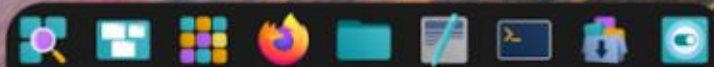




# Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #220 - August 2025

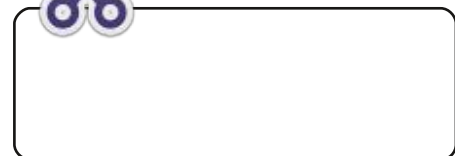


## BUDGIE & UNITY 25.04 UNDER REVIEW

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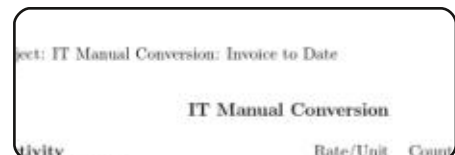
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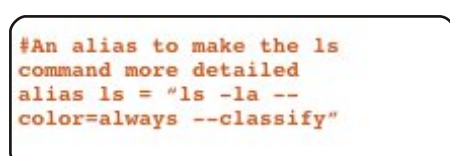


# Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY



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## WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

Once again, we bring you the usual line up of Latex, Trading Up, and Inkscape. But wait! There's more! We bring you a new series on GTK4 programming in C.

As ever, we have reviews from Adam. Not one, not two, but three! Yes, this month he's reviewing both Ubuntu Budgie and Ubuntu Unity 25.04 and, as a bonus, Pop!\_OS 24.04 alpha 7. By the time you read this there may well be a new alpha available, but alpha 7 is the most recent as we go to (digital) press.

Elsewhere, we have a few blank spaces this month as regular writers have been busy with real-life and I've got nothing in reserve to fill those spaces. So, again, if you can, **PLEASE** send over an article as every article helps by filling a space.

Remember: the **Full Circle Weekly News** is available on **Spotify** and **YouTube**. The more upvotes and reviews you give it on those platforms the more exposure we get. And, 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

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## OPENAPV 0.2 IS

**AVAILABLE:**

21/07/2025

The OpenAPV library has been released, providing a reference implementation of the APV (Advanced Professional Video) video codec, designed for professional video recording and processing without noticeable loss of quality. The library code is written in C and is distributed under the BSD license. The project is being developed by the Academy Software Foundation, established by the Academy of Motion Picture Arts (USA) and the Linux Foundation to promote the use of open source software in the filmmaking process.

The new version adds support

for APV families, which define typical codec configurations that meet certain size and bitrate requirements. The latest specification improvements have been taken into account. They also added support for profiles like, 422-12, 444-10, 444-12, 4444-10, 4444-12 and 400-10. Optimizations have been made to reduce encoding and decoding time. Then they implemented protected methods for accessing the bitstream buffer and managing metadata and expanded the API.

<https://github.com/AcademySoftwareFoundation/openapv/releases/tag/v0.2.0.0>

## GOOGLE INTRODUCES OSS REBUILD PROJECT:

22/07/2025

Google has introduced the OSS Rebuild project, designed to detect hidden changes in ready-made packages published in repositories. OSS Rebuild is based on the concept of reproducible builds and comes down to checking the compliance of a package placed in the repository with a package obtained via rebuilding from the reference source code corresponding to the declared version of the package. The toolkit code is written in Go and is distributed under the Apache 2.0 license.

Currently, OSS Rebuild supports verification of packages from NPM

JavaScript/TypeScript), PyPI (Python), and Crates.io (Rust) repositories. They plan to expand the number of supported repositories in the future. In practice, the toolkit allows identifying "supply chain" class attacks, where, after the accounts of maintainers are compromised or sabotage is carried out within the project, a malicious update is published in the repository. At the same time, the code in the original repository of the main project remains correct, and malicious changes are made only to the finished packages.

After a specific version of a package has been verified, attestation data is generated that can be used by others to evaluate already verified packages. The verification can be done by running a command line utility or by checking a hash stored in a separate cloud storage. The infrastructure for checking packages can be deployed on your own server. You can also use information about the checks performed in Google for several thousand packages.



# DistroWatch.com

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

<https://security.googleblog.com/2025/07/introducing-oss-rebuild-open-source.html>

## MySQL 9.4.0 RELEASE:

23/07/2025

Oracle has formed a new branch of the MySQL 9.4.0 DBMS. MySQL Community Server 9.4.0 builds are available for all major Linux, FreeBSD, macOS, and Windows distributions. In accordance with the release model introduced in 2023, MySQL 9.4 is classified as an "Innovation" branch. Innovation branches are recommended for those who want to get access to new functionality earlier, are published every 3 months, and are supported only until the next major release (for example, after the appearance of branch 9.4, support for branch 9.3 was discontinued). In the northern hemisphere fall, they plan to form an LTS release, 9.5, recommended for implementations that require predictability. Following that LTS branch, a new Innovation branch will be formed - MySQL 10.0.

<https://dev.mysql.com/downloads/mysql/>

## THE XLIBRE PROJECT INTEGRATES DRIVERS INTO THE MAINLINE X SERVER:

23/07/2025

Enrico Weigelt, the XLibre project lead, has prepared a pull request after discussions with the community to integrate the core X11 drivers into the X server master branch. The stated reasons are the desynchronization of the X server and drivers due to the changing ABI that the drivers interact with, and the desire to provide all the necessary drivers together with the X server without having to manually search for compatible versions.

Some of the community criticize this decision, fearing that it will complicate the development of new drivers for XLibre, but Enrico insists on the need for such an approach. The arguments cited include a similar model for developing the Linux kernel, which actually does not have a stable ABI, as well as the "raw" state of the XLibre code base, which is still undergoing a full-scale refactoring. However, in the future, as the

project matures, the developers do not rule out stabilizing the ABI. Developing new drivers for X11 outside the XLibre tree is possible, but ABI synchronization remains the baby of the developer. For those who do not want to install all the drivers together with the server, they promise to implement build flags.

<https://github.com/X11Libre/xserver/pull/449>

## RELEASE OF OPNSENSE 25.7:

24/07/2025

The release of the distribution for creating firewalls OPNsense 25.7 has been published. In 2015, it separated from the pfSense project with the goal of developing a completely open distribution that could have the functionality at the level of commercial solutions for deploying firewalls and network gateways. The source code of the distribution components, as well as the tools used for assembly, are distributed under the BSD license. The builds are prepared in the form of a LiveCD and a system image for recording on Flash drives (490 MB).

The distribution can be used to create fault-tolerant configurations based on the CARP protocol and allowing a backup node to be launched in addition to the main firewall, which will be automatically synchronized at the configuration level and will take over the load in the event of a failure of the primary node. (failover) The administrator is given a web interface for configuring the firewall, built using the Bootstrap web framework and Phalcon MVC.

<https://forum.opnsense.org/index.php?topic%3D48072.0>

## FIRST RELEASE OF WAYBACK:

24/07/2025

The first experimental release of the Wayback 0.1 project is presented. It allows you to run desktop environments tied to the X11 protocol using Wayland-based components. Wayback is a stripped-down Wayland composite server that supports only the capabilities necessary to run a full-screen X11 session using Xwayland (a DDX (Device-Dependent X) component

for organizing the execution of X11 applications in Wayland-based environments). The project code is written in C and is distributed under the MIT license.

The Wayback code is based on tinywl, the reference composite server from the developers of the wlroots library, with its functionality stripped down to the bare minimum needed to run Xwayland standalone. It is intended that in the future, Wayback will be able to be used as a complete replacement for the Xorg executable (/usr/bin/X).

The first release of Wayback is presented as an alpha version, allowing to get acquainted with the concept implemented by the project. At this stage, there is no support for such features as multi-monitor configurations, screen blanking via DPMS, mouse pointer capture (prohibiting movement beyond a certain area on the screen), many Xorg options. Packages for testing Wayback are compiled for Alpine Linux, NixOS, Arch Linux and Fedora.

<https://wayback.freedesktop.org/news/2025/07/23/wayback-0.1-released/>

## CUDATEXT UPDATE 1.226.0:

25/07/2025

The release of the cross-platform free code editor CudaText 1.226.0, written using Free Pascal and Lazarus, has been published. The editor supports Python extensions and has a number of advantages over Sublime Text. It includes some features of an integrated development environment, implemented as plugins. More than 300 syntax lexers have been prepared for programmers. The code is distributed under the MPL 2.0 license. Builds are available for Linux, Windows, macOS, FreeBSD, OpenBSD, NetBSD, DragonflyBSD, Solaris and Haiku platforms. One of the main additions has been that they added an AI Local plugin to Plugins Manager, which uses Ollama to use large language models locally.

<https://cudatext.github.io/download.html>

## THE MAINTENANCE FEE INITIATIVE:

25/07/2025

The author of WiX, an open source toolkit for creating Windows installation packages, is developing the Maintenance Fee initiative to solve the problem of funding open source projects. The Maintenance Fee initiative allows for a small monthly fee (an option is \$10) to ensure the financial sustainability of projects without limiting their openness or resorting to funding models like Open Core, which imply the delivery of an extended paid version.

The essence of Maintenance Fee is to conduct a monthly payment for users and companies that receive commercial benefits and directly or indirectly earn money from using an open source project. Payment is stimulated by adding a user agreement (EULA) to maintainers, regulating access to the infrastructure, binary assemblies and ready-made packages. They proposed to use the GitHub sponsorship system to transfer the fee.

According to the EULA, only paid

subscribers and users who do not profit from the project can download binary release builds, participate in discussions, and submit issue requests. Access to the source code remains unchanged and is provided in accordance with the open licenses used by the projects. If a company that profits from the project does not want to pay a monthly fee, it can use the code from the repository and independently create builds for itself, but does not have the right to use ready-made release builds provided by the main project (it is prohibited to use official package builds among dependencies connected through package managers such as NPM and NuGet).

<https://news.ycombinator.com/item?id%3D44669858>

## TAILS 6.18 RELEASE:

25/07/2025

The release of the specialized distribution Tails 6.18 (The Amnesic Incognito Live System), developed as part of the Tor project, is presented. The distribution is based on Debian 12,

comes with the GNOME 43 desktop and is designed for anonymous network access using Tor. All connections, except for traffic through the Tor network, are blocked by default by the packet filter. When saving user data between launches, encryption is used. An iso image capable of working in Live mode, 1 GB in size, has been prepared for download.

The new version implements the ability to use network bridges based on WebTunnel transport to connect to the Tor network. WebTunnel simulates typical web traffic and can be used where obfs4 transport does not work. Tor Browser 14.5.5 and Thunderbird 128.12.0 have been updated.

[https://tails.net/news/version\\_6.18/](https://tails.net/news/version_6.18/)

## RULES FOR AI ASSISTANTS USED IN THE LINUX KERNEL:

26/07/2025

NVIDIA's Sasha Levin, who maintains the LTS branches of the Linux kernel and is on the Linux Foundation's advisory board, has put forward a set of rules and

documentation for developers to consider when generating changes to the Linux kernel. Links to the instructions are provided in configuration files prepared for the Claude, GitHub Copilot, Cursor, Codeium, Continue, Windsurf, and Aider AI platforms.

To highlight changes prepared using AI, the commit is required to be tagged "Co-developed-by: \$AI\_NAME \$AI\_MODEL \$AI\_VERSION". For example: "Co-developed-by: Claude claude-3-opus-20240229", "Co-developed-by: GitHub-Copilot GPT-4 v1.0.0" and "Co-developed-by: Cursor gpt-4-turbo-2024-04-09". At the same time, the AI assistant should not add itself to the "Signed-off-by" tag. This tag should only be added by a human to provide legally significant confirmation of the right to transfer code under an open license.

<https://linux.slashdot.org/story/25/07/25/1950226/linux-kernel-could-soon-expose-every-line-ai-helps-write>

## SUDO 1.9.17p2 UPDATE:

27/07/2025

A new release of the sudo utility 1.9.17p2 is available. It is used for the execution of commands on behalf of other users. The new release fixes an issue that, under certain circumstances, would cause the SIGHUP signal (terminal connection lost) to be sent not to the running process, but to all processes in the system.

The problem is present since sudo 1.9.16 and is caused by the use of killpg() instead of kill() in some cases to terminate a child process. Unlike kill(), killpg() sends a signal to a process group, but as a group it can handle values greater than or equal to 0. When a negative group value is passed, the behavior is undefined and on some systems may result in the signal being sent to process number 1 (init) and all processes on the system being terminated.

Additionally, sudo has fixed an issue that could cause a failure when intercepting and verifying commands being run in configurations that used the "intercept and intercept\_verify"

options in the sudoers file. On Linux systems that support the ptrace\_readv\_string() function, processes that had command line arguments or environment variables larger than the memory page size (usually 4096 bytes) would crash.

<https://github.com/sudo-project/sudo/releases/tag/v1.9.17p2>

## SLACKEL 8.0 RELEASE

27/07/2025

Slackel 8.0 has been released. It is based on Slackware and Salix and is fully compatible with the repositories offered in them. The key difference of Slackel is the use of a constantly updated Slackware-Current branch. The graphical environment is based on the Openbox window manager. The size of the boot image, capable of working in Live mode, is 3.6 GB (i386 and x86\_64).

The new release is synchronized with the Slackware Current branch and ships with Linux kernel 6.12.39. Updated programs include firefox 140.0.4, thunderbird 140.0.1esr, libreoffice 25.2.1, GIMP 3.0.4,

smplayer 25.6.0, mpv 0.40.0, MPlayer 20250330, exaile 4.1.3, brasero 3.12.3, isomaster 1.3.17, pidgin 2.14.142, and transmission 2.94.

<https://slackel.sourceforge.io/forum/viewtopic.php?t%3D815>

## LINUX KERNEL 6.16:

28/07/2025

After two months of development, Linus Torvalds presented the Linux kernel 6.16. Changes include: a driver for accelerating OpenVPN, a kernel extension handOver mechanism, enabling five-level memory page tables for x86 by default, removing the DCCP protocol, a zloop block driver, the ability to send core dumps via a UNIX socket, support for atomic writing to XFS, offload sound processing for USB devices, optimizations in Ext4, a virtual TPM (Trusted Platform Module) driver, a full implementation of Device Memory TCP, support for unnamed pipes in io\_uring, preparation for the integration of the Asahi DRM driver, a "usermode queue" mechanism in the AMDGPU driver, support for Intel TDE (Trusted

Domain Extensions) and Intel APE (Advanced Performance Extensions).

The new version accepted 15924 fixes from 2145 developers, the patch size is 50Mb (the changes affected 13793 files, 655451 lines of code were added, 316441 lines were deleted). The previous release had 15945 fixes from 2154 developers, the patch size was 59 MB. About 45% of all changes presented in 6.16 are related to device drivers, about 16% of changes are related to updating code specific to hardware architectures, 13% are related to the network stack, 4% - to file systems and 3% to internal kernel subsystems.

<https://lkml.org/lkml/2025/7/27/337>

## OPENPRINTING PROJECT LEADER LAID OFF:

29/07/2025

Canonical has let Till Kamppeter go, the leader of the OpenPrinting project, which develops components for providing printing on Linux (among other

things, since 2021 the development of the CUPS print server has been transferred to the OpenPrinting project after Apple lost interest in developing the project for platforms other than macOS). Till is a co-founder of OpenPrinting and has been maintaining the project since its inception in 2001. Since 2006, Till has been employed by Canonical, where he was engaged in the development of a printing system for Linux.

Canonical has not commented on the layoffs, but it is believed that they are related to a reduction in staff working remotely or on an external project.

<https://ubuntu.social/@till/114932498368800052>

## VULKAN 1.4 SUPPORT ADDED TO PANVK DRIVER:

30/07/2025

Collabora announced that the PanVK Vulkan driver has been updated to support the Vulkan 1.4 graphics API for devices with V10-based ARM GPUs, such as the Mali-G610 and Mali-G310. The changes have been merged into the Mesa

codebase and will be available to users in the Mesa 25.2 release candidate. The current stable release of Mesa 25.1 in PanVK only supports Vulkan 1.2.

Plans for further development of the PanVK driver include certification of Vulkan 1.4 support in the Khronos consortium, optimization of DDK performance when performing typical tasks, improved compatibility with existing applications, and implementation of support for additional Vulkan extensions. Separately, the intention to improve performance for older generations of Mali GPUs, such as Bifrost (V6 and V7), and to provide Vulkan support for the first generations of Valhall family GPUs (V9) is noted.

<https://www.collabora.com/news-and-blog/news-and-events/panvk-now-supports-vulkan-1.4.html>

## CDE DESKTOP ENVIRONMENT ON OPENBSD:

30/07/2025

The OpenBSD ports collection now includes the classic CDE (Common Desktop Environment), developed in the early nineties by Sun Microsystems, HP, IBM, DEC, SCO, Fujitsu, and Hitachi, and supplied for many years as the standard graphical environment for Solaris, HP-UX, IBM AIX, Digital UNIX, and UnixWare. In 2012, the CDE 2.1 code was opened by "The Open Group" under the LGPL license.

It includes an XDMCP-compatible login manager, user session manager, window manager, CDE FrontPanel, desktop manager, interprocess communication bus, desktop toolkit, shell and C application development tools, and third-party application integration components. The Motif library is used for the interface.

<https://undeadly.org/cgi?action%3Darticle;sid%3D20250730080301>

## VIVO OPEN SOURCES BLUEOS KERNEL WRITTEN IN RUST:

31/07/2025

Vivo, which occupies about 10% of the global smartphone market (5th place among smartphone manufacturers), presented the first official open release of the BlueOS operating system kernel (Blue River OS). The BlueOS operating system has been in development since 2018 and is already used in the Vivo Watch series smartwatches. Vivo is also working on using BlueOS in smart glasses, robots, smart terminals, and consumer AI devices. The kernel code is written in Rust and is open under the Apache 2.0 license. BlueOS system frameworks are also written in Rust.

The BlueOS kernel (Blue River Kernel) is optimized for minimal resource consumption and can be used on embedded platforms, mobile devices, and Internet of Things systems. In the minimum configuration, the kernel requires only 13 KB of RAM for its operation. At the same time, the kernel supports modern processor architectures, including ARM and

RISC-V. On top of the kernel, there is a standard C library that supports the software interfaces defined in the POSIX standard, as well as the rust-std library.

<https://translate.google.com/website?sl=auto&tl=en&hl=en-US&client=webapp&u=https://blueos.vivo.com/activity/details?id%3D94%26data%3DblueRiver>

## MOZILLA CHINA STOPS PROVIDING FIREFOX SERVICES IN CHINA:

31/07/2025

Mozilla China has announced that it is shutting down its services for Firefox users in China. Starting July 27, registration for the Chinese versions of Firefox Accounts ([accounts.firefox.com.cn](https://accounts.firefox.com.cn)) and Firefox Community services has been suspended, and the ability to post messages and comments in the forum has been blocked. Starting September 29, the [firefox.com.cn](https://firefox.com.cn) website, forum ([mozilla.com.cn](https://mozilla.com.cn)), home page ([home.firefoxchina.cn](https://home.firefoxchina.cn)), resources for downloading and updating the version of Firefox for China, as well as services for maintaining

accounts and synchronizing settings (Firefox Sync) will cease to operate.

<https://translate.google.com/website?sl=auto&tl=en&hl=en-US&client=webapp&u=http://www.firefox.com.cn/farewell/>

## 4MLINUX 49.0 DISTRIBUTION RELEASE

01.08.2025 07:39

4 MLinux 49.0 is now available, a minimalist user distribution that is not a fork of other projects and uses a graphical environment based on the JWM window manager. 4MLinux can be used both as a Live environment for playing multimedia files and solving user tasks, and as a system for recovery from failures and a platform for running mini-servers. A live image (x86\_64, 1.7 GB) with a graphical environment and a stripped-down console build (x86\_64, 16.2 MB) are available for download.

<https://4mlinux-releases.blogspot.com/2025/07/4mlinux-490-stable-released.html>

## KDE LINUX TESTING

### EDITION:

01/08/2025

The KDE project has begun publishing test builds of its own KDE Linux distribution -the KDE Linux Testing Edition, and has also posted a page on the main kde.org website dedicated to the distribution. System images (5.2 GB) are available for installation to create bootable USB drives that work in Live mode. KDE Linux is positioned as a reference implementation of the Linux distribution for the KDE desktop and applications, optimally combined with KDE technologies and developed without intermediaries by KDE developers.

KDE Linux Testing Edition is based on the master branch in Git and is designed for testing, quality control, and development tracking. Builds will be updated daily and reflect the current state of development of the project components. The primary target audience for KDE Linux Testing Edition is KDE developers and users who want to participate in quality control, feature testing, and bug

reporting.

The system is separated from applications - additional applications can be installed to the home directory in Apptainer, Snap or Flatpak formats. In addition, the Distrobox and Toolbox tools are included, allowing you to create containers in the home directory for installing arbitrary packages from other distributions. The user can also use the systemd-sysext utility to install System Extension images, the contents of which are superimposed on the /usr/ hierarchy using OverlayFS.

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

## RELEASE OF THE EMBEDDED DBMS LIBMDBX 0.13.7:

01/08/2025

The release of the libmdbx 0.13.7 (MDBX) library has been published, implementing a high-performance compact embedded key-value database. The libmdbx code is distributed under the Apache 2.0 license. All current

operating systems and architectures are supported. libmdbx offers an advanced API for C++ , as well as enthusiast-supported bindings to Rust, Haskell, Python, NodeJS, Ruby, Go, Nim, Deno and Scala.

Historically, libmdbx is a deep reworking of the LMDB DBMS and surpasses its ancestor in reliability, feature set and performance. Compared to LMDB, libmdbx pays much more attention to code quality, stable API operation, testing and automatic checks. A utility for checking the integrity of the database structure with some recovery capabilities is also supplied. Technologically, libmdbx offers ACID, strict serialization of changes and non-blocking reading with linear scaling across CPU cores. Auto-compaction, automatic database size management, range query estimation are supported.

<https://translate.google.com/website?sl=auto&tl=en&hl=en-US&client=webapp&u=https://gitflic.ru/project/erthink/libmdbx/release/4465d9ff-62a2-4104-ad9b-c0224ea60e48>

## RELEASE OF FEX 2508

### EMULATOR:

02/08/2025

The FEX 2508 project release has been published. It develops an emulator for running games and applications compiled for x86 and x86-64 architectures in a Linux environment on systems with ARM64 (AArch64) processors. The FEX emulator is used by the Asahi project to run games from the Steam catalog compiled for the x86\_64 architecture on systems with ARM chips. The project code is written in C++ with assembler inserts and is distributed under the MIT license.

To access host environment capabilities, such as audio and 3D graphics tools, thunk libraries are placed in the rootfs, which translate calls to libraries and code on the host system side (for example, calls to OpenGL and Vulkan can be redirected). These libraries can also be used on the host side to call code in the guest environment. Libraries available for forwarding are: libEGL, libGL, libSDL2, libX11, libVDSO, libasound, libdrm, libfex\_malloc, libvulkan, libwayland-client and libxshmfence.

What's new:

Significant optimization of the JIT compiler was performed, which allowed FPS increase in the game Cyberpunk 2077 by 38.9%, Doom 2016 - by 30.9%, Stray - by 25.2%, Grim Fandango Remastered - by 24.7%, Teardown - 12.6%, God of War 2018 - by 4.6%. The greatest impact was made by optimizations of the call stack and returns (call-return), as well as the use of the TSO (Total Store Ordering) memory model in the wow64/arm64ec libraries, supported in Apple Silicon CPUs.

<https://fex-emu.com/FEX-2508/>

## THE FOURTH EXPERIMENTAL RELEASE OF ORBITINY:

04/08/2025

The fourth release of the Orbitiny Desktop environment (DE), written from scratch using the Qt framework, has been published. The project tries to combine some innovative ideas that have not been seen in user environments before with traditional elements such as the panel, menus, and desktop icon

placement. The code is written in C++ and is distributed under the GPL license.

In the new version, most of the changes are related to the expansion of the functionality of the Qutiny file manager and tools for working with files on the desktop. The device name has been added to the notes for mount points (E.g: If /dev/sdc1 is mounted on "/mnt/my\_mount\_point" and you navigate to /mnt, Qutiny file manager will append ("/dev/sdc1") to the mounted directory's icon caption.), separate icons for mount points have been implemented, a list of mounted external media has been added to the sidebar, and a button for showing mount points has been added to the toolbar. The deletion confirmation dialog now shows the full path to the file being deleted. A tab with hashes and a field with data on the file owner have been added to the file properties dialog. The design of the file renaming dialog has been redesigned.

[https://www.reddit.com/r/linux/comments/1mfos7t/orbitiny\\_desktop\\_10\\_pilot\\_4\\_released/](https://www.reddit.com/r/linux/comments/1mfos7t/orbitiny_desktop_10_pilot_4_released/)

## SQUID 7 STABLE RELEASE:

04/08/2025

The stable release of Squid 7.1 proxy server is now available for production use (7.0.x releases were beta versions). Once the 7.x branch is stable, it will only be used to fix vulnerabilities and stability issues, and minor optimizations may be made. New features will be developed in the new experimental 8.0 branch. Users of the previous stable 6.x branch are advised to plan their migration to the 7.x branch.

<https://www.mail-archive.com/squid-announce@lists.squid-cache.org/msg00131.html>

## OPENSUSE LEAP 16

### RELEASE CANDIDATE:

05/08/2025

The release candidate of the openSUSE Leap 16 is presented. It is built on the technologies of the next major branch of the commercial SLES 16 distribution, which is moving to the new SLFO (SUSE Linux Framework One)

platform, previously known as ALP (Adaptable Linux Platform). openSUSE Leap 16 will retain the features of the classic distribution using traditional packages and for those who need an atomically updated system with basic filing in read-only mode, the openSUSE Leap Micro edition should be used. Builds for x86\_64, ARM64, s390x and PowerPC architectures are available for testing. The release is scheduled for 1 October 2025.

<https://news.opensuse.org/2025/08/04/leap-16-rc/>

## RELEASE OF SYNCSPRIT 0.4.1:

05/08/2025

The release of syncspirit 0.4.1 is available. It allows you to organize automatic continuous synchronization of user files on several devices. The project solves problems similar to the proprietary Resilio Sync system (former BitTorrent Sync). Syncspirit is written in C++ and is distributed under the GPLv3 license. The graphical interface is built using the FLTK library; the domestic embedded DBMS libmdbx is used

to store the database and the rotor actor framework is used to handle events. Ready-made builds are available for Linux (x86\_64, AppImage), Windows (Windows XP is supported) and macOS.

Unlike the Syncthing project, which is written in Go and uses a client-server architecture and REST-API (with a web browser acting as a client), syncspirit provides both an implementation in the form of a background process syncspirit-daemon and a separate application with a graphical interface, allowing for more economical use of RAM.

<https://github.com/basiliscos/syncspirit>

## ALMALINUX STARTS PROVIDING NVIDIA DRIVER PACKAGES:

06/08/2025

The developers of the AlmaLinux distribution announced packages with NVIDIA drivers for the AlmaLinux 9 and 10 branches. Packages with the driver and CUDA stack are also offered for installation. The drivers can be used in configurations with UEFI Secure

Boot.

Kernel modules from the official set of proprietary drivers from NVIDIA cannot be loaded in UEFI Secure Boot mode, since they are not digitally signed by the distribution. This limitation was circumvented by using kernel modules open by NVIDIA, which are already used by default in the set of NVIDIA drivers for GPUs, starting with the Turing microarchitecture (GeForce GTX 1600 and RTX 2000).

Based on components open by NVIDIA, a proprietary nvidia-open-kmod package has been created with modules certified by the AlmaLinux digital signature. A separate almalinux-release-nvidia-driver package has been created with the configuration of an external repository supported by NVIDIA, from which CUDA drivers and proprietary NVIDIA driver components operating in user space are loaded (according to the terms of the license agreement, repackaging proprietary NVIDIA components is not allowed).

<https://almalinux.org/blog/2025-08-06-announcing-native-nvidia-support/>

## PROXMOX BACKUP SERVER 4.0 AVAILABLE:

06/08/2025

Proxmox, known for developing Proxmox Virtual Environment and Proxmox Mail Gateway products, has released the Proxmox Backup Server 4.0 distribution, which is presented as a ready-made solution for backing up and restoring virtual environments, containers, and server stuffing. The installation ISO image is freely available for download. Distribution-specific components are open under the AGPLv3 license. Both the paid Enterprise repository and two free repositories are available for installing updates, which differ in the level of update stabilization.

Proxmox Backup Server supports integration with the Proxmox VE platform for backing up virtual machines and containers. Backup management and data recovery are performed via a web interface. You can restrict user access to their data. All traffic transmitted from clients to the server is encrypted using AES-256 in GCM mode and the backups

themselves are transmitted already encrypted using asymmetric encryption using public keys (encryption is performed on the client side, and compromising the server with backups will not lead to data leakage). The integrity of backups is controlled using SHA-256 hashes.

<https://www.proxmox.com/en/about/company-details/press-releases/proxmox-backup-server-4-0>

## MESA 25.2 RELEASED:

07/08/2025

After three months of development, the release of the free implementation of the OpenGL and Vulkan APIs - Mesa 25.2.0 - is out. The first release of the Mesa 25.2.0 branch has an experimental status - after the final stabilization of the code, version 25.2.1 will be released.

Mesa 25.2 adds support for the Vulkan 1.4 graphics API in the ANV drivers for Intel GPUs, RADV drivers for AMD GPUs, NVK drivers for NVIDIA GPUs, Asahi drivers for Apple GPUs, Turnip drivers for

Qualcomm GPUs, PanVK drivers for ARM Mali GPUs, the lavapipe software rasterizer (lvp), and emulator mode (vn). Vulkan 1.0 is supported in the v3dv drivers (Broadcom VideoCore GPUs for Raspberry Pi 4+) and dzn drivers (a Vulkan implementation on top of Direct3D 12).

Mesa also provides full OpenGL 4.6 support for the iris (Intel Gen 8+ GPUs), radeonsi (AMD), Crocus (older Intel Gen4-Gen7 GPUs), AMD (r600), zink, llvmpipe, virgl (virgil3D virtual GPU for QEMU/KVM), freedreno (Qualcomm Adreno), d3d12 (OpenGL layer on top of DirectX 12), and asahi (AGX GPU used in Apple M1 and M2 chips). OpenGL 4.5 support is available for NVIDIA (nvc0) GPUs. OpenGL 3.3 support is available in the softpipe (software rasterizer) and nv50 (NVIDIA NV50) drivers. OpenGL 3.1 is supported in the panfrost (ARM Mali GPU) and v3d (Broadcom VideoCore GPU) drivers.

<https://lists.freedesktop.org/archives/mesa-announce/2025-August/000815.html>

## UBUNTU 24.04.3 LTS RELEASED:

07/08/2025

An update for the Ubuntu 24.04.3 LTS distribution has been released, which includes changes related to improved hardware support, an update to the Linux kernel and graphics stack, and bug fixes in the installer and bootloader. The release also includes current updates for several hundred packages related to fixing vulnerabilities and issues affecting stability. Similar updates for Kubuntu 24.04.3 LTS, Ubuntu Budgie 24.04.3 LTS, Ubuntu MATE 24.04.3 LTS, Lubuntu 24.04.3 LTS, Ubuntu Kylin 24.04.3 LTS, Ubuntu Studio 24.04.3 LTS, Xubuntu 24.04.3 LTS, Edubuntu 24.04.3 LTS, Ubuntu Cinnamon 24.04.3 LTS, and Ubuntu Unity 24.04.3 LTS are also released.

<https://lists.ubuntu.com/archives/ubuntu-announce/2025-August/000315.html>

## MARIADB 12.0 IS AVAILABLE:

08/08/2025

MariaDB 12.0.2 has been released, marking it as the first stable release of the 12.0 branch. The MariaDB 12.0 branch is classified as a rolling release, continuing the gradual development of functionality and replaces the MariaDB 11.8 branch. MariaDB 12.1.1, which has the status of a release candidate, has been published at the same time. The MariaDB 12.0 branch will be supported until the 12.1.2 release is formed.

The MariaDB project is a fork of MySQL that maintains backward compatibility and features additional storage engines and advanced features. MariaDB development is overseen by the independent MariaDB Foundation, following an open and transparent development process that is independent of individual vendors. MariaDB is shipped as a replacement for MySQL in many Linux distributions (RHEL, SUSE, Fedora, openSUSE, Slackware, OpenMandriva, ROSA, Arch Linux, Debian) and is used in major

projects such as Wikipedia, Google Cloud SQL and Nimbuzz.

<https://github.com/MariaDB/server/releases/tag/mariadb-12.0.2>

## SHOTSTARS 4.7 UPDATE:

08/08/2025

The Shotstars 4.7 tool has been updated, tracking the movement, disappearance and appearance of fictitious "stars" in projects on GitHub. GitHub's standard capabilities do not provide users with information on the waning "stars" in a project and only allow information on their addition. The project is written in Python and is distributed under the GPLv3+ license.

<https://github.com/snooppr/shotstars/releases>

## RELEASE OF THE POCKETHANDYBOX:

09/08/2025

The PocketHandyBox 0007 distribution has been released. It is based on the Debian (and Devuan) package base and is

intended for testing and servicing PCs and laptops. The distribution allows you to check the performance of the equipment, load the processor and video card, estimate the temperature, check SMART HDD and NVMe SSD. The distribution includes such applications as CPU-X, GSmartControl, GParted, Partimage, Partclone, TestDisk, ddrescue, WHDD. The user environment is based on Xfce. Versions based on Debian 12 "Bookworm" (Devuan "Daedalus") and Debian 13 "Trixie" (Devuan "Excalibur") are available.

<https://github.com/PocketHandyBox/pocket-handybox>

## DEBIAN 13 RELEASE: 09/08/2025

After two years of development, Debian 13 "Trixie" is now available for eight officially supported architectures : Intel IA-32/x86 (i686), AMD64/x86-64, ARM EABI (armel), ARM64, ARMv7 (armhf), RISC-V, PowerPC 64 (ppc64el), and IBM System z (s390x). Debian 13 will continue to receive updates for five years.

Installation images are available for download via HTTP, jigdo or BitTorrent. LiveUSBs are available for the amd64 architecture, with GNOME, KDE, LXDE, Xfce, Cinnamon and MATE variants, as well as a multi-arch DVD that combines packages for the amd64 platform with additional packages for the i386 architecture.

The repository contains 69830 binary packages, which is 5411 more than were offered in Debian 12. Compared to Debian 12, 14116 new binary packages were added, 8844 (12%) obsolete or abandoned packages were removed, 44326 (63%) packages were updated. The total combined size of the source code offered in the distribution is 1,463,291,186 lines of code. The total size of all packages is 403 GB.

For 96.9% of packages, support for reproducible builds are provided, which allows us to confirm that the executable file was built from the declared source code and does not contain any changes, for example, that can be made by attacking the build infrastructure or a backdoor in the compiler.

<https://www.debian.org/News/2025/20250809>

## RELEASE DEBIAN GNU/ HURD 2025: 10/08/2025

The Debian GNU/Hurd 2025 distribution, combining Debian's software environment with GNU/Hurd kernel, is out. The Debian GNU/Hurd repository includes approximately 72% of the packages of the total size of the main Debian archive. Installation builds are available (364MB) for i386 and x86\_64 architectures. To get acquainted with the distribution without installation, they have prepared ready-made images for virtual machines.

Debian GNU/Hurd remains the only actively developed Debian platform, created based off a kernel other than Linux (previously developed the Debian GNU/KFreeBSD port, but it has long been in an abandoned state). The GNU/Hurd platform is not one of the officially supported Debian architectures, so Debian GNU/Hurd releases are formed separately and

have the status of informal release of Debian.

The GNU Hurd is a kernel developed as a replacement for the Unix kernel and designed as a set of servers running over the GNU Mach microkernel and implementing various system services such as file systems, network stack, file access control system. The GNU Mach microkernel provides an IPC mechanism used to organize the interaction of the components of GNU Hurd and the construction of a distributed multi-server architecture.

<https://lists.gnu.org/archive/html/bug-hurd/2025-08/msg00008.html>

## RELEASE OF HANDBRAKE 1.10.0: 11/08/2025

HandBrake 1.10.0, a tool for multi-threaded transcoding of video files from one format to another, has been released. The program is available both as a command-line version and as a GUI interface. The project code is written in C (uses the GTK4 library on Linux and .NET Desktop Runtime

on Windows) and is distributed under the GPL license. Binary builds are prepared for Linux ( Flatpak ), macOS and Windows.

The program can transcode video from BluRay/DVD discs, copies of VIDEO\_TS directories and any files whose format is supported by the libavformat and libavcodec libraries from FFmpeg. The output files can be output in WebM, MP4 and MKV, the following codecs can be used for video encoding: AV1, H.266, H.265, H.264, MPEG-2, VP8, VP9 and Theora, for audio - AAC, MP3, AC-3, Flac, Vorbis and Opus. Additional functions include: bitrate calculator, preview during encoding, image resizing and scaling, subtitle integrator, a wide range of conversion profiles for specified types of mobile devices.

<https://handbrake.fr/news.php?article%3D59>

## REDIS 8.2 RELEASED:

11/08/2025

The release of Redis 8.2 DBMS, which belongs to the NoSQL class of database systems, has been published. Redis provides functions

for storing data in the key/value format, extended by support for structured data formats such as lists, hashes and sets, as well as the ability to execute Lua script handlers on the server side. The project code is written in C and is distributed under the AGPLv3 license.

Redis DBMS supports transactions, which allow you to execute a group of commands in one step, guaranteeing consistency and sequence of the execution of a given set of commands, (commands from other requests cannot intervene) and in case of problems, allowing you to roll back changes. All data is fully cached in RAM. Client libraries are available for most popular languages, including Perl, Python, PHP, Java, Ruby, and Tcl.

Commands such as increment/decrement, standard operations on lists and sets (union, intersection), key renaming, multiple selections and sorting functions are provided for data management. Two storage modes are supported: periodic data synchronization to disk and maintaining a change log on disk. In the second case, complete safety of all changes is guaranteed. You can

organize master-slave data replication to several servers, carried out in a non-blocking mode. The "publish/subscribe" messaging mode is also available, in which a channel is created, messages from which are distributed to clients by subscription.

<https://redis.io/blog/redis-82-ga/>

## BCACHEFS TO BE REMOVED FROM LINUX KERNEL:

12/08/2025

The Bcachefs file system will be removed from the main Linux kernel tree. Despite its technical merits and active development, the project's fate has been complicated by a protracted conflict between its author Kent Overstreet and the leading maintainers of the virtual memory (VM) and file systems (FS) subsystems.

The conflict between Kent and a number of key maintainers has been going on for several years. According to those involved, it is not so much about technical issues or violations of kernel development procedures, but rather about a loss of trust. A recent dispute over

whether the journal\_rewind function was a bug fix or new functionality was the last straw, and Linus Torvalds has stated outright that a long-term demonstration of constructive work with other maintainers is needed to restore trust.

<https://www.phoronix.com/forums/forum/software/general-linux-open-source/1568257-linux-6-17-rc1-released-with-many-new-features-but-no-bcachefs-changes/page6>

## CROSSOVER 25.1 RELEASED:

12/08/2025

CodeWeavers has released the Crossover 25.1 package, based on Wine code and designed to run programs and games written for the Windows platform. CodeWeavers is one of the key participants in the Wine project, sponsors its development and returns to the project all the innovations implemented for its commercial products. The source code of the open components of Crossover 25.1 can be downloaded on this page.

In the new version :

Issues with Electronic Arts (EA) and Ubisoft launchers have been resolved.

Issues with game controllers have been resolved, including improved compatibility with Xbox and 8BitDo Pro controllers.

The game compatibility database has been updated to provide the necessary settings.

Fixed issues with downloading games from Steam when msync is enabled, as well as issues with connecting to Steam.

Fixed issues connecting to an Outlook account in Office 365.

Improved stability of MS Office 2016 on Linux.

<https://www.codeweavers.com/support/forums/announce/?t%3D24;msg%3D334116>

## WHONIX 17.4 IS RELEASED: 12/08/2025

The Whonix 17.4 distribution is now available. It is aimed at providing guaranteed anonymity, security and protection of private information. The distribution is based on Debian GNU/Linux and uses Tor to ensure anonymity. The project's code is distributed under the GPLv3 license. Virtual machine images in .ova format for VirtualBox (2.3 GB with Xfce and 1.5 GB console) are available for download, which can be converted for use with the KVM hypervisor.

Whonix-Workstation comes with the Xfce user environment by default. The package includes programs such as VLC, Tor Browser, Pidgin, etc. The Whonix-Gateway

package includes a set of server applications, including Apache httpd, nginx, and IRC servers that can be used to organize the operation of hidden Tor services. It is possible to forward tunnels over Tor for Freenet, i2p, JonDonym, SSH, and VPN. If desired, the user can use only Whonix-Gateway and connect their regular systems through it, including Windows, which allows for anonymous access for workstations already in use.

<https://forums.whonix.org/t/whonix-17-4-4-6-point-release/22053>

## NVIDIA PROPRIETARY DRIVER 580.76.05:

13/08/2025

NVIDIA has published the release of the NVIDIA

proprietary driver 580.76.05 (the first stable release of the new 580.76 branch). The driver is available for Linux (ARM64, x86\_64), FreeBSD (x86\_64), and Solaris (x86\_64). NVIDIA 580.x became the eleventh stable branch after NVIDIA open-sourced its kernel-level components. The sources for the kernel modules nvidia.ko, nvidia-drm.ko (Direct Rendering Manager), nvidia-modeset.ko, and nvidia-uvm.ko (Unified Video Memory) from the new NVIDIA branch, as well as the common, non-OS-specific components they use, are hosted on GitHub. The firmware and user-space libraries, such as the CUDA, OpenGL, and Vulkan stacks, remain proprietary.

<https://github.com/NVIDIA/open-gpu-kernel-modules/releases/tag/580.76.05>

## NEW VERSION OF NGINX 1.29.1:

14/08/2025:

The release of the main branch of nginx 1.29.1 has been published, in which the development of new features



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continues. In parallel, the stable branch 1.28.x is supported, only changes related to the elimination of serious errors and vulnerabilities are made. In the future, the stable branch 1.30 will be formed based off the main branch 1.29.x. The project code is written in C and is distributed under the BSD license.

<https://github.com/nginx/nginx/releases/tag/release-1.29.1>

## RELEASE OF KDE GEAR 25.08:

14/08/2025

After four months of development, the August consolidated update of KDE Gear applications 25.08, developed by the KDE project, is presented. The set contains releases of 249 programs, libraries and plugins. Information about the availability of Live builds with new releases of applications can be found on their web page. New versions of individual applications can be downloaded from the Flathub and SnapCraft catalogs.

<https://kde.org/announcements/gear/25.08.0/>

## EASYOS 7.0 RELEASED:

15/08/2025

Barry Kauler, the founder of the Puppy Linux project, has published the EasyOS 7.0 distribution, which combines Puppy Linux technologies with the use of container isolation to launch system components. The distribution is managed through a set of graphical configurators developed by the project. The boot image size is 1 GB.

<https://bkhome.org/news/202508/easyos-excalibur-series-version-70-released.html>

## RELEASE OF LIBREELEC 12.2:

16/08/2025

The new release of the LibreELEC 12.2 project is presented. It is a fork of OpenELEC. The user interface is based on the Kodi media center. Images for working from a USB drive or SD card (32- and 64-bit x86, Raspberry Pi 2/3/4/5, various devices on

Rockchip, Allwinner and Amlogic chips) are prepared for download. The build size for the x86\_64 architecture is 270 MB.

With LibreELEC, you can turn any computer into a media center, which is no more difficult to work with than a DVD player or a TV set-top box. The main principle of the distribution is "everything just works" - to get a fully operational environment, simply download LibreELEC to a flash drive. The user does not need to worry about keeping the system up to date - the distribution uses a system of automatic download and installation of updates, activated when connected to the internet. It is possible to expand the functionality of the distribution through a system of add-ons that are installed from a separate repository developed by the project developers.

<https://libreelec.tv/2025/08/15/libreelec-omega-12-2-0/>

## SHOTCUT VIDEO EDITOR RELEASE 08/25:

17/08/2025

The release of the Shotcut 25.08 video editor, developed by the author of the MLT project and using this framework for editing video, has been published. Support for video and audio formats is implemented via FFmpeg. You can use plugins with the implementation of video and audio effects compatible with Frei0r and LADSPA. Shotcut features include the ability to multi-track editing with the composition of video from fragments in various source formats, without the need for their preliminary import or recoding. There are built-in tools for creating screencasts, processing images from a web camera and receiving streaming video. The code is written in C++ using the Qt framework and is distributed under the GPLv3 license. Ready-made builds are available as AppImage, flatpak and Snap

<https://www.shotcut.org/blog/new-release-250816>

**ZULIP 11:**

18/08/2025

Zulip 11 is out, a server platform for deploying corporate messengers suitable for communication between employees and development teams. The project was originally developed by Zulip and opened after its acquisition by Dropbox under the Apache 2.0 license. The server 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 the Slack service and considered as an internal corporate Twitter analogue, used for communication and discussion of work issues in large groups of employees. It provides tools for tracking the status and participating in several discussions simultaneously using a threaded message display model, which is an optimal compromise between binding to rooms in Slack and a single public space of Twitter.

Simultaneous threaded display of all discussions allows you to cover all groups in one place, while maintaining logical separation between them.

<https://blog.zulip.com/2025/08/13/zulip-11-0-released/>

**RELEASE OF VENTOY****1.1.07:**

18/08/2025

The release of Ventoy 1.1.07 has been published. It is designed to create bootable USB drives that include several operating systems. The program allows you to boot the OS from unchanged ISO, WIM, IMG, VHD and EFI images, without requiring image unpacking or media reformatting. Simply copy the desired set of ISO images to a USB Flash drive with the Ventoy bootloader, and it will boot the operating systems located inside the images. You can replace or add new ISO images at any time by simply copying new files, which is convenient for testing and preliminary familiarization with various distributions and operating systems. The project code is written in C and is distributed under the

GPLv3 license.

Ventoy supports booting on systems with BIOS, IA32 UEFI, x86\_64 UEFI, ARM64 UEFI, UEFI Secure Boot and MIPS64EL UEFI with MBR or GPT partition tables. It supports booting various versions of Windows, WinPE, Linux, BSD, ChromeOS, as well as images of VMware and Xen virtual machines. The developers have tested 1283 iso images in Ventoy, including various versions of Windows and Windows Server, several hundred Linux distributions, more than a dozen BSD systems (FreeBSD, DragonFly BSD, pfSense, FreeNAS, etc.).

<https://github.com/ventoy/Ventoy/releases/tag/v1.1.07>

**GIT 2.51:**

19/08/2025

After two months of development, the distributed source control system, Git 2.51 is released. Git is productive and provides non-linear development tools based on branching and merging of branches. To ensure the integrity of history and resistance

to retroactive changes, implicit hashing of the entire previous history in each commit is used, as well as digital signatures of individual tags and commits by developers. The Git code is distributed under the GPLv2+ license.

<https://lore.kernel.org/lkml/xmqqikkk1hr.fsf@gitster.g/>

**LUANTI 5.13.0:**

19/08/2025

After two months of development, Luanti 5.13.0 has been released. It is a free cross-platform sandbox game engine that allows you to create games similar to Roblox, but with voxel mechanics, using various blocks for players to jointly build various structures and buildings. Some games on the engine seek to clone Minecraft. The gameplay provided by the engine depends entirely on a set of mods created in the Lua language. The engine is written in C++ using the IrrlichtMt 3D library (a fork of Irrlicht). Luanti code is distributed under the LGPL license, and game resources are licensed under the CC BY-SA 3.0 license.

Ready-made assemblies are generated for various Linux distributions, Android, FreeBSD, Windows and macOS.

<https://blog.luant.org/2025/08/10/5.13.0-released/>

## SOLARIS 11.4 SRU84:

20/08/2025

Oracle has released the Solaris 11.4 SRU 84 (Support Repository Update), which offers a series of significant 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 as a rolling release.

<https://blogs.oracle.com/solaris/post/announcing-oracle-solaris-114-sru84>

## THUNDERBIRD MAIL CLIENT 142:

20/08/2025

Thunderbird 142.0, a community-developed email client based on Mozilla technologies, is now available. Thunderbird 142 is built on the Firefox 142 code base and is an intermediate version, with updates released before the next big release. The ESR branches, with long-term support, (with updates released throughout the year), contain releases 128.14.0 and Thunderbird 140.2.0 .

<https://www.thunderbird.net/en-US/thunderbird/142.0/releasesnotes/>

## LIBREOFFICE 25.8:

20/08/2025

The Document Foundation has published the release of the LibreOffice 25.8 office suite. Ready-made installation packages have been prepared for various Linux distributions. One hundred and sixty developers took part in the release preparation. Note that 40% of the changes were made by 44 employees of the companies

supervising the project, such as Collabora and Allotropia, 41% by eight employees of The Document Foundation, and 19% by 108 independent enthusiasts.

The release of LibreOffice 25.8 is labeled "Community", will be supported by enthusiasts and is not aimed at enterprise use. LibreOffice Community is available to everyone without exception, including corporate users, for free without restrictions.

<https://blog.documentfoundation.org/blog/2025/08/20/libreoffice-25-8/%0D%0A>

## ZED GETS \$42 MILLION, ALSO ZEDLESS FORK:

21/08/2025

Zed Industries, the company behind the open source code editor, Zed, announced that Sequoia has invested \$35 million in the project. Taking into account previous cash injections, the total investment in the development of Zed has exceeded \$42 million. The money is allocated to develop a new method of collaborative

coding, in which the discussion of the code is tied to the code itself.

It is noted that until now the main focus of the project has been on creating a user interface for the code editor. "The investments received will allow us to move on to the next stage and engage in the implementation of a new version control system DeltaDB, which forms a workspace for collaborative work on code." The new system incrementally tracks the development of the code down to individual editing operations.

The Zed project is being developed under the leadership of Nathan Sobo, the author of the Atom editor (the basis of VS Code), with the participation of a team of former developers of the Atom editor, the Electron platform and the Tree-sitter syntax parsing library. The project code is written in Rust. The source code of the server part for multi-user editing is open under the AGPLv3 license, the code of the editor itself is under the GPLv3 license, and the code of the GPU library for generating the user interface , which uses the GPU for rendering, is under the Apache 2.0 license.

Then there's the Zedless project, which develops a fork of the Zed editor, focused on ensuring privacy and isolated local work without access to third-party servers. Among the features of Zedless, the following is mentioned:

No tie-in to proprietary cloud services - it is planned to remove all features and components that cannot be supported on your own equipment.

Removed code related to sending telemetry and automatically generated crash reports.

Shifting the priority in deploying your own infrastructure. All features that use network services are disabled by default and are not tied to external providers. The user is provided with settings to select external services at their discretion.

The ability to participate in development without signing a CLA (Contributor License Agreement) and without transferring property rights to the code.

<https://zed.dev/blog/sequoia-backs-zed>

## APACHE NETBEANS 27:

22/08/2025

Apache NetBeans 27 is now available, an integrated development environment that provides support for the Java SE, Java EE, PHP, C/C++, JavaScript, Rust, and Groovy programming languages. Ready-to-use builds are available for Linux in snap or flatpak .

Changes include:

Version control tools now support renaming branches.

The code editor now supports directory content comparison, TextMark/Markdown markup support has been improved, and SVG image preview has been added.

FlatLaf theme engine has been updated to version 3.6.1.

Ensured compatibility with the Gradle 9 build system and added the ability to use Gradle 9 in new projects.

Improved support for Maven and Ant build systems. Maven toolkit updated to version 3.9.11. Added Njord add-on.

Expanded capabilities related to the use of LSP (Language Server

Protocol) servers and the use of a plugin for VSCode.

For Java code, the ability to refactor individual Java files that are not part of projects has been implemented. Partial support for importing Java modules has been added. Debugging and stack analysis capabilities have been improved. The built-in NetBeans Java compiler nb-javac (modified javac) has been updated to JDK 25b31.

The PHP language environment has improved syntax highlighting and allows the use of custom HTML tags in PHP scripts.

Added support for new versions of GlassFish application server - 7.0.24 and 8.0.0-M11. Added new namespaces PrimeFaces and OmniFaces. Improved autocompletion of jsf classes. Implemented HTTP Monitor for javax.servlet and jakarta.servlet. Improved support for JSF tags. For Payara 5.x, support for JDK 21 is included.

The environment for web projects now supports CSS media queries that comply with the Media Queries Level 4 specification . A JSON semantics analyzer has been implemented. The capabilities for embedding Vue files (Vue Single-File Component) have been

expanded.

<https://github.com/apache/netbeans/releases/tag/27>

## G'MIC 3.6:

22/08/2025

One of our favourite frameworks here at FCM, the G'MIC 3.6 framework is out. It provides a universal scripting language for image processing and graphical interfaces for converting, filtering and visualizing graphic content. G'MIC provides more than a thousand ready-made algorithms and functions for image processing, supports multithreading and can use OpenMP to speed up calculations by parallelizing the load on several CPU cores. It supports processing of various types of images, including those with an arbitrary number of color channels, volumetric images and vector 3D objects. The project code is distributed under the free CeCILL license , compatible with the GPL.

G'MIC is available as: the gmic command-line tool (in the style of ImageMagic); the libgmic and CImg multithreaded C++ libraries ; the

G'MIC-Qt plugins implementing over 600 filters for GIMP, Paint.NET, Photoshop, Affinity Photo, PaintShop Pro, PhotoLine, and XnView; the G'MIC Online web application for manipulating graphics from a web browser; and the ZArt graphical interface for processing video files or video streams from web cameras in real time. G'MIC's capabilities are used in open source projects, such as the EDK video post-processing package, the Flowblade and Kdenlive video editors, the Krita graphics editor, the PhotoFlow photo processing system, and the Veejay video effects overlay system.

<https://paille.fr/@gmic/115067813632697767>

## MINIOS 5:

23/08/2025

**M**inios 5.0.0 is out, based on Debian 13 "Trixie" and running directly from a USB drive. The graphical environment is based on Xfce. The distribution uses a modular architecture that allows you to create specialized configurations to adapt the system to specific tasks. The release is

available in three editions:

Standard (amd64, 798 MB) - a compact assembly for everyday tasks. Characterized by high performance and a laconic interface. Includes a web browser, file manager, text editor, archiver, multimedia capabilities and specialized Minios utilities for installing the system, setting up, managing modules and working with drives.

Toolbox (amd64, 1.2 GB) is a specialized Linux distribution for servicing, diagnostics, and recovery of computer systems. Contains tools for disk management, network diagnostics, data security, system testing, support for various file systems, and virtualization. Designed for system administrators and technical specialists.

Ultra (amd64, 1.7 GB) - an extended set of software tools designed for both servicing and diagnostics of computer systems, and for solving a wide range of office tasks. Includes all the capabilities of Toolbox plus an office suite, multimedia applications for working with graphics, audio and video, as well as containerization tools.

<https://github.com/minios-linux/minios-live/releases/tag/v5.0.0>

## WHOMADE:

23/08/2025

**T**o detect applications that create files in the user's home directory that consume disk space, a background process called whomade is unveiled, which monitors the appearance of new files using the 'fanotify' mechanism. The project is written in C++ and is distributed under the GPLv3 license.

The data is stored in a SQLite3 database, which is periodically cleared of irrelevant information (for example, information about deleted files). To implement the required functionality, whomade currently monitors file access via fanotify with subsequent filtering of unnecessary events, rather than file creation operations directly. Root rights are required to run (required for fanotify).

MATE desktop users are provided with an extension for the Caja file manager that displays information about the process that

created the selected file.

<https://github.com/ANGulchenko/whomade>

## FIRST RELEASE OF THE NITRO INIT SYSTEM:

23/08/2025

**T**he first public release of the Nitro project has been published. They develop a minimalistic initialization system with functions for controlling the execution of processes. The project is developed by Leah Neukirchen, one of the package maintainers in the Void Linux distribution. The code is written in C and is distributed under the BSD license.

Nitro can be used both as an init process (pid 1) and as an unprivileged process that controls the smooth execution of applications in user space and restarts tasks in case of failures. It supports Linux and FreeBSD, and can be used in environments based on the standard C library Musl. The areas of application mentioned include embedded systems, RAM disk images (initramfs), containers (Docker/Podman/LXC/Kubernetes),

as well as workstations and server systems. The nitroctl command line utility is supplied to manage the operation of services and interact with the init process.

Instead of composite initialization scripts, Nitro uses a model based on moving each function into a separate script. For each service in the /etc/nitro hierarchy, a subdirectory is created, which can contain the following scripts: setup - contains commands executed before starting the service; run - defines the service startup script; finish - includes commands executed after the service has finished. For logging, a symbolic link named log is used, pointing to another service where the output will be redirected. To disable autostart of a service, simply create a file named "down" in its directory and to ignore the service, add the "@" symbol to the directory name.

<https://git.vuxu.org/nitro/commit?id%3D1f301d3f860e56c77ed9e844573d47fa3378ea34>

## KDE NOW HAS A SETUP

### WIZARD:

23/08/2025

Nate Graham, a quality assurance developer for the KDE project, has published another KDE development report. The most notable change is the addition of the KDE Initial System Setup ( KISS ) wizard to the branch that is being used to build the KDE Plasma 6.5 release, which complements the Welcome Center. KISS offers system operations that are performed before the first login after installation, such as creating a new user to use for further work, selecting the language and time zone, setting up the keyboard layout, and configuring network access.

<https://blogs.kde.org/2025/08/23/this-week-in-plasma-kde-initial-system-setup/>

## PowerDNS 5.0:

23/08/2025

The release of the authoritative DNS server "PowerDNS Authoritative Server 5.0" has been published. In the past, PowerDNS

Authoritative Server served up to 30% of the total number of domains in Europe and up to 90% of domains with DNSSEC. The project code is distributed under the GPLv2 license.

PowerDNS Authoritative Server provides the ability to store information about domains in various databases, including MySQL, PostgreSQL, SQLite3, LMDB, Oracle, and Microsoft SQL Server, as well as in LDAP and regular text files in BIND format. The response can be additionally filtered (for example, to filter out spam) or redirected to its own handlers in Lua, Java, Perl, Python, Ruby, C and C++.

The key innovation in PowerDNS Authoritative Server 5.0 is support for views in the style of the BIND DNS server, which allows different DNS zone contents to be returned depending on the IP address from which the request was received. For example, using views, one version of the DNS zone for the requested domain can be returned to users with internal addresses (intranet), and another to external users. For now, only the LMDB backend can be used to store different DNS zone views.

<https://blog.powerdns.com/2025/08/22/powerdns-authoritative-server-5.0.0>



# COMMAND & CONQUER

Written by Erik

During a recent discussion:

[7/5/25 5:19 AM]

*Anyways I am going to build a PC for family which would act as always on file server with 2 disks in raid 1 and gaming pc for us in living room*

[7/5/25 5:20 AM]

*Honestly just have a backup disk for important files  
Imo raid is just a waste of resources especially raid 1*

[7/5/25 5:22 AM]

*Why? It's redundancy*

[7/5/25 5:25 AM]

*But still 1 disk can fail and my data is still safe*

[7/5/25 5:25 AM]

*Like setup some sort of incremental backups or something*

Since this discussion was between two other people, I left off the tags. Then someone also not in the conversation reached out to me and asked me to explain what the discussion was.

This is a discussion on that for our command and conquer for this issue. RAID - Redundant Array of Independent Disks, it used to be inexpensive disks, but I'm sure we all can agree that with SSD's that is no longer the case.

Why would any home user consider RAID? RAID is a technology that is used to increase the performance and/or reliability of data storage and home users may want a piece of that.

When RAID is mentioned, we also need to mention LVM, logical volume management. Why would we need to, you may ask, well, when you use RAID, there is more than one disk involved and other than straight mirroring, your data is split over multiple disks. LVM allows you to manage physical disks as a single pool of storage and with it, you can create logical volumes that behave like partitions. LVM creates an abstraction layer between physical storage and logical partitions, this is the important part.

We are not going to dive deep into this, I just want you to know enough so we can continue and you are curious enough to go look it up. This will not be a step-by-step, rather a 10000ft overview, as it would be a nightmare to cover all the cases.

With LVM, disks or partitions are grouped into Physical Volumes (PVs). These PVs are combined into Volume Groups (VGs), and from these groups you can create Logical Volumes (LVs). Does it make sense? Good. It's not rocket science.

First we tell Ubuntu to create our PV from either disks or partitions, for example:

```
sudo pvcreate /dev/sda1 /dev/sdb1
```

I want you to use all the methods we used in the last issue to get some help on the pvcreate command.

```
root@ubuntusrv:~# pvcreate /dev/sda1 /dev/sdb1
Physical volume "/dev/sda1" successfully created.
Physical volume "/dev/sdb1" successfully created.
```

There are three commands you can use to display properties of physical volumes: pvs, pvdisplay, and pvscan. I'm not even discussing those, you know the drill.

Next, we need to combine the physical volumes into a volume group:

```
sudo vgcreate new_vg /dev/sdb1 /dev/sdc1
```

If the device was not previously initialized as a PV with pvcreate, vgcreate will initialize them, making them PV, but you obviously have less control. You can specify multiple physical volumes to create a new volume group from them, like so:

```
nonroot@ubuntusrv:~$ sudo vgcreate vol_grp2 /dev/sda2 /dev/sda5 /dev/sda7
Volume group "vol_grp2" successfully created
```

Then, you can create a LV from the VG. You can specify the size or use all the free space, for example:

```
sudo lvcreate -L 500G -n new_lv new_vg
```

Once that is done, we can go ahead and slap a filesystem on it:

```
sudo mkfs.ext4 /dev/new_vg/  
new_lv
```

Now we can just mount the beast and we can use our new volume.

Now that we understand the steps, getting our PV down first, making a VG or many VG's, on top of our PV, and lastly the LV. Three steps, however I cannot tell you 100% how, as each computer is different, you may be using two different partitions or multiple partitions or multiple drives. All I want you to do is visualise the order, attack the problem step by step and follow the order and you will be successful. Don't type out my commands 100%, you may not have sdb1, for instance, you need to use your own volumes or partitions.

RAID on the other hand is a beast on it's own. You can have hardware and software RAID, and RAID that may require you to install drivers for Linux. If you opt for hardware RAID, it is usually an add-on card that you will plug into your PC, unless you have a server board. Here you need to follow the instructions from the supplier with care. In my case, I was lucky, the last

time I needed to do this, the driver came in a convenient .deb-file, that I needed to load, but you may not be so lucky. My advice is, that if you decide to home server it, check for compatibility. The previous install I did only had drivers for old versions of Red Hat Linux. Beware of cheap RAID cards on e-bay or wherever, as some work like the old win modems, that was purely software. Do your homework!

Software RAID is cheaper and more prone to failure, as it relies on your OS. I don't recommend it as I have had waaay too many issues with it in the past, if you want to learn about it, sure. RAID comes in "levels"

RAID 0 – striping

RAID 1 – mirroring

RAID 5 – striping with parity

RAID 6 – striping with double parity

RAID 10 – combining mirroring and striping

To envision striping, imagine a bunch of pot plants in a row. If I take a paintbrush wet with paint, and I draw a line across them, you may see the line, but each pot in the row only has a piece of the line on it.

Mirroring is just what it says, it

writes everything twice. You can imagine that this takes longer to write, but reading will be twice\* as fast. (\*almost)

Parity is almost like the answer to a sum, imagine the data that you write is 2 and 3 bits, parity would sum them, and put a "5" down next to the numbers, so that even if one of the two get lost, you will know what the other one was, via simple math. This happens across all the drives in the set, meaning you will have to give up a lot of space for these parity sums. It is not what parity actually is, but it is a way for you to visualise it, remember that.

So now you can work out what the different RAID levels mean, yourself, without getting bogged down in jargon or technical details. If you are the technical kind and want to know, see: <https://www.techtarget.com/searchstorage/answer/RAID-types-and-benefits-explained>

Software Raid, requires mdadm, and Ubuntu does not ship with it by default, so you would need to install it. I suggest doing this in a VM, as it is easy to mess up your working desktop: `sudo apt install mdadm`

OK, so here is the command syntax:

```
sudo mdadm --create --verbose  
/dev/md0 --level=0 --raid-  
devices=2 /dev/sda /dev/sdb
```

You need to replace the Raid level you require, as you can see, this is RAID 0 and the devices should change to match \*your devices, currently set to two. Again, these are examples, please don't just go copying and pasting it into your working machine's terminal.

Now you go have coffee, while the software "builds" the array. Once done, we format the MD not the SD, like so: `sudo mkfs.ext4 /dev/md0`

Then we mount it in the usual way, `sudo mkdir /mnt/raid`  
`sudo mount /dev/md0 /mnt/raid`

While I do not think that this is something for a CnC, as the variables are too diverse, I did promise to put an outline down, explaining each part. So while LVM and RAID are often used together, they can also be used apart. If you would like more on each, drop us a note on [misc@fullcirclemagazine.org](mailto:misc@fullcirclemagazine.org) and I'll see if I can whip up a step-by-step in a VM for you to test.



This article is the first in a series on how to develop GTK4 applications using C. Some small programs will be developed to show how GTK4 and associated libraries can be used for Graphical User Interface (GUI) programming. In this first article GTK4 is introduced. It shows how to install GTK4, the C compiler and the GNU Make build automation tool. A small demo application is developed to demonstrate how to create a window and use button and label widgets. A screenshot is shown below.

Throughout this series Ubuntu 24.04 will be used which uses GTK4 version GTK4.14. The series assumes that the reader has a working knowledge of the C programming language. There are many online tutorials and videos on C programming.

The full source code for this project can be downloaded using this web link: <https://github.com/crispinprojects/fullcircle>

## GTK4

GTK4 is a library for creating graphical user interfaces which is widely available in Linux distribution repositories. It is a portable toolkit meaning that if applications are written for one platform they can be ported to another. Linux, of course, is the preferred platform. Although C will be used in these articles GTK4 has bindings for other programming languages. GTK is licensed under the GNU Library General Public License v2.

GTK4 uses the GObject library which provides object-oriented programming (OOP) features by using function-like macros. In OOP, constructors are used to initialise a new object from a specific class. This means that when you use the GTK4 API it provides a list of classes with their constructors, properties, methods and signals.

Widgets are the fundamental building blocks when creating a GTK4 Graphical User Interface (GUI) application. Widgets are pre-built

user interface elements such as labels, text entries and buttons. GtkWidget is the base class for all widgets. Every widget derives from GtkWidget. It provides a common set of properties, methods and signals to ensure consistency and styling of widgets.

## GTK4 API

The GTK4 API information is an essential resource when developing an GTK application providing information about constructors, properties, methods and signals of an object. See the GTK4 API external link below. Properties represent the data or state of an object. Methods are functions associated with an object. Signals notify the program that something has happened to the object and invariably signals are connected to callback functions to take some appropriate action. The function macro `g_signal_connect()` is used to connect a callback function to a signal for a particular object.

For example, the API information on the button class

reveals that it has a constructor called `gtk_button_new_with_label()`, a property called `has-frame` and a signal called "clicked". The "clicked" signal is emitted when the button has been pressed and released (activated). The `has-frame` property has getter and setter methods called `gtk_button_get_has_frame()` and `gtk_button_set_has_frame()` respectively.

## INSTALL GTK4

To build GTK applications from source it is necessary to install the `libgtk-4-dev` package which contains the header and development files for the GTK4 library. When the package `libgtk-4-dev` is installed other libraries such as `Glib` and `Gio` are also installed. `Glib` offers various data structures, string manipulation and file handling functions that are commonly used in C programming. The `Gio` library provides classes for general purpose input/output, networking and D-bus support. The build-essential meta-package is also needed which contains a collection

# HOWTO - GTK PROGRAMMING IN C

of essential software tools and libraries required for building and compiling applications from source code. This includes the GNU Compiler Collection (GCC) for C and C++ programming together with GNU Make which is a build automation tool that can manage the build process of a project.

With Ubuntu 24.04 the following packages need to be installed using the terminal commands below.

```
sudo apt update
```

```
sudo apt install build-essential
```

```
sudo apt install libgtk-4-dev
```

A number of different code editors can be used when developing GTK applications including Geany and GNOME Builder.

Geany can be installed using the Ubuntu App Center. Geany has an integrated terminal and a sidebar that has a symbols tab. This is very useful as it shows a list of symbols (functions, classes and variables) found within the current open file. This list can be filtered.

With Ubuntu 24.04 the latest version of GNOME Builder is installed using Flatpak. A tutorial on how to install Flatpak on Ubuntu is in the external links below. GNOME Builder can be used for developing both GTK4 and GNOME applications. In this series of articles GNOME (libadwaita) applications are not being developed. Some feature highlights of GNOME Builder include browser pages so that GTK4 API information can be displayed within the IDE, code completion, integral terminal, build, rebuild, clean and run command menu items.

## FIRST APPLICATION

Open the main.c file in the download. It shows how to use GTK4 to create a window containing label and button widgets positioned using a box layout container. A GTK4 program must start with the directive `#include <gtk/gtk.h>`. This includes all of the widgets, variables, functions and structures available in the GTK4 toolkit together with files from other libraries that GTK4 depends on.

The main function is the entry

point for the program and is used to create a `GtkApplication` object and run it. The pointer called “app” is declared and initialised using the `gtk_application_new()` constructor. The function macro `g_signal_connect()` connects the “activate” signal to the `activate()` function. The activate signal is emitted when the application is started with `g_application_run()` which takes the command line arguments. The `g_object_unref()` method is called on the `GtkApplication` app pointer when the application is closed.

(Code is shown on the next page.) Notice that “org.gkt.demo” is the application ID. As an aside, GTK and GNOME make use of “reverse DNS” style identifiers for applications and a desktop file should be named using the application ID. That is `<application_id>.desktop`.

In the `activate()` function a GTK window is created using the `gtk_application_window_new()` constructor. The window title “Hello Window” is set using `gtk_window_set_title()`. In GTK, `GTK_WINDOW()` is a macro that performs a type cast to convert a `GtkWidget` pointer to a `GtkWindow`

pointer. The window size is set using `gtk_window_set_default_size()` and a window is displayed using `gtk_window_present()`.

Button, label and box `GtkWidget` pointers are declared. The label widget is created using the `gtk_label_new()` constructor and its text set to “GTK4 Programming in C”. The button widget is created using the `gtk_button_new_with_label()` constructor with the button label text set to “Click Me”. The box layout container is created using the `gtk_box_new()` constructor and its orientation is set to vertical and is used to arrange child widgets (e.g. the label and button in this example). The `gtk_box_append()` method is used to add the label and then the button to the box container. The `gtk_window_set_child()` function is used to add the box to the window.

The button property “has-frame” is set to `FALSE` using the setter function `gtk_button_set_has_frame()`. Then `g_signal_connect()` is used to connect a callback function called `button_clicked()` to the “clicked” signal of the button. The function

```
#include <gtk/gtk.h>

static void button_clicked (GtkButton *button, gpointer user_data)
{
    GtkWidget *label =user_data;
    gtk_label_set_text (GTK_LABEL(label), "Button Clicked");
}

static void activate (GtkApplication* app, gpointer user_data)
{
    GtkWidget *window;
    GtkWidget *button;
    GtkWidget *label;
    GtkWidget *box;
    window = gtk_application_window_new (app);
    gtk_window_set_title (GTK_WINDOW (window), "Hello Window");
    gtk_window_set_default_size (GTK_WINDOW (window), 400, 100);
    label =gtk_label_new("GTK4 Programming in C");
    box =gtk_box_new(GTK_ORIENTATION_VERTICAL, 1);
    gtk_window_set_child (GTK_WINDOW (window), box);
    button = gtk_button_new_with_label ("Click Me");
    gtk_button_set_has_frame(GTK_BUTTON(button), FALSE);
    g_signal_connect (GTK_BUTTON (button), "clicked", G_CALLBACK (button_clicked), label);
    gtk_box_append(GTK_BOX(box), label);
    gtk_box_append(GTK_BOX(box), button);
    gtk_window_present (GTK_WINDOW (window));
}

int main (int argc, char **argv)
{
    GtkApplication *app;
    int status;
    app = gtk_application_new ("org.gtk.demo", G_APPLICATION_DEFAULT_FLAGS);
    g_signal_connect (app, "activate", G_CALLBACK (activate), NULL);
    status = g_application_run (G_APPLICATION (app), argc, argv);
    g_object_unref (app);
    return status;
}
```

arguments of the button clicked callback function are the GtkButton and a gpointer. A gpointer (generic pointer) is an untyped pointer meaning that it is not associated

with any data type and so requires casting. It has to be explicitly cast to the correct specific pointer type or else the compiler does not know how to interpret it. In this case the

gpointer is the label widget. In the callback function the macro GTK\_LABEL() casts the GtkWidget label pointer obtained from the gpointer user\_data to a GtkLabel.

The `gtk_label_set_text()` method then sets the label text to "Button Clicked". When the button is clicked the text in the label changes to "Button Clicked".

There are macros similar to GTK\_LABEL for almost every widget such GTK\_ENTRY(object) which casts the object to GtkEntry\*. A GtkEntry allows a user to input and edit a single line of text. These macros are a cornerstone of how GTK implements object oriented programming and type safety in the C language.

## MAKEFILE

GNU Make is a build automation tool that manages the build process of a project. The overall objective is to create a Makefile to build the project executable with the GTK4 libraries and headers. Make and other build systems are used in software development because they only recompile files if changes have been made which is important for large projects having many source code files. An explanation of the Makefile for this GTK4 project is contained in the code download and so only how to use it is covered here.

To use the Makefile to compile the demo project open a terminal in the project directory and run the "make" command. The beauty of using GNU Make is that just one command is needed to build the project.

## MAKE

To run the demo executable use the command shown below (i.e. dot forward slash followed by the program name).

```
./demo
```

The Makefile contains a target called clean which will delete the executable and any object files so that a fresh build can be performed using the source code files which remain untouched. Running "make clean" at the command line removes the object file and the executable.

## EXTERNAL LINKS

GTK Toolkit

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

GTK4 API

<https://docs.gtk.org/gtk4/>

C programming Code Vault

<https://www.youtube.com/@CodeVault>

An Introduction to Makefiles

[https://www.gnu.org/software/make/manual/html\\_node/Introduction.html](https://www.gnu.org/software/make/manual/html_node/Introduction.html)

Geany is a lightweight source-code editor.

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

GNOME Builder is an IDE for writing GTK and GNOME-based software

<https://gitlab.gnome.org/GNOME/gnome-builder>

Flatpak on Ubuntu: The Right Way to Set It Up and Use It

[https://www.youtube.com/watch?v=Pk\\_GeN5OC68](https://www.youtube.com/watch?v=Pk_GeN5OC68)



**Alan** is retired and a Linux enthusiast. He has worked in education and industry and has used many programming languages including C, C++, Delphi and Java. His Linux projects can be found on his Github: <https://github.com/crispinprojects>.





Now that we have Linux installed, updated, customized, and running smoothly, it's time to think about backup procedures so that we can easily recover our system and, in particular, our personal data files should any problems arise.

My backup strategy is a three-part process. I make regular full-disk image backups, usually on a monthly basis, that allow the entire system to be restored in the event of a catastrophic disk failure. This also provides the ability to restore an individual partition, such as that holding the Linux operating system, without affecting other areas of the drive. A second process automatically creates incremental backups of my dedicated data partition each time the Linux system is booted, and retains multiple backups over an extended time period. Finally, I take a manual snapshot of the data partition after every working session so as to ensure that fully up-to-date copies of all my data files are available at all times.

### FOXCLONE

My current preference for a disk imaging solution is Foxclone. This is open-source software, based on a stripped-down version of Ubuntu, that runs as a live-USB. The bootable drive can be created by downloading the Foxclone ISO file and using Balena Etcher as we did when creating our boot disk for

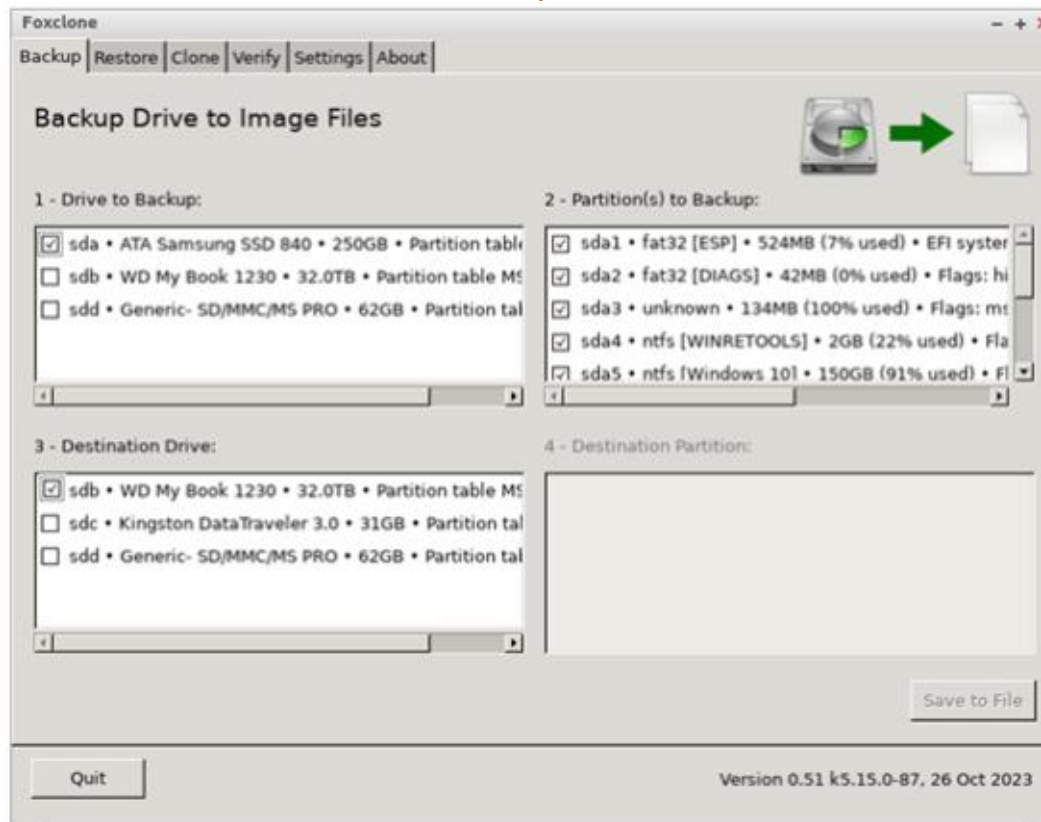
Linux Mint (see Trading Up To Linux – Part 1). Foxclone is a front-end for partclone. It supports both MBR and GPT drives, and filesystems such as ext4 or NTFS.

The live-USB boots into a Linux desktop with Foxclone being available as an icon on the desktop. Running Foxclone brings up the main program window (below) on

which the main options of current interest are the tabs for Backup and Restore.

The top two panels in the display for the Backup tab allow the source disk and partitions to be selected for backup. By default, all available disk partitions are checked for inclusion in the backup process but any of these can be unchecked as desired. The lower-left panel is for the selection of the target drive on which the backup files will be stored. Once this has been selected, a file-manager window is displayed that allows the user to drill down into the file system and choose a backup folder and a baseline name for the backup files. The default name includes the current date, e.g. 20250321.backup, etc.

A final display screen allows the user to review the backup choices before the process is launched. Progress bars and time estimates indicate the degree of completion of the backup of the disk partition that is currently underway together with that for the backup process as



a whole.

The backup that is produced essentially consists of file pairs, one pair for each disk partition in the backup, such as the compressed image file, 20250321.sda1.img.gz, and the backup information file, 20250321.sda1-log.txt.

Restoring a backup image for an entire drive, or for one or more partitions, is essentially the reverse of the above process. However, if an individual disk partition(s) is to be restored, prior to invoking the Restore tab, it is necessary to use the Settings tab and check the box labelled Enable partition selection since this is disabled by default.

The Foxclone User Guide can be downloaded as a PDF file. The guide provides excellent documentation for the software and includes annotated screenshots of the program's operations.

BACK IN TIME

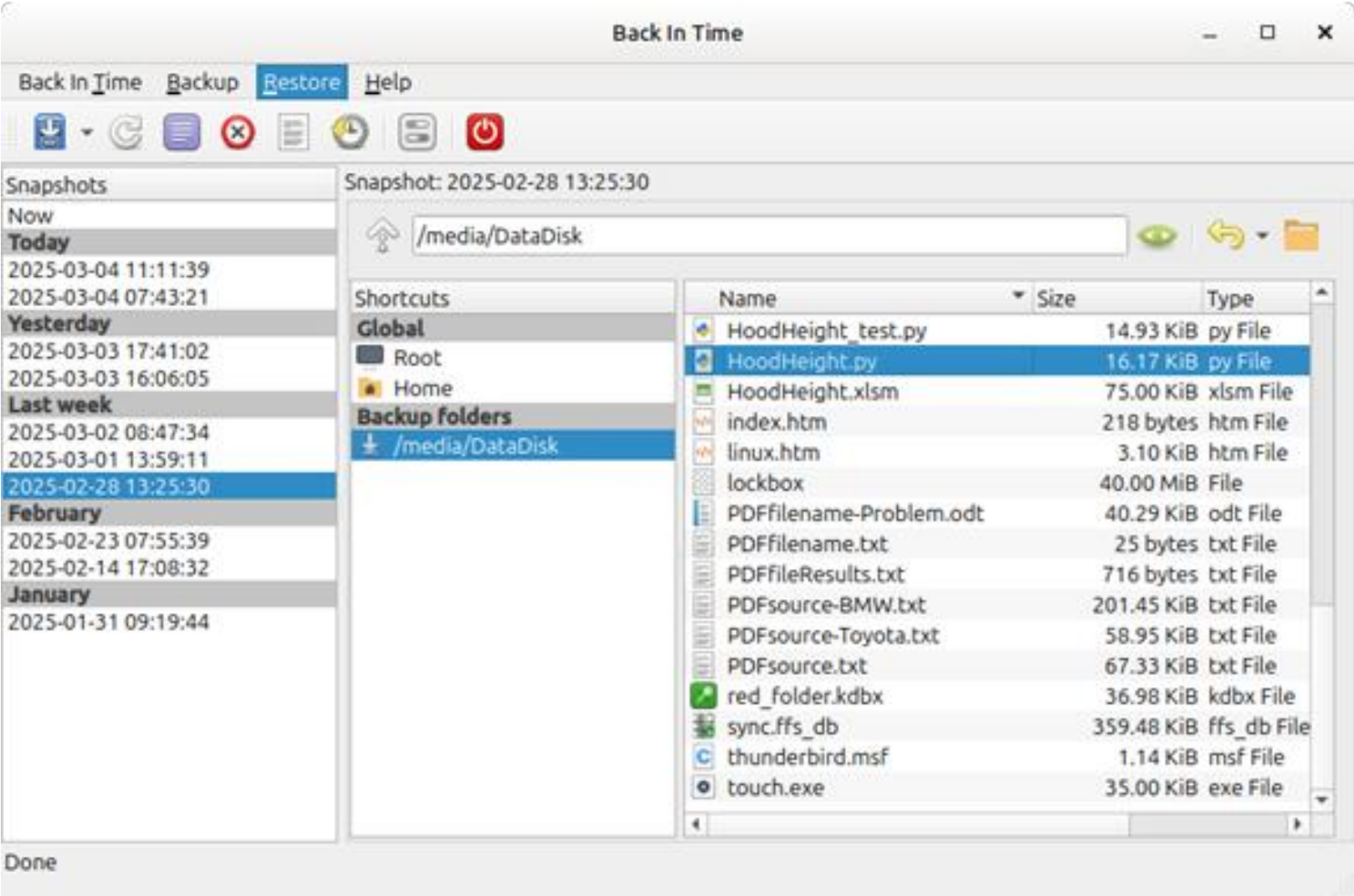
This open-source software package is available through GitHub but, for Linux Mint, it can be installed simply by using the Software Manager. Back In Time is a

front end for the rsync utility and provides a convenient way to schedule automatic backups of files and folders. Due to the use of hard links, once an initial backup set has been created, subsequent backups are incremental, saving both storage space and the time required to make backups.

The first time the program is run, a backup profile is established with the user specifying the storage location for the backup snapshots, an optional schedule for the backup process, the files and folders to be included or excluded from the backups, and an optional retention

scheme for historical backups.

Other options include enabling notifications, disabling snapshots for a laptop running on battery power, and continuing a backup in the event of errors. A final set of "Expert Options" is headed by a cautionary note to Change these



# HOWTO - TRADING UP

options only if you really know what you are doing. Good advice!

My preference is to run Back In Time at every boot/reboot. All snapshots made in the last three days are retained, together with one snapshot per day for 7 days, one snapshot per week for 4 weeks, and one snapshot per month for 24 months. This strategy provides a series of historical backups that are displayed each time Back In Time is run manually.

The left panel shows the set of past snapshots that have been stored. Any of these snapshots can be selected in order to restore a file. The screenshot shows that the

snapshot for 2025-02-28 has been selected. The right panel is used to browse for a specific folder and a file within that folder. In the screenshot, the file HoodHeight.py has been selected in the root folder of /media/DataDisk.

A pop-up dialogue box asks for confirmation that the selected file is to be restored and provides an optional checkbox to create a backup copy of the file on the hard drive with the current date in the filename. For example, if the Python script file, HoodHeight.py, is being restored to the hard drive on 2025-03-04, then the current file on the hard drive that is being replaced will be renamed by

adding .backup.20250304 to the filename. In this case, once the restoration process is complete, the file from the 2025-02-28 backup will have been copied to the hard drive as HoodHeight.py and the file that was replaced on the hard drive will still be present as HoodHeight.py.backup.20250304.

## FREEFILESYNC

FreeFileSync is an open-source, cross-platform, file and folder synchronization utility that can be downloaded from the developer's website (<https://freefilesync.org>). The download for Linux is a zipped archive file (.tar/.gz) the contents of which are extracted to produce an

executable file (.run). To install the software, we open the Terminal, change to the Downloads directory using

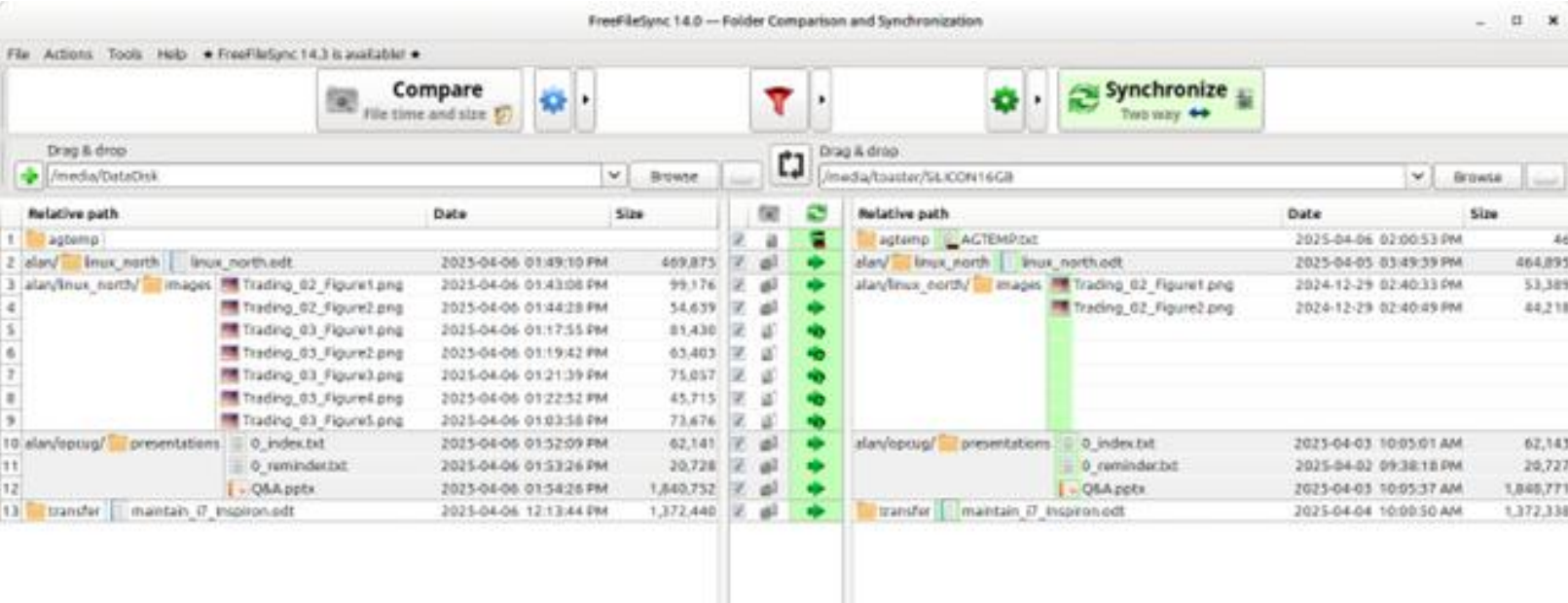
```
cd/Downloads
```

and use the command

```
./FreeFileSync_14.3_Install.run
```

The default installation parameters are to install for all users, use /opt/FreeFileSync as the installation directory, and not create desktop shortcuts. These can be modified using menu items if required. Otherwise, just pressing the Enter key, and typing the sudo password, results in FreeFileSync being installed. An entry for FreeFileSync is automatically created in the Accessories category of the main menu that then allows the program to be started.

I use a simplified window layout by removing the default Configuration and Overview tabs. I then set the source folder, in the left panel, as my dedicated data partition (/media/DataDisk) and the target folder, in the right panel, as my backup flash drive (media/toaster/SILICON16GB).



Additional configuration options can be selected using the gear icons adjacent to the Compare and Synchronize buttons. The comparison method can be left at the default of file time and size while comparison by file content is an available option. The latter process can be selected if there is a need to ensure that the backup files are bit-for-bit copies of the originals. Most users will likely select mirror as the synchronization method to make the backup on the target drive an exact copy of the source drive. In this case, new or modified files will be copied from the source drive to the target, and files that have been deleted from the source will be deleted on the target. The alternatives are two-way where the newest file on either drive will be copied to the other drive, and files deleted on one drive will be deleted from the other drive, or update where new or modified files are copied from the source drive to the target but no files are ever deleted from the target drive.

Pressing the Compare button causes FreeFileSync to analyze the files contained in both the source

and target folders, and their sub-folders, and to display a preview of the changes that will be made when the Synchronize button is pressed. For the files displayed, the trash can icon indicates a file that is to be deleted, the green right-arrow represents a file that has been modified on the source drive and is to be copied to the target, while the green right-arrow with the plus sign indicates a new file on the target that is to be copied to the target.

While FreeFileSync is easy to set up and use for simple file and folder synchronization as noted above, the software has many additional and much more powerful features. These include the ability to establish multiple filters to include or exclude certain items from processing, scheduling batch jobs, synchronization with SFTP and FTP servers, and file versioning.

### SUMMARY

The combination of Foxclone, Back In Time, and FreeFileSync, when used in a regular manner, provide a robust backup solution for the operating system, the installed applications, and user data

files. Each of the programs is easy to set up, is highly configurable, and offers an efficient backup process.

### BOTTOM LINE

Foxclone (Open Source)  
Andy Hardwick  
Version 53  
<https://foxclone.org>

Back In Time (Open Source)  
Version 1.5.4  
<https://github.com/bit-team/backintime>

FreeFileSync (Open Source)  
Zenju  
Version 14.3  
<https://freefilesync.org>



**Alan** is a computer enthusiast based in the Great White North where he is an active member of the Ottawa PC Users' Group (<https://opcug.ca>) and maintains the LinuxNorth blog at <https://linuxnorth.wordpress.com>



# HOW-TO

Written by Robert Boardman

## Latex - I to J

Another month has gone by and another column is due for FCM. This time I will look at Latex topics at [ctan.org](http://ctan.org) starting with "I". There are sixteen topics in this group. Five of them have to do with languages or supporting documentation for languages Icelandic, Indic (India), Irish-Gaelic and Italian. There are four topics which deal specifically with indexes (indices). In alphabetical order after Icelandic, the first topic is IDE: Integrated Development Environments. There are twenty-three packages listed in IDE, a few of them are for the DOS and OS/2 operating systems so I will not work with them. I will also ignore all the IDE packages that are designed for Windows or the Mac. These two conditions eliminate almost all of the IDE packages.

The kile package may be of interest to some. It is designed to work with the KDE 4 desktop environment. I could find very little information about it. Kile is available from sourceforge and must be compiled with the appropriate versions of the KDE libraries, QT, Cmake and C++

compiler. There is a second IDE for the KDE environment called KtexShell. CTAN marks it as obsolete.

The next group of packages are for index support. There are many packages that deal with indexes (indices). Part 2 of The Latex Companion (ISBN 978-0-201-36300-5) has a thirty-page chapter called Generating Indexes as well as more than two columns of entries for the word "index" in its own index. This is obviously an important topic in document preparation. Its importance suggests Latex is most often used for documents that require an index: academic papers and non-fiction books.

One day I hope to write a cookbook using Latex. For now I use Latex to put together teaching materials. One week's worth of lessons does not need an index. However a semester of weekly lessons should have a table of contents and an index. So I learned how to use one of the available index tools.

The basics of building an index with Latex are clearly explained in Part 2 of The Latex Companion. If you are interested I suggest you follow the steps on pp. 345 – 346.

include the following command in the preamble:

```
\usepackage{makeidx}
```

include the following command in the preamble \makeindex

put the \printindex command where you want the index to appear (usually at the end of a document).

On p. 342 the authors give the following advice "You should, therefore, plan an index and develop it along with the main text." Adding entries for an index after a document has been typed is tedious and will teach you the strengths and weaknesses of Search and Replace. Every term (word, phrase) which will appear in the index has to be coded in the text using `\index{the term}` before the term.

To explain using the file from last issue, if I wish there to be an index entry for the word "Whitefoot" pointing to p. 5, then I

need to write `\index{Whitefoot}` somewhere on p. 5. If I want a Whitefoot entry in the index pointing to a different page, then I need to add `\index{Whitefoot}` on the appropriate page. As I said, Search and Replace becomes very useful if you wish to build an index after a document has been completed. It may also be the smart way to build an index. Search and Replace will find all appearances of an entry, human beings will miss one or more if searching by eye.

Some word processors have a feature called a concordance used with their indexing tools. The concordance is a list of words which should appear in the index. The word processor searches for every occurrence of each word and codes it so it appears in the index. CTAN has a package called `addindex` which seems to do the same. However it is an old package and was designed to run on a Sun Sparc workstation. It may not perform on our machines. There are some specialized tools on CTAN which can build, for example, an index of citations, or an index of chemical

substances, but I have not found anything similar to the word processor concordance feature for Latex. It is possible there is such a package among the 170 hits at ctan using the term index. Perhaps one of you knows the name of such a package.

Moving to another topic, the Invoice area has thirteen packages listed. Two are specialized for use in Belgium, one for Venezuela, one for France, and one for the U.S. (Doing this search I learned there are different standard invoice forms in different countries.) The package invoice is in English. The introduction says “the package may be used for generating invoices. The package can deal with invisible expense items and deductions, output may be presented in any of 10 different languages.” It is part of the standard install of TexLive so I am able to use it without installing anything.

The documentation says further “the invoice package is basically a tailor-made solution for a consultant who charges fees and claims all sorts of expenses, sometimes working on different assignments for the same client.” It requires the use of the calc and fp

```
\documentclass[letterpaper,11pt]{letter}
\usepackage{invoice}
\date{\today}
\author{Document Company}
\begin{document}
    Project: IT Manual Conversion: Invoice to Date
    \begin{invoice}{CA\string$}{13}
        \ProjectTitle{IT Manual Conversion}%
        %
        Contents                Rate/Hour    Units
        \Fee{Training IT Staff}    {250}      {16}
        \Fee{Convert Existing Manual} {150}      {35}
        \EBC{Transportation}      {63.24}
        \EBC{Meals}               {185.38}
    \end{invoice}
\begin{center}
    Invoice due on Receipt
\end{center}
\end{document}
```

Project: IT Manual Conversion: Invoice to Date

IT Manual Conversion				
Activity	Rate/Unit	Count	Amount (CA\$)	
Training IT Staff	250	16	4000.00	
Convert Existing Manual	150	35	5250.00	
Subtotal Fees			9250.00	
VAT (13%)			1202.50	

Expense	Currency	Amount	Factor	CA\$
Transportation	CA\$			63.24
Meals	CA\$			185.38
Sum Fees				9250.00
Sum VAT				1202.50
Sum Expenses				248.62
Total				10701.12

Invoice due on Receipt

packages. (These two packages are installed by default in TexLive.) The invoice package works in its own Latex environment. It does not include any tools for letterhead, addresses, phone numbers, etc. Those items have to be set up in a Latex document letter class. Page 3 of the documentation shows the logical structure of the invoice environment.

The invoice environment requires two options: the base currency of the invoice and the tax rate (a number without the percent sign). For example: `begin{invoice}{CA\string$}{13}`. (If your currency does not use a dollar sign, you can dispense with the `\string`.) If VAT is included in the price then enter a 0 or there is no VAT, when you start the environment use: `\begin{invoice}{CA\string$}{0}`. That will remove the VAT entries from the invoice.

An invoice will contain one or more projects. Each project will have either fees or expenses or both. If both, then fees must come before expenses. Expenses can be billed in either the base currency (called the local currency in the documentation), or a foreign currency, or both. A foreign

currency can either be converted before being entered into the invoice or the invoice can calculate the equivalent base currency based on a conversion rate provided by the user. (See accompanying screenshot.)

I think in Europe VAT is the standard term for sales tax. In North America it can have several acronyms. If you want to use some other term, I suggest you save a copy of `invoice.sty` with another name. Then use a text editor and Search and Replace. I suggest you use a two- or three-letter acronym to replace VAT (perhaps Tax). Using more than three letters might generate errors so be prepared to redo the Search and Replace if replacing VAT with “Sales Tax” causes problems.

Assuming you have done that Search and Replace, you then need to install the edited file as a new package. Use the new name in the `usepackage` instruction in the preamble to your document. Alternatively you can rename `invoice.sty` to something else, then rename the edited file to `invoice.sty`. Let me know if my suggestion for changing VAT to something else is useful.

For more complex questions or customization about invoice, please read the well written sixteen-page documentation.

To fill out this issue’s column, I looked at the short list of “J” topics. There are only seven of them. Two have to do with typesetting in Japanese, and four of the remaining five topics deal with specific professional journals. One topic is called “journal personal”, it contains one package “`scrjrn`”. It is a document class, not a package to use in an existing document. The initial command is `\documentclass{options}{scrjrn}`.

The documentation is six pages long, half of it shows the commands in the `cls` file. The other three pages offered very little information that was useful to me. After considerable experimentation, and considerable searching, I found the Github of the author. It has four `tex` files with accompanying PDF files in four different languages. I copied the commands from the author’s English `tex` file into a sample file on my machine. The resulting `tex` file would compile so I have a sample

PDF. However the `tex` file also generated several “undefined control sequence” errors. This error indicates Latex cannot find what it needs to complete the compilation.

I got frustrated trying to learn how to use the `scrjrn` package. The Linux Companion was of no assistance and I could not find anything online (other than the author’s Github) which was related to `scrjrn`. I may need to learn a lot more about the KOMA-script family of packages before I tackle `scrjrn` again. During all this work I did discover another package which might be of use for making a journal or diary or other document with periodic entries. That is a topic for another column. Hope you are enjoying pleasant weather wherever you are.



# HOW-TO

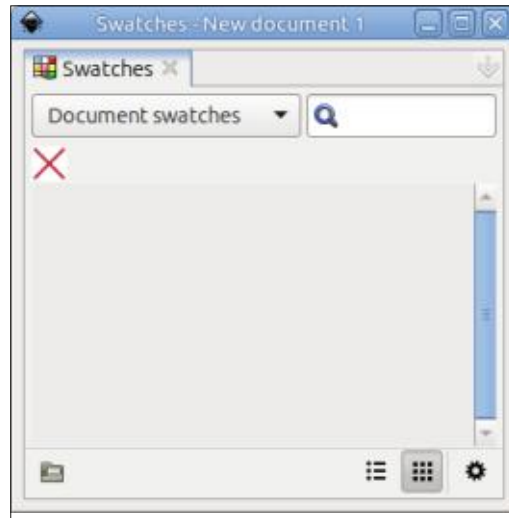
Written by Mark Crutch

## Inkscape - Part 160

The topic for this month is a feature that I never really use in Inkscape: color swatches. In theory, they could be a very useful tool for tackling some specific issues or requirements – but, in practice, I find Inkscape’s implementation to be a little too confusing, leading me to avoid them. But since the UI of the Swatches dialog has been overhauled in version 1.4, let’s revisit what they are, how you can use them, why you might want to – and why you might not.

Sometimes the term ‘color swatch’ is used to generally refer to an entry in the color palette at the bottom of the Inkscape window, or for similar colored blocks elsewhere in the UI. But in this context we’re talking about something far more specific: an individual color block that appears in the Swatches dialog (View > Swatches, or Ctrl-Shift-W). Opening this dialog could, initially, lead to disappointment, as there may be no swatches visible at all – just a lonely red cross.

If you see this view, it just means that there are no swatches defined



in your document as yet. We’ll come on to how you create them shortly, but first it’s useful to understand the three main reasons why you might want to use swatches in the first place.

- To use a very specific (named) color
- To use a predefined collection of specific colors
- To easily change the color of multiple objects simultaneously

In the old days of lithographic printing, that first reason was far more important than it is now. Most color printing is now done using CMYK colors – combining Cyan, Magenta, Yellow and black in

different proportions to produce a wide range of colors. Other, similar systems may use more base colors, but they still combine them in different proportions to produce any given color on the page.

On a modern digital press, which uses toners in a similar manner to a laser printer or photocopier, that’s likely to be the only option you have. But on a traditional press, with wet inks, it’s possible to use what are known as “spot” colors. These are very precisely controlled inks, made in small batches against very precise recipes to ensure that exactly the same color can be reproduced again and again. If a company has a very strong association with a specific color, they may well require that their logo is reproduced using a spot color ink, rather than risk it being slightly incorrect when C, M, Y and K are mixed.

You may have heard of spot colors through the term ‘Pantone colors’. This is a reference to the largest vendor of these color recipes, used throughout the

printing industry. When a company’s logo is defined as “Pantone Reflex Blue” or “Pantone PMS 803 C”, they can be sure that it will be reproduced in precisely the correct color – assuming they’re using lithographic printing, and a competent print supplier.

The first use of swatches is therefore to define a very specific color. Except that the Pantone system is proprietary (and expensive) – and Inkscape, due to the web-based history of the SVG format, doesn’t really support anything other than RGB colors anyway. Try defining the color of an Inkscape swatch as “Pantone Reflex Blue” and you’ll get nowhere.

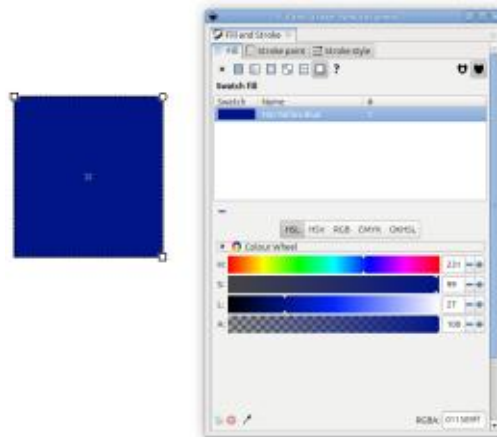
While this does greatly limit the utility of Inkscape swatches for this purpose, it doesn’t render them completely useless. Okay, so you’re not going to be defining spot colors with Pantone references in your Inkscape documents, but most companies now have RGB equivalents (or approximations) of their corporate colors for use on websites and other purely digital

media. You may not be able to use “Pantone Reflex Blue”, but your corporate style guide might let you swap it out for an RGB value of #011589 when used in a digital context. In this sense, swatches in Inkscape provide a way to define specific named colors. Let’s give that a try...

In order to create a swatch in your document, you might expect to open the Swatches dialog and find a button to create and name a new entry. But that’s not how it works, unfortunately. Instead, swatches are created via the Fill & Stroke dialog, and the options you need are available only when an object is selected on the canvas. Our first step, therefore, is to create an object of some sort – just a plain ellipse or rectangle will do – and open the Fill & Stroke dialog.

You can define a swatch on the fill or the stroke tab (or both). I usually set the fill color, as it’s a lot more obvious than a potentially thin stroke. Either way, in the collection of buttons at the top – where you might usually select a flat color or gradient – click on the penultimate button, which should have a tooltip of “Swatch”. This will display a list of the existing

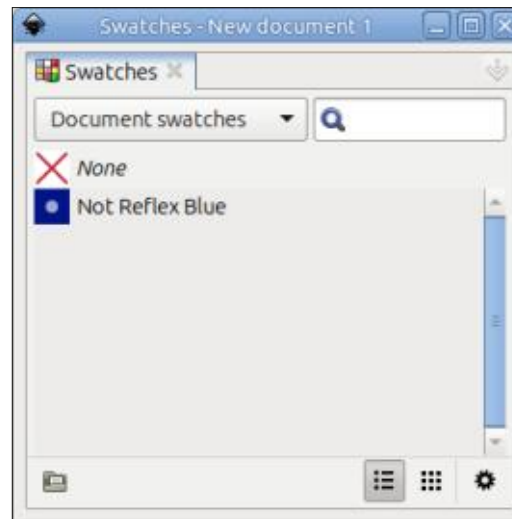
document swatches (possibly only one, if this is the first one you’re creating), with the usual selection of color pickers below. You can use any of these to define your color, whether by moving sliders, entering values directly, or showing the color wheel. In this example image, I pasted the RGB hex code from a couple of paragraphs above into the RGBA field at the bottom right – Inkscape automatically removed the hash (#) and added an extra ‘ff’ at the end for the Alpha (opacity) value.



In the list at the top, your swatch will have been given a default name, such as “swatch1” – you can click on the name to change it, which I definitely recommend if you want to use swatch colors for very specific purposes. Here, I’ve

changed mine to be called “Not Reflex Blue”.

Now, back to the Swatches dialog, and you should see your new swatch in all its glory (assuming you’ve got the “Document swatches” option selected in the dropdown). You may see your swatch as a square, or stretched out into a rectangle, depending on the configuration you’ve got defined in the settings menu (the cog icon at the bottom-right of the dialog). Hovering over the swatch will show the name you defined in a tooltip. Alternatively, you might prefer to use the icons next to the cog to switch between the grid and list view. The latter is shown here, where you can see the swatch name is clearly displayed.



Oddly, you can’t actually edit the name here. What you can do is to right-click on the swatch itself (though not on the name), to open a context menu. The “Edit...” option in the menu will open the Fill & Stroke dialog with the swatch already selected and ready to alter – allowing you to change the color, or the name.



The other options in that menu are fairly self-explanatory. Setting the fill or stroke color is more easily done by clicking on the swatch (fill) or shift-clicking (stroke) – do the same on the red X swatch to remove the fill and/or stroke. The Pin Color option will, as its name suggests, pin the swatch to the top of the dialog, next to the X – which may be useful if you have a lot of swatches, but only a few that you frequently use. Note that pinning a

color removes it from its position in the list rather than creating a 'clone' of the original, so if you've defined a specific series of colors (such as a stepped gradient) this might somewhat spoil your order. Unpinning will put it back into place though. Swatches appear in the dialog in reverse order of creation, with no way to sort them by name or color, which is another big omission in my opinion.

Now you know how to create your own document swatches, it's time to move onto my second reason for using swatches: to use a predefined collection of specific colors. At the top-left of the Swatches dialog is a pop-up which opens a menu listing all the palettes Inkscape knows about. These are the same ones you'll see if you click the menu button at the end of the main palette below the canvas. Although it's the same list, there's no synchronisation here; the two selections are independent of each other. Selecting a palette for the main window won't change the selection in the Swatches dialog, nor vice versa.

Using the pop-up in the dialog to select a palette here will, as you might expect, show swatches for

each of the colors in the palette as separate swatches. Depending on the palette you choose, the entries may have names, just hex values, or even a mixture of both. The lack of any sorting in the dialog means you're at the mercy of the order in which the colors are specified in the underlying palette file. This can lead to quite jumbled swatches – as with the SVG palette in this image.



Note in that screenshot that there are no pinned swatches next to the red X, despite me having pinned my "Not Reflex Blue" swatch previously. Pinned swatches remain

specific to the selected palette, so the one I pinned when viewing "Document Swatches" doesn't appear here, and a color pinned here won't appear when any other palette is selected. For some situations this could be useful, to prevent you accidentally using an out-of-palette swatch that you pinned in another context. But it also prevents you from creating a 'greatest hits' collection of your favourite swatches across different sources. As you might have guessed, pinning colors here also does not affect the pinned colors in the main palette below the canvas, nor the other way round.

Still, not having a way to pin a swatch across palettes is no great hardship, because as soon as you use a swatch from another palette, it will become available in the "Document Swatches" view, right? Alas, no. When you select a swatch from a predefined palette to apply it to the fill or stroke of an object, all it actually does is set the RGB color on that object – it doesn't actually create or use a document swatch. This means that the "Swatches" dialog actually serves two different purposes: it shows Inkscape swatches (i.e. Document Swatches), and it displays palettes

that just set RGB values, much like the palette at the bottom of the main window. But these are two separate notions of the word 'swatch', and there's nothing in the UI to clearly indicate this difference if you don't know about it.

There is an awkward workaround. If you apply a fill or stroke color using a palette – either from the Swatches dialog or from the bottom of the main window – it will appear as a solid fill (or stroke) in the Fill & Stroke dialog. Simply switching to the Swatches section within this dialog will create a new document swatch with the selected color – in other words, it's a mechanism to copy the RGB value of the palette color to a document swatch. You'll have to set the swatch name manually, however, as that information does not get carried over.

The Swatches dialog does offer one advantage over just using the palette on the main screen: at the bottom-left of the dialog is a button which allows you to dynamically load a palette from disk. The supported formats are 'Gimp Color Palette', 'Adobe Color Book' and 'Adobe Swatch Exchange' – so this feature might prove

## HOWTO - INKSCAPE

invaluable if you work in the sort of environment with a corporate color scheme available to download in one of these formats.

This ability to load palettes is not, however, matched with a means to create your own. It would be great if you could create a collection of Document Swatches and save it out into a supported format to load later, but the Swatches dialog lacks any way to export. It may seem that all is not lost, as Inkscape offers “GIMP Palette” as a target filetype in the Save As... dialog (and yes, there’s some inconsistency in the capitalization of GIMP within Inkscape). But, again, minor issues prevent this being a truly useful solution as the resultant file takes the swatch names from the “id” attribute, not the “inkscape:label” attribute which gets set if you provide a custom name. In my example, therefore, my GIMP Palette file contained “swatch1” rather than “Not Reflex Blue”. So while you can export the colors of your swatches, you’ll have to manually modify the resultant file with a text editor if you want to preserve the names of the colors.

Even worse than this, exporting

a palette in this way fails to put an entry into the ‘Name:’ field of the file – without which the Swatches dialog refuses to load it. So even if you’re happy to lose or re-create your swatch names, you’ll still have to edit the exported file if you want to be able to load it again later. Thankfully the format of a GIMP palette file is pretty straightforward, so you should be able to work out how to edit it to add a palette name and swatch names, if you want to pursue this approach.

The third way I suggested swatches might be useful is “to be able to change the color of multiple objects simultaneously”. What I mean by this is that document swatches effectively act as variables in an Inkscape document. If you change the color of a document swatch, then all objects using it will immediately update to the same color.

Consider, for example, creating a mock-up of a user interface which has a specific accent color. By using a document swatch, you can quickly change the accent color for every element in the mock-up in order to produce differently themed examples of the UI. Or think of a

“Congratulations” banner where the winning team is not yet known. You can create the entire design using a document swatch, and just update it to the right color once the results are in. There are lots of ways in which it can be useful to ensure that multiple objects all use the same color, and all update to a change in that color at once.

But that brings me onto the disadvantages of swatches. Quite frankly they serve too many purposes, but do none of them particularly well. If you create your own document swatches, it can be really useful to be able to trivially change them and have every object update. But that can also be dangerous when you need to set a very specific color, and want to avoid the possibility of an accidental update. Yet there’s no way to lock a document swatch against further editing to help avoid this problem.

One solution might be to create your own palette of fixed colors but, as we’ve seen, Inkscape doesn’t make that an easy task to achieve. And with no way to pin swatches across multiple palettes, you might end up having to ‘copy’ your colors back to Document Swatches, which

brings back the same potential editing issues.

Then there’s the limited way in which Document Swatches can be used. They can be set on the fill or stroke of an object, but that’s all. You can’t use them to create named stops in a gradient, or when picking the color of a pattern, grid or guideline. Realistically these may not be practical limitations, but they do reflect the fact that a swatch is not a “real” color in the sense that an RGB value is within Inkscape. Instead they’re a slightly confused way to create a named variable to use as a flat color, and really not much more.

When looked at in that light, it’s not surprising that I don’t use them much.



**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

IN MY ZOOM CALL THE INTERVIEWER  
ASKED ABOUT MY BACKGROUND

DUH, IT'S THE ARCTIC. ONE  
WOULD THINK ALL THE SNOW  
WOULD GIVE IT AWAY ...





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# BODHI CORNER

Written by Moss Bliss

BACK NEXT MONTH



**Moss** has been using Linux since 2002, and has been co-host of mintCast since Oct 2018, Distrohoppers Digest from 2019 to 2024, and host of Full Circle Weekly News since April 2021. He is retired but works as a substitute teacher, and lives in Eastern Tennessee.



# UBPORTS DEVICES

Written by UBports Team

BACK NEXT MONTH



# The Daily Waddle

I'M SELLING MY MENTHOL CANDY  
COLLECTION

I'LL TAKE THEM AS LONG  
AS THEY ARE IN 'MINT'  
CONDITION...

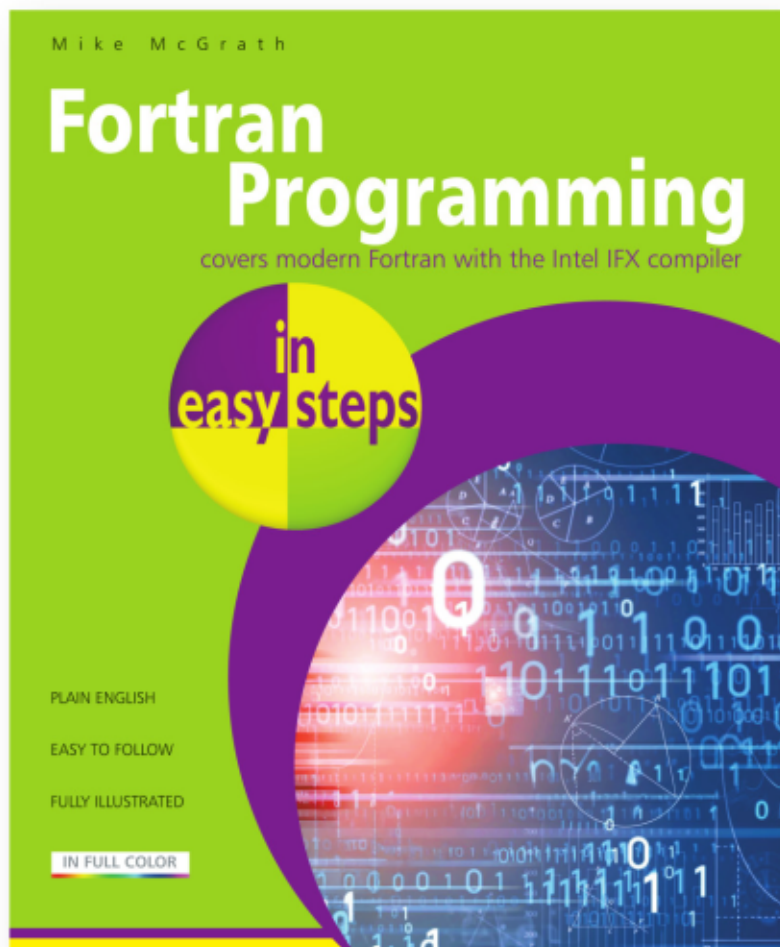




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# MY OPINION

Written by Erik

BACK NEXT MONTH



# HOW-TO

Written by Ronnie Tucker

## 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).**

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- Images should be JPG, no wider than 1200 pixels, and use low compression.

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

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## TRANSLATIONS

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## REVIEWS

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**When reviewing games/applications please state clearly:**

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

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**When reviewing hardware please state clearly:**

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- 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 25.04

Ubuntu Budgie 25.04 flew in on 17 April 2025, the same day as the other Ubuntu flavors. This is the second of three interim releases in this development cycle that will lead to Ubuntu Budgie 26.04 LTS, the next long term support version, expected out in April 2026.

This is the distribution's 19th release and, as it is an interim release, is supported for just nine months, until January 2026.

The previous release, Ubuntu Budgie 24.10, brought a lot of new things to start off this development cycle, but this release has fewer changes included. This probably indicates that most of the smaller changes planned for this cycle have been implemented, but there is one bigger project underway: the transition to a Wayland display server.

### INSTALLATION

I downloaded the ISO file for Ubuntu Budgie 25.04 as a bit torrent from the official website using Transmission and then did a

command line SHA256 sum check on it to make sure it was a good download. This last check only takes a minute to do and is a strongly recommended step to avoid later problems with a potentially corrupted file.

The ISO file download size was 3.5 GB which is 100 MB bigger than the last release, Ubuntu Budgie 24.10.

I dropped the ISO file onto a USB stick equipped with Ventoy 1.1.05 and booted it up for testing. Ubuntu Budgie is officially

supported by Ventoy so it worked just fine.

### SYSTEM REQUIREMENTS

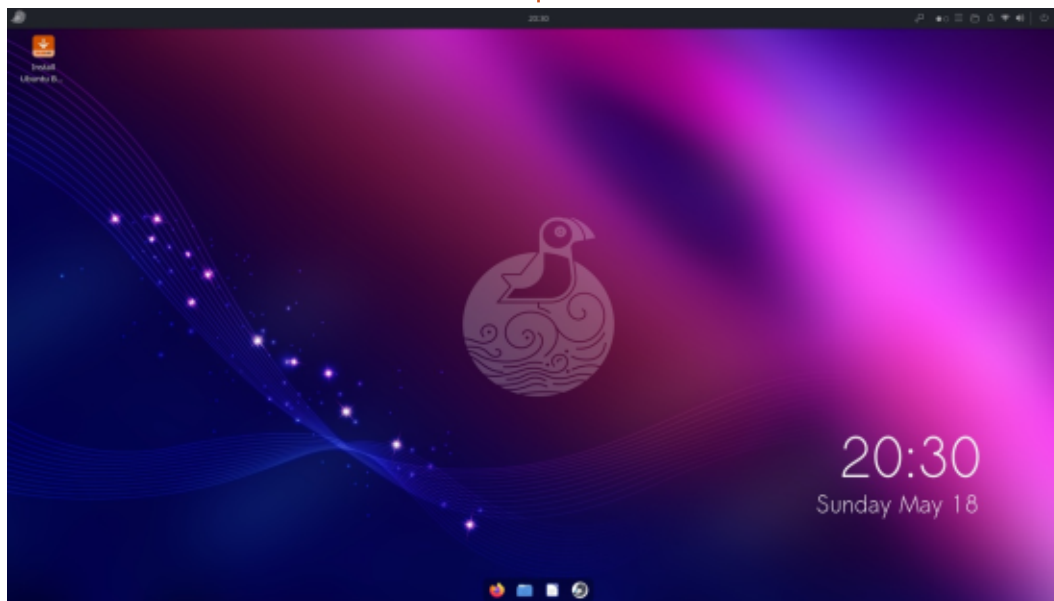
The recommended minimum system requirements for Ubuntu Budgie 25.04 have not changed since the last release:

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

### NEW

As noted, the pace of changes has diminished with this release. This is actually a normal development pattern as, in an ideal world, the developers would include as many changes planned as possible in the first release of the cycle, fewer in the second, refine everything in the third and then put out an LTS version with everything all well-tested and working right.

The larger developer goal this cycle has been to move Ubuntu Budgie from the legacy X11 display server to Wayland, which is a major undertaking. For instance, as part of this transition the last release introduced a new budgie-desktop dock to replace the formerly used Plank dock. Plank has been a longstanding feature of Ubuntu Budgie, but it is X11-only and replacing it was a necessary step towards Wayland compatibility. The intention is that the next release, Ubuntu Budgie 25.10, will introduce Budgie Desktop version 10.10 and it will be a Wayland-only release. For 25.04, the developers are providing a separate Wayland personal package archive (PPA) for



# REVIEW

user testing and feedback. I'll have a look at how this planned Wayland implementation rolls out in the next release, Ubuntu Budgie 25.10, due on 9 October, 2025.

This 25.04 release uses the interim Budgie Desktop version 10.9.2-8 which is still X11 compatible, but addresses some bugs and window manager crashes.

This release also has some applet and mini-app updated translations and improvements to the default Pocillo theme, including to the Snap-based version. There are also new Snap packages for the icon theme.

As has been the case for the last

few releases, the designers have been putting out a new wallpaper with each release marking the release's code name. For this "Plucky Puffin" release, a puffin has been added to the standard spacey-looking Budgie wallpaper ("ubuntu\_budgie\_wallpaper1", which has been in use since Ubuntu Budgie 19.04) to create the new 25.04 default wallpaper. This release has 15 wallpapers provided, down from 17 in the last release.

As with all the Ubuntu 25.04 flavors, the Linux kernel has been updated to version 6.14 and the initialization system is now systemd 257.4. Mainstream Ubuntu introduced systemd into the ecosystem from its parent

distribution, Debian, ten years ago starting with Ubuntu 15.04. Since Ubuntu Budgie is based on Ubuntu, it has been using systemd since its first release, Ubuntu Budgie 16.04, with no issues noted.

## SETTINGS

New in this release is the inclusion of Bibata cursors as a user settings option. These can be selected in the Budgie Desktop Settings under cursors. Do Budgie users fuss over cursors?

As is always the case with Ubuntu Budgie, the settings are still widely scattered over many places and are quite confusing for new

users to find. I assume experienced Budgie users either are used to it by now or have a checklist. This is the one area where Ubuntu Budgie could really use some serious reorganization. Putting the settings all in one place would make life a lot easier.

For the uninitiated here is where everything is:

Budgie Desktop Settings is where you find the window themes, oddly under Style - Widgets. There are 14 window themes provided with the default still Pocillo-dark, a black, brooding color scheme. There are also some nice optional lighter themes provided, including Pocillo-light which is quite bright



and cheerful. You can select styling preferences (light or dark); ten icon styles, with Pocillo as the default; nine cursor styles (including the six new Bibata cursors) and choose from four notification screen positions, one in each corner, with top right as default.

Budgie Makeovers & Layouts is where you find complete one button wallpaper, window theme and icon packages, with ten combinations to choose from. This time around there are seven combinations actually installed, with the remaining three available as downloads. The last release had only three which might account for some of the ISO file size increase. There are also eight desktop

layouts, each of which includes launchers and menus that mimic most common desktop set-ups. The choices are Ubuntu Budgie, Classic Ubuntu Budgie, Redmond, Eleven, Chrome, Traditional Budgie, The One and Cupertino.

Budgie Extras is where the desktop applets are hidden away. In this release, there are 37 applets included, ten more than in the last one. These applets add features such as calendars, weather and other functionality to the desktop. Confusingly, if you were using Kubuntu these would be called "widgets". It seems that even within the Ubuntu universe we do not yet speak a common language.

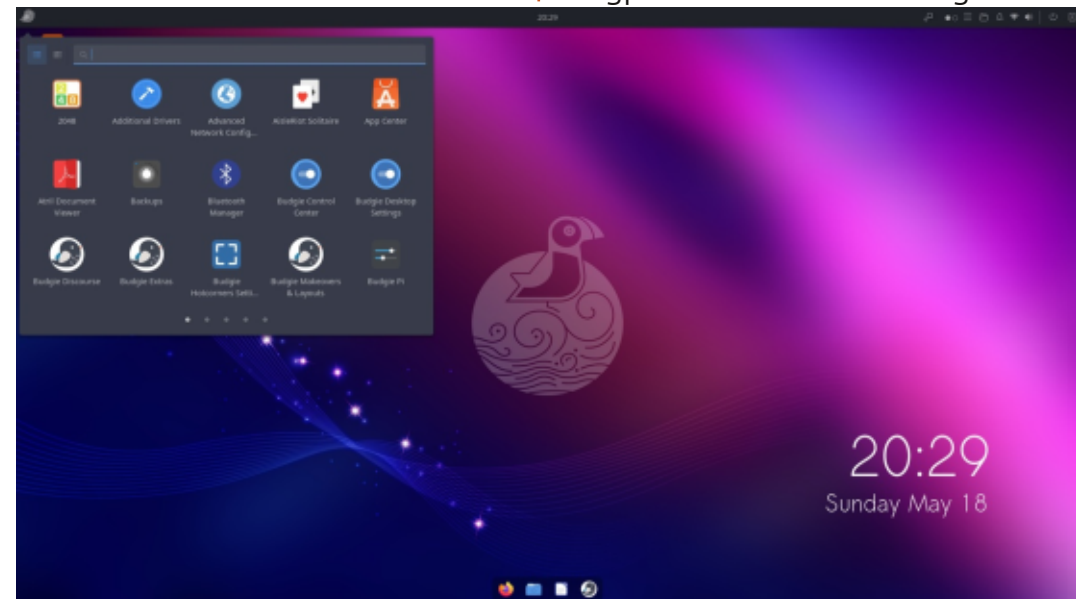
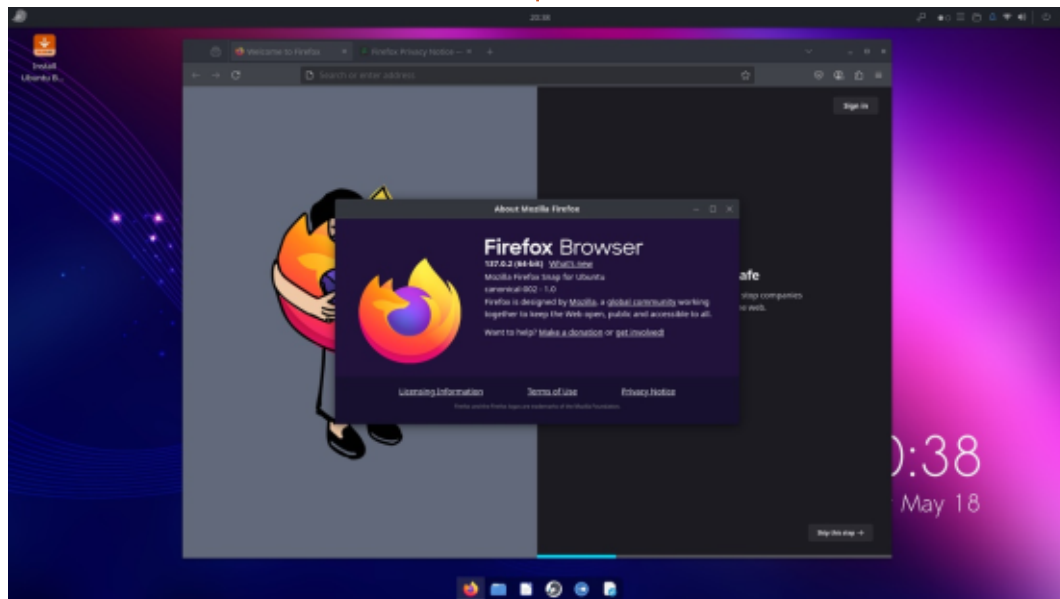
The Budgie Control Center is a modified version of GNOME Settings for configuring such items as WiFi, wallpaper, sound and power settings.

As in the past, the Budgie main menu can be set to either show applications as tiles in alphanumerical order or as a list of icons by category. Unlike on the Cinnamon and Xfce desktops, the Budgie menu cannot be resized, but it does include "search" capabilities.

## APPLICATIONS

Some of the applications included with Ubuntu Budgie 25.04 are:

Archive Manager (File Roller) 44.5 archiver  
Atril 1.26.2 PDF viewer\*  
Budgie Screenshot Applet screenshot tool  
CUPS 2.4.12 printing system  
Deja Dup 45.2 back-up tool\*  
Document Scanner (Simple Scan) 46.0 optical scanner\*  
Drawing 1.0.2 image editor\*  
Firefox 137.0.2 web browser\*\*  
Goodvibes 0.8.1 internet radio  
GNOME Disks 46.1 disk manager\*  
Gparted 1.6.0 partition editor\*  
Gpodder 3.11.3 podcast player\*  
gThumb 3.12.7 image viewer  
Guvvview 2.2.1 webcam application  
LibreOffice 25.2.2.2 office suite  
Lollypop 1.4.41 music player  
Magpie 0.9.3 window manager\*



# REVIEW

Mate Calculator 1.26.0 calculator\*  
Mate System Monitor 1.26.3 system resource monitor\*  
Nemo 6.4.5 file manager\*  
Parole 4.18.2 movie player  
Pipewire 1.2.7 audio controller  
Systemd 257.4 init system  
Text Editor (gedit) 48.1 text editor  
Transmission 4.0.6 bit torrent client\*  
Ubuntu App Center 1.0.0 package management system\*\*  
Xfce4 Terminal 1.1.4 terminal emulator

\* indicates same application version as used in Ubuntu Budgie 24.10  
\*\* supplied as a snap, so version depends on the upstream package manager

This release brings only one change to the default application list. The Thunderbird email client, previously supplied as Snap package, has been removed and has not been replaced with a new email application. Instead, on installation the user is given a choice of email clients to install, if needed, from a list of: Astroidmail, Claws, Evolution, Geary, Kontact and the Snap version of Thunderbird. I give credit to the Ubuntu Budgie developers for explaining their rationale in the release

announcement: "with many users now using webmail we have decided the choice of email clients should rightly be put into our community hands". It is always great when developers explain their decisions.

Ubuntu Budgie is actually a little bit late to this email client deletion party. Lubuntu and Ubuntu Unity stopped shipping default email clients a while back, starting with Lubuntu 22.04 LTS and Ubuntu Unity 24.04 LTS respectively. You could argue that because Ubuntu has shipped a minimal installation by default since Ubuntu 23.10 that it too has removed the email client, although the optional "full installation" still includes the Thunderbird Snap package. It will be interesting to see if the remaining Ubuntu flavors follow suit over time.

In the last release, Ubuntu Budgie 24.10, the Tilix terminal emulator was swapped out for the Xfce4 Terminal, from the Xfce desktop and this remains the case in 25.04.

Ubuntu Budgie 25.04 continues to use the Cinnamon desktop's Nemo file manager, which has now

been updated to version 6.4.5. Nemo is a very functional file manager, with lots of user customization options, but in this implementation it has no integral bulk file renaming so installing a stand-alone bulk file renamer, like GPRename, is a good idea. Here is a tip: by default, in its Ubuntu Budgie implementation, the Nemo file manager does not display its menu bar making it impossible to customize. Hitting the "alt" key will show the menu bar which then can be selected to stay permanently displayed at View - Menubar.

Ubuntu Budgie 25.04 includes the LibreOffice 25.2.2.2 office suite, complete except for LibreOffice Base, the database program. While probably the least-used part of LibreOffice, it can be installed if needed.

## CONCLUSIONS

Ubuntu Budgie 25.04 is a solid release which adds a few new features. The biggest change in this development cycle is still in the future: the move from the X11 display server to Wayland, expected to appear in the next release, Ubuntu Budgie 25.10, due out on 9

October 2025. If all goes to plan, most users should not notice much difference except perhaps the elimination of the odd screen flicker. This should leave the subsequent LTS version, Ubuntu Budgie 26.04 LTS due out in April 2026, as a stable and fully tested Wayland release.

Ubuntu Budgie continues to appeal to users looking for a distribution with a classic-style menu system and a desktop dock. Its only real minus is its widely scattered and confusing user settings.

## 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 25.04

Lots of people enjoy mystery stories, the type of novel where as a reader you try to figure out what's going on before the book ends and the author reveals all. I even admit to reading some novels like that myself from time to time.

But recently, I ran into a bigger mystery. The release announcement for Ubuntu Unity 25.04 presented a real conundrum. It has some bug details, how-to-upgrade instructions, lots of “credits” and “thank-yous” and even a plug for the official merchandise shop (did you know they are selling towels now? Wow...) but no information on what is actually new in this release. That seemed odd. It was a mystery which begged solving through old fashioned gumshoe sleuthing. Time to hit the streets.

Ubuntu Unity 25.04 is the middle one of three interim releases which make up this development cycle. That is a cycle which will eventually result in the next long term support (LTS) version, Ubuntu Unity 26.04 LTS,

due out in April 2026.

Arriving on 17 April 2025, Ubuntu Unity 25.04 is this distribution's 11th release. As it is an interim release, it is supported for nine months, until January 2026.

The last two releases, 24.04 LTS and 24.10, introduced very little that was new. That seemed to indicate that as of 2024 at least, the developers had Ubuntu Unity just about where they wanted it. Much of their effort in that year was reported to be on Ubuntu Lomiri, a

test and development project using the Lomiri (Unity 8) desktop in an attempt to get Ubuntu Unity ready for the switch to a Wayland display server environment from its current X11.

But what about Ubuntu Unity 25.04? I had to find out the hard way....

## INSTALLATION

I downloaded the Ubuntu Unity 25.04 ISO file from the official source via BitTorrent, using Transmission. With the file

downloaded, I ran the usual command line SHA256 sum check to verify it was good... nothing suspicious there.

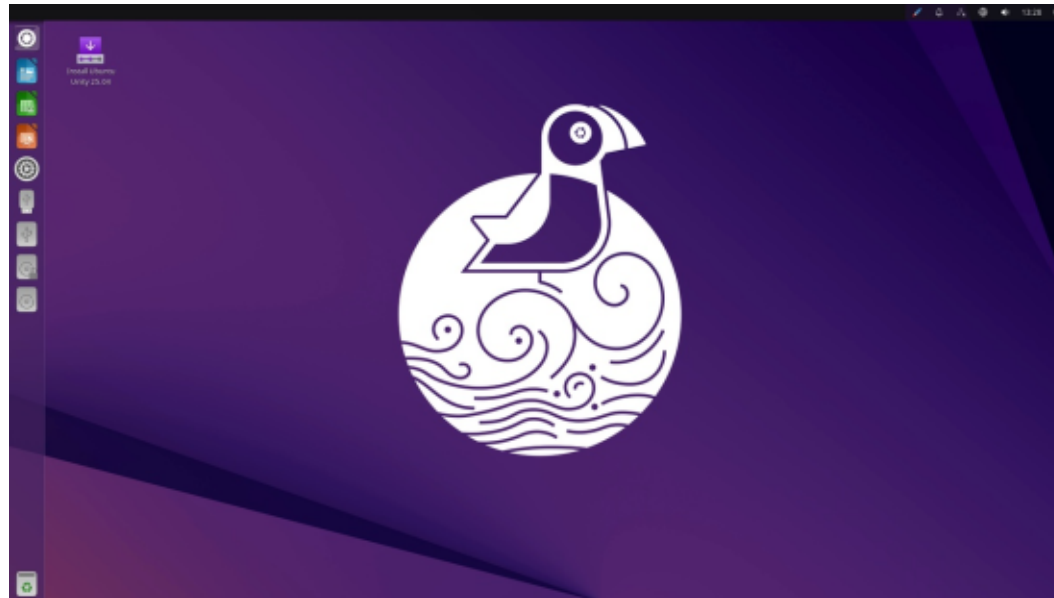
I rang up a live session, using a USB stick equipped with Ventoy 1.1.05. Even though it is still not officially listed as supported by Ventoy, being Ubuntu-based it works fine. From experience, that was expected.

The Ubuntu Unity 25.04 ISO file is a 3.8 GB download, 100 MB bigger than the last release. Was that from new features or just inherited from Ubuntu backend bloat? The mystery deepened.

## SYSTEM REQUIREMENTS

Ubuntu Unity does not specify any system requirements and never has done, but it is probably safe to assume that it is the same as Ubuntu 25.04, a minimum of:

2 GHz dual core processor  
4 GB of RAM



As I noted, the release announcement has nothing to say about what is new. Was this just an oversight or are they hiding something? I got deep into the menus, settings, and applications, running comparisons against 24.10.

What I discovered was that not much has changed.

I did find some new things inherited from Ubuntu upstream. As with all the other Ubuntu 25.04 flavors, Ubuntu Unity 25.04 uses the 6.14 version of the Linux kernel and that includes new hardware support. The initialization system has also been upgraded to systemd

257.4. That was no surprise, though, as Ubuntu Unity has been using systemd since its inception with no noted issues.

## SETTINGS

I found no changes in the settings locations or the offerings there. Ubuntu Unity continues to have its settings spread out between the regular settings menu, the panel brush icon and the included Unity Tweak Tool. Once you find them all, they work just fine.

The regular settings menu provides only two window themes, Yaru and Yaru-dark, while the Unity

Tweak Tool offers a choice of four window themes: Ambiance, Radiance, Yaru and Yaru-dark, plus 37 icon themes and seven cursor styles. The settings menu has 16 accent colors and the brush icon has ten. Nothing new there.

I did find that there is new wallpaper. Not totally unexpected, as this release is code named "Plucky Puffin", it is a fresh and very dark purple, puffin-themed wallpaper. As well, there are 14 other wallpapers, nine of which have puffins on them. All of them are quite well rendered, in fact they are some of Ubuntu Unity's best wallpapers to date.

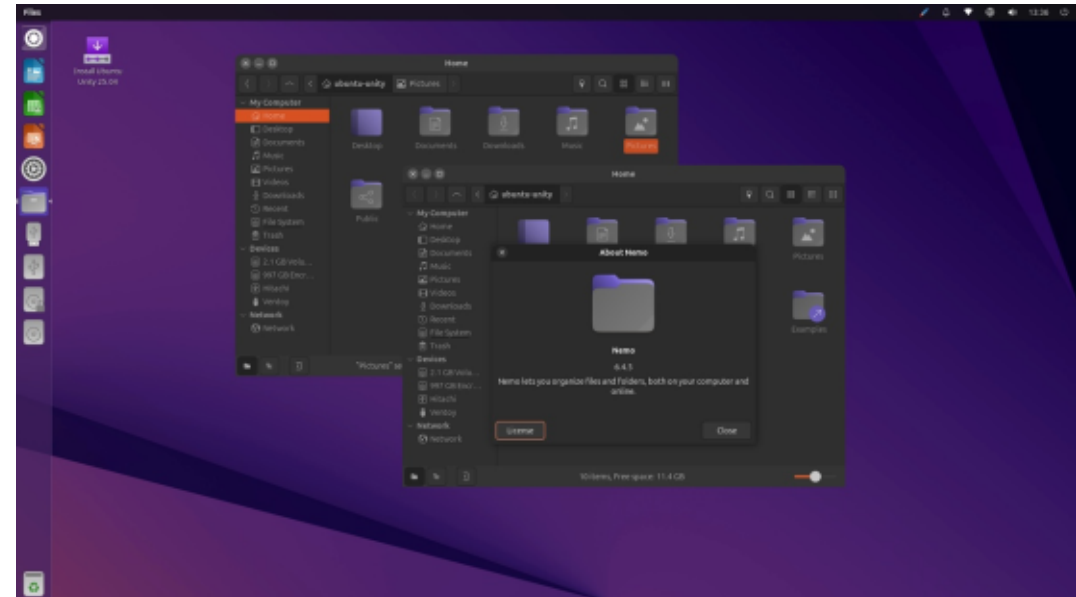
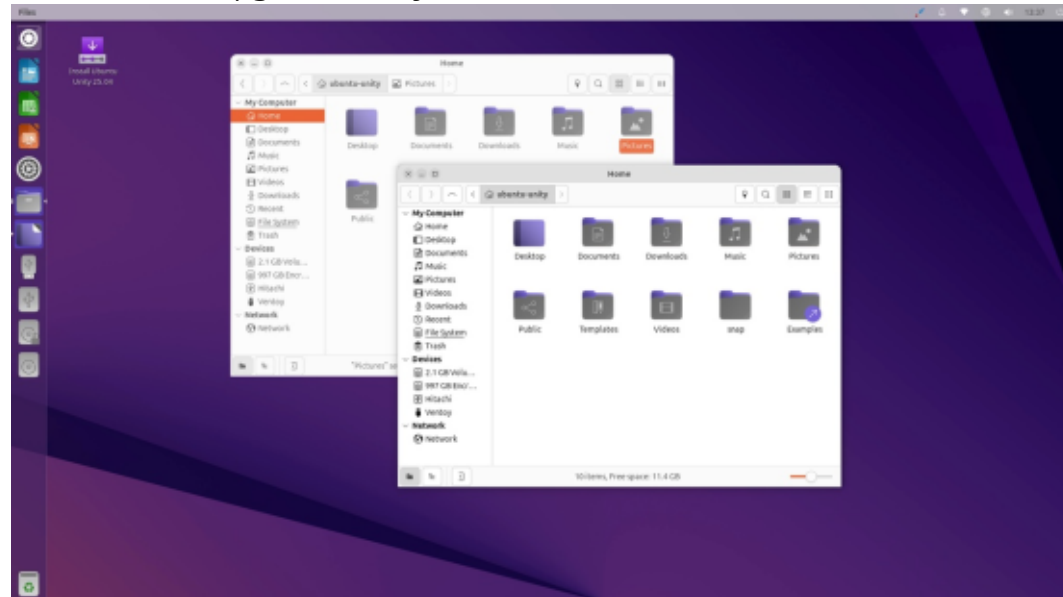
While the mainstream Ubuntu

has only very limited theme and color choices, Ubuntu Unity provides its users with a wide range of customization options.

## APPLICATIONS

Some of the applications included with Ubuntu Unity 25.04 are:

- Archive Manager (File Roller) 44.5 file archiver
- Atril 1.26.2 PDF viewer\*
- Cheese 44.1 webcam application\*
- CUPS 2.4.12 printing system
- Document Scanner (Simple Scan) 46.0 optical scanner\*
- Firefox 137.0.2 web browser\*\*
- GDebi 0.9.5.8 .deb package installer



# REVIEW

Gnome Disks 46.1 disk manager\*  
Gnome Screenshot 41.0 screenshot tool\*  
Gnome Terminal 3.56.0 terminal emulator  
Gparted 1.6.0 partition editor  
Image Viewer (Eye of MATE) 1.26.1 image viewer\*  
LibreOffice 25.2.2.2 office suite  
Mate Calculator 1.26.0 calculator\*  
Nemo 6.4.5 file manager  
Pluma 1.26.1 text editor\*  
PulseAudio 17.0 audio controller  
Remmina 1.4.39 remote desktop client  
Rhythmbox 3.4.8 music player  
Shotwell 0.32.10 photo manager  
Stacer 1.1.0 system monitor\*  
Startup Disk Creator 0.4.1 USB ISO writer  
Synaptic 0.91.5 package

management system  
Systemd 257.4 init system  
Transmission 4.0.6 bit torrent client\*  
Unity 7.7.0 interface\*  
Unity Tweak Tool 0.0.7 settings manager\*  
VLC 3.0.21 media player\*  
XTerm 397-1 terminal emulator

\* indicates same application version as used in Ubuntu Unity 24.10  
\*\* supplied as a snap, so version depends on the upstream package manager

Some of the default applications have received updated versions, although the mix of applications itself has not changed.

The file manager remains the Cinnamon desktop's Nemo, although updated to version 6.4.5. Nemo is a fork of Nautilus (GNOME Files) from version 3.4. That was before version 3.6 removed a lot of user options and functionality from Nautilus. Nemo works quite well and has a wide choice of user customization settings, but still lacks bulk file renaming in this implementation so installing a stand-alone bulk file renamer like GPRename is a good idea.

In this release, by default Ubuntu Unity's Nemo file manager does not display the menu bar, making it impossible to customize it like that. Hitting "alt+v" displays the Nemo menu on the top panel as a

"global menu", which then can be selected to stay permanently displayed at View - Menubar.

LibreOffice 25.2.2.2 is supplied complete, except for LibreOffice Base, the database application, which can be installed from the Ubuntu repositories if needed.

The applications provided are pretty complete for most desktop user's needs.

## CONCLUSIONS

So...I think this mystery is solved. What the release announcement is really telling us is that, even though Ubuntu Unity 25.04 is a pretty



## REVIEW

flawless release with a few new puffin wallpapers and some updated application versions, it has very little else new that is worth mentioning, so they didn't. Users may want to wait for the LTS to upgrade, unless they have new hardware requiring a new Linux kernel.

We will see what turns up in the next release, Ubuntu Unity 25.10, due out on 09 October 2025. It will

be the last interim release before the next LTS appears in April, 2026.

And as for when Wayland will land in Ubuntu Unity, well that is still a mystery....

### EXTERNAL LINKS

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



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



# REVIEW

Written by Adam Hunt

## Pop!\_OS 24.04 Alpha 7

It has been more than three years since Denver, Colorado-based computer builder System76 embarked on the ambitious project of building a whole new Linux desktop from scratch and, with their seventh alpha release out on 24 April, 2025, I thought it was time for a detailed look at their progress.

I previously used the last release, Pop!\_OS, 22.04 LTS and reviewed it in FCM#198, so I was keen to see how this new alpha compared.

### BACKGROUND

Pop!\_OS had its first 17.10 release on 27 October, 2017. Prior to that, the company had shipped its computers with Ubuntu and were quite happy with that distribution and its GNOME 2, and later Unity, interface. But Ubuntu 17.04 Zesty Zapus marked the end of Unity and Ubuntu's move to the modified GNOME 3 interface still in use today. System76 was not pleased with that move and decided to create their own modified GNOME interface which

grew into COSMIC by the seventh release, version 20.10. COSMIC is a backronym for Computer Operating System Main Interface Components.

Being based on Ubuntu, Pop!\_OS followed Ubuntu's release cycle, with fresh versions every six months, in April and October, and long term support (LTS) releases every two years in April of the even-numbered years.

As a desktop, the original COSMIC worked well and was aimed at users working in science,

aerospace, medicine and robotics, rather than general enterprise use, like Ubuntu. New features were introduced with each release, with almost all of the development being done in-house.

The last release of that series was Pop!\_OS 22.04 LTS, out on 25 April, 2022. There have been no further releases to free-up developer time for the new, planned desktop, but Pop!\_OS 22.04 LTS has remained supported and, in fact, has incorporated a lot of updates over time, almost like a rolling release. While it works well

enough, and the interface design had good user acceptance, it required quite a bit of developer maintenance work, had some stability and RAM consumption issues, and was a bit of a "kludge", running on the legacy X11 display server. A decision was made to take the basic COSMIC design concept and write a whole new fresh version from scratch in the Rust programming language, using the new Iced toolkit and a modern Wayland display server.

The developer team at System76 set to work, including creating new core applications for the new desktop with a new file manager, media player, text editor, screenshot tool, settings manager, terminal emulator, and software center. Many other desktop components were also built, all using Rust, including a new panel and dock. It was called COSMIC DE (DE = "desktop environment") and based on April 2024's Ubuntu 24.04 LTS release.

After having been announced in April 2022, the first alpha version



# REVIEW

arrived on 26 August, 2024. New alpha versions have been released almost every month for user testing, bug reports and feedback. There were also company blog posts, conference updates and press releases to keep up the momentum. The Linux press has kept notice, too.

Because the whole project is all open development and free software, several other Linux distributions adopted the COSMIC DE desktop which brought more outside feedback and contributions, illustrating the real strength of free software! There is now a Fedora COSMIC Spin, plus Fedora COSMIC Atomic. Other distributions offering it include

NixOS, Arch, openSUSE, Aeryn OS and CachyOS, plus Redox OS uses some COSMIC components.

People ask if there will be an Ubuntu version? There already is, Pop!\_OS itself is the COSMIC DE on top of Ubuntu as a base!

At the Linux Foundation's Open Source Summit on 27 June, 2025, System76 announced that a beta release of Pop!\_OS 24.04 is coming "soon" and the stable version will be out "later this year".

It is currently unclear whether there will be any further alpha versions or more than one beta before the stable release. It is likely that there will be a new Pop!\_OS

26.04 LTS release in the spring of 2026, too.

## GETTING Pop!\_OS 24.04 ALPHA 7

For now, each alpha version in succession has been available on the System76 website at <https://system76.com/cosmic/>.

Pop!\_OS 24.04 Alpha 7 can be run on almost any Intel or AMD computer, not just System76 hardware.

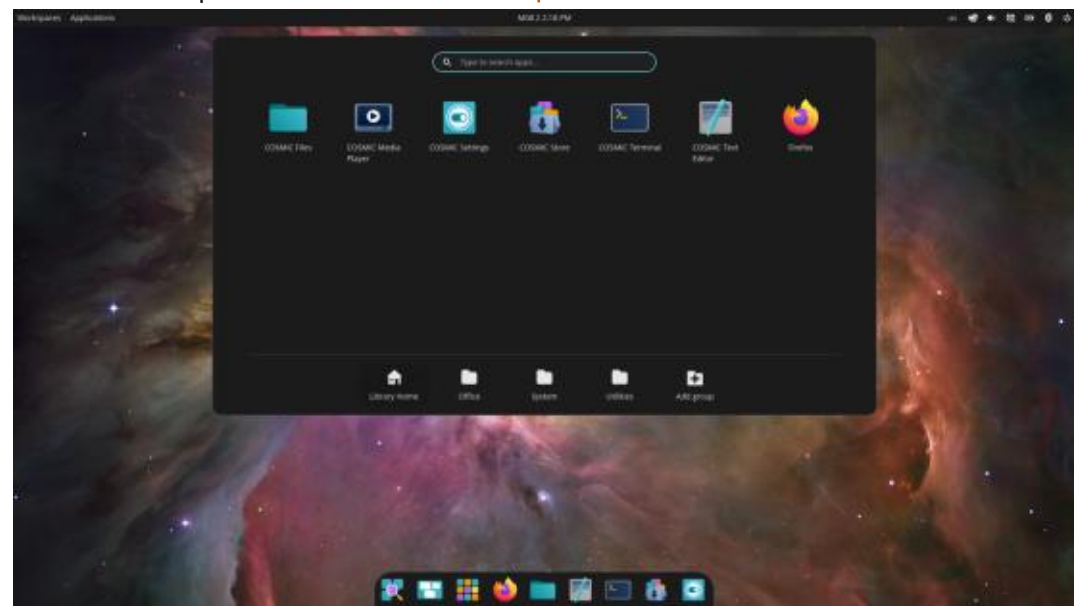
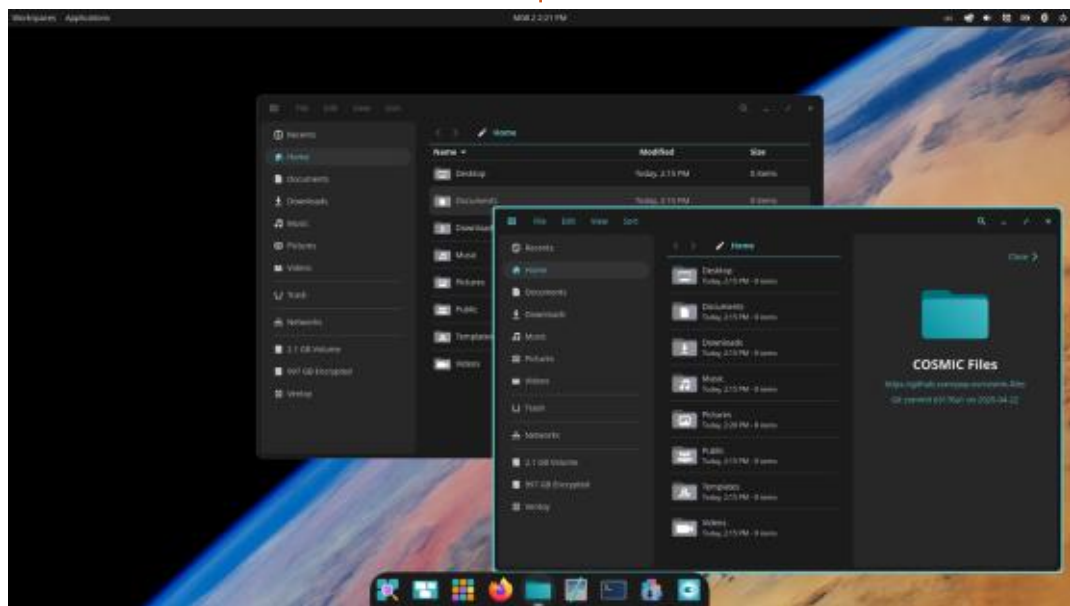
There are two downloads provided, both only by https, as no BitTorrents are available. One is for Intel or AMD processors and the

second for NVIDIA graphics-equipped computers. SHA256 sums are provided, though, and I did a command-line check to make sure the download I got was good.

Pop!\_OS 24.04 Alpha 7 is a relatively lightweight download at just 2.9 GB. This compares to Ubuntu 24.04 LTS (upon which it is based) which was 6.1 GB. That makes Pop!\_OS only 48% the size of Ubuntu. There are some reasons for that, including the number of applications included, as I detail below.

## INSTALLING

I dropped the ISO file onto a USB



# REVIEW

stick equipped with Ventoy 1.1.05 and booted it up for testing. Pop!\_OS is officially listed as supported by Ventoy and it worked just fine.

## SYSTEM REQUIREMENTS

There are no listed system requirements for Pop!\_OS 24.04 Alpha 7, but I can note that it is not light on RAM usage.

One of my previous complaints when I ran Pop!\_OS 22.04 LTS was that its idle RAM with a fresh boot was 3.9 GB. Pop!\_OS 24.04 Alpha 7's idle RAM is 4.3 GB, which is a bit higher yet! In comparison, I noted Ubuntu 25.04 and Ubuntu Cinnamon 25.04 both idling at 2.3 GB, while also running on Ventoy.

In my testing with a number of applications open, I reached 10.6 GB of RAM in use so 16 GB would be the minimum recommended RAM and 32 GB would be better. A similar set of applications on Ubuntu Cinnamon 24.04 LTS uses about the same 10 GB, so POP!\_OS may not actually suffer much from excess RAM consumption in operational use, despite its higher idle.

## TRYING OUT POP!\_OS 24.04 ALPHA 7

There is so much new in 24.04 Alpha 7 compared to Pop!\_OS 22.04 LTS that it is hard to catalog it all. The new COSMIC DE actually looks and works much like the old interface did, but with many refinements added.

The launcher (Super key) is a small, centered pop-up window where you can search for installed applications or any documents, plus it shows all the applications which are currently open. The applications menu (Super+A) allows browsing for installed applications while the workspaces menu (Super+W) shows

everything that is open on a spread out grid, plus the workspaces in use. By default, two workspaces are shown with more added as needed, always one more than in use. Workspaces can also be fixed in number in the settings.

One of my previous issues using 22.04 LTS was that with text scaling increased, some of the application menus, particularly Firefox spellchecking, often overlapped the top panel, so you could not select the top menu item. The old panel could not be moved or hidden, either. The new Rust-based COSMIC Panel solves this neatly. First off, the menus no longer overlap the panel on this desktop, but also it can be set to any screen edge or to

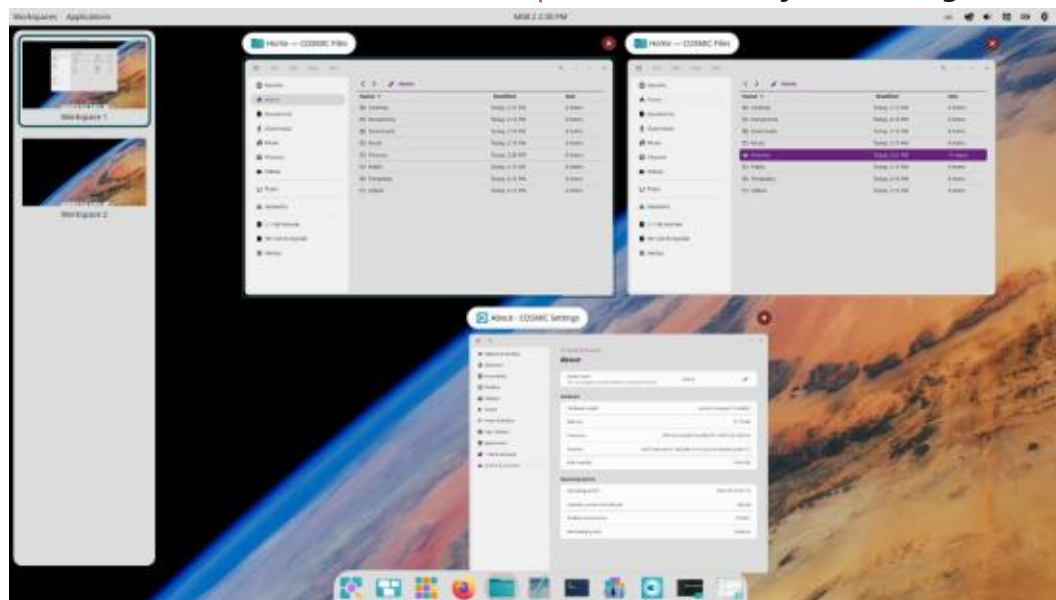
hide when not in use. Problem solved.

Presently the panel's clock still needs some work. It keeps time fine, but its date display is quite odd ("M08 03" for August 3rd for instance) and so needs some additional formatting options.

Another fixed item is that the "alt-tab" application switcher that every Linux distribution has, has been completely re-written. In 22.04, it did not work well, bringing up multiple layers to select from and requiring two hands to use it, but this new iteration is much more functional. It looks and works much more like the launcher.

Also new is that 24.04 runs on a Wayland display server. Most modern Linux applications already run on Wayland and Ubuntu has used it for a number of releases already. Older X11-only applications can still be run using the included XWayland compatibility layer and it works fine. The settings give scaling options for any X11 applications.

Window tiling is handled completely differently on 24.04 than in 22.04, and is by default "off". Tiling can be enabled from



the display control on the panel. In testing, as in the past, I found that while tiling may be useful on a large screen or a multi-monitor setup, it is not really helpful on your average small laptop screen if you have more than two applications open at a time.

There is a new desktop scaling feature designed around Wayland that works really well. You can choose any incremental scaling level you like and even adjust it to the nearest percentage. This illustrates the advantage of embracing the newest Linux technology available. Pop!\_OS is definitely future-oriented.

In my testing, the overall system stability was good, with only a couple of minor feature crashes, which is not entirely unexpected in an alpha release. Hopefully these will be taken care of by the time the stable release comes out.

## SETTINGS

From its inception, Pop!\_OS has always been about maximizing user choices and the new COSMIC desktop takes that to a higher level than almost any other Linux

desktop, with the possible exception of KDE Plasma.

In Pop!\_OS 24.04, most of the settings are now contained in the new COSMIC Settings manager. That makes them neatly organized and easy to find. A few items are hidden away in the panel icon right-click menus, but are easy enough to find there.

The settings provided allow a huge range of customization for almost anything imaginable on the desktop including turning off the dock and removing any item on the panel, all which are provided as individual applets. The dock can also be reconfigured, including placing it on any screen edge,

changing its color, opacity, height, and shrinking or expanding it to the screen edge.

There are only two window themes provided, light and dark, but that should be enough to keep most users happy. There are also nine highlight color schemes for each of the light and dark themes. These not only provide selection highlighting in application windows, but also frame the active window (the so-called "active hint"), which is helpful to identify it. This feature does give the desktop a sort of neo-futurist "spacey" feel too. Custom themes can also be created, saved, exported, and shared.

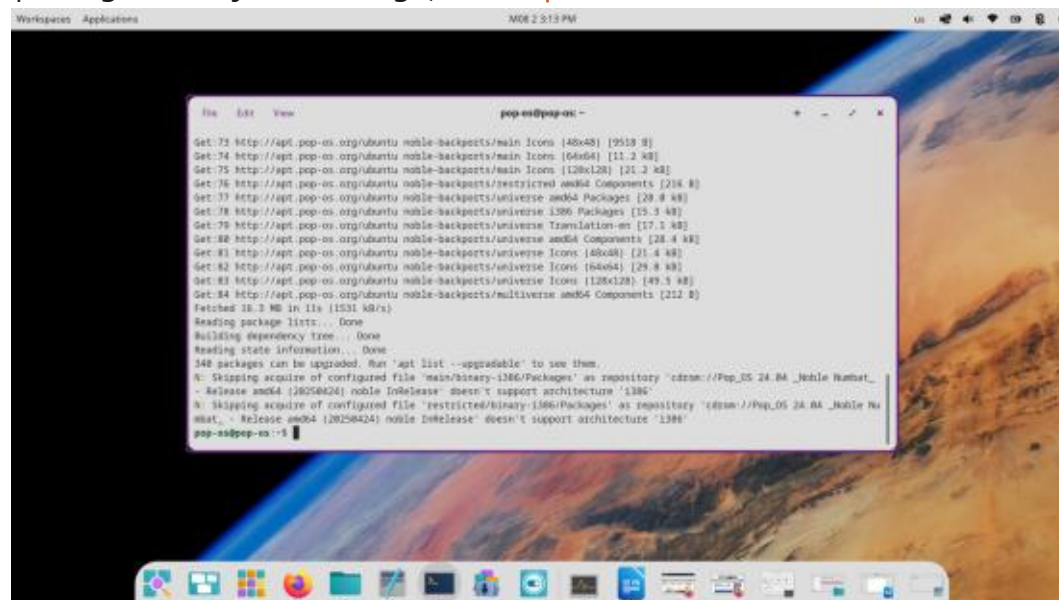
I think most users will be

impressed with the wide range of user settings provided and there are still more to come before the stable version is released. They really do make it easy to customize Pop!\_OS and make the COSMIC desktop truly your own.

## APPLICATIONS

Some of the applications included with Pop!\_OS 24.04 Alpha 7 are:

- Archive Manager (file-roller) 44.3 file archiver
- COSMIC Files 0.1.0 file manager
- COSMIC Media Player 0.1.0 media player
- COSMIC Screenshot 0.1.0 screenshot utility
- COSMIC Store 0.1.0 package management system
- COSMIC Terminal 0.1.0 terminal emulator
- COSMIC Text Editor 0.1.0 text editor
- CUPS 2.4.7 printing system
- Firefox 137.0.2 web browser
- GNOME Disks 46.0 disk manager
- GNOME Disks Usage Analyzer (baobab) 46.0 disk manager
- GNOME Document Scanner (simple-scan) 46.0 optical scanner
- GNOME Document Viewer (evince) 46.3 PDF viewer



GNOME Image Viewer (Eye of Gnome) 45.3 image viewer  
GNOME System Monitor 46.0 system monitor  
Gparted 1.5.0 partition editor  
LibreOffice 24.2.7.2 office suite, less LibreOffice Base  
PipeWire 1.2.7 audio controller  
Popsicle 1.3.3 USB writer  
Systemd 255.4 init system  
Thunderbird 128.9.2 ESR email client  
Wget 1.21.4 command line webpage downloader

Package management, including application installation and removal, can be done from the COSMIC Store which is simple to use. It can also be done with APT from the command-line. Pop!\_OS has its own set of repositories, which mirror those of Ubuntu.

Support for Snap packages is available, but not installed by default. Both the included Firefox and Thunderbird are from Mozilla's binaries rather than Snaps as used on Ubuntu. Flatpak is enabled by default, using flathub.org, although no Flatpak applications are included with the ISO file.

As can be seen from the above list, the suite of provided default

applications is fairly light. The basics are all there but, compared to Ubuntu, it is not really a typical beginner desktop suite. Obviously missing are a bittorrent client, calendar, file backup utility, webcam, image editor, music player, photo organizer, remote desktop client, and there are also no games included, although any of these can be added from the repositories if needed. I personally like the short list of applications included, as it reduces the number of unneeded applications I would want to remove and leaves only a few things I would need to add.

The biggest shortcoming in Pop!\_OS 24.04 Alpha 7 is in the core COSMIC applications' features. They all work to some extent but are pretty basic, missing features and needing more work before they are really ready for a stable release. For example:

- COSMIC Files 0.1.0 file manager does not display disk space, has no bulk file renaming and does not even give a count of files when selected.
- COSMIC Media Player 0.1.0 is lacking codecs for .mov files although it will play .webm ones. It also plays .mp3 and .ogg music files, although it did not recognize an

open format .ogg file as associated (Pop!\_OS wanted to play that on Firefox!).

- COSMIC Screenshot 0.1.0 lacks a timing-delay feature.
- COSMIC Text Editor 0.1.0 has syntax highlighting but lacks spellchecking.

All of these could be good applications, they just need a bit more development work. Hopefully they will be completed by the time the stable version is out.

I will point out that, until these applications are more feature-complete, there are lots of alternatives in the repositories to use instead. I installed and tested the Nemo 6.0.2 file manager and the gedit 46.2 text editor and they worked well on Pop!\_OS 24.04 Alpha 7.

## CONCLUSIONS

An alpha release is not the same thing as a final, stable release, but overall Pop!\_OS 24.04 Alpha 7 is on track as a developmental release. Most of the desktop itself works quite well in Alpha 7 and it is just the core COSMIC applications that need more work to be as good as

their equivalents in other Linux desktops. The development team at System76 has put in almost three and a half years on this new desktop and they are on the home stretch now. There is no reason to think that they won't get to the finish line and complete it before the end of 2025.

I am planning to review the Pop!\_OS 24.04 LTS stable version when it is released, so we will see how all this development comes to fruition.

## EXTERNAL LINKS

Official website:  
<https://system76.com/cosmic/>



**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

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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 are many waiting, and I do them first-come-first-served.

I recently sat down to read something to take my mind off of life. I grabbed "Stellaris infinite frontiers", which I'm sure you can tell is related to the game "Stellaris". As I enjoy playing the game with my friend, I thought it may be a way to immerse myself in the lore. The author is supposedly "Steven Savile", but I am 100% sure it was ChatGPT. Not only is the whole thing structured like Reddit

HFY AI slop, it even kept all those m-dashes. The three part statements, everything AI. Why even have an editor and a proofreader? It blew my mind. They then proudly add their web URL for more books. But it figures, Paradox is a profit only company. If you look at their games, it is never complete, always requiring more paid DLC's to play the full thing. Now on top of never buying a game from them, I'll never bother getting a book from them. If I wanted to be fed AI slop, I'd head over to Reddit. Why do companies do this? Do they really think it will bring in more money from stolen data? Makulu Linux was one of the first to incorporate AI into Jacques's distro, but he is not the only one. I, for one and I'm sure many others, don't want glue holding our cheese on our pizza. Can AI make / save you money? Maybe? Can AI lose you money and customers? 100% ...

**Q** : My 14" Dell has a blue version of the red Lenovo nipple. However, it is terrible. On my Lenovo, if I add pressure, the cursor

accelerates, and it is more accurate than the mousepad. The Dell nipple is sluggish and inaccurate. I'm using Gnome on my Dell, but I don't mind switching if you say so. I'm not aware of any driver I would need to install and Ubuntu is up to date. The only difference between the two is the screen sizes, the Lenovo is FHD while the Dell is 2K.

**A** : Hahahaha, thanks for the laugh. It's called a trackpoint, heh and a trackpad. (just so we are all on the same page, mousepads are what the rodents glide on, don't worry, English is not my first language either.) You can try to install Gnome Tweaks – it has a separate acceleration option for trackpads and trackpoints, other than the "mouse acceleration" of the Settings app. You can try that, however, I cannot tell you if it works or not, usually those are tied to their manufacturer, Elan or Synaptic pointing devices, it may be an option to find out which you have and look them up on the web. Open a terminal and check, eg: sudo apt-cache search synaptics

**Q** : I've installed the "privacy quick settings" addin for gnome. <https://github.com/stuarthayhurst/privacy-menu-extension/> It adds it to my drop down menu with location, microphone and camera. However, I added Whatsapp to Opera and Telegram to my desktop, and both still work fine, whether I toggle it or not. I'm on Ubuntu 24.04 LTS that was upgraded from 22.04 LTS, when it was installed. Could it be something in the upgrade that went wrong?

**A** : I'm not familiar with the Gnome extension, but I installed it from the Gnome extensions website and it did absolutely nothing for me either. I'd turn off microphone, but I was still able to make calls with FAgam, and Telegram Desktop. My suggestion is to log a ticket with the developer on his github page.

**Q** : Whenever I drag my window to the left or right center of my

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screen, on the opposite side, there is Document viewer and Firefox and VLC popping up like I pressed control and alt, but only in Gnome, it goes away when I go back to Cinnamon?

**A** : If you want to get rid of it, you need to open 'Settings' in Gnome, then go to 'Ubuntu Desktop' and on the right under 'Enhanced Tiling' you will find the settings.

**Q** : My laptop is only a dual core i3 with 4Gb of Ram, so I tend to stick with lightweight apps. The other one my daughter uses is an i5, but it has 2Gb of Ram. To keep things simple, we use Abiword. As my eyes are giving me trouble I prefer to use a dark background with a light font. I have Xubuntu and she has Kubuntu, but neither of us can figure out how to change the i-bar to a light version. Can you help?

**A** : At first I changed my background to dark blue and my font to yellow. My i-bar remained like it was as it is a mouse theme thing, not an Abiword theme

thing. Then I realised the flashing cursor was black. I suspect this is what you meant. I can see that being a problem on a black or dark grey page. However, I have no idea how to change it. If there are any of our smart readers out there who can help, please reach out to us, it would be appreciated.

**Q** : I wanted to change my default Terminal in Gnome Ubuntu. However, there was no option for it in "default apps". I then used the "Apps" part to see what I could set, but it had less than nothing. If I went to app details, it said "potentially unsafe, provided by a third party" and at the top it said the app is not sandboxed, so settings cannot be enforced? I'm more confused than ever.

**A** : Think of those app settings as for Snaps only. If your installed .deb files show up there, you will not be able to manage them. That is part of the Snap ecosystem that is built into Ubuntu Gnome.

**Q** : I'm really trying to dip my toes into Ubuntu. I installed it on my

crappy chromebook tablet thing and it worked! The best part is Ubuntu only uses 12 Gb compared to Windows using almost all of my 32Gb. How can I find out more about getting started, like what is the best way?

**A** : You can start with F1, yep, hit F1 on your desktop and you will get the help manual. You can also visit the Ubuntu website, they too have manuals on anything you may need. You could also trawl Youtube, look for "10, 15 or 20 things to do after installing Ubuntu". Then grab back issues of FCM, it is not in sequence, but it is meant to inspire you rather than be textbook. (Try: <https://www.tutorialspoint.com/ubuntu/index.htm>)

**Q** : Where can I get a typing tutor for Linux? I had one on Windows 98/XP and now I want one for my kids. Only, none of those work on Ubuntu. We moved to Ubuntu with Windows 8 when Windows 7 stopped supporting. I haven't really wanted for anything, until now.

**A** : I can recommend an app called Klavaro. I think it is free for personal use. There are also terminal-based typing tutors if you would prefer, but I think Klavaro may be the most rounded. I will get it and add an article to the magazine.

**Q** : Quick one, I'm running Ubuntu server on a machine with a Xeon CPU. I just want to check on the battery every so often as it is a few years old and plugged in permanently. Is there a way if there is no GUI?

**A** : Check on the battery, eh? When you check the power, you should see all the info on the battery too. Type:

```
upower -i /org/freedesktop/Upower/devices/battery_BAT0
```

(assuming your battery is BAT0) and obviously you can use grep to grab or highlight what you need.

**Q** : I'm running Ubuntu 24.04 on my HP laptop. While everything seems fine, I have no sound whatsoever. I have been reading up

## Q&A

on ALSA and Pipewire, but I'm not sure what I need. <Removed> I can also confirm that sound works when I install Windows on there.

**A** : It seems that you need to downgrade/upgrade your kernel, I found this: <https://answers.launchpad.net/ubuntu/+question/821982> -Regarding an HP Envy 360.

"Use the Ubuntu HWE kernel (6.11-generic):

```
sudo apt install linux-  
generic-hwe-24.04"
```

**Q** : I'm pulling my hair out with Ubuntu Noble and SM Player. When I do a sound test, it is loud. I can go turn on overamplification, that just changes the graphical output of the settings volume slider. I'm not sure if it is related to an update. When I listen to books in SM player as the speed control is better than VLC, it is soft now and there is nothing I can do to change the maximum volume. Inside the settings SM Player also has overamplification that does nothing. I have been told it is because of the underlying audio

bus, but this only started happening in the last two months, so that does not make sense to me. Please point me to something I can look at?

**A** : You mentioned VLC and a known issue (since 18.04) is that if you turn the volume down in VLC on Ubuntu, it sort of messes with the overall sound for other media players. (Global volume) I will bet that your volume in VLC is low, play something, turn the volume to 100% and quit VLC. Now open your movie in SMPayer and the sound there too, will be louder.

**Q** : When I right click in Ubuntu I only see: Change background, Display Settings, and Settings. I'm sure there used to be more? How do I edit it? I'm sure there must be a way? I'm using Ubuntu Gnome 24.04 with 32Gb RAM and 1Tb SSD and everything is up to date.

**A** : It took me a while, until I realised you meant right clicking on your desktop. I had no idea, so I surfed the web a bit. It turns out the desktop options are not provided by the file manager, that is why it is different. If you want to manage files on your

desktop, you can do that from the file manager. If you want more, I suggest searching the [extensions.gnome.org](https://extensions.gnome.org) website.



**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.





Website: <https://triomatica.games/boxville2/>

Price: \$5-7 USD

Blurb: *"Two can friends had an important job from the mayor to set up fireworks for the city's celebration. But due to a mistake, the fireworks went off wrong, causing chaos in the city. Worse, one of the friends went missing. Now, the main character, a red can, has to explore different areas and secret spots in Boxville and even travel outside the city to fix everything and find his friend."*

I will say that I'm surprised that this game got a sequel. This may be that people are looking elsewhere for their gaming fixes, with the AAA studios pushing political messages in their games. People want to play games to have fun and take their minds off the crap in the real world, not be forced political propaganda. While \*I failed to see the "fun" in this title, others may find it to be so, as the steam reviews are positive.

### INSTALLATION

The GOG installer works like a charm under Ubuntu 24.04, the minimum specs are also the recommended specs as the game does not require a lot to run. The game is also available on the Epic game store, but they do not offer a Linux version. You can install the demo on Steam right now.

Recommended system requirements:  
System: Ubuntu 20.04 or newer  
Processor: Intel Core i3

Memory: 2 GB RAM  
Graphics: Integrated  
Disk space: 2 GB of available space

You can launch it from the menu, once done.

### GRAPHICS

This Indie title looks gorgeous (old-style soviet cartoons meet Machinarium if I had to give a one-liner). The cans look like they are going to leap off the screen at any moment, with hand-drawn backgrounds that are interesting. The animation is a little bit stiff, but

as I may have pointed out, not a AAA-title, and if they were going for the retro soviet-era cartoons, they hit the nail on the head.

The quests or hints to the current puzzle are hand drawn, giving the game a personalized feel, though later on there are different quests/hints/puzzle indicators, whatever you want to call them.

A lot of the game is however cute as a button, with a blue can and his "dog", a tuna can, who plays fetch in one scene, for instance.

### SOUNDS

The game relies on ASMR-type sounds to draw you into the game, and while it does work, the sounds need to be normalized as some are too loud and some too soft, meaning that when you pump up the volume for the soft ones, the others become irritating. The sounds are "real" too, meaning that when the can flips his lighter, you hear a lighter flip, not an approximation or a stand-in sound. I was a bit disappointed to hear a



drone sound for the firework, though it was funny (I may need to explain that one, the studio is a Ukranian....). The soundscape itself is great, other than the volume issue. The game is not a "talkie"; it communicates with sounds and sketches only.

## GAMEPLAY

Let me talk about the puzzles first, as the game is an adventure puzzle game. Where the first game in the series fell down here, (we reviewed it in 2022/3), this one has gone with making them even better. I always say, if your game is about driving, make the driving feel great; if the game is about

shooting, make the shooting feel great, and these guys from Triomatica listened. The difference between this game and the last, when it comes to the puzzles, is chalk and cheese.

Ok, let me talk about the first part, I did not read any of the blurb before playing and jumped straight in. After all, I played the first one; it should be fine, right? Well, no, this one has a better "story" than the first one too, but it felt disjointed, as though the story was an afterthought (I'll explain as we go..). Though what I'll be telling you may be considered as "spoilers", I don't think they are, as it is all part of the first "gimme".

We are treated to a scene with cans on a roof, planting a firework in some chewing gum and lighting it. For some reason, the cans hold on to the firework and one lets go and the other is blasted off to an island in the distance. The firework set the floor on fire (very slightly) and there is a broken hammer on the floor for you to collect. You collect the hammer and assemble it and pick up the gum from the floor. For some reason, you cannot walk over the tiny flames, even though you are made of Aluminium. You now need to bang the pipe with a hammer, and the water pressure spays all over the flames. You are then to use the gum to "seal" the hole. While the puzzle makes sense, it feels contrived.

I then walked the can down the ramp, and there was a cart with ice cream. I tried to pick one up, to find I could only move them, ah, another puzzle. If you now put these in order, (a number appears when you place them, with a chalkboard), you get a cone for free from the vendor. See where I'm going with this? There is nothing wrong with the puzzle or the mechanic, but why am I arranging ice cream cones and why am I getting one for free for doing so? If I walk down a level, there is a vending machine with someone next to it. If you click on it and shake it, out falls the master code. You put that into the vending machine keypad and out pops a lollipop. You hand said lollipop to



the can loitering beside the vending machine, and so on. Same with the guy who gives you the balloon, you can randomly place the marbles on the board and when they go yellow, the guy gives me a balloon... Some of it was just pure fun, not a puzzle, like playing rock, paper, scissors on the remote island. :)

As I said, the puzzles are great, but it felt disjointed. As to the adventuring and exploring part, the

game was about two hours long, with some change to spare. I'll leave you to make that connection. If the game had a larger world and there was some more exploring to do, this game could have been punching way above its weight.

While my eyes did rove everywhere, drinking in the scenery, ultimately, the game has no replay value. It is a once off experience for two hours.

Regional pricing meant the game was pretty affordable, coming in at \$68 NAD. As beautiful as the game looked, as nice as it sounded, I just had trouble getting immersed. Even after reading what the story is supposed to be, I could not fathom how a runaway firework scrambled the order of someone's (somecan's?) ice cream...

Should you disagree with

anything:

[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.



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

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