44.1 archiver
- Atril 1.26.2 PDF viewer
- Budgie Screenshot Applet screenshot tool
- CUPS 2.4.7 printing system
- Deja Dup 45.2 back-up tool
- Document Scanner (Simple Scan)

- 46.0 optical scanner
- Drawing 1.0.2 image editor\*
- Firefox 125.0.2 web browser\*\*
- Gdebi 0.9.5.7\*
- Goodvibes 0.7.9 internet radio
- GNOME Disks 46.0 disk manager
- GNOME Software 46.0 package management system
- Gparted 1.5.0 partition editor\*
- Gpodder 3.11.3 podcast player
- gThumb 3.12.6 image viewer
- Guvvview 2.0.8 webcam application\*
- LibreOffice 24.2.2 office suite
- Lollypop 1.4.37 music player\*
- Magpie 0.9.3 window manager\*
- MATE Calculator 1.26.0
- Mate System Monitor 1.26.3 system resource monitor
- Nemo 6.0.2 file manager
- Parole 4.18.1 movie player





# REVIEW

Pipewire 1.0.5 audio controller  
Plank 0.11.89 desktop dock\*  
Text Editor (gedit) 46.2 text editor  
Thunderbird 115.10.1 email client\*\*  
Tilix 1.9.6 terminal emulator  
Transmission 4.0.5 BitTorrent client  
Ubuntu App Center 1.0.0 package management system\*\*

\* indicates same application version as used in Ubuntu Budgie 23.10  
\*\* supplied as a snap, so version depends on the upstream package manager

Once again in this release, there are no changes to the suite of default applications provided, just some updated versions, so it looks like the developers' applications switchover plan outlined in April

2022 has been completed.

At one time, Ubuntu Budgie was basically a new, menu-driven interface for GNOME but, as can be seen, that is no longer the case and the applications are now a real mix from the GNOME 46, MATE 1.26, and Cinnamon 6.0.2 desktops, plus independent projects such as Gucvview and Mozilla's Thunderbird and Firefox.

Ubuntu Budgie 24.04 LTS continues to use the Cinnamon desktop's Nemo file manager. Nemo looks good and it works really well, with many user choices available, but in Budgie's implementation it has no integral bulk file renaming. Adding a stand-

alone bulk file renamer like GPRename is a good way to address that.

This release includes the LibreOffice 24.2.2 office suite which is complete except for LibreOffice Base, the database program. It is probably the least-used part of LibreOffice and can be installed if needed.

## CONCLUSIONS

Ubuntu Budgie 24.04 LTS is a good solid release with no obvious vices, which should keep Budgie fans happy for the next three supported years.

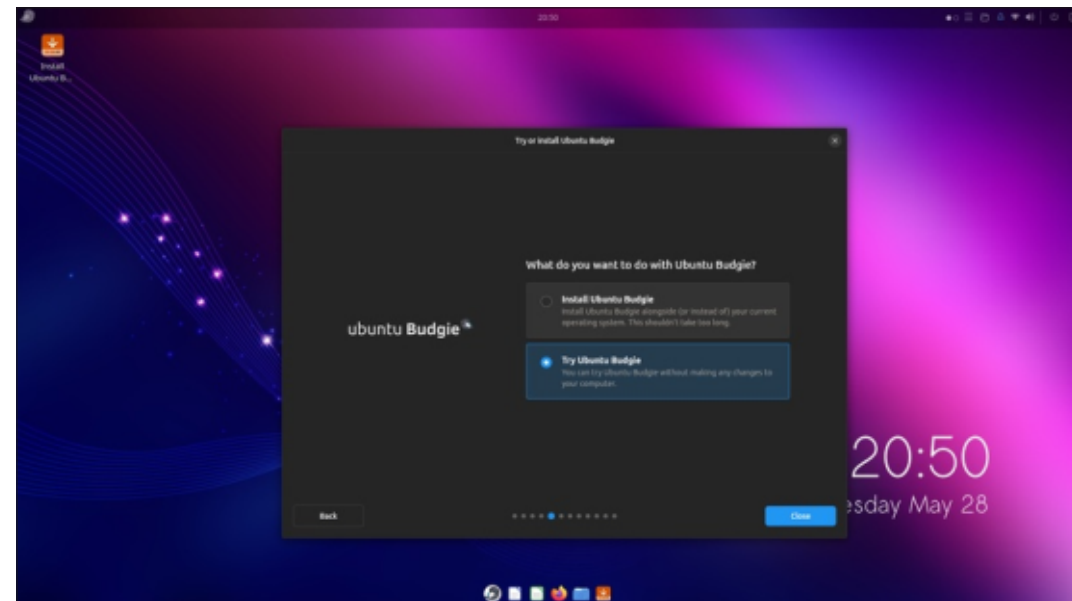
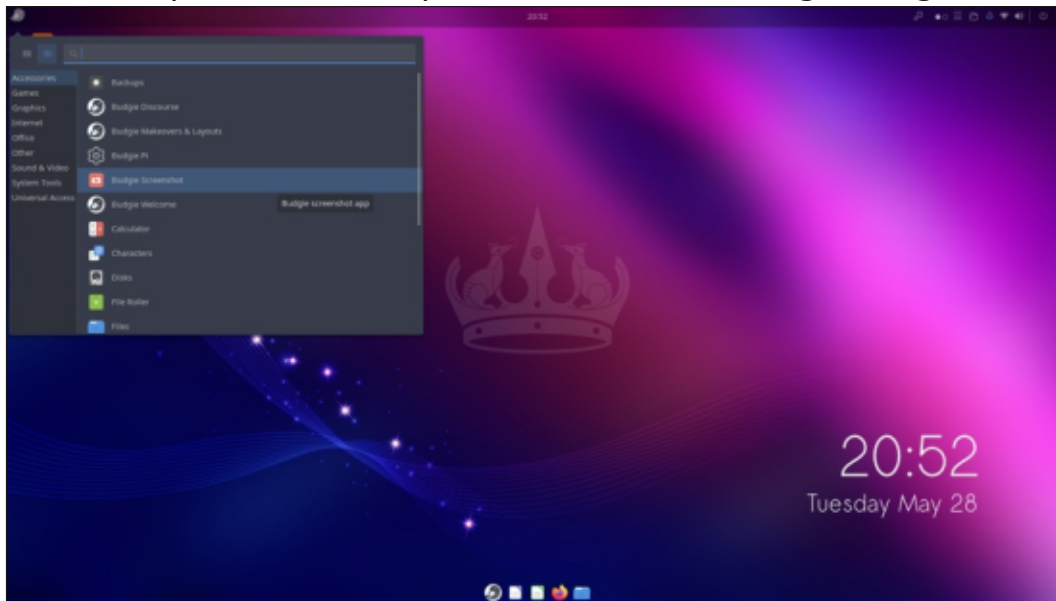
The new developmental cycle starts with the next interim release, Ubuntu Budgie 24.10, due out on 10 October, 2024.

## EXTERNAL LINKS

Official website:  
<https://ubuntubudgie.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 Adam Hunt

# Ubuntu Unity 24.04 LTS

The latest version of Ubuntu Unity is 24.04 LTS, a long term support release out on 25 April, 2024. This is the ninth overall release of Ubuntu Unity and the third LTS version since the project started in 2020. Because this release is an LTS, it has support for three years, until April, 2027.

This new release actually brings only a few, small changes, which is how it should be. Ideally over a two year development cycle, all the changes should be introduced in the three interim releases, leaving the LTS with not much new beyond its extended support period.

## INSTALLATION

I downloaded the ISO file for this release from the official source using BitTorrent. Once I had the file, I did a command line SHA256 sum check to ensure the file was good.

This download was 3.5 GB, the same size as the last one, Ubuntu Unity 23.10. It is worth noting that this is about half the size of the

mainstream Ubuntu 24.04 LTS which is 6.1 GB.

I tested out Ubuntu Unity 24.04 LTS in a series of live sessions from a USB stick equipped with Ventoy 1.0.98. Ubuntu Unity is not listed as officially supported by Ventoy but it worked just fine.

## SYSTEM REQUIREMENTS

Ubuntu Unity does not specify any system requirements but it is probably safe to assume that it is the same as Ubuntu 24.04 LTS, a minimum of:

2 GHz dual core processor  
4 GB of RAM

## NEW

The development team led by Rudra Saraswat has been working on a few projects lately. The first one is to get Lomiri working on Ubuntu Unity. This was originally intended to be complete in the autumn of 2023, but took longer than expected. Lomiri is the new name for Unity 8 and is being developed by the UBports community primarily as a phone interface for their Ubuntu Touch

project. The Ubuntu Unity team has been working with UBports to get it working on the desktop, as it is Wayland-ready. The current Unity 7 used on Ubuntu Unity and the still-under-development Unity X both are still tied to the old X.org display server, due to dependencies, especially the Nux OpenGL toolkit. Rather than incorporate Lomiri into this Ubuntu Unity release, it has been put out as a separate test ISO file under the name Ubuntu Lomiri 24.04. Saraswat notes: "Unlike the half-broken testing Lomiri ISOs I have built in the past, this one's quite stable and can be installed on real hardware, while also including the Ubuntu Touch LightDM greeter and for that matter, several apps you'd only expect to find on Ubuntu Touch. Do bear in mind, however, that you may encounter occasional crashes here and there."

Ubuntu Unity 24.04 LTS has a new installer, Callamares, that has been successfully used on Lubuntu for several years and now also on Kubuntu. It is quite trouble-free and easy to use.



# REVIEW

## SETTINGS

As in the past, this release has its settings spread out a bit. They are found in the regular settings menu, the top panel brush icon, and the Unity Tweak Tool. Once you find them though, they all work well enough.

The Unity Tweak Tool offers four window themes: Ambiance, Radiance, Yaru, and Yaru-dark, plus 37 icon themes and seven cursor styles. The regular settings menu has only two of the window themes, Yaru and Yaru-dark. The settings menu has 20 accent colors to choose from, while the brush icon has ten instead of the twenty

choices in the last release. I am not sure this really matters, though, as most users will probably just find one they like and use it.

This release code name is "Noble Numbat" so there is a new default numbat crown wallpaper, similar to that found with the mainstream Ubuntu 24.04 LTS. There are also 14 other wallpapers, six of which have numbats on them and eight that don't.

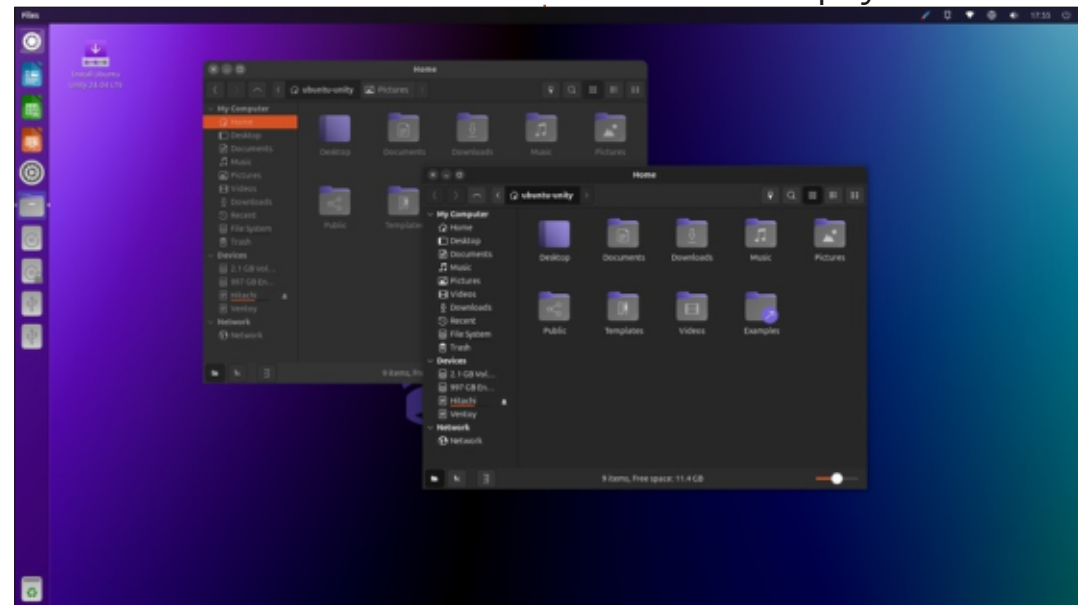
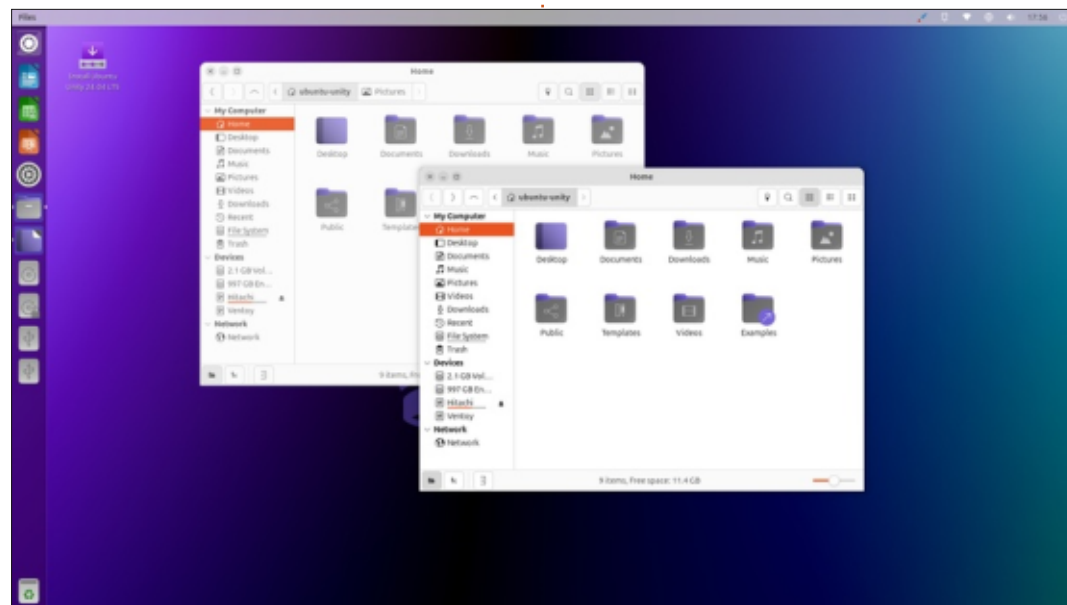
Ubuntu Unity continues to offer lots of user customization options which differentiates it from the mainstream Ubuntu distribution, which has very limited choices.

## APPLICATIONS

Some of the applications included with Ubuntu Unity 24.04 LTS are:

- Archive Manager (File Roller) 44.1 file archiver
- Atril 1.26.2 PDF viewer
- Cheese 44.1 webcam application\*
- CUPS 2.4.7 printing system
- Document Scanner (Simple Scan) 46.0 optical scanner
- Firefox 118.0.1 web browser\*\*
- GDebi 0.9.5.7 .deb package installer\*
- Gnome Disks 46.0 disk manager
- Gnome Screenshot 41.0 screenshot tool\*
- Gnome Terminal 3.52.0 terminal emulator

- Gparted 1.5.0 partition editor\*
- Image Viewer (Eye of MATE) 1.26.1 image viewer
- LibreOffice 24.2.2 office suite
- Mate Calculator 1.26.0 calculator\*
- Nemo 6.0.2 file manager
- Pluma 1.26.1 text editor
- PulseAudio 16.1 audio controller
- Remmina 1.4.35 remote desktop client
- Rhythmbox 3.4.7 music player\*
- Shotwell 0.32.6 photo manager
- Startup Disk Creator 0.3.17 USB ISO writer\*
- Synaptic 0.91.3 package management system\*
- Transmission 4.0.5 bit torrent client
- Unity 7.7.0 interface\*
- Unity Tweak Tool 0.0.7 settings manager\*
- VLC 3.0.20 media player





# REVIEW

XTerm 390-1 terminal emulator

\* indicates same application version as used in Ubuntu Unity 23.10

\*\* supplied as a snap, so version depends on the upstream package manager

For reasons that are unclear, as they are not mentioned in the Ubuntu Unity 24.04 LTS release announcement, both the Gnome System Monitor and the Thunderbird email client have been removed. Within the general Ubuntu application packaging system, Thunderbird has moved from a .deb file to a Snap package, but there is no indication that this was a factor in omitting it. Lubuntu removed its email client in 2022, so

Ubuntu Unity is just following suit. These days most people probably make use of webmail instead of email clients anyway.

The Ubuntu Unity file manager remains Nemo, this time as version 6.0.2, taken from the Cinnamon desktop environment version with the same number. Nemo works really well and has a lot of useful customization settings but, as implemented in Ubuntu Unity, still lacks bulk file renaming. Adding a stand-alone bulk file renamer, like GPRename, is a good idea.

LibreOffice 24.2.2 is provided complete, except for the LibreOffice Base database application, which can be installed

from the Ubuntu repositories, if needed.

## CONCLUSIONS

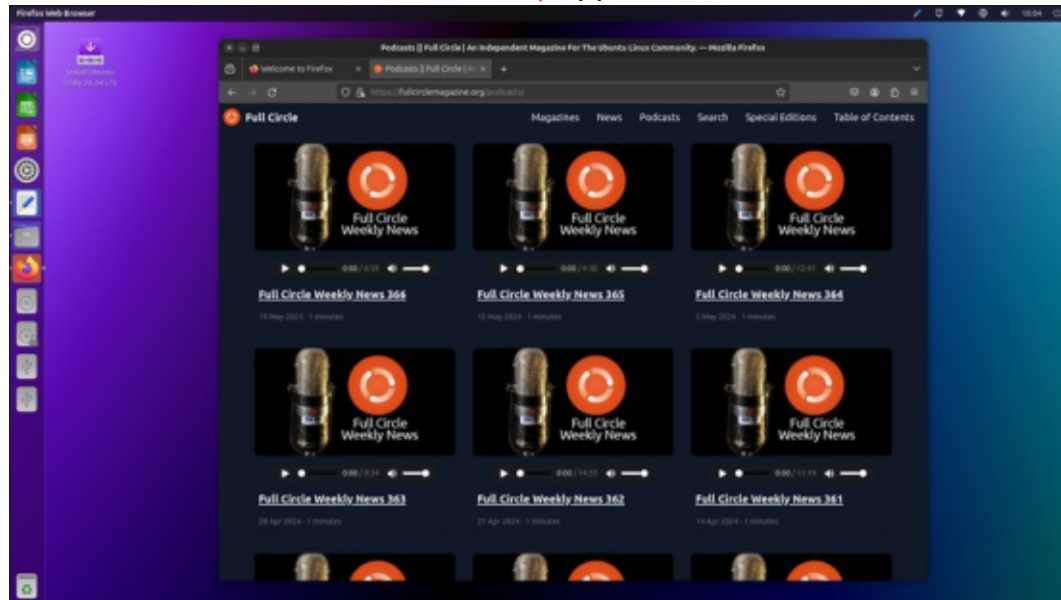
Ubuntu Unity 24.04 LTS is a very solid and refined release with only minimal changes from the last interim release. It provides a good working desktop for Unity fans and should keep them happy until the next LTS version comes out in April, 2026.

## EXTERNAL LINKS

Official website:  
<https://ubuntuunity.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.





I should probably start off by explaining that Ubuntu Lomiri is not intended to be a new flavor of Ubuntu, but is instead just a test release made by Ubuntu Unity developer **Rudra Saraswat** to see if it is plausible to run Lomiri on Ubuntu Unity instead of X11.

Why this project is useful requires a bit of background.

Display servers draw the application windows on your computer screen. The X Window System has been around for 40 years and has been on version 11 since 1987. It is old technology and due to limitations is on its way to end-of-life on Linux. The replacement systems are new display servers based on the Wayland protocol. Some distributions, like Ubuntu, are already operationally using Wayland.

To date, Ubuntu Unity has been using X11 but Saraswat and the other developers would like to be able to change it over to Wayland because eventually X11 will no

longer be supported. The main blockage is that the Ubuntu Unity interface is currently Unity 7.7 and it has a number of dependencies, most notably Nux, that only run on X11 not Wayland. Saraswat has been working on a replacement version of Unity, called Unity X, but it has the same dependency issues. For both Unity 7 and X, there will be a lot of work required to move them to Wayland.

Then there is Lomiri. Originally called Unity 8, it was originally conceived by Canonical as the holy grail of interfaces, a “convergence

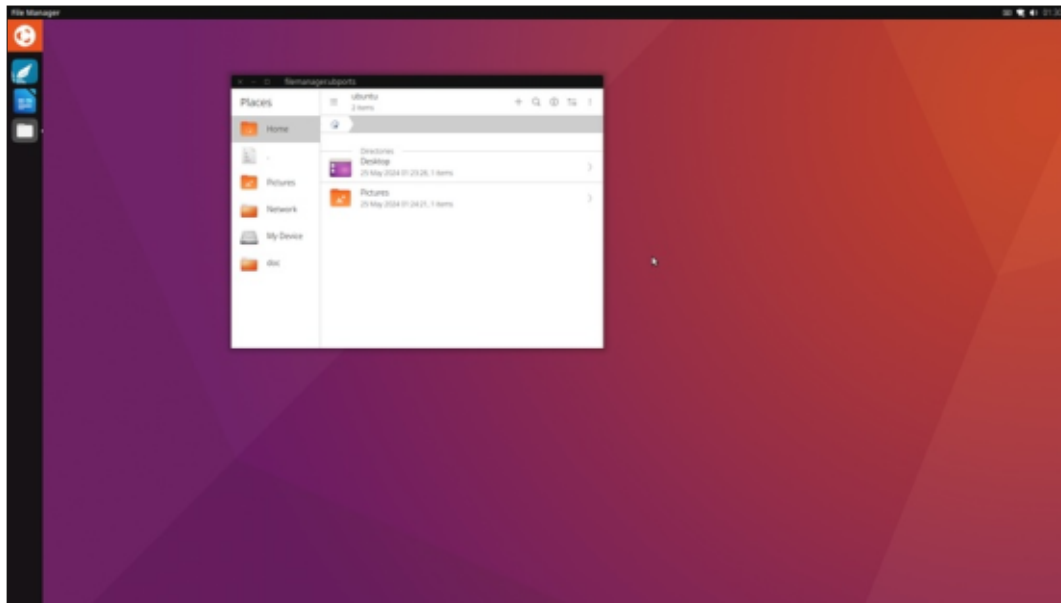
desktop” that would scale to work on pretty much any device from a smartphone, tablet, laptop or desktop plus IoT and other hardware too. One aim was to be able to just plug your smartphone into a screen and keyboard and it would be your desktop. Best of all, it was designed for Wayland.

A number of factors ended the Unity 8 dream for Canonical, including a fundraising shortfall to produce the Ubuntu Edge smartphone, the need to trim Canonical’s outlays with an eye to taking the company public and

some technical challenges as well. Canonical announced the end of development on Unity 8 in April, 2017. Two days later, UBports founder Marius Gripsgård announced they would take the project over and develop it primarily as a smartphone operating system. On 27 February, 2020, Unity 8 was renamed Lomiri.

Saraswat concluded that a proof-of-concept release using Lomiri on Ubuntu Unity would show that there was at least one open pathway to move Ubuntu Unity to Wayland. Early experiments did not result in stable operating systems, but persistence pays off. With assistance from the UBports team getting all the Lomiri components into the Debian ecosystem, they eventually flowed down into the Ubuntu repositories, making them easy to install.

This latest test shot is dubbed Ubuntu Lomiri 24.04 (not LTS) and Saraswat has made it publicly available so anyone can have a look and see how it works.



# REVIEW

Saraswat notes that this version of Ubuntu Lomiri is mostly usable noting that "unlike the half-broken testing Lomiri ISOs I have built in the past, this one's quite stable and can be installed on real hardware, while also including the Ubuntu Touch LightDM greeter and for that matter, several apps you'd only expect to find on Ubuntu Touch. Do bear in mind, however, that you may encounter occasional crashes here and there." He is right there, too.

## INSTALLATION

I downloaded the Ubuntu Lomiri 24.04 ISO file via HTTPS since there is no BitTorrent available. There are

also no checksums to verify the download and no minimum system requirements specified.

The download is a fairly hefty 5.9 GB, almost as large as mainstream Ubuntu these days. It was also a slow download, but eventually I got it.

I dropped the ISO file onto a USB stick equipped with Ventoy 1.0.98 and it booted up just fine, despite not being officially supported.

## FEATURES

Since this is just a test release, it is pretty "bare bones" overall. The

ISO boots up to a very bare desktop but hitting the "super" key displays the launcher, at least, which then allows access to the main menu.

I was able to confirm via command line that it was running on Wayland which is really the point of the whole exercise.

There is no graphical package manager, but APT works from the command line. Snap packages are also enabled with snapd already installed. This was useful as I had to install the FileZilla FTP client as a Snap to get my screenshots out of the live session since drives are not able to be mounted and the Morph web browser would not connect to the file manager to allow getting

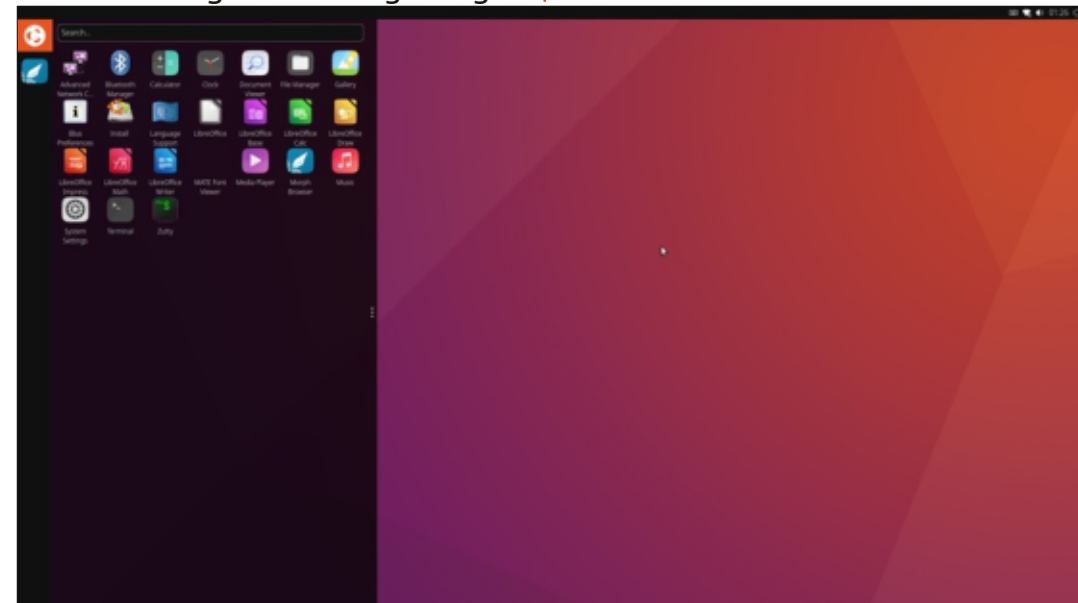
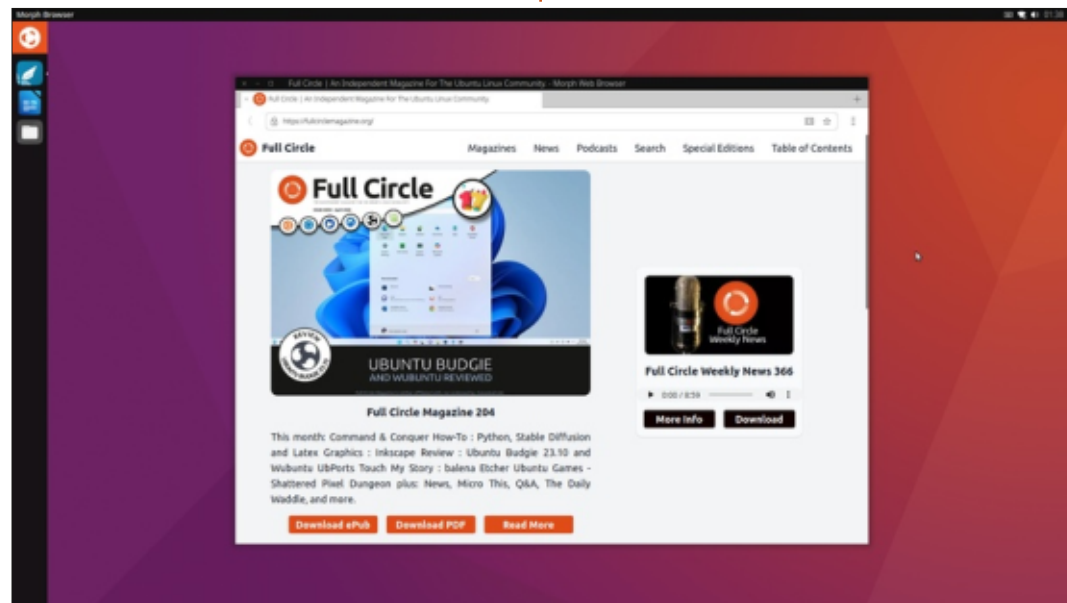
them off by either of those methods. There are a few bugs.

## SETTINGS

Settings are also pretty minimal. In many ways, it looks like a phone OS with just light and dark window themes, 20 wallpapers and that is about it. The desktop is pretty minimalist but at least there is no clutter.

## APPLICATIONS

Some of the applications included with Ubuntu Lomiri 24.04 are:  
Blueman Bluetooth manager  
Calculator





# REVIEW

docviewer.ubports PDF viewer  
filemanager.ubports file manager  
LibreOffice 24.2.2.2 office suite  
Media Player  
Morph 1.1.0 web browser  
music.ubports music player  
Photos photo organizer  
qmlscene clock  
Screenshot  
Terminal terminal emulator  
Zutty terminal emulator

This application list is pretty skimpy, lacking both a text editor and a graphical package manager, among the other things you would expect in a true desktop distribution. The Zutty terminal emulator crashed each time it was opened, but the other terminal provided worked fine, fortunately.

Interestingly, LibreOffice 24.2.2 is supplied complete, including the LibreOffice Base database application, which is a rarity in Ubuntu derivatives.

## CONCLUSIONS

Is Ubuntu Lomiri 24.04 a great desktop distribution? No, not right now, but it is not intended to be. Strictly as a test to see if Ubuntu Unity can be run using Lomiri on Wayland, it can only be considered a success. Saraswat concludes, "while Unity7 isn't going away anytime soon, Lomiri would act as a suitable replacement if there ever arose a need."

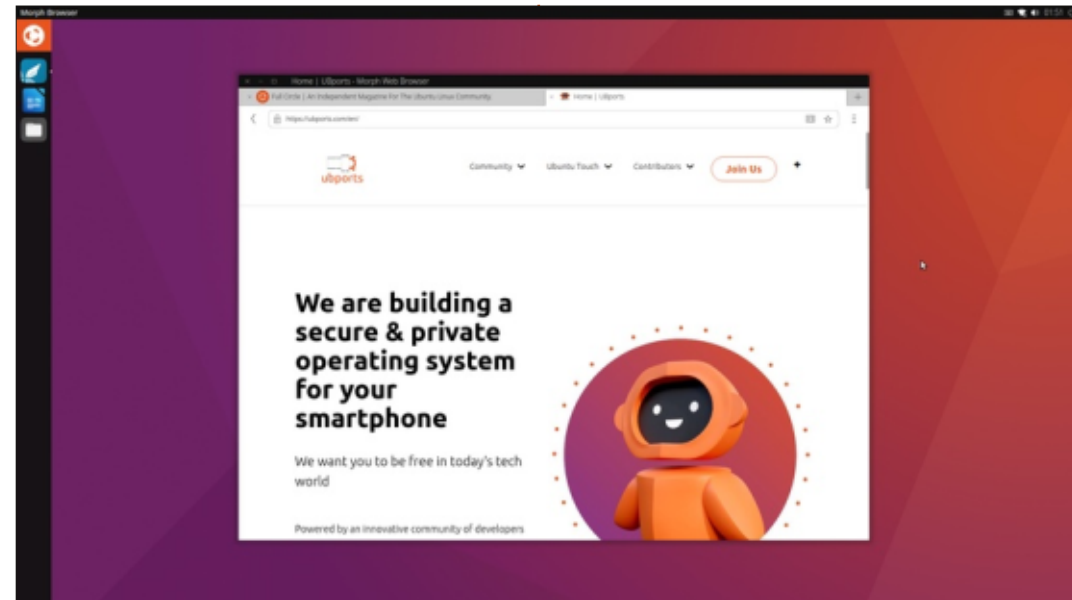
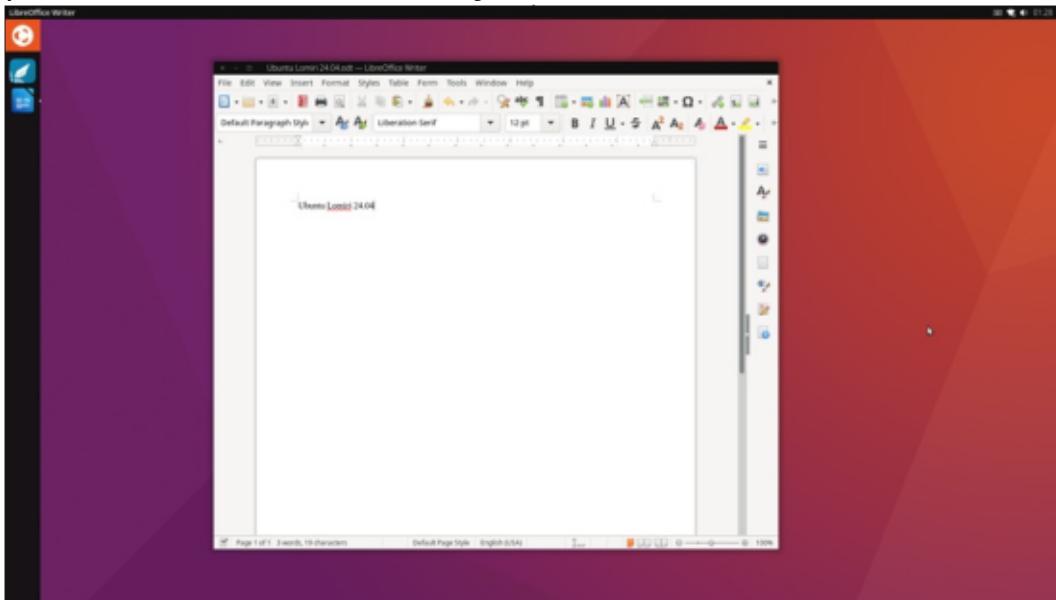
Eventually, Ubuntu Unity will need to move past X11. Lomiri may just be the pocketed "ace" that makes that a reality, especially if Unity X does not work out. Watch for future news!

## EXTERNAL LINKS

Official website:  
<https://ruds.io/cloud/s/eNiJxnc7qk2tpKN>



**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.





# 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.

Join us on:



[facebook.com/  
fullcirclemagazine](https://facebook.com/fullcirclemagazine)



[twitter.com/#!/fullcirclemag](https://twitter.com/#!/fullcirclemag)



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



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

## FULL CIRCLE NEEDS YOU!



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

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

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



# 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.

Sometimes I wish I could slap people awake. It is right in front of their eyes and they do not see. When it is in the press, it is usually 180 degrees of what you are being sold. In other words a lie. I am looking for a new place to live, and when the ad says spacious, I always look at the square metering of the place, because it never is. When they say it has a beautiful view of the mountain, it means when you stand on your tippy-toes to see it over the large freeway taking up 70% of the view. When you do a

cloud certification like Azure AZ-900, almost half of the time you are being told how much "cheaper" the "cloud" is. (Spoiler, it's not) Then things in your face, like the slogan, "There is no cloud, it is just someone else's computer" meaning "a large \*evil corporation's computer". Now I know there are some honest cloud providers out there, don't shoot yet. The thing is everyone wants to own what you have, by some sly means. Handing your data to a cloud provider, they will make doubly sure they have some legal way to steal your data. They will use it to train their "AI" (no such thing, just a way to take what you have and make it theirs) without even telling you. The EU put all these laws into place like the GDPR, but it is about as effective as putting toilet paper on a landmine to absorb the blast. There are already more than 50 ways to bypass every aspect of the GDPR, for instance. Why, you may ask? Simple answer is greed. Just like the "startup" idiocracy. The goal of a "startup" is to sell it to a big corporation for a lot of money, instead of working to make it your

business and running with it. It is easy to rag on open source, but at least they are trying.

**Q**: I have Ubuntu in Ubuntu. My host is Xubuntu and my Virtualbox is Ubuntu Gnome. I have shared the clipboard and folders, so I could move files to Gnome and when I look again, the Gnome VM is locked and I have to unlock it. It happens so frequently, that I have changed my password to 'a', just for this, it is so annoying. Is there anything I can do in the Gnome VM?

**A**: Are you asking how to keep your session alive or open? If that is the case, consider installing caffeine and caffeine indicator in your VM and activate it before you do anything. If you are saying that your copying stops until you log in again, maybe that will help too.

**Q**: I am running two identical machines, about 9 years old, black boxes, with Ubuntu 20.04 and every now and then, the screen dies

and I can see that the machine is still running. Both have MSI motherboards and Apacer memory and WD green drives. They plug into a D-link switch. There are no peripherals that could cause a power dip. The screens are still VGA not HDMI. I just can't figure it out.

**A**: Without some kind of logging, I have no idea either, though I did find something on the internet that may give some insight. <https://superuser.com/questions/1839115/ubuntu-22-04-dies-all-of-a-sudden-after-some-time-yet-the-pc-is-still-running>

**Q**: I was configuring server 20.04 for games, when adding the IP address with the port it was established correctly, but I could not enter the game, I was looking at the server, I opened the firewall, I gave it sudo reboot, it froze, I updated and now it no longer works for me.

**A**: You "opened" the firewall, do you mean disabled it? If you did



## Q&A

not, that would be the reason you can no longer access the server. We did a short piece on Firewalls in CnC in the magazine, please give it a once-over.

**Q**: I am trying to configure OpenVPN on Ubuntu. I have the username & password & configuring file. I am only a beginner and <https://community.openvpn.net/openvpn/wiki/OpenVPN3Linux> is not really helping for the beginner.

**A**: I am going to assume vanilla Ubuntu. Just open settings > network. Under VPN it will say, "not set up", click the "+". Choose OpenVPN or import from file and import your file. It is really as simple as that.

**Q**: After doing a dist-upgrade, I see blocks everywhere, instead of normal writing. I think I am going to have to reinstall, but I would prefer not to. I went from 20.04 to 22.04 and I made sure to disable my PPA's before doing so. Any ideas?

**A**: You probably had a custom font. Just reinstall the custom fonts again. If all else fails, change all your font settings to "ubuntu" and see what happens.

**Q**: I'm trying to copy my environment from my old computer to my new one. The old one is still on Ubuntu 20.04 and the new one is Ubuntu 24.04. Most things installed fine, except:

```
apt-get install python3-distutils
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package python3-distutils is not available, but is referred to by another package.
This may mean that the package is missing, has been obsoleted, or is only available from another source
E: Package 'python3-distutils' has no installation candidate
```

**A**: The last line is the error message, denoted by the "E". It tells you that the package you are trying to install is not in the repositories you have configured. Did you use a PPA before? Did you use a different version of Python

before? It could also just be that that specific package was dropped in Ubuntu 24.04, in which case you need to find out what replaced it. (I had a quick look and I can confirm there is no such package)

**Q**: So I got rid of the Ubuntu panel and installed a much saner Dobby dock. Just one thing now escapes me, how do I get the 9-button grid thingy? Or how can I make it work without the Ubuntu panel please?

**A**: For the keyboard you should just be able to use the WIN+A or "super+a" keys.

**Q**: I am running Xubuntu 22.04 on my Dell laptop. Its screen resolution is set to 3840x2160, no scaling. I installed a mouse cursor theme, DJ-FOX-C that looks amazing. Next to the theme, you have the cursor size buttons. I have set it many times on Xubuntu 20.04 to around 50 pixels. However nothing happens in Xubuntu 22.04. The cursor remains the same size.

**A**: I looked up the cursors on [gnome-look.org](https://gnome-look.org) and there is a

readme in the tar archive, stating that the cursor size is 36 pixels. "Size: ===== 36x36" Not all cursors are made with SVG files, some are PNG at heart. SVG you can scale without loss of quality. It also says he has a shop, so I suspect if you want the scalable ones, you can buy it?

**Q**: Smartctl is saying that my drive is failing? The current value is bigger than the "worst" or "threshold". My machine keeps doing a journalctl when I start up, but I don't know how to interpret this table? <removed>

**A**: I would not worry too much about the other values, what you are going to be looking for is the "RAW\_VALUE" of the uncorrectable errors. If it is anything but 0, backup your data immediately and look for a new drive.

**Q**: Man I hate man pages, most of the time they mean nothing if you don't know what a command does. I looked up lsattr and all it says is: "list file attributes on a Linux second extended file system". About as useful as a rooster in a

## Q&A

saddle. How does an idiot like me learn anything from that?

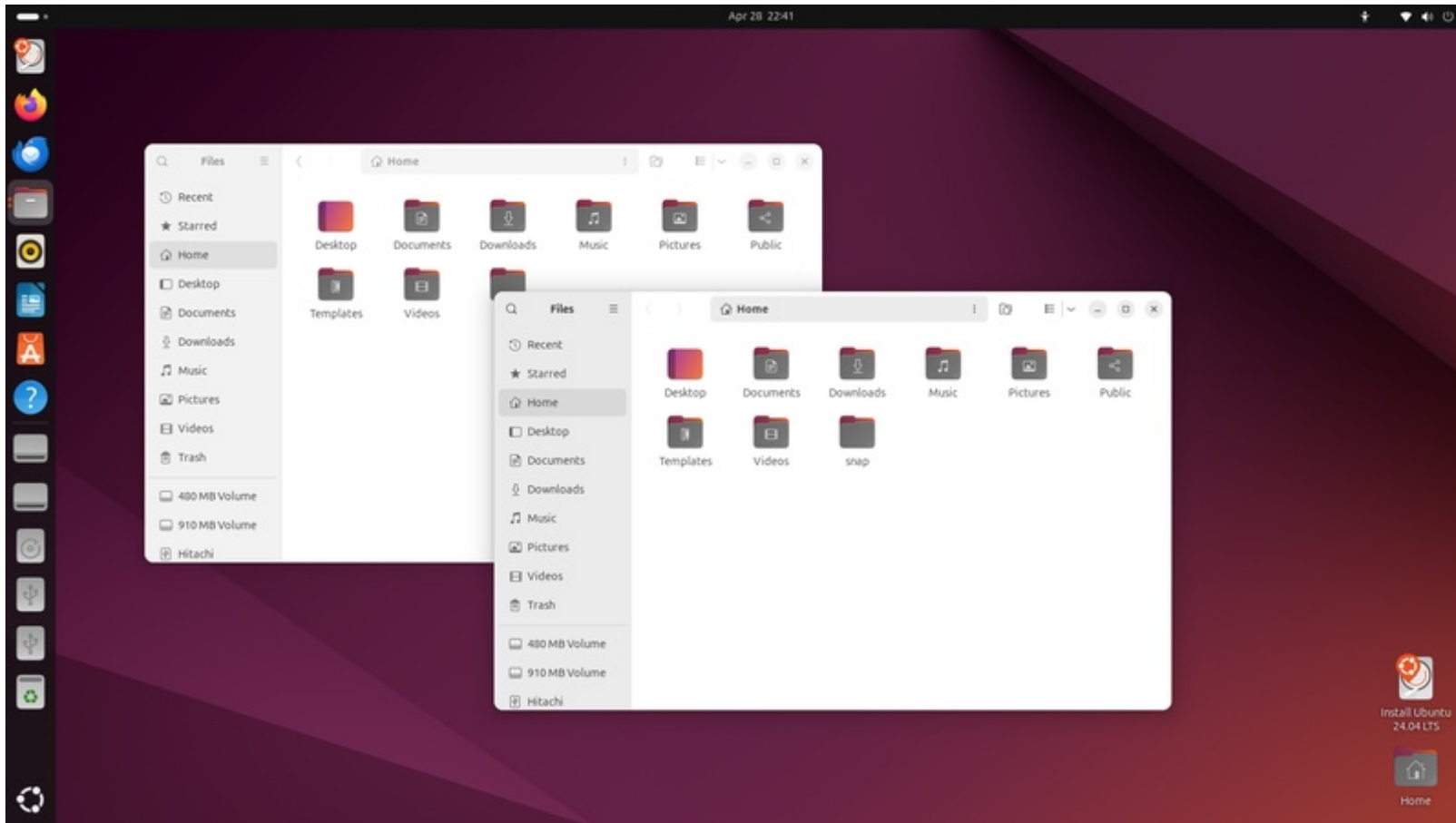
**A**: You could try TL;DR pages or tealdeer, or even bro pages. I recall something called yelp, but that may no longer exist. You could try to find a bash bible in paperback?

**Q**: I have two 13inch dell laptops. One runs MX Linux the other

runs Ubuntu. Something strange happened the other day, after updating the MX Linux laptop, I shut down and closed the lid. I took the Ubuntu one to update, but it goes off near the MX laptop. I put it down carefully, I did not drop it, and it would not turn on. I took it to a friend's house and it turned on fine. I'm not sure what to do here.

**A**: It has nothing to do with your OS. You probably put one

laptop on top of the other. The magnets in the slim laptops are strong enough to affect another laptop, as they are so thin. If you did not know, there are magnets in the base that move when another magnet is near, completing a circuit. The circuit then signals the lid closed and the laptop goes to sleep. (the method differs, but the effect is the same)



**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.



Price: +- \$4.99 USD (at the time of writing)

Blurb: *"Explore the depths below a remote mountain town in this procedurally-generated Adventure Platformer. Taking inspiration from hack 'n slash dungeon crawlers and Metroidvania-style platformers, Chasm will immerse you in a fantasy world full of exciting treasure, deadly enemies, and abundant secrets."*

Chasm has an "intro" song titled "The adventure begins", that starts off like some grand epic. When I hear it, I have Hobbit thoughts, and I want to go to Hogsback. A song or two later, we have "Road to Karthas" and I'm having "The good, the bad and the ugly" vibes. Then a couple of tracks later again, we have "Wheel of fate", which has that carnival sound, but it ends quickly, unlike the wheel of time, which goes on and on and on. The soundtrack is an absolute roller-coaster ride. Naturally, I had to check the game out. For those of you wondering,

you can listen to it here: <https://www.youtube.com/watch?v=7TigjBcqiuI>

That said, you have the option to switch the music from "original" to chiptunes in the settings. This made me happy – though it has to be said, it is more of a Pokey-type sound than a SID chip sound.

To be honest, from the description and the intro graphics, I was expecting Spelunky. When you start a game, you have a seed number, meaning the world is procedurally generated. Before I lay into the game, know that this is



a console game and when I say that, I mean Sega Genesis or Super NES console (thankfully, without the English). It is not heavy on resources at all. My laptop temperature went up by 1 degree whilst playing the game.

The story is nothing to write home about and leans heavily into old console game tropes. (The game lets you enter a name, and then you start with "Wake up <name>" ala Zelda. You are a knight in training, sent on your first mission – to clear a nearby mine of monsters. So you head off to this one horse town (no really!!) to do

your duty.

The town has a blacksmith, lodgings, and a site office with a horse on one end and a deflated hot-air balloon on the other. The game looks gorgeous, there was a lot of effort put in, working within the 8-bit low-res constraints. That said, pixel art needn't be 16x16 or 32x32 (just sayin'). I will add a picture of the horse, but notice the backdrop.

The game actually starts in the dungeon, erm, sorry, the mine. You explore the mine in search of treasure, no wait, you are searching for townsfolk – that you happen to steal all the treasure is a side effect :) You will first encounter grey goblins (apparently they are Trolls, but I will call them Goblins as they are nowhere near as scary as Trolls), that are easily dispatched with one swing. Then you loot their corpses for gold! Erm, no, you are a knight-in-training, so you liberate the stolen gold... Yes, that's my story and I'm sticking to it. There are poison gas pits, and exploding worms on a string. In the beginning,



## UBUNTU GAMES

the damage is light, and you can recover by eating fruit the goblins drop. I dunno man, if a Goblin's dirty paws have been all over the fruit, I'd want to wash it first...

The game also has a levelling mechanic, you level you, but it is automatic and I honestly did not notice a difference. Between level one and two, the Goblins still went down with one hit, things that were out of reach jumping, are still out of reach jumping, and walking in the green mist still did three points of damage, so I digress.

What I did like is that game objects were intractable. You can jump up and smack a lantern and it will break, spilling a bit of oil and flame. Not nearly as much flame as slicing and dicing Goblins.

The game is played with a controller, or the arrow keys and z,x,c,v. Z is jump, X and C are attacks respectively, and V is dodge backwards. The game has MP (magic points) too, so you should be able to cast spells further down the line. You have inventory slots, meaning there is armour and items to be had. You also go around vandalising books, ripping out pages and adding them to your journal for some flavour text. I don't know about you, but I intensely dislike people who rip pages out of books – it is right up there with idiots who throw trash out of the car window.

The map is simple, but serviceable, lacking things like being able to mark chests that you cannot reach, or blocked tunnels

and the like, on the map. You have a simple “set marker” and “remove marker” only.

I have yet to find a secret; it has been half an hour and I am only 30 rooms in. I have been slicing walls, and trying to jump to places, and slicing the air, looking. I mean the game bills itself as taking inspiration from Metroid-vanias's.

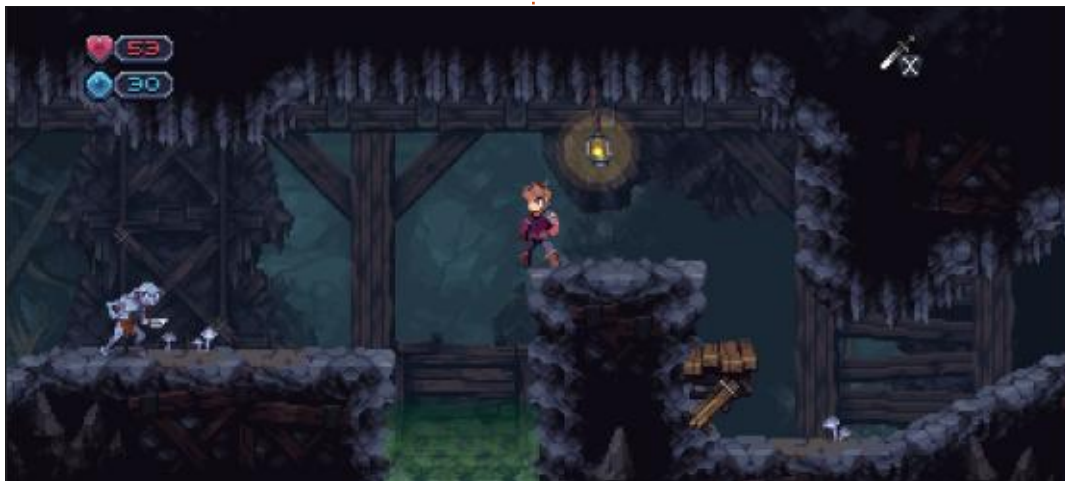
The game is fun and there are definitely worse ways to spend a fiver. The things I did not like were as follows:

- killing an enemy, and walking or jumping out of a screen and falling back; the enemy will be back there waiting for you.
- The animations felt a bit stiff, like an 8-bit console – I mean, we are in 2023, the “at rest/idle” animations could have more than two frames.

• Idle characters look like they are pushing a putty. Prince of Persia created a storm 20 years ago because it broke the stiff animation mold.

- On the chiptune side, it would have been nice to have more tunes; it feels like the same four tunes play over and over.
- It would have been nice to control your levelling, say putting my skill points into constitution and getting more health.

If some mindless hack 'n slash mixed with nostalgia is what you are looking for, you have come to the right place. You can turn off and play without having to think about much. The game runs like a dream on Linux. I actually doubt it touched my dedicated Nvidia card as that shows it is running at minimal everything.





# PATRONS

## MONTHLY PATRONS

Alex Crabtree  
 Alex Popescu  
 Andy Garay  
 Bill Berninghausen  
 Bob C  
 Brian Bogdan  
 Carl Andersen  
 CBinMV  
 Darren  
 Dennis Mack  
 Devin McPherson  
 Doug Bruce  
 Elizabeth K. Joseph  
 Eric Meddleton  
 Gary Campbell  
 George Smith  
 Henry D Mills  
 Hugo Sutherland  
 Jack  
 Jack Hamm  
 Jason D. Moss  
 Joao Cantinho Lopes  
 John Andrews  
 John Malon  
 John Prigge  
 Jonathan Pienaar  
 Joseph Gulizia  
 JT  
 Katrina  
 Kevin O'Brien

Lee Allen  
 Lee Layland  
 Leo Paesen  
 Linda P  
 Mark Shuttleworth  
 Moss Bliss  
 Norman Phillips  
 Oscar Rivera  
 Paul Anderson  
 Paul Readovin  
 Rino Ragucci  
 Rob Fitzgerald  
 Robin Woodburn  
 Roy Milner  
 Scott Mack  
 Sony Varghese  
 Taylor Conroy  
 Tom Bell  
 Tony  
 Vincent Jobard  
 Volker Bradley  
 William von Hagen

## SINGLE DONATIONS

**2024:**  
 Louis W. Adams, Jr.  
 Sergio Arroyos  
 Brian Kelly  
 Linda Prinsen  
 Christophe CARON  
 Borso Zsolt

Ennio Quattrini  
 Kimberly James Kulak  
 Yvo Geens  
 David Cohen

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.**



<https://donorbox.org/recurring-monthly-donation>



# HOW TO CONTRIBUTE

## FULL CIRCLE NEEDS YOU!

A magazine isn't a magazine without articles and Full Circle is no exception. We need your opinions, desktops, stories, how-to's, reviews, and anything else you want to tell your fellow \*buntu users. Send your articles to: [articles@fullcirclemagazine.org](mailto:articles@fullcirclemagazine.org)

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

Send your **comments** or Linux experiences to: [letters@fullcirclemagazine.org](mailto:letters@fullcirclemagazine.org)  
Hardware/software **reviews** should be sent to: [reviews@fullcirclemagazine.org](mailto:reviews@fullcirclemagazine.org)  
**Questions** for Q&A should go to: [questions@fullcirclemagazine.org](mailto:questions@fullcirclemagazine.org)  
**Desktop** screens should be emailed to: [misc@fullcirclemagazine.org](mailto:misc@fullcirclemagazine.org)  
... or you can visit our **site** via: [fullcirclemagazine.org](http://fullcirclemagazine.org)



## FCM#209

### Deadline:

Sunday 08th Sept. 2024

### Release:

Friday 27th Sept. 2024.



## Full Circle Team



**Editor** - Ronnie Tucker

[ronnie@fullcirclemagazine.org](mailto:ronnie@fullcirclemagazine.org)

**Webmaster** -

[admin@fullcirclemagazine.org](mailto:admin@fullcirclemagazine.org)

## Editing & Proofreading

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

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

## Getting Full Circle Magazine:

## For the Full Circle Weekly News:



You can keep up to date with the Weekly News using the RSS feed: <https://fullcirclemagazine.org/podcasts/index.xml>



back on Spotify:

<https://open.spotify.com/show/6JhPBfSm6cLEhGSbYsGarP>



and now on YouTube:

<https://www.youtube.com/playlist?list=PLnv0U8wOzXu487qi5I2Isf-rQjEyKPAif>



**EPUB Format** - Most editions have a link to the epub file on that issue's download page. If you have any problems with the epub file, email: [mobile@fullcirclemagazine.org](mailto:mobile@fullcirclemagazine.org)

**FCM PATREON:** <https://www.patreon.com/fullcirclemagazine>

