Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

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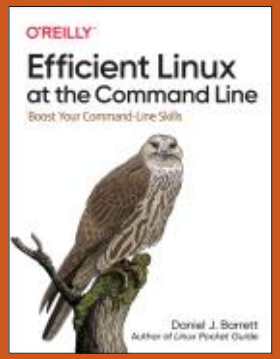
BOOK REVIEW



CINNAMON VS MATE

DESKTOP SHOWDOWN

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THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

HowTo

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EDITORIAL

Welcome to the latest issue of Full Circle

This month, we bring you the full Monty of Python, Micro This Micro That, Latex, Stable Diffusion and Inkscape. News hot off the press is that this is the last month of Stable Diffusion. Jon is taking a well earned break from writing. If you have a series of articles you'd like to run from the next issue, now is your chance to drop me an email: ronnie@fullcirclemagazine.org.

Adam's reviews this month compares desktops; Cinnamon and MATE. I've billed it as a showdown, but in all honesty that's a bit clickbait-y as it's really Ubuntu Cinnamon vs Mint Cinnamon. Also, Erik does one of his book reviews too.

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.

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

All the best!
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https://open.spotify.com/show/6JhPBfSm6cLEhGSbYsGarP

NEW

https://www.youtube.com/playlist?list=PLnv0U8wOzXu487gi5I2Isf-rQjEyKPAif

NEW

Release of OSMC 2024.08-1:

26/08/2024

OSMC 2024.08-1 has been released, designed to create a media center based on Raspberry Pi single-board computers or Vero set-top boxes developed by the distribution developers. The distribution is equipped with the Kodi media center and offers out of the box a complete set of tools for creating a home theater that supports displaying video in 4K, 2K and HD (1080p) quality. Both images for direct recording to a USB drive or SD card and specialized installers for Windows, macOS and Linux are available for download, allowing a novice user to install the distribution. Ready-made builds are available for Raspberry Pi boards, as well as for Vero 4K, 4K+ and V set-top boxes.

The distribution is based on Debian and supports installation of packages from standard repositories. No knowledge of Linux is required to work with the distribution, all setup operations are performed through a graphical interface. They suggest that you connecte yourRaspberry Pi-based media center is to a TV via a HDMI port and powered via a USB port, which is available in some TVs. When playing video, hardware video decoding tools provided by the Broadcom VideoCore graphics accelerator are used.

OSMC has built-in support for various TV tuners, DVB adapters and remote controls. It is possible to connect an infrared receiver via the GPIO port. Additionally, it supports network control of Kodi from a smartphone using specialized applications for iOS and Android platforms. To ensure a broadcast of music and video from Apple devices, the distribution supports AirPlay and AirTunes technologies.

https://osmc.tv/2024/08/osmcs-august-update-is-here-with-kodi-21-1/

The OpenBSD project has made changes to the entire code base:

26/08/2024

Theo de Raadt announced that the OpenBSD project had reached a milestone where the entire code base imported in 1995 was covered by changes - not a single original file of the original code base remained unchanged or not removed. The last unchanged component was the quiz game, which recently replaced the Greek knowledge test with a test of ship terminology. The OpenBSD project was founded by Theo de Raadt in 1995 after a conflict with the NetBSD developers, as a result of which Theo was denied access to the NetBSD CVS repository. Theo de Raadt and a group of like-minded people then created a new open source operating system based on the NetBSD source tree, where the main development goals were portability, standardization, correct operation, proactive security and integrated cryptographic tools.

https://marc.info/?l%3Dopenbsd-cvs%26m%3D172443408727088%26w%3D2

Release of the Calligra 4.0 office suite:

27/08/2024

After more than 4 years of development, a new release of the free office suite Calligra 4.0, created in 2010 as a result of the restructuring of the KOffice project, has been published. The office suite is built on KDE technologies and uses a single system of embedded objects for all applications of the office suite. The components responsible for the functionality and user interface are separated, which allows you to create both lightweight mobile versions and full-featured versions of the office suite for desktop systems on the same base. Open Document (ODF) is used as the basic format. Ready-made binary builds will soon be prepared for Linux, FreeBSD, macOS and

Windows.

https://carlschwan.eu/2024/08/27/calligra-office-4.0-is-out/

Release of VeraCrypt 1.26.14:

28/08/2024

After 11 months of development, VeraCrypt 1.26.14 has been released, developing a fork of the TrueCrypt disk partition encryption system, which has ceased to exist. VeraCrypt is notable for replacing the RIPEMD-160 algorithm used in TrueCrypt with SHA-512 and SHA-256, increasing the number of hashing iterations, simplifying the build process for Linux and macOS, and eliminating problems identified during the audit of TrueCrypt source code. The code developed by the VeraCrypt project is distributed under the Apache 2.0 license, and borrowings from TrueCrypt continue to be supplied under the TrueCrypt License 3.0. Ready-made builds are generated for Linux, FreeBSD, Windows, and macOS.

https://www.veracrypt.fr/en/Release%2520Notes.html

Microsoft hands over Mono project development to Wine community:

28/08/2024

Microsoft has announced that it is transferring the Mono project, which develops an alternative implementation of the .NET platform, to WineHQ, an organization that develops an open implementation of the Win32 API. Microsoft acquired the Mono project after acquiring Xamarin in 2016. The Mono platform was planned to be used to develop tools for mobile applications in C# using .NET technologies, but over time the project stagnated and has not seen any major releases since 2019, although corrective updates continued to be published regularly.

Since Mono was used in Wine to run .NET-based executables built for Windows, the Wine developers maintained a synchronized Wine Mono fork that was successfully maintained and regularly updated. After assessing the situation, Microsoft decided to hand over the main Mono project to the Wine community and make the Wine Mono repository the main one. The code in the old Mono repository will be preserved, but transferred to archive mode. Previously generated ready-made assemblies will remain available for 4 years.

At the same time, having transferred the original Mono to Wine, Microsoft will continue to support a more modern fork of Mono Runtime , included in the code base of the open .NET platform. They plan to gradually transfer components of Microsoft projects that remain tied to Mono to this fork. Microsoft also stated that it recommends that users of applications using Mono switch to using the general .NET platform, which includes Mono Runtime.

https://www.mono-project.com/news/

OpenTofu politics:

28/08/2024

The OpenTofu project, that is developing an open fork of the Terraform configuration management and infrastructure maintenance automation platform under the auspices of the Linux Foundation, has blocked access from Russian IP addresses to the registry.opentofu.org repository, through which modules and providers for use with OpenTofu are distributed. In addition, OpenTofu has removed providers (plugins for interacting with cloud services and managing resources in them) from the repository for the SberCloud, Yandex Cloud, and Rustack Cloud Platform cloud systems.

Blocking access to the repository was done by a unanimous decision of 5 members of the governing board as a measure to comply with sanctions by a company under US jurisdiction. It is specified that the decision was made out of fear of legal problems for the company hosting the repository.

U.S. export laws prohibit

providing commercial services or services that could be used for commercial purposes to designated companies or residents of sanctioned countries. However, previous legal analysis by the Apache Software Foundation, the Linux Foundation, and GitHub found that export control restrictions do not apply to publicly available open source software and public repositories.

https://news.ycombinator.com/item?id=41382437

Release of GNU screen 5.0:

29/08/2024

Two and a half years after the last major release, the full-screen console window manager (terminal multiplexer) GNU screen 5.0.0 has been released, allowing you to have a multi-window interface in the console, using one physical terminal to work with several applications, which are allocated separate virtual terminals that remain active between different user sessions.

http://savannah.gnu.org/news/?id%3D10668

4MLinux 46.0 release:

29/08/2024

4MLinux 46.0 is now available, a minimalist user distribution that is not a fork of other projects and uses a graphical environment based on JWM. 4MLinux can be used not only as a Live environment for playing multimedia files and solving user tasks, but also as a system for recovery from failures and a platform for running LAMP servers (Linux, Apache, MariaDB and PHP). A live image (x86_64) with a graphical environment (1.5 GB) and a build with a stripped-down console environment (16.5 MB) are available for download.

https://4mlinux-releases.blogspot.com/2024/08/4mlinux-460-stable-released.html

Release of MediaGoblin 0.14:

29/08/2024

After 10 months of development, a new version of the decentralized platform for sharing multimedia files MediaGoblin 0.14.0 has been published. It is designed for hosting and sharing of media content, including photos, videos, audio files, 3D models and PDF documents. Unlike centralized services like Flickr, YouTube and SoundCloud, the MediaGoblin platform is aimed at content sharing without being tied to a specific service and uses a model similar to StatusNet and pump.io, which provides the ability to run a server on its own capacities. The project code is written in Python and is distributed under the AGPLv3 license.

https://mediagoblin.org/news/mediagoblin-0.14.0-release.html

Ubuntu 24.04.1 LTS Release:

30/08/2024

Canonical has released the first corrective release of the Ubuntu 24.04.1 LTS distribution, which includes updates to several hundred packages related to the elimination of vulnerabilities and problems affecting stability. The new version also fixes errors in the installer and bootloader. The release of Ubuntu 24.04.1 marked the completion of the basic stabilization of the LTS release - users of the previous LTS branch

Ubuntu 22.04 will now be offered to upgrade to the 24.04 branch .

At the same time, similar updates were presented for Ubuntu Budgie 24.04.1 LTS, Kubuntu 24.04.1 LTS, Ubuntu MATE 24.04.1 LTS, Ubuntu Studio 24.04.1 LTS, Lubuntu 24.04.1 LTS, Ubuntu Kylin 24.04.1 LTS and Xubuntu 24.04.1 LTS. It makes sense to use the presented builds only for new installations - previously installed Ubuntu 24.04 configurations will receive all the changes present in Ubuntu 24.04.1 through the standard update installation system. Support for the release of updates and security fixes for the server and desktop editions of Ubuntu 24.04 LTS will last until April 2029 (plus another 7 years for users of the Ubuntu Pro service).

Among the changes in the new release, it is worth noting the update to new corrective versions of the GNOME (46.2), Mesa (24.0.9), nvidia-graphics-drivers, xdg-desktop-portal-gnome, ovn (24.03.2), snapd (2.63.1) and apparmor packages. The ubuntu-core-installer project has been added to the livecd-rootfs package and experimental support for building ubuntu-core-desktop installation images has been provided. The linux-firmware package implements support for DCN 3.5 (Display Core Next) for AMD GPUs. Support for the RISC-V platform has been improved, support for StarFive VisionFive 2 and Allwinner Nezha boards has been added. Identifiers for new Broadcom chips have been added. The problem with network booting of the Ubuntu Desktop installer has been resolved.

Integration of the new kernel version, drivers, and graphics stack components is expected in the planned February release of Ubuntu 24.04.2, as these components will be imported from the Ubuntu 24.10 release, which will not be ready until the fall and will require additional testing time.

https://lists.ubuntu.com/archives/ubuntu-announce/2024-August/000304.html

Elasticsearch reverts to open source license:

30/08/2024

Elasticsearch BV announced that the Elasticsearch data search, analysis and storage platform and the Kibana web interface have returned to open source status. In addition to the proprietary ELv2 and SSPL licenses, the Elasticsearch and Kibana code will now be distributed under the free AGPLv3 license. Before switching to proprietary licenses, the product was distributed under the Apache 2.0 license, which continues to be used in the OpenSearch fork .

The return to the open source code distribution model is explained by the resolution of problems with AWS (Amazon Web Services) - it is noted that after the change of license for Elasticsearch, Amazon began to invest in the development of its fork, partnership relations with AWS strengthened, confusion in the market disappeared and Elasticsearch felt the disappearance of the former threat to its business.

Unlike the GPLv3 license, AGPLv3 has additional restrictions for applications that provide network services. When using AGPL components in the operation of network services, the developer is obliged to provide the user with the source code of all changes made to these components, even if the underlying software of the service is not distributed and is used exclusively in the internal infrastructure to organize the operation of the service. The AGPL license also imposes copyleft conditions, i.e. to include AGPL code from Elasticsearch in your project, the code base of your own project must be relicensed under the AGPL license.

Let us recall that in 2021, the Elasticsearch project was transferred to the SSPL (Server Side Public License) license, which is based on the AGPLv3 text, which introduced additional requirements for the delivery under the SSPL license of not only the application code itself, but also the source code of all components involved in providing the cloud service. The SSPL license did not receive open status due to discrimination against certain categories of users (cloud service providers). For those who are not satisfied with the terms of the SSPL license, a commercial license ELv2 (Elastic License) was provided in Elasticsearch. In response to the license change, Amazon, Red Hat, SAP, Capital One and Logz.io created a fork of OpenSearch , within which, with the

participation of the community, they continued to develop the open source code base of Elasticsearch 7.10.

https://www.elastic.co/blog/elasticsearch-is-open-source-again

Wireshark 4.4.0 Released:

30/08/2024

The release of the new stable branch of the Wireshark 4.4 network analyzer has been published . The program supports more than a thousand network protocols and several dozen traffic capture formats. A flexible interface is provided for creating filters, capturing traffic, analyzing saved dumps and inspecting packets. Such advanced features as reassembling the order of packets, selecting and saving the contents of files transmitted using different protocols, playing VoIP and RTP streams, decrypting IPsec, ISAKMP, Kerberos, SNMPv3, SSL/TLS, WEP and WPA/WPA2 are supported. The project code is distributed under the GPLv2 license.

https://www.wireshark.org/news/20240828b.html

Rhino Linux 2024.1 Rolling Release:

01/09/2024

Rhino Linux 2024.2 has been released. It implements a variant of Ubuntu with a continuous update delivery model, allowing access to the latest versions of programs. New versions are mainly transferred from the devel branches of Ubuntu repositories, where packages with new versions of applications synchronized with Debian Unstable are built. Desktop components, the Linux kernel, boot splash screens, themes, the Firefox browser and utilities developed by the project are distributed through a separate Pacstall repository. Installation images that can be booted in Live mode are prepared for the x86_64 (2.4 GB) and ARM64 (2.3 GB) architectures, as well as for the PineTab, PineTab2, PinePhone, PinePhone Pro and Raspberry Pi ARM devices.

The graphical interface is based on the proprietary Unicorn user environment , which is a reworked version of Xfce, it resembles GNOME, but remains lightweight. In Unicorn, the developers tried to combine a more modern design with a traditional approach to building a desktop. Plank Dock is used as a sidebar for applications , and the standard Xfce panel is used as the top panel. The App Grid mode, implemented, based off of Lightpad, is used to navigate through installed applications .

https://rhinolinux.org/news-15.html

Linux From Scratch 12.2 and Beyond Linux From Scratch 12.2 Released:

01/09/2024

New releases of Linux From Scratch 12.2 (LFS) and Beyond Linux From Scratch 12.2 (BLFS) are available in two flavors, with the SysVinit and systemd init systems. Linux From Scratch provides instructions for building a basic Linux system from scratch, using only the source code for the necessary software. Beyond Linux From Scratch supplements the LFS instructions with information on building and configuring more than 1,000 software packages, covering a variety of applications, from databases, virtualization systems, an extended set of developer applications, to graphical shells.

Linux From Scratch 12.2 updates 45 packages and adds one new package lz4, including Glibc 2.40, Linux kernel 6.10.5, binutils-2.43.1, gcc-14.2.0, systemd-256.4, SysVinit-3.10 and more.

Beyond LFS has over 1,750 updates, including many text changes to improve readability, and major changes include upgrading KDE5 (Frameworks, Gear, Plasma) to KDE6. GNOME has been updated to version 46, KDE Plasma to 6.1.4, and LXQt to version 2.0.0. Several new packages have been added, including FreeRDP, vinagre replaced by gnome-connections, and dolphin and konversation from KDE have been added. A total of 32 packages have been added to support packages already in the book. In addition, 21 unsupported packages have been removed, including Python2 and GTK2. It has been announced that Qt5 will be removed in future versions of BLFS.

https://www.linuxfromscratch.org/lfs/read.html

https://www.linuxfromscratch.org/blfs/read.html

Release of Armbian 24.8:

02/09/2024

Armbian 24.8 is out, providing a compact system environment for various single-board computers with ARM, RISC-V, and x86 processors, including various models of Raspberry Pi, Odroid, Orange Pi, Banana Pi, Helios64, pine64, Nanopi, and Cubieboard based on Allwinner, Amlogic, Actionsemi, Freescale/NXP, Marvell Armada, Rockchip, Radxa, and Samsung Exynos processors.

The project supports more than 30 variants of Linux kernel builds for different ARM and ARM64 platforms. An SDK is provided to simplify the creation of your own system images, packages and distribution editions. ZSWAP is used for swapping. When logging in via SSH, an option is provided for using two-factor authentication. The package includes a box64 emulator, which allows you to run programs compiled for processors based on the x86 architecture. Ready-made packages are offered for running user environments based on KDE, GNOME, Budgie, Cinnamon, i3wm, Mate, Xfce and Xmonad.

https://www.armbian.com/newsflash/armbian-24-8-yelt/

Release of DietPi 9.7

02/09/2024

DietPi 9.7 distribution , designed for use on single-board PCs based on ARM and RISC-V architectures, such as Raspberry Pi, Orange Pi, NanoPi, BananaPi, BeagleBone Black, Rock64, Rock Pi, Quartz64, Pine64, Asus Tinker, Odroid and VisionFive 2. The distribution is built on Debian and is available in builds for more than 50 boards. DietPi can also be used to create compact environments for virtual machines and regular PCs based on the x86_64 architecture. Builds for boards are compact (on average 130 MB) and take up less space on the drive, compared to Raspberry Pi OS and Armbian. The tools for building and maintaining the distribution are distributed under the GPLv2 license.

The project is optimized for minimal resource consumption and develops several of its own utilities: an interface for installing DietPi-Software applications, a configurator DietPi-Config, a backup system DietPi-Backup, a mechanism for maintaining temporary logs DietPi-Ramlog (rsyslog is also supported), an interface for setting process execution priorities DietPi-Services and a system for delivering updates DietPi-Update. The utilities provide a console user interface with menus and dialogs based on whiptail. A fully automated installation mode is supported, allowing installation on boards without user intervention.

https://dietpi.com/docs/releases/v9_7/

Samba 4.21.0 Released:

02/09/2024

After 6 months of development, Samba 4.21.0 was released , continuing the development of the Samba 4 branch with a full implementation of a domain controller and Active Directory service, compatible with the Windows 2008 implementation and capable of servicing all Microsoft-supported versions of Windows clients, including Windows 11. Samba 4 is a multifunctional server product, also providing the implementation of a file server, print service and identification server (winbind).

https://lists.samba.org/archive/samba-announce/2024/000674.html

GhostBSD 24.07.1 Released:

02/09/2024

A release of the desktop-oriented distribution GhostBSD 24.07.1 has been published. It is based on FreeBSD 14-STABLE and offers the MATE user environment. By default, GhostBSD uses the ZFS file system. Both Live mode and installation on a hard drive are supported (using the proprietary ginstall installer written in Python). Boot images are generated for the x86_64 architecture (2.6 GB).

https://ghostbsd.org/news/GhostBSD_24.07.1_is_Now_Available

Weston Composite Server 14.0 Released:

04/09/2024

After nine months of development, the stable release of Weston 14.0, a composite server with technologies that facilitate the emergence of full support for the Wayland protocol in Enlightenment, GNOME, KDE and other user environments, has been published. Weston development is aimed at providing a high-quality code base and working examples for using Wayland in desktop environments and embedded solutions, such as platforms for in-car infotainment systems, smartphones, TVs and other consumer devices. The project code is distributed under the MIT license.

https://wayland.freedesktop.org/releases.html

KDE Project Report 2023:

04/09/2024

The non-profit organization KDE e.V., which oversees the development of the KDE project, has published a report for 2023, which, in addition to information about projects, events and conferences, also discloses financial indicators. The organization received 349 thousand euros in 2023 and spent 457 thousand euros.

The largest amount of funds (181 thousand euros) was received through donations and contributions from members of the organization. In second place (80 thousand euros) is financial assistance from corporations and patron participants, including Blue Systems, Canonical, g10 Code, Google, Kubuntu Focus, Qt Group, Slimbook, SUSE, TUXEDO Computers and MBition. In third place (66 thousand euros) are income from holding the Akademy conference and other events.

The expenses were distributed as follows: 317 thousand euros - salaries of staff and developers, 43 thousand euros - expenses for the Akademy conference, 20 thousand euros - expenses for other events, 18 thousand euros - infrastructure expenses, 15 thousand euros - other expenses, 13 thousand euros - expenses for sprints, 7 thousand euros - office maintenance, 22 thousand euros - taxes and fees.

https://ev.kde.org/reports/ev-2023/

SeaMonkey 2.53.19 Released:

04/09/2024

The SeaMonkey 2.53.19 suite of Internet applications has been released. It combines a web browser, email client, news feed aggregation system (RSS/Atom) and WYSIWYG HTML page editor Composer in a single product. The Chatzilla IRC client, DOM Inspector web developer toolkit and Lightning calendar planner are offered as pre-installed add-ons. The new release includes fixes and changes from the current Firefox code base (SeaMonkey 2.53 is based on the Firefox 60.8 browser engine with security fixes and some improvements ported from the current Firefox branches).

The new version mainly fixes bugs and shortcomings. The display of the font list in the settings has been improved. The cancel button in the bookmark creation interface has been adjusted. Blocking of access to IP 0.0.0.0 has been enabled to prevent attacks on local services. The nss and nspr libraries have been updated. Some fixes from the Firefox 115 ESR branch have been backported.

https://www.seamonkey-project.org/news%232024-09-04

QEMU 9.1.0 Available:

05/09/2024

As an emulator, QEMU 9.1.0 allows you to run a program compiled for one hardware platform on a system with a completely different architecture, for example, to run an ARM application on an x86-compatible PC. In virtualization mode in QEMU, the performance of code execution in an isolated environment, is close to the hardware system due to direct execution of instructions on the CPU and the use of the Xen hypervisor or the KVM module in Linux, or the NVMM module in NetBSD.

The project was originally created by Fabrice Bellard to enable x86-based Linux binaries to run on

non-x86 architectures. Over the years, full emulation support has been added for 14 hardware architectures, with over 400 emulated hardware devices. More than 2,800 changes from 263 developers were made during the preparation of version 9.1.

https://lists.nongnu.org/archive/html/qemu-devel/2024-09/msg00637.html

SyncStar, a service for creating bootable USB drives:

05/09/2024

A Fedora developer working at Red Hat has introduced the SyncStar toolkit , which allows deploying services for recording operating systems of the user's choice onto USB drives. The main purpose of SyncStar is called the creation of kiosks and information stands that can be used during technical conferences and exhibitions to make bootable builds of various operating systems onto USB drives of event participants. The project code is written in Python and is distributed under the AGPLv3 license.

Linux distribution developers can use these kiosks to distribute demo builds of their systems, making it easier for conference and exhibition attendees to get acquainted with Linux. Speakers and lecturers can use the project to distribute a bootable image they have prepared, to attendees, demonstrating the systems mentioned in the talk or containing training materials.

To create a kiosk, you only need a regular laptop installed on an exhibition stand, or a Raspberry Pi board. The project is designed to work without a monitor - control and selection of an image for recording is done through a web interface, which can be accessed from a smartphone or laptop by any participant in the event, connecting to a common wireless network. SyncStar features the ability to simultaneously record several images in asynchronous mode, an adaptive web interface designed to work with various types of devices and a command line interface for configuring the kiosk are mentioned.

https://fedoramagazine.org/introducing-syncstar/

Release of Q4OS 5.6:

05/09/2024

Q4OS 5.6 has been published. It is based on Debian and comes with the KDE Plasma 5 and Trinity desktops (continues development of the KDE 3.5.x code base). Both user environments can simultaneously coexist on one system, and the user can switch between them. The distribution is positioned as undemanding to hardware resources and offering a classic desktop design. The boot image size is 1.5 GB (x86_64).

The package includes several applications of their own development, including 'Desktop Profiler' for quick installation of thematic software sets, 'Setup utility' for installation of third-party applications, 'Software center' for installation of additional programs, 'Welcome Screen' for simplifying initial setup, 'Lookswitcher' for quick appearance switching, scripts for installation of alternative environments, like LXQt, Xfce and LXDE. An application for installation of the distribution in a separate Windows directory is provided, which allows you to use the distribution in parallel with Windows without allocating a separate disk partition for it.

In the new release, the package base has been updated to Debian 12.7 with Linux kernel 6.1.0-25. The Calamares installer now supports loading custom profiles that define a set of user-selected packages and applications for installation. The capabilities of the Q4OS Setup configurator and the Desktop Profiler application set installer have been expanded . The Shim boot layer and GRUB loader have been updated in Live builds. Digital signatures of old Shim versions have been revoked.

https://www.q4os.org/blog.html

A systemd port for Musl library-based systems:

06/09/2024

The creator of the Adelie Linux distribution, which uses the standard C library Musl, the OpenRC initialization system and the APK package manager, has announced the successful porting of the system manager, systemd, to

work with the Musl library. Despite the fact that the implementation has the status of initial, it is already quite stable and demonstrates a threefold reduction in boot time, compared to using OpenRC.

Initially, systemd only supported working with the C library, Glibc, but a separate set of patches was developed by the OpenEmbedded project, allowing the use of systemd in Musl-based environments. The new port is aimed at creating a completely updated series of patches that ensures compatibility with the latest versions of systemd and musl, and uses the new features of systemd and musl. The presented port is written from scratch and except for changes related to support for GLOB_BRACE, malloc_info and malloc_trim, does not intersect with the port from OpenEmbedded.

https://catfox.life/2024/09/05/porting-systemd-to-musl-libc-powered-linux/

Nginx project moves to Git and GitHub:

07/09/2024

The Nginx project announced that it is migrating from the Mercurial version control system to Git, moving its official repository to GitHub, and using the GitHub Issues and GitHub Discussions platforms to replace the trac.nginx.org issue tracker and mailing list discussions. The move to GitHub is expected to simplify community engagement and attract third-party developers to the project.

Pull requests have been implemented to accept changes from other participants. The trac.nginx.org bug tracking system has been switched to read-only mode. In order to give developers and users time to adapt to the new way of life, in addition to using GitHub, the ability to send patches and receive consultations via mailing lists will be retained until December 31.

https://mailman.nginx.org/pipermail/nginx-ru/2024-September/JO5YGKLOQA6RZ43PIDOEVFOHV4ON6RCM.html

Red Hat Enterprise Linux AI distribution:

07/09/2024

Red Hat has announced the availability of a new edition of the RHEL distribution - Red Hat Enterprise Linux AI (RHEL AI), specially adapted for machine learning tasks and designed to simplify the creation of server solutions using large language models.

The distribution includes a selection of tools and frameworks for machine learning, drivers for using various hardware accelerators from AMD, Intel and NVIDIA, and components for using the capabilities of Dell, Cisco, HPE, Lenovo and SuperMicro servers optimized for AI systems. The builds are distributed through the Red Hat Customer Portal in options for direct installation on servers and for deployment in AWS and IBM Cloud cloud systems.

The platform can be used to develop corporate AI applications, implement content generation services, create dialogue systems and integrate virtual assistants into applications that support such skills as the ability to answer questions in natural language, solve mathematical problems, generate meaningful text on a given topic, write a summary of the content, correct errors in the text, perform rewriting in other words, help in writing code in various programming languages, generate letters and documents using a template.

RHEL AI integrates components for creating, testing, and executing machine learning systems based on the large language model Granite , open sourced by IBM under the Apache 2.0 license, capable of taking into account up to 4 thousand tokens when generating text and covering 7 billion parameters. To interact with the Granite model, the distribution integrates the open source InstructLab toolkit , which supports the LAB (Large-scale Alignment for chatBots) methodology for customizing and optimizing models, as well as adding additional knowledge and implementing new skills in pre-trained models.

https://www.redhat.com/en/about/press-releases/red-hat-enterprise-linux-ai-now-generally-available-enterprise-ai-innovation-production

GTK 4.16 IS AVAILABLE:

09/09/2024

After six months of development, the multi-platform GUI toolkit GTK 4.16.0 has been released. GTK 4 follows a development process that tries to provide application developers with a stable and supported API for several years that they can use without having to rework their applications every six months because of API changes in the next GTK branch.

https://gitlab.gnome.org/GNOME/gtk/-/tags/4.16.0

RELEASE OF REDOX OS 0.9:

09/09/2024

After almost two years of development, the Redox 0.9 operating system, developed using the Rust language and the microkernel concept, has been published. The project's code is distributed under the free MIT license. For testing Redox OS, bootable live environments for real hardware and system images for virtual machines (512 MB and 1.5 GB) were prepared for the x86_64 and i686 architectures.

The demo image includes a DOSBox emulator, a selection of games (DOOM, Neverball, Neverputt, sopwith, syobonaction), educational programs, a rodioplay music player with support for FLAC and WAV formats, a Netsurf web browser, an image viewer, a Sodium console text editor, a file manager, a terminal emulator, and a text editor from the COSMIC project. There is support for Slint, Iced, and winit GUI libraries. The user environment is built on their own Orbital graphical shell, which was initially developed based on the OrbTk toolkit, but then the development was transferred to the iced library.

The project develops its own package manager, a set of standard utilities (binutils, coreutils, netutils, extrautils), the ion command shell, the relibc standard C library, the vim-like sodium text editor, a network stack and a file system. Configuration is specified in the Toml language.

Supported hardware includes USB input devices (keyboards, mice, touchpads), graphics output via VESA BIOS API or UEFI GOP (GPU drivers are not supported), AC'97 and Intel HD Audio sound chips, SATA (AHCI, IDE) and NVMe. Support for Wi-Fi and USB storage devices is not yet ready.The graphical environment has been tested on Lenovo IdeaPad Y510P, System76 Galago Pro and System76 Lemur Pro laptops. Support for Dell XPS 13, HP Dev One, ASUS X554L, ASUS ROG g55vw, Toshiba Satellite L500 and ASUS Eee PC 900 laptops is provided with certain restrictions. Raspberry Pi 3 Model B+ is supported among ARM systems.

https://www.redox-os.org/news/release-0.9.0/

DROIDIAN 99, HAS BEEN RELEASED:

10/09/2024

The Droidian 99 project is now available, developing a build based on Debian, intended for use on smartphones, instead of Android. The Phosh shell, based on GNOME technologies and the GTK library, is offered as a graphical environment. The system and user environments are built using the Debian and Mobian repositories. Unlike the Mobian distribution, which is aimed at use on certain boards and specialized Linux smartphones, such as the PinePhone, Droidian is focused on installation on regular Android smartphones.

To ensure compatibility with smartphone hardware, Droidian uses the Android platform kernel, a set of system components from the Halium project and the libhybris layer, which allows you to use drivers created for the Android platform and running in the user space. The Waydroid platform is used to run Android applications from a Debian-based environment The oFono2MM stack is used to solve problems related to telephony and making calls Installation of additional programs is supported in the Flatpak format.

The project claims official support for installation on smartphones Xiaomi Poco M2 Pro / Redmi Note 9 Pro / Pro Max / 9S, Fxtec Pro1, Sony Xperia 5, Google Pixel 3a / 3a XL and Volla Phone. Separately, the community is creating unofficial firmware for Sony Xperia 1, OnePlus 3 / 3T and Xiaomi Redmi Note 7 Pro.

https://github.com/droidian-images/droidian/releases/tag/droidian%252F99

Radicle 1.0 released:

10/09/2024

The release of the P2P platform, Radicle 1.0, is out. It is aimed at creating a decentralized service for collaborative development and storage of code, similar to GitHub and GitLab, but not tied to specific servers, not subject to censorship and working using the resources of P2P network participants. The release 1.0 marked the stabilization of the protocol and the readiness of the platform for widespread use. Starting with this release, the protocol will be changed while maintaining backward compatibility, and the toolkit will include the ability to seamlessly update existing systems to the new version. The project's code is written in Rust and distributed under Apache 2.0 and MIT licenses. Builds are prepared for Linux and macOS. Additionally, a desktop client, web interface and console interface are being developed for the platform.

Radicle allows you to be independent of centralized platforms and corporations when developing and distributing code, since being tied to them introduces additional risks (a single point of failure, the company may close or change its operating conditions). Radicle uses the familiar Git to manage code, expanded by means of defining repositories in a P2P network. All data is primarily saved locally (the local-first concept) and is always available on the developer's computer, regardless of the state of the network connection.

Contributors provide access to their code and related artifacts, such as patches and issues, which are stored locally and replicated to other interested developers' nodes connected to a common decentralized P2P network. The end result is a global decentralized Git repository, with data replicated and duplicated across contributors' systems.

The Gossip protocol is used to identify neighboring nodes in the P2P network, and the Heartwood protocol, based on Git, is used to replicate data between nodes. Since the protocol is based on Git, the platform can be easily integrated with existing Git development tools. Public-key cryptography is used to identify nodes and verify repositories, without the use of accounts.

Each repository in the P2P network has its own unique identifier and is self-certified, i.e. all actions in the repository, such as adding commits and leaving comments to an issue, are certified by the owner with a digital signature, which allows you to verify the correctness of the data on other nodes without using centralized certification authorities. To gain access to the repository, it is enough for at least one node to be online, which has a replicated copy of it.

Nodes in a P2P network can subscribe to specific repositories and receive updates.You can create private repositories that are only accessible to specific nodes. The concept of "delegates" is used to manage and own a repository. A delegate can be either a single user, a bot, or a group linked to a special identifier. Delegates can accept patches into a repository, close issues, and set access rights to the repository. Several delegates can be linked to each repository.

On user systems, Radicle repositories are stored as regular git repositories, with additional namespaces to store data about peers and forks that are being worked on. Discussions, proposed patches, and review organization components are also stored in the git repository as Collaborative Objects (COBs) and replicated between peers.

https://radicle.xyz/2024/09/10/radicle-1.0.html

Gentoo Linux Significantly Improves Support for MIPS and Alpha:

11/09/2024

The Gentoo project has announced the resumption of work on the MIPS and Alpha architectures, where the support has been stagnant for the past few years. Thanks to the emergence of enthusiasts interested in using these architectures, current stage builds and binary packages have

been published for MIPS and Alpha, and processes for checking the dependency tree and testing in the continuous integration system have been established. For the MIPS ABI, support is provided for the o32, n32 and n64 ABIs in big endian and little endian variants. For Alpha, in addition to stage builds, an installation CD image has also been prepared.

https://www.gentoo.org/news/2024/09/11/Improved-MIPS-and-Alpha-support.html

Release of Ardour 8.7:

12/09/2024

The release of Ardour 8.7 has been published. It is designed for multi-channel recording, processing and mixing of sound. Ardour provides a multi-track time scale, unlimited level of rollback of changes during the entire time you work with the file (even after closing the program) and support for various hardware interfaces. The program is positioned as a free analogue of professional tools, like ProTools, Nuendo, Pyramix and Sequoia. The code is distributed under the GPLv2 license. In the near future, unofficial builds for Linux will be available in the Flatpak format .

https://ardour.org/whatsnew.html

Ubuntu 22.04.5 LTS Released:

13/09/2024

An update for the Ubuntu 22.04.5 LTS distribution has been released, which includes changes related to improved hardware support, an update to the Linux kernel, and bug fixes in the installer and bootloader. The package also includes current updates for several hundred packages related to the elimination of vulnerabilities and problems affecting stability. Similar updates for Kubuntu 22.04.5, Ubuntu Budgie 22.04.5, Ubuntu MATE 22.04.5, Lubuntu 22.04.5, Ubuntu Kylin 22.04.5, Ubuntu Studio 22.04.5, and Xubuntu 22.04.5 are also released.

The release includes some improvements backported from the Ubuntu 24.04 release. In particular, packages with the 6.8 kernel are offered for cloud services from Google, Oracle, AWS, and Azure, as well as for the RISC-V platform and configurations requiring minimal latency (lowlatency). For other cases, the supply of kernels 6.5 and 5.15 is continued. The versions of cloud-init 24.2, openldap 2.5.18, dpdk 21.11.6, squid 5.9, snapd 2.63.1, Rust 1.75, xdg-desktop-portal-gnome 42.1, and nvidia-graphics-drivers packages have been updated. Support for new Synaptics devices has been added. RISC-V builds of ubuntu-desktop and ubuntu-desktop-minimal have been added.

It makes sense to use the presented build only for old equipment. For new systems, instead of the 22.04 branch, it is recommended to use a more current release of Ubuntu 24.04.1 LTS . Systems installed earlier can receive all the changes present in Ubuntu 22.04.5 through the standard update installation system. Support for the release of updates and fixes for security issues for the server and desktop editions of Ubuntu 22.04 LTS will last until April 2027, after that, updates will be generated for another 7 years as part of separate paid support (ESM, Extended Security Maintenance).

https://lists.ubuntu.com/archives/ubuntu-announce/2024-September/000305.html

Maestro console music player unveiled:

13/09/2024

The Maestro project is developing a console music player aimed at creating the most functional tool for listening to music in the console. It supports such features as working with playlists, playing music from YouTube, YouTube Music and Spotify, visualizing the sound waves in the terminal, downloading, displaying and translating song lyrics into other languages, creating clips for playing only part of a composition, integration with Discord (publishing statuses with the composition being listened to and streaming to other systems via Discord). The project code is written in Python and is distributed under the MIT license.

Support for mp3, wav, flac and ogg formats is mentioned. The player is cross-platform and can be used in Linux, macOS and Windows,

and when launched in the terminal in macOS, it supports the display of the playback control indicator. Compositions can be filtered based on tag binding. There are built-in capabilities for analyzing statistics, for example, you can view the rating of songs by the number of plays for a certain period. A recommendation request is supported with a selection of similar songs from YouTube Music.

https://github.com/PrajwalVandana/maestro-cli

Shotcut Video Editor Released:

14/09/2024

Shotcut video editor, release 24.09 is now available. It is developed by the author of the MLT project and uses this framework to do video editing. Support for video and audio formats are 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 video composition 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 interface was built with Qt. The code is written in C++ and is distributed under the GPLv3 license. Ready-made assemblies are available for Linux (AppImage , flatpak and snap), macOS and Windows.

https://shotcut.org/blog/new-release-240913/

Haiku R1 Operating System Beta 5:

14/09/2024

After a year and a half of development, the fifth beta release of the Haiku R1 operating system has been published. The project was initially created as a reaction to the closure of the BeOS and was developed under the name OpenBeOS, but was renamed in 2004 due to claims related to the use of the BeOS trademark in the name. Several bootable Live images (x86 , x86-64 1.4 GB) have been prepared to evaluate the new release. The source code for most of Haiku OS is distributed under the free MIT license, with the exception of some libraries, media codecs and components borrowed from other projects.

Haiku OS is aimed at personal computers, uses its own kernel, built on a modular architecture, optimized for high responsiveness to user actions and efficient execution of multithreaded applications. An object-oriented API is provided for developers. The system is directly based on BeOS 5 technologies and is aimed at binary compatibility with applications for this OS. Minimum hardware requirements : Pentium II or AMD Athlon CPU and 384 MB RAM (Intel Core i3 or AMD Phenom II and 2 GB RAM recommended).

OpenBFS is used as a file system, supporting extended file attributes, journaling, 64-bit pointers, support for storing meta tags (for each file, attributes can be saved in the form of key=value, which makes the FS similar to a database) and special indexes to speed up retrieval by them. "B+ tree" trees are used to organize the directory structure. From the BeOS code, Haiku includes the Tracker file manager and the Deskbar panel, the source code of which was opened after BeOS left the scene.

https://www.haiku-os.org/news/2024-09-13_haiku_r1_beta5/

Nextcloud Hub 9, is released:

15/09/2024

The Nextcloud Hub 9 platform was released, providing a self-sufficient solution for the collaboration of employees of enterprises and teams developing various projects. At the same time, the Nextcloud 30 cloud platform, which is the basis of Nextcloud Hub, is published, allowing you to deploy cloud storage with support for synchronization and data exchange, providing the ability to view and edit data from any device at any point in the network (using a web interface or WebDAV). The Nextcloud server can be deployed on any hosting that supports the execution of PHP scripts and provides access to SQLite, MariaDB/MySQL or PostgreSQL. The Nextcloud source code is distributed under the AGPL license.

Nextcloud Hub resembles

Google Docs and Microsoft 365, but allows you to deploy a fully controlled collaborative infrastructure that operates on its own servers and is not tied to external cloud services. Nextcloud Hub combines several open-source add-on applications over the Nextcloud cloud platform into a single environment, allowing you to work together on office documents, files, and information for planning tasks and events. The platform also includes add-ons for accessing email, exchanging messages, organizing video conferences, and chats.

User authentication can be performed either by a local database or through integration with LDAP/Active Directory, Kerberos, IMAP and Shibboleth/SAML 2.0, including the use of two-factor authentication, SSO (Single-sign-on) and linking new systems to an account using a QR code. Version control of changes allows you to track changes in files, comments, sharing rules and tags.

https://github.com/nextcloud/server/releases/tag/v30.0.0

Sovereign Fund invests 688 thousand euros in the development of the Samba project:

15/09/2024

The developers of the Samba project announced that they have received an investment of 688 thousand euros from the STF (Sovereign Tech Fund), established in Germany to stimulate the development of open digital infrastructure and open-source ecosystems.STF was created with funds provided by the German Ministry of Economic Affairs and Climate Protection and is supervised by the Federal Agency for Disruptive Innovations SPRIND. The decision to invest was made after an application was submitted by SerNet, which manages the Samba trademark in Germany on behalf of the international developer community and develops the Samba+ product for enterprises. The investment program provides for work to be carried out over 18 months (from September 1, 2024 to February 28, 2026).

Over the course of 18 months, Samba developers employed by SerNet will complete 17 projects aimed at enhancing Samba's capabilities to improve security, scalability, and add additional functionality. All work will be done in an open manner and using the same processes used in Samba development. The projects to be completed are: ensuring SMB3 fault tolerance through transparent switching to a backup server; adding Unix extensions to SMB3; supporting SMB-Direct technology to speed up file transfers; and implementing protocols to improve performance and security, such as " SMB over QUIC ."

https://lists.samba.org/archive/samba/2024-September/249751.html

Linux kernel 6.11 released:

16/09/2024

After two months of development, Linus Torvalds released the Linux kernel 6.11. The most notable changes: support for atomic write operations at the block level, support for bind() and listen() operations in io_uring, a new mechanism for blocking software interrupt handlers, the ability to write to memory-mirrored executables, support for writing block device drivers in the Rust language, optimization of the getrandom() call, a new implementation of AES-GCM.

The new version includes 15,130 fixes from 2,078 developers, the patch size is 85 MB (the changes affected 13,282 files, 985,857 lines of code were added, 268,915 lines were deleted). The previous release had 14,564 fixes from 1,989 developers, the patch size was 41 MB (two times less than the patch for the 6.11 kernel). About 46% of all changes presented in 6.11 are related to device drivers, about 17% of changes are related to updating code specific to hardware architectures, 10% are related to the network stack, 5% - to file systems and 3% to internal kernel subsystems.

https://lkml.org/lkml/2024/9/15/282

FreeBSD 13.4 Released:

17/09/2024

After 6 months of development, the FreeBSD 13.4 release has been published, which became the first release formed within the framework of the updated development cycle, that implies intermediate releases every six months. FreeBSD 13.4 installation images are prepared for the amd64, i386, powerpc, powerpc64, powerpc64le, powerpcspe, armv6, armv7, aarch64 and riscv64 architectures. Additionally, builds have been prepared for virtualization systems (QCOW2, VHD, VMDK, raw) and cloud environments Amazon EC2, Google Compute Engine and Vagrant. The next release 13.5, which is scheduled for March, will be the final one and will be supported until April 2026. In parallel, the FreeBSD 14 branch is being developed, the next release (14.2) is scheduled for December 2024. The first release of the FreeBSD 15 branch will be released in December 2025.

https://www.freebsd.org/releases/13.4R/announce/

OpenSearch, a fork of the Elasticsearch platform, is now under the wing of the Linux Foundation:

17/09/2024

Amazon has announced the creation of the OpenSearch Software Foundation, controlled by the Linux Foundation, which will oversee the further development of the OpenSearch project, which is developing a fork of the Elasticsearch, as well as the Kibana web interface. The transfer of OpenSearch to an independent neutral platform, not controlled by individual companies, will attract new participants to the development and make the project more attractive for implementation.

The project will be managed by a technical committee formed from representatives of the community and companies participating in the development. The main principle of the management model is defined as "development by the community, for the community". Amazon, SAP, Uber, Aiven, Aryn, Atlassian, Canonical, DigitalOcean, Eliatra, Graylog, NetAp Instaclustr and Portal26 have announced their participation in the work on OpenSearch in the new organization. The community that has formed around OpenSearch has several thousand participants, including more than 200 maintainers from 25 companies and organizations. Since the fork was created, the project has recorded more than 700 million downloads.

The fork was created in response to the Elasticsearch project switching to the non-free SSPL (Server Side Public License) license and ceasing to publish changes under the old Apache 2.0 license. Despite Elasticsearch's recent return to using a free license, the OpenSearch project has not lost its relevance, as it continues to use the permissive Apache 2.0 license instead of the AGPLv3 license that Elasticsearch switched to and also develops a number of specific add-ons that were previously supplied by Amazon in a separate Open Distro for Elasticsearch distribution and replace the paid components of Elasticsearch.

https://aws.amazon.com/blogs/opensource/aws-welcomes-the-opensearch-foundation/

AMD Engineer Proposes Easier Linux Kernel Management of CPU Vulnerability Locks:

17/09/2024

Since the number of modes supported in the Linux kernel to counter CPU vulnerabilities has reached 15 and listing all vulnerabilities in the kernel command line has become quite a difficult task, a kernel developer from AMD has proposed moving from configuring blocking of specific vulnerabilities to selecting blocking of attack vectors.

It is proposed to activate blocking methods depending on the type of isolation violation: between the user and the kernel (mitigate_user_kernel), between the user and another user (mitigate_user_user), between the guest system and the host environment (mitigate_guest_host), between different guest systems

(mitigate_guest_guest), and between different threads (mitigate_cross_thread).

The proposed approach will enable activation of protection only against those classes of vulnerabilities that really concern the user. For example, cloud environment owners can enable the mitigate_guest_host and mitigate_guest_guest modes, after which the protection methods against the BHI, GD, L1TF, MDS, MMIO, Retbleed, RFDS, Spectre_v2, SRBDS, SRSO and TAA vulnerabilities will be activated.

https://lore.kernel.org/lkml/20240912190857.235849-1-david.kaplan@amd.com/T/

LLVM 19 Compiler Suite Released:

17/09/2024

After six months of development, the LLVM 19.1.0 has been released. It develops tools (compilers, optimizers, and code generators) that compile programs into intermediate bitcode of RISC-like virtual instructions (a low-level virtual machine with a multi-level optimization system). The generated pseudocode can be converted into machine code for a given target platform or used by a JIT compiler to generate machine instructions directly during program execution. Based on LLVM technologies, the project develops the Clang compiler, which supports the C, C++, and Objective-C programming languages. Starting with the previous branch, the project switched to a new version number generation scheme, according to which the zero release ("N.0") is used during the development process, and the first stable version is supplied with the number "N.1".

https://discourse.llvm.org/t/llvm-19-1-0-released/81285

Valkey 8.0 has been released:

18/09/2024

Valkey 8.0 project is a fork of the Redis DBMS, created after the Redis codebase was transferred to a proprietary license. The project is being developed on a neutral platform under the auspices of the Linux Foundation with the participation of developers from companies such as Amazon, Google, Oracle, Ericsson, and Snap. Valkey developers include Madelyn Olson, a former Redis maintainer. The project code is written in C and distributed under the BSD license. It supports Linux, macOS, OpenBSD, NetBSD, and FreeBSD.

Starting with release 7.4, Redis has switched to using the Redis Source Available License v2 (RSALv2) and Server Side Public License v1 (SSPLv1) licenses, which discriminate against certain categories of users and do not allow them to be considered open or free. Both licenses are similar in their goals, and the differences are that the SSPL license is based on the AGPLv3 copyleft license, while the RSAL license is based on the BSD permissive license. The RSAL license allows you to use, modify, distribute, and integrate the code into applications, except for cases when these applications are commercial or used to provide managed paid services. The SSPL license additionally requires that you provide under the same license not only the code of the application itself, but also the source code of all components involved in providing the cloud service.

Valkey and Redis provide functions for storing data in key/value format, extended with support for structured data formats such as lists, hashes and sets, and the ability to execute Lua handler scripts on the server side. The database is stored in memory and synchronized with the disk version or reflected in the change log on disk, which ensures the safety of data in case of an abnormal shutdown. Transactions, publish/subscribe mode, increment/decrement commands, list and set operations (union, intersection), key renaming, master-slave replication, multiple selections and sorting functions are supported.

https://valkey.io/blog/valkey-8-ga/

GNOME Desktop Environment Release 47:

18/09/2024

After six months of development, the GNOME 47 desktop environment has been released. Specialized Live builds based on openSUSE and an installation image prepared by the GNOME OS initiative are available

for a quick evaluation of GNOME 47's capabilities . GNOME 47 is also already included in experimental builds of Ubuntu 24.10 and Fedora 41 .

https://foundation.gnome.org/2024/09/18/introducing-gnome-47/

Release of nxs-data-anonymizer 1.11.0:

19/09/2024

Nxs-data-anonymizer 1.11.0 has been released - a tool for anonymizing PostgreSQL and MySQL/MariaDB/Percona database dumps. The tool is written in Go and released under the Apache License 2.0.

The tool can be used via unnamed pipes in the command line to redirect the dump from the source DB directly to the target DB with the necessary transformations. Depending on the entity type in the security settings, the tool anonymizes columns for tables with the rules described in the filters section. If the table does not contain any rules, the data will still be protected, since the anonymizer will not include it in the resulting dump. It is possible to link the anonymization of DB entities in different tables according to different rules and work with one-time generated data using global variables.

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

Swift 6.0 on Linux:

19/09/2024

Apple has released the Swift 6.0 programming language. Official builds are available for Linux (Ubuntu 20.04/22.04/24.04, Debian 12, Fedora 39, Amazon Linux 2, RHEL 9), Windows 10, and macOS (Xcode). The source code is distributed licensed under Apache 2.0.

Swift combines the best elements of C and Objective-C, and provides an Objective-C-compatible object model (Swift code can be mixed with C and Objective-C code), but features automatic memory allocation, variable and array overflow control, protection against the use of uninitialized variables, and blocking access to memory after it is freed, which significantly increases the reliability and safety of the code. Swift also offers many modern programming techniques, such as closures, generic programming, lambda expressions, tuples and dictionary types, fast collection operations, and elements of functional programming.

The Swift implementation is built using technologies from the free LLVM project. To ensure high performance, Swift programs are compiled into machine code, which in tests demonstrates performance 30% faster than Objective-C code. Instead of a garbage collector, Swift uses object reference counting tools. The Swift Package Manager is included in the binary, providing tools for distributing modules and packages with libraries and applications in the Swift language, managing dependencies, automated loading, assembling and linking components.

https://swift.org/download/%23releases

Valve has released Proton 9.0-3:

20/09/2024

Valve has published a new version of the Proton 9.0-3 project, based on the Wine project code base and aimed at ensuring that games created for Windows and presented in the Steam catalog in Linux, work.The project's code is distributed under the BSD license.

Proton allows you to directly run Windows-only Steam games in your Linux client. The package includes DirectX 9/10/11 (based on the DXVK package) and DirectX 12 (based on vkd3d-proton) implementations that work via translating DirectX calls to the Vulkan API, provides improved support for game controllers and the ability to use full-screen mode regardless of the screen resolutions supported in the games. To increase the performance of multi-threaded games, the " esync " (Eventfd Synchronization) and " futex/fsync " mechanisms are supported.

https://github.com/ValveSoftware/Proton/releases/tag/proton-9.0-3

Zorin OS 17.2 Released:

20/09/2024

After 6 months of development, the release of the Linux distribution Zorin OS 17.2 , based on Ubuntu 22.04, is presented. The target audience of the distribution is novice users accustomed to working in Windows. The distribution offers a special configurator that allows you to give the desktop a look, typical of different versions of Windows and macOS and the distribution includes a selection of programs close to the programs that Windows users are accustomed to. The size of the bootable iso image is 3.5 GB.

Zorin OS uses GNOME as the desktop with a set of its own add-ons and a panel based on Dash to Panel and Dash to Dock. To integrate the desktop with a smartphone, the Zorin Connect application is supplied (based on KDE Connect). In addition to deb packages and Ubuntu repositories, support for Flatpak, AppImage and Snap formats is included by default, with the ability to install programs from the Flathub and Snap Store catalogs.

https://blog.zorin.com/2024/09/19/zorin-os-17.2-has-landed/

Ubuntu 24.10 Beta Release:

21/09/2024

The beta release of the Ubuntu 24.10 "Oracular Oriole" distribution is out. After the release, the package base was completely frozen, and the developers moved on to final testing and bug fixing. The release, which is classified as an intermediate release, which has updates for a period of 9 months, is scheduled for October 10. Ready-made test images have been created for Ubuntu, Ubuntu Server , Lubuntu , Kubuntu , Ubuntu Mate , Ubuntu Budgie , Ubuntu Studio , Xubuntu , UbuntuKylin (edition for China), Ubuntu Unity , Edubuntu and Ubuntu Cinnamon .

https://lists.ubuntu.com/archives/ubuntu-announce/2024-September/000306.html

Release of CRIU 4.0:

22/09/2024

The CRIU 4.0 (Checkpoint and Restore In Userspace) toolkit has been released. It is designed to save and restore processes in user space. The toolkit allows you to save the state of one or a group of processes and then resume work from the saved position, including after a system reboot or on another server without breaking already established network connections. The project code is written in C and is distributed under the GPLv2 license. CRIU is used in container management systems such as OpenVZ, LXC/LXD, and Docker. The changes required for CRIU to work are included in the main Linux kernel.

The areas of application of CRIU technology include, ensuring OS reboot without disrupting the continuity of long-running processes, Live migration of isolated containers, accelerating the launch of slow processes (you can start working from the state saved after initialization), performing kernel updates without restarting services, periodically saving the state of long-running computing tasks to resume work in the event of a crash, load balancing nodes in clusters, duplicating processes to another machine (fork to a remote system), creating snapshots of user applications during operation for their analysis on another system or in case it is necessary to cancel further actions.

https://github.com/checkpoint-restore/criu/releases/tag/v4.0

BACK NEXT MONTH

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.

Python In The Real World - Pt.155

Python and Space Weather

Greetings again fellow Sentient Lifeforms. Things here at landing pad 2997 on Terra STILL mostly crazy. Trying to handle everything on my plate is somewhat like trying to juggle four chainsaws, and an orange, all at the same time. (A VERY nasty mental picture, I must admit.) I mean, I'm supposed to be at least SEMI retired, but I seem to be busier than I was when I had a full time (read 70+ hours a week) job, a young family, and other professional responsibilities. Oh well, as the Barenaked Ladies once said "I wax poetic as you're waxing your legs". We'll move on now to this month's offering.

Here in Texas, we have a saying: "If you don't like the weather, wait 10 minutes." That's because on any given day, the weather is so very volatile. Especially in the summertime. In order to make any plans for outside activities, things like walks, shopping, family trips, heck even walking the dog, can be impacted by the weather. Cold, hot, windy, rainy, foggy, muddy, clear… it all affects how we will spend our day or night.

So, yes, weather here on Terra is an important thing that we need to take into consideration before we make any decisions about what we will do today, tomorrow or even next week. There is another event that is very weather sensitive. That's the launching of spacecraft to explore areas not on Terra, and even the return of said spacecraft. Yes, I'm talking about space, the great unknown, the 'final frontier'.

Space doesn't have rain or thunder or cold fronts or even seasonal changes, but it does have some interesting things like plasma temperatures and densities, solar wind speeds, and when you look at our star, the sun, there are Coronal Mass Ejections and solar flares and other things that can make our lives here on Terra interesting to say the least.

Many countries have created space programs that only monitor the space weather. NASA is one of them and that's where we will concentrate our attention for this article.

To get started, take a look at https://api.nasa.gov/. This link will give you a list of 17 (as of September 5, 2024) different APIs that are available. Many of the APIs have "sub APIs" associated with them. For example, the DONKI API (Space Weather Database of Notifications, Knowledge, Information) has 11 different sub groups. These include things like Coronal Mass Ejection (CME), Geomagnetic Storms (GST), Solar Flares (FLR), and many more.

If you are interested in digging in, you should sign up for an API key at https://api.nasa.gov/#signUp. The API key is FREE, so really there's no reason to not sign up for one, and the key is delivered in your email within a minute or two. However, if you want to just play before you commit, most of the API calls support an API key of "DEMO_KEY". You are limited to 50 requests per IP addresses per day, and 30 requests per IP address per hour. So your free testing will be fairly limited.

Let's look at some of the things that DONKI can provide.

In your favorite IDE, start a quick python project. Of course, we'll need to import requests and json. Due to the amount of data that will come down, you'll want to include pprint in your project as well. Set a variable named mykey to "DEMO_KEY", then create a formatted string to the API url that you want to use. In this case "https://api.nasa.gov/DONKI/CME?api_key=DEMO_KEY".

You can narrow the amount of data that comes down by including a startDate and endDate in the format YYYY-MM-DD, but if you want to just get a gross overview of what the call will return, leaving out the startDate will default to 30 days prior to the current UTC date, and the endDate will default to the current UTC date.

Here's (top right) what the api call would look like, including the startDate and endDate parameters… https://api.nasa.gov/DONKI/CME?startDate=2024-09-01&endDate=2024-09-30&api_key={mykey}

Please note, by leaving out the startDate and/or endDate could lead to way more data items than you might want to start with. So use that type of call for when you really need it.

From here, you can query the info variable to get the fields you want.

I did this very early in the morning on Saturday, September the 7th, and it returned 129 data records with each record containing 12 items, and some of those items were dictionaries themselves.

So anyway, in order to get a very gross overview of the data, I decided to query the json response for just the dictionary keys. Here's what was returned…

```
dict_keys(['activityID', 'catalog', 'startTime',
'instruments',
'sourceLocation',
'activeRegionNum', 'note',
'submissionTime',
'versionId', 'link',
'cmeAnalyses',
'linkedEvents'])
```

I then wanted to see what just one record would look like. So I had it dump to the terminal via pprint. I broke the data dump into smaller pieces to make it easier to understand. Some of the data items don't mean anything to me yet.

```
{'activeRegionNum': None,

 'activityID': '2024-08-
08T04:48:00-CME-001',

 'catalog': 'M2M_CATALOG',
```

```
import requests
import json
import pprint

mykey = "DEMO_KEY"

url1 = f"https://api.nasa.gov/DONKI/CME?api_key={mykey}"

resp = requests.get(url1)
print(resp)
info = resp.json()
```

For me, the important data item in this small group is the activityID. This contains the date and time of the incident in the id number.

Now for the second dictionary item in our json data. The cmeAnalyses field (below):

You can see that there are many items that don't quite compute to me, but there are two items that stand out pretty well right at first glance. Mainly the note field and the link field. If I was really interested in this event, I'd pull that link up. Remember, this is the analysis of the event, so it will be

```
 'cmeAnalyses': [{'enlilList': None,
                  'featureCode': 'LE',
                  'halfAngle': 30.0,
                  'imageType': 'running difference',
                  'isMostAccurate': True,
                  'latitude': 40.0,
                  'levelOfData': 0,
                  'link': 'https://webtools.ccmc.gsfc.nasa.gov/DONKI/view/CMEAnalysis/
32619/-1',
                  'longitude': 138.0,
                  'measurementTechnique': 'SWPC_CAT',
                  'minorHalfWidth': None,
                  'note': 'Measurement based on best fit between SOHO LASCO C2 '
                          'and STEREO A COR2.',
                  'speed': 291.0,
                  'speedMeasuredAtHeight': None,
                  'submissionTime': '2024-08-08T13:07Z',
                  'tilt': None,
                  'time21_5': '2024-08-08T17:10Z',
                  'type': 'S'}],
```

fairly specific.

Now we are back at the "general" data, and here we see that there were two devices that were used to look at this event as well as another link, this time a more general web page that will show any related (top right).

The note field is usually one of the most important to me, so I can decide to dive deeper into this report or not.

```
 'note': 'Faint CME first seen in the NW by SOHO LASCO C2 beginning at '

         '2024-08-08T04:48Z as well as in later frames by STEREO A COR2. This '

       'event is not clearly visible in SOHO LASCO C3 as it may be too faint '

         'or obscured by the pylon. Possible source is wider field line '

  'opening seen beyond the NW limb in SDO AIA 171 and GOES SUVI 284',
```

Finally the last batch of data fields. Here, the startTime and submissionTime fields are something I would normally look at.

```
   'instruments': [{'displayName': 'SOHO: LASCO/C2'},
                   {'displayName': 'STEREO A: SECCHI/COR2'}],
   'link': 'https://webtools.ccmc.gsfc.nasa.gov/DONKI/view/CME/32618/-1',
   'linkedEvents': None,
```

```
 'sourceLocation': '',
 'startTime': '2024-08-08T04:48Z',
 'submissionTime': '2024-08-08T13:06Z',
 'versionId': 1}
```

All that having been said, the cmeAnalyses dictionary can contain multiple entries. A very good example of this occurred on May 11 of this year (2024, just in case you read this sometime in the future). I used the same methodology to get a data dump for that day again using DONKI.

```
url1 = f"https://api.nasa.gov/DONKI/CME?startDate={startDate}&endDate={endDate}&api_key={mykey}"
```

Then, once I got the data, I saved the data to a local pickle file, so I didn't have to keep making the call. There were 5 events reported that day. I dug into the json data and near the end of the first report was a link to https://webtools.ccmc.gsfc.nasa.gov/DONKI/view/CME/30719/1, which is a very clear (well sort of) description of the actual event, including other links.

Higher up in the json data for the first report, I found another link which led me to https://webtools.ccmc.gsfc.nasa.gov/DONKI/view/WSA-ENLIL/30726/-1. This site, at the bottom, showed a number of animated .gif files. The first "Inner Planets Link" shows a rather large CME flying off the Sun https://iswa.gsfc.nasa.gov/downloads/20240511_032400_2.0_anim.tim-den.gif.

That big dark purple (to my eyes) is the CME headed for that tiny yellow dot which represents Earth. Since the image is a GIF, I didn't try to capture it just as it hits, but you can visit the above link to watch it yourself.

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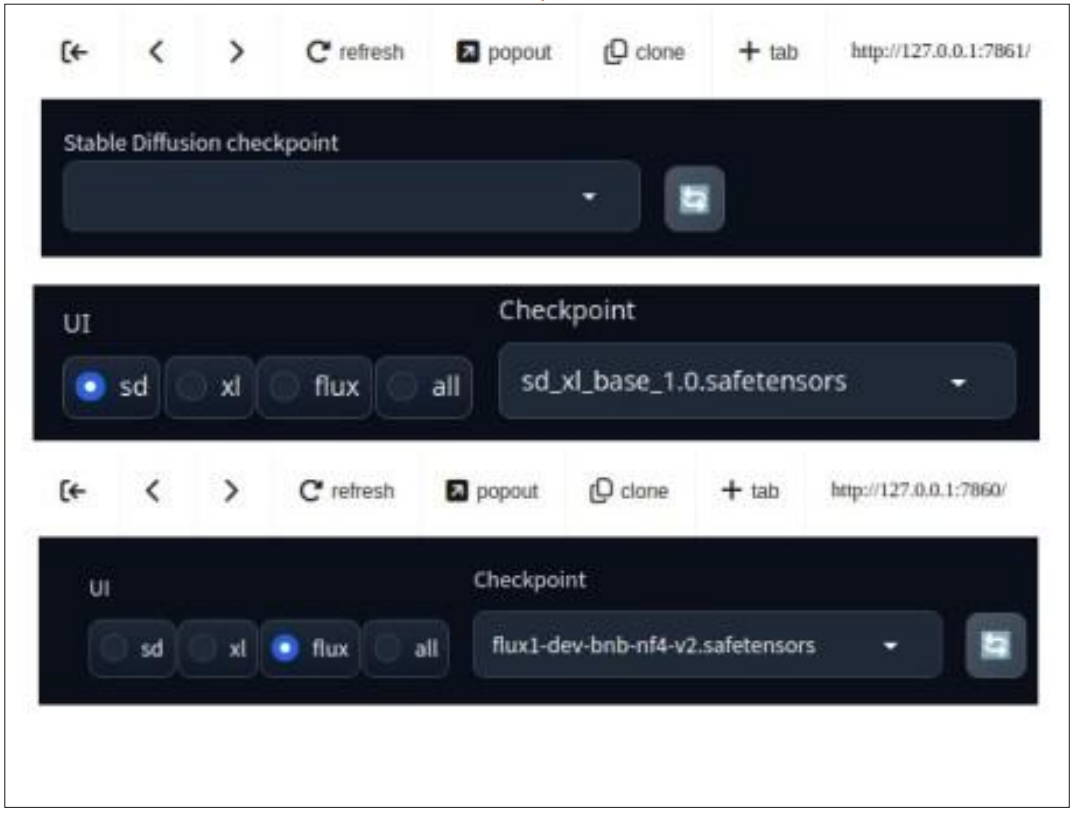
Stable Diffusion Pt.18

First we should consider why we might want to load/use Forge. Initially important is that Forge offers a speed increase compared with Automatic 1111. It is rather dramatic for middle of the road GPUs with six or eight gigs of video ram with decreasing speed boast as ram increases but even then some modest amount. Regardless of the speed increase, the inclusion of Advanced features and extensions might make you want to use it anyway.

The easiest way to install Forge is via Pinokio (https://pinokio.computer/) as discussed in last month's issue. Note that it requires an Nvidia graphics card and you need to first load Pinokio. Then within Pinokio, simply start up the Discover option and search for the Forge script via the search bar or scroll down to find the installer. You will need to download the git file as named or rename if needed, then install and run it.

Without Pinokio it's a more typical install requiring a download and usually some terminal work. Rather than repeating what others have already done I will point you to two videos which explain Forge install. You might want to view both before actual installation. Some installations do not require an Nvideo graphics card but will also work with AMD. See: https://www.youtube.com/watch?v=gJotSdaMFqw or https://www.youtube.com/watch?v=TatD9zNvhqY&t=18s and/or other websites or videos as instructions come and go although your best bet would be an installation for your OS.

Also needed regardless of the install may be appropriate models. What is required depends on how you are using Forge given it can essentially act like Automatic 1111 with expanded capabilities. I am running it on two machines, one with Linux Mint using an Nvidia GeForce 4080 graphics card with 16 GB video ram installed via Pinokio and another with Ubuntu Studio using an Nvidia GeForce RTX 3060 with 4 GB video ram using a more standard install. The screenshots of three different model options are shown. They are very similar except the top one is the standard Stable Diffusion interface as being run within the Pinokio framework (4080 card), the second is Forge, without Pinokio, as seen using the 3060 card within Ubuntu Studio and the third as Forge (4080 card) within Pinokio. The later is using the Flux interface.

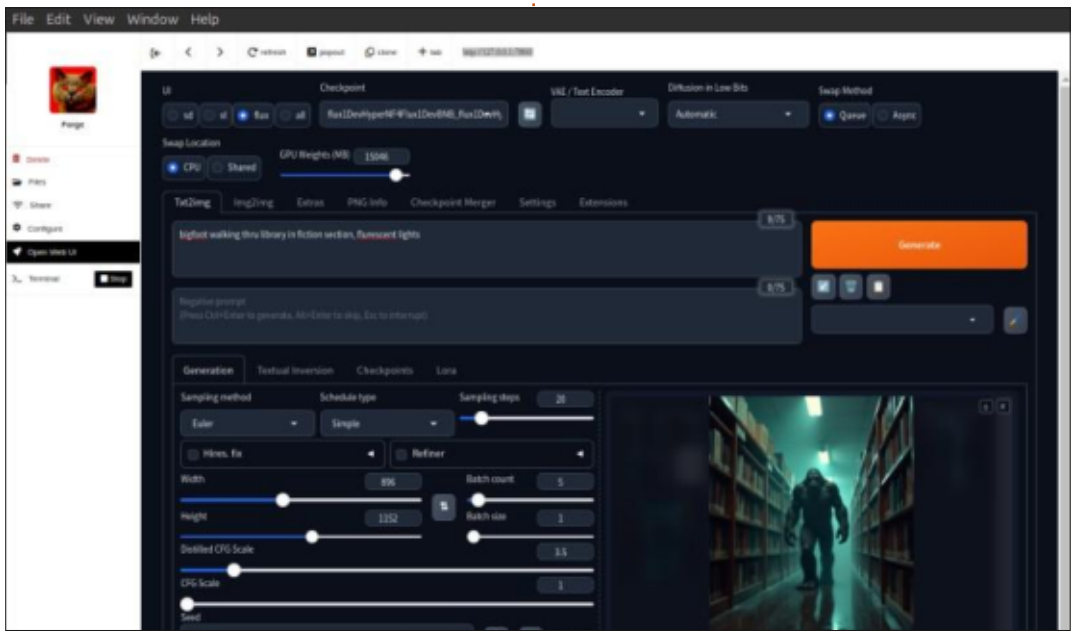


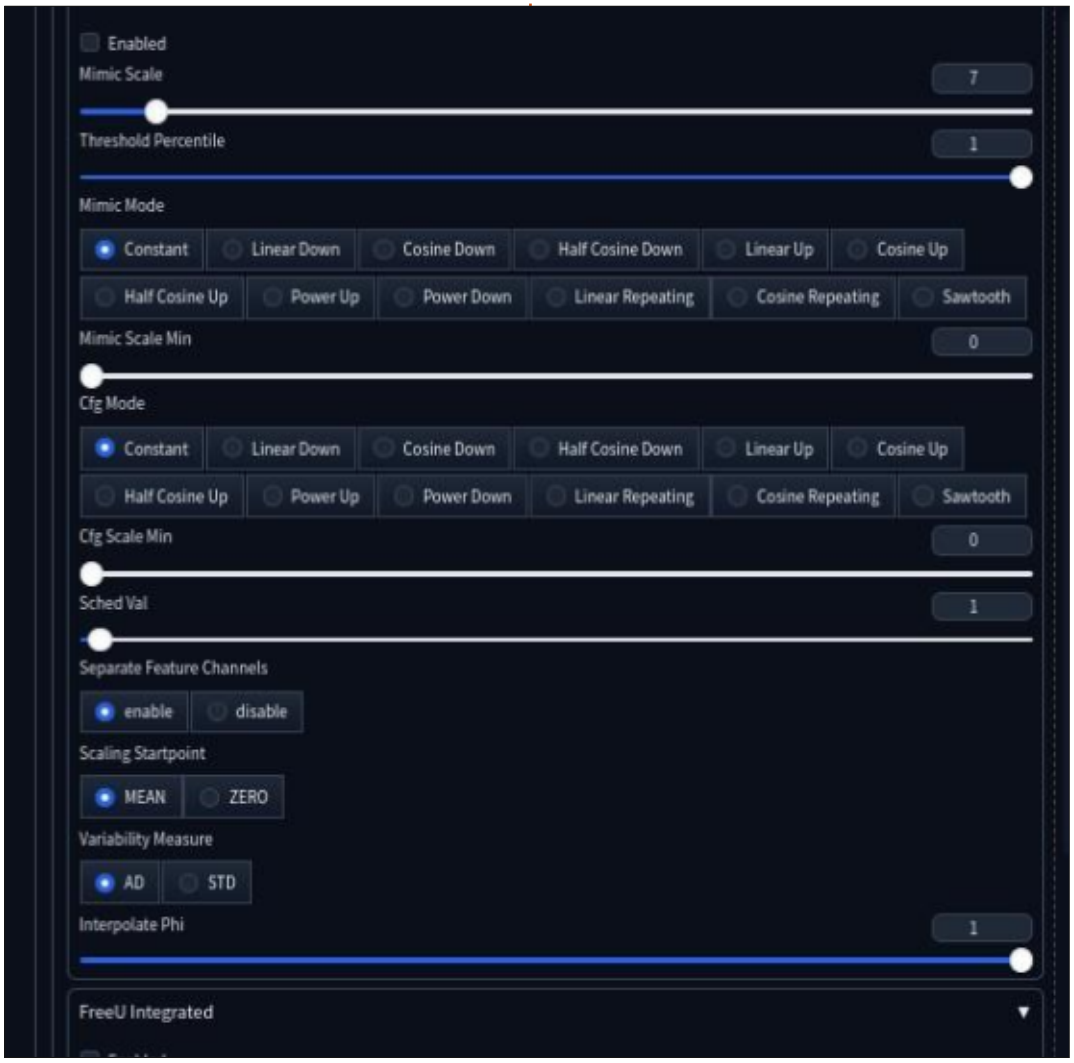
Exactly what is Flux? It's a relatively new model (https://blackforestlabs.ai/) that has recently gotten a lot of press. Not perfect but very impressive in terms of photographic-like images created, especially when derived from a real photograph. Sometimes it's a little too perfect or small imperfections make you start to wonder if they are really photographs. Nevertheless, it's good enough to scare some people

into questioning what is needed to control this ever more capable avalanche of image related AI technology. I am not sure who will win between those trying to monetize it on one hand, the pro legislation crowd worrying about nefarious uses on the other with the unappreciated, unaffiliated creative uses in the middle that keep making it better.

Using Forge in Pinokio with a Flux model produces a fairly realistic image of a Bigfoot walking through a library under fluorescent lights with light reflection and a realistic floor. You will notice a variety of options within the screenshot both under the image and on the left are available. Just below the Generate button is an empty style bar which gives you access to what seems to be several hundred styles. You could spend significant time just getting to know the interface. It seems overwhelming and one might have to ask whether you need this kind of creative power. For example if you simply need general images which convey an idea, you might find that Fooocus is more than adequate.

Next time I will attempt to address some of the features within Forge using the Flux model. However, for those new to this concept you might want to "try before you buy" meaning get a feel for what is possible before you purchase additional hardware or spend time installing software that you may not need. (It's already too late for me.) A quick look at https://replicate.com/explore will allow anyone to test the possibilities and still be able to walk away without much cost in time or money and other options do exist. Considering how rapidly this area is advancing and the possible legal issues that may soon start to develop, a prudent approach may be appropriate for those finding the technology overwhelming.





At the CTAN site, there are quite a few topics listed under B when I select Browse > Topics > B. As with the A topic, there are various language packages: Bahasa, Basque, Belorussian, Bengali and four more. Eventually I will get around to exploring the Babel package – which can control many features of documents written in languages other than English. For these columns, I will skip over the language packages. Bebel takes up one full chapter in The Latex Companion (Mittelbach and Fischer, ISBN 978-0-201-36300-5 chap 13). I am also going to skip over the twelve topics concerned with bibliographies. These are obviously very important for some writers. Currently there seems to be two dominant models for generating bibliographies in Latex: BibTex and BibLatex. It is a topic that requires more than one dedicated column.

The background topic contains ten distinct packages for adding backgrounds to documents. Two of them state that they generate watermarks, one makes graph paper-like images behind text, another generates the page grid behind text, another allows for a Postscript image behind text. The bidipagegrid package makes the standard pagegrid package work properly when the document requires bidirectional printing. The gradback package generates gradient backgrounds in dvips output, which does not matter to me; the package also has no documentation.

AeB-Tilebg uses a rectangular image and tiles it behind page contents. Tiled backgrounds are often generated electronically for desktops and web pages. Here is an excerpt from the documentation: "Download your favourite tiled background swatch from the Internet or create one yourself, convert it to a .eps or a .pdf format (if you use distiller or pdftex, respectively), then place that image in the same folder as your text document. Anywhere in your document, use the command \setTileBgGraphic to bring in your tiled background using the graphicx package; for example, \setTileBgGraphic[scale=.5] {graphics_file}". The usepackage instruction must include the name of the driver (dvips, dvipsone, pdftex) and the option usetemplates. For other options, read the documentation that is part of the package download. See the code below and Figure 1 (below).

```
\documentclass[]{article}
\usepackage[pdftex,usetemplates]{web}
\usepackage[]{aeb_tilebg}
\usepackage[]{lipsum}
\begin{document}
\setTileBgGraphic[scale=1]{042tile}
      \lipsum[1-4]
\end{document}
```

The background package is more complex, more flexible, and has thirteen pages of documentation. The content of the background initially is “Draft”. After skimming through the documentation it is obvious that this package inserts what are usually called watermarks; text behind the main text. I did not see any mention of the capability to use an image with this package. See the code below and Figure 2 (below left).

```
\documentclass[11pt]{article}
\usepackage{fadingimage,tikz}
\usepackage{lipsum}
\begin{document}
\UPFadingImage*[trim={0 {1.3\paperheight} 0 0},clip]{largeblocksrotated}
\lipsum[1-4]
\LOWFadingImage*[trim={0 0 0 {1.2\paperheight}},clip]{largeblocksrotated}
\end{document}
```

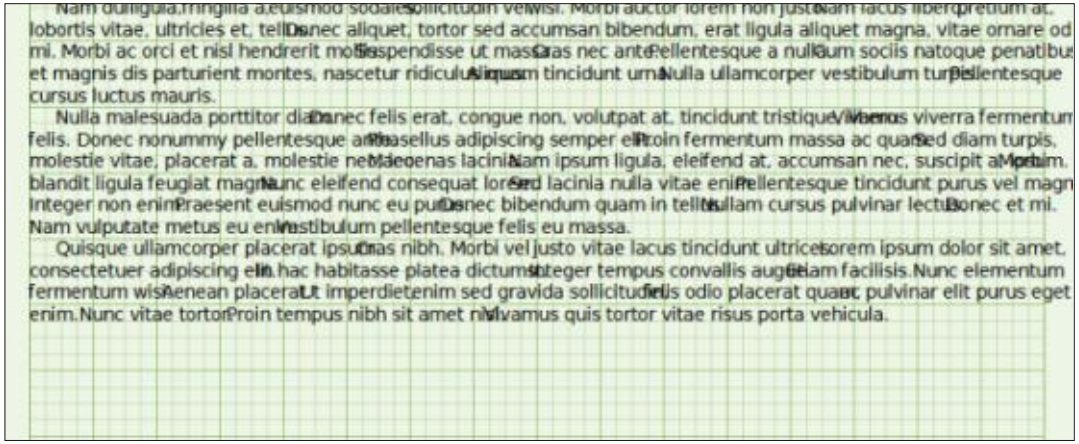
There were two other background-generating packages I thought interesting: gridpapers and fadingimage. The first generates what I know as graph paper, although the styles available are different from the graph paper I used at school. The second does what its name suggests: it places an image that fades from one edge of the page to the opposite edge. Let’s look at gridpapers first.

Gridpapers can generate eleven possible grid patterns. Read the documentation which comes with the package to find out what they are. There are six possible preset color combinations which control the major grid color, the minor grid color and the background color. The user can stick with one of the built-in color combinations or dictate colors for any or all three possible choices. The size of the pattern can either be one of the predefined sizes, or customized. If using the “dot” grid, the size of the dots is also controllable. The pattern (or grid) can either fill the area where there is text, or fill the whole page. Gridpapers can even override any page geometry settings from the geometry package if the gridpapers package is loaded before the geometry package.

```
\documentclass[options]{article}
\usepackage[color=red,contents=Confidential,]{background}
\usepackage[]{lipsum}
\begin{document}
\lipsum[1-4]
\end{document}
```

Here is the code (above) and the result for some simple syntax (Figure 3 - below).

The next group of fifteen packages were designed to generate barcodes and other machine readable coding in documents. Barcodes appear on almost all consumer products. They are used in warehouses, in retail stores, and many other places. CTAN has packages for generating barcodes for various standards:



Code 128, EAN, EAN Code 13, UPC, U.S. ZIP codes, and QR codes. I assume all my readers know what barcodes and QR codes look like, so no sample for these packages. Again I urge you to read the documentation for whatever package you use before you use it.

There are eleven packages grouped under the bidi topic. They all have to do with printing text right-to-left as well as left-to-right (i.e. bidirectional). This is necessary when writing Hebrew, Syriac and Arabic, and was normal when writing Chinese for a few thousand years until recently. Mittelbach and Fischer mention only the bidi package. I cannot write Hebrew, Syriac or Arabic, so no sample. I assume if you write in these languages you know what they look like.

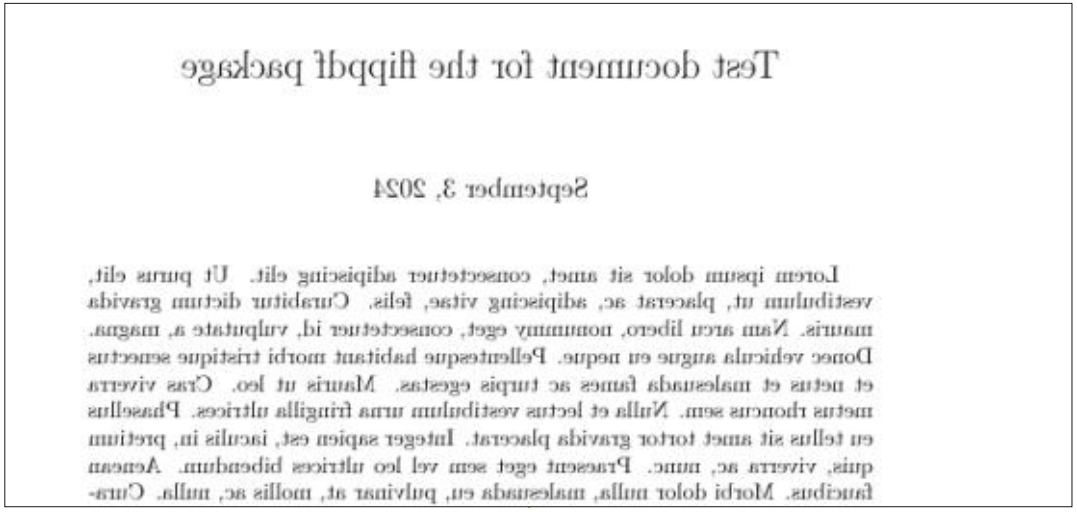
The biology topic contains fifteen packages. Five of them are specialized versions of bibliography packages for specific journals. Several of the others are to assist in typesetting scientific names for specimens in collections or in reports and articles. Two are used for typesetting bracketed dichotomous identification keys. If you know what a dichotomous key is and need to set them up, these packages could be very useful.

There is a topic called Blank Pages which seems out of place but can be useful when producing longer documents. One of the two packages ensures there is always an even number of pages in a document. The other says it fills documents with notes pages and notes areas. That sounds useful for textbook authors and teachers. The abstract from the 47-page documentation says "the NotesPages package provides one macro to insert a single notes page and another to fill the document with multiple notes pages, until the total number of pages (so far) is a multiple of a given number. A third command can be used to fill half empty pages with a notes area." Putting an image of an empty page into FCM is a waste. I leave it to your imagination or experimentation to learn how this package works.

There are 48 packages in the Book Publication topic. Some are samples of books in various languages or for particular publishers. One offers to set up your book in a colorful way. A couple set up crop marks so the final printing of a book can be cut to the appropriate size. If you are writing or plan to write a book, one or more of these packages could be useful and help save time in page design. I chose the flippdf package as an example of the many possibilities available in this topic.

Quoting from the package documentation: "The pdfflip package extends pdfLATEX and LuaLATEX making it possible to typeset a "mirrored" version of the document. This is sometimes required by publishers who use photographic printing processes that need "camera-ready" documents to be printable on transparent films". The code for a sample is below, see the image for the result.

I have reached the end of my exploration of the B section of topics of Latex packages. Next issue, I will review some of what is available in the next section.




```
\documentclass[a4paper]{article}
\usepackage{flippdf}
\usepackage{lipsum}
\title{Test document for the flippdf package}
\begin{document}
\maketitle
\lipsum[1-5]
\end{document}
```

KILOBYTE MAGAZINE

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

https://retro.wtf/kilobytemagazine/

Inkscape - Part 149

As I write this, the third beta for Inkscape 1.4 has just been released, primarily fixing some Windows issues. I encourage any readers who are so inclined to download the beta versions, try them out, and report any issues they find. If you're not a programmer, it's perhaps one of the best ways to contribute back to Open Source software, helping to ensure that the quality of the final release is as high as possible.

Despite version 1.4 looming large on the horizon, there are still a couple of features from 1.3 for me to cover. This month, I'm going to look at some new on-canvas controls that have been added. As has often happened with Inkscape, these controls don't actually provide any new functionality, but they do expose existing features in the UI in a way that might make them more discoverable, or easier to access, when you need them.

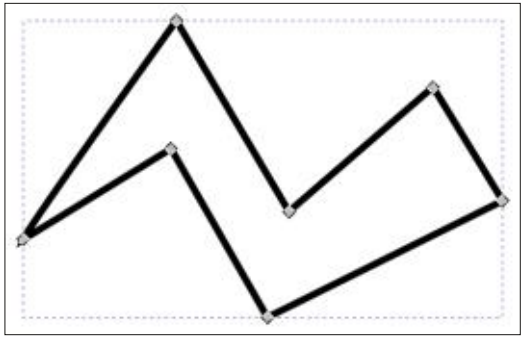
The first of these is on-canvas editing of corners for paths and other shapes. In other words, the ability to turn sharp corners into fillets (curved corners) and chamfers (angled corners) directly on the canvas. This brings Inkscape somewhat up to parity with other applications which often offer such functionality, but there's a good reason why it wasn't present previously: the SVG file format.

SVG doesn't support filleted or chamfered corners, other than through them being drawn as real path segments. Inkscape often gets around such limitations through the use of Live Path Effects (LPEs). These are a means by which Inkscape can store the 'original' path or object data in its own custom fields, while also creating a version of the shape using 'normal' SVG paths, so that other applications can still render the result. Those applications won't have the same editing capabilities as Inkscape, but at least the end result can still be displayed and used, even if some of the Inkscape-specific editing options are lost.

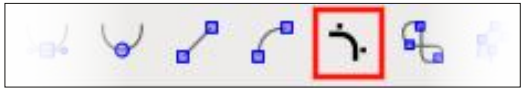
LPEs have been exposed as on-canvas tools before: if you draw a Spiro path using the Pen tool (aka the Bézier tool) or the Pencil tool, Inkscape automatically adds the Spiro LPE to produce the effect. Creating a BSpline similarly adds the BSpline LPE, while selecting a shape for the path (e.g. Ellipse or Triangle In) adds the Pattern Along Path or Power Stroke LPE. These effects stack, so drawing a Spiro path with the Triangle Out shape adds both the Spiro and Power Stroke LPEs.

This approach does a good job of hiding the complexity of the main LPE dialog, while still allowing more advanced users to edit the LPE parameters directly, or flatten the path to remove the overhead of the LPE calculations. In the same manner, the new on-canvas editing of corners exposes the Corners LPE in a more intuitive way, while still allowing access to the LPE parameters if necessary.

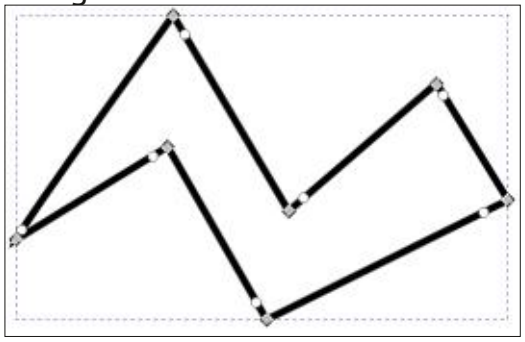
To begin, let's use this feature on a simple path drawn using the Bézier tool. Here's how my semi-random shape looks with the Node tool selected (F2).



With the Node tool still selected, we can add the Corners LPE simply by clicking a button in the tool control bar (outlined in red in this image). Note that clicking it a second time removes the LPE, losing any changes you've made, though Edit > Undo (Ctrl-Z) should save you if you click it by mistake.

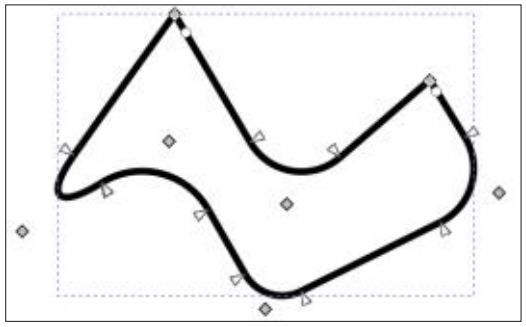


Note that the button doesn't appear as a visible toggle: it doesn't change state when the LPE is

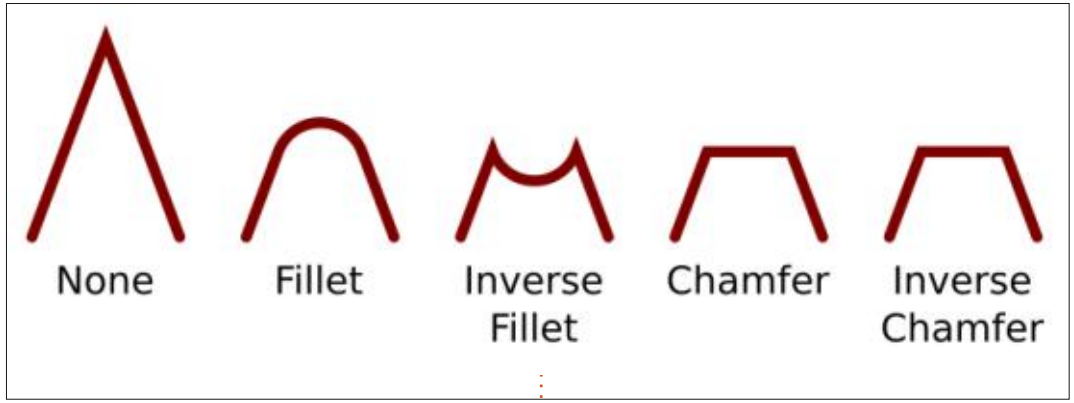


applied. The most obvious way to tell, however, is just to take a look at your path, which will have gained a new handle by each node (the small round circles in this image).

Drag any of those handles to set the fillet radius for the corner. As you do so, the single circular handle will be replaced by two triangular handles, allowing further tweaks to the radius to be made from either side of the underlying node. Dragging a few of these handles makes it very easy to turn our sharp, spiky shape into a mixture of spikes and curves.



Holding Control while clicking on any of these handles will cycle the corresponding node through the various types of corner that the LPE offers: fillet, inverse fillet, chamfer and inverse chamfer. The latter two appear identical at this point, just cutting off the corner with a straight line, but we'll do



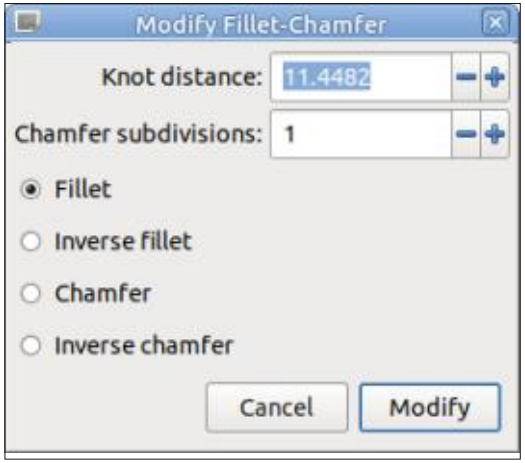
something more interesting with them in a moment. For now, here's what the same corner looks like in each mode.

At this point it's worth noting a small bug when using anything other than a normal corner or fillet. If you copy and paste, or duplicate your shape, the LPE sometimes loses track of the type of corner you had selected, so inverse fillets, or either type of chamfer, are converted to normal fillets in the new object. The behaviour is a little erratic so this is just something to keep an eye out for, though you may get lucky and never be affected by it.

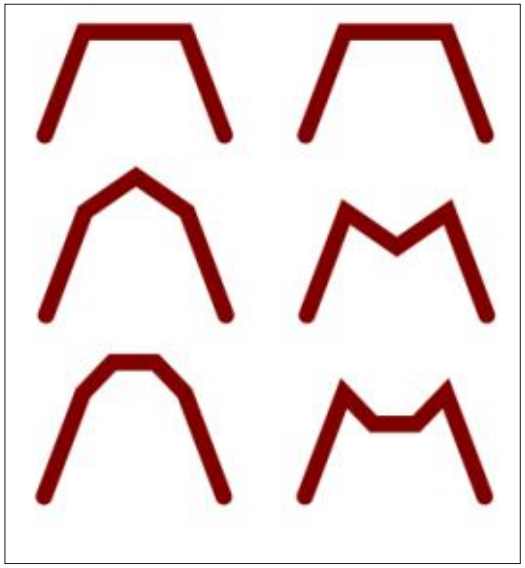
For setting the position of the corner handles there's a useful trick that can save a lot of time with complex paths. If you have any nodes selected, their handles will also be modified to match the same relative position of the one you've dragged (whether the drag handle is on a selected node or not). This makes for a quick way to set all corner handles to the same relative position by pressing Ctrl-A to select all the nodes before dragging. Unfortunately, Ctrl-Clicking to set the corner type still only works on the clicked handle, regardless of any selected nodes. It is possible to set the type for all nodes, or all selected nodes, at once via the main LPE controls. See part 121 of this series (FCM #181) for more details about the controls and parameters available via the LPE dialog.

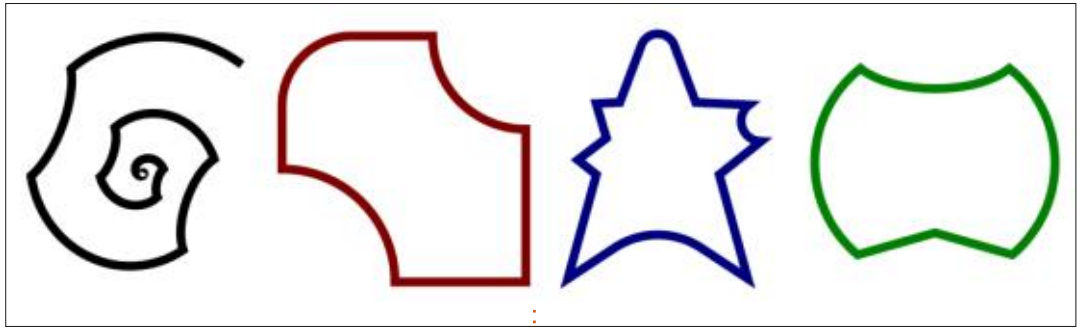
Shift-Clicking on a handle opens a small dialog that allows you to set various parameters for that specific corner:

This is an alternative way to set the corner type, or to accurately



position the handle (labelled as 'Knot distance' in the dialog), but it also offers one other field to set the 'Chamfer subdivisions'. Increasing this beyond 1 reveals the difference between a chamfer and an inverse chamfer. This image shows each type of corner, with 1, 2 and 3 subdivisions.





So far we've looked at using this feature on paths, but it also works on 2D shapes. Squares, rectangles, and the shapes created with the Star/Polygon tool, seem like obvious candidates, due to their sharp corners, but you might be surprised to find that this feature can also be useful on circles and spirals. This image shows a spiral, rectangle, star and circle, with the corners LPE applied and edited on-canvas to give you an idea of the sort of effects you can now easily achieve.

As well as the on-canvas editing of corners, Inkscape 1.3 also introduced some on-canvas handles for editing blurs. You may already be aware that blurs in Inkscape are implemented using SVG's Gaussian Blur filter primitive and can, of course, be added via the Filter Editor dialog. This is a rather tricky part of the UI for beginners (and many experts) to understand, but because blurring an object is a pretty common requirement, Inkscape has always offered a shortcut in the form of the slider at the bottom of the Fill & Stroke dialog.

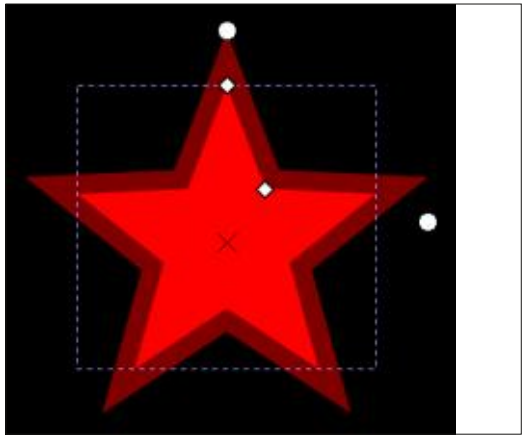
The slider in this dialog is fine for most cases where you simply want the object to be blurred in all directions. But the UI in the Filter Editor actually splits the blur into separate controls for the amount of blur in the horizontal and vertical directions. Usually the little 'chain' button next to the controls links both sliders so that the values remain identical, giving the same effect as the slider in the Fill & Stroke dialog. But toggle that button and you can set each slider separately – ideal for 'motion blur' effects which only occur in one direction.

The new on-canvas UI provides the best of both options: separate controls for the horizontal and vertical blur, but with the ability to easily set both to the same value. The only tricky bit is getting the controls to appear in the first place!

This feature appears only when the Node tool (F2) is selected. But unlike the Corners LPE, there's no button in the toolbar to make the handles appear. Instead they are only visible if the object you're editing already has the blur effect applied. This does make the handles a little redundant, in my view, as you'll have already had to interact with the Fill & Stroke slider, the Filter Editor, or one of the predefined blur filters, in order for the on-canvas controls to appear. They're possibly useful for fine-tuning the blur in the context of the rest of your drawing, but it would be nice if there was a toolbar button to add and remove a simple blur filter in the same way as the Corners LPE can be toggled on and off.

Your first step, therefore, is probably to select your object and open the Fill & Stroke dialog. There are various ways to do this, from the Object menu or keyboard shortcut (Ctrl-Shift-F), through to my preferred method, which is just to click on the Fill or Stroke color swatches at the bottom left of the window, below the palette. Or you may be the sort of person who always has it open in a sidebar and just needs to make sure the right tab is active. Whichever approach you take, you then need to nudge the Blur slider up a little. I recommend just a single click on the '+' button at the right,: that's enough to add the effect, but not so much that it has a significant effect on Inkscape's redraw speed.

Now switch to the Node tool, if it's not already selected, and you should find that the object has an additional pair of circular handles, just outside the bounding box. In this screenshot, I've put my object over a black background to make the white handles stand out a little more:

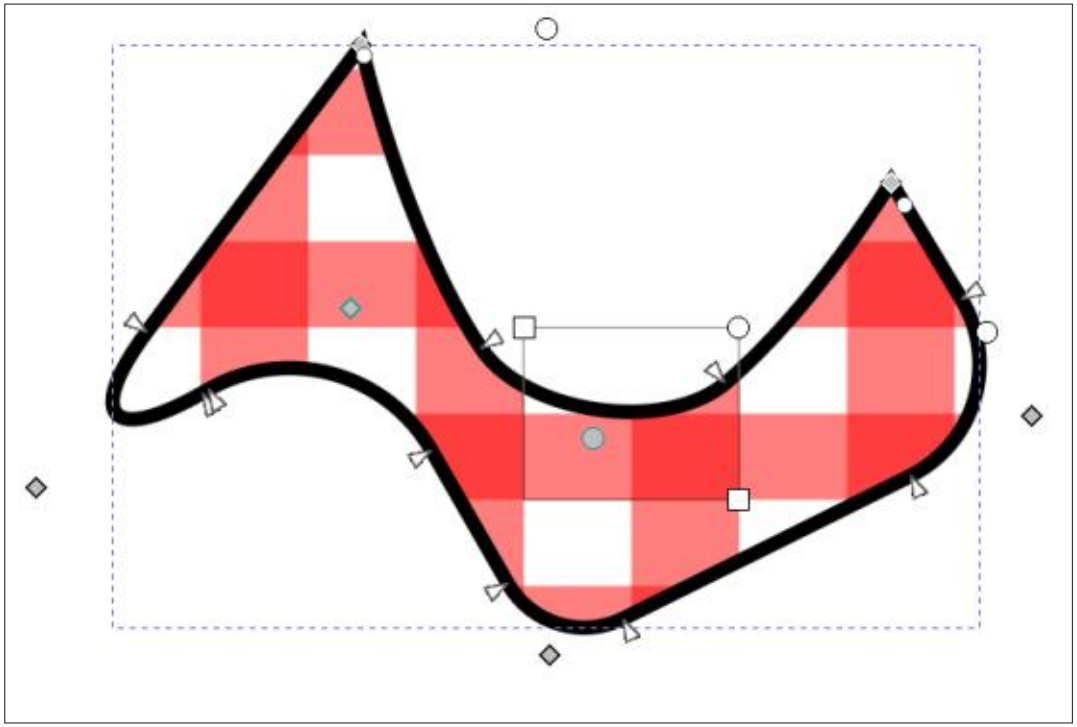


The handles will always be perpendicular to each other, with one at the top and the other at the right for newly created objects. If you've rotated the object, however, they may not appear in this orientation. The handles give an indication of the direction that the blur will take (if you don't have a uniform blur in all directions), so can act as a flag that you might not be blurring in the direction you want to! A quick tip in that case is to remove the blur from the object itself (set it to zero in the Fill & Stroke dialog), then group the rotated object – it's fine for it to be in a group of its own, with nothing else in it. If you add a blur to the group, you'll now find that the blur is back to the default orientation, while your object remains rotated. Another tip, if you do need to work with rotated blurs, is to remember that Inkscape can now rotate the canvas during editing. See part 98 of this series in FCM #158 for details.

With the handles visible, it's rather obvious how you can adjust the blur on-canvas. Dragging either handle will adjust the blur in that direction. Hold the Control key at the same time to adjust both handles to the same value – you'll usually want to do that unless you specifically require an asymmetric or motion blur effect.

You can also hold both Shift and Control to adjust the handles proportionally. That is, if the handles have different values then dragging one will cause the other to move by an amount that is proportional to the difference between them. In other words, use this if you have an asymmetric blur and want to preserve the overall direction while adjusting its strength. There is a big caveat to this feature, however: if the handle has a value of 0 when you start dragging then Inkscape's maths can sometimes go awry, sending the other handle zooming off towards infinity and blurring the object so much that it might even disappear from view, replaced by a slight smudge on the canvas. The solution is to nudge the handle above zero first with no modifiers held before trying to drag it proportionally with Ctrl-Shift.

These new additions to on-canvas editing definitely improve the usability of Inkscape, especially in the case of the Corners LPE. One concern, however, is that Inkscape is stacking up ever more handles on the canvas, leading to potential confusion about what feature any given handle corresponds to. Just take a look at this image of my random shape from earlier, once I've added a pattern fill, changed the type of some of the nodes, and added a little blur. That's too many handles for me to make sense of – and I know what each of them are for! Could we end up in a situation where each of these additions, intended to make the program more user-friendly, actually combine to scare new users away from the complexity they see on the canvas?



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


THE DAILY WADDLE
MMM . . .
CONFLICT RESOLUTION MEETING
CANCELLED
DUE TO DISAGREEMENT OVER TIME SLOT

CYD (Cheap Yellow Display) ESP-32

Greetings again fellow Sentient Lifeforms. Things here at landing pad 2997 on Terra STILL haven't calmed down at all over the last couple of months, but I'm hoping that as we get through the beginning of Autumn, things will lighten up a bit (before the holiday season hits).

This month, we will dig deeper into the ESP32-2432S028, or the Cheap Yellow Display. Of course, the one I bought is more orange than Yellow to my old eyes, but I won't call it the COD, since that normally means Collect On Delivery, or to some Cause of Death. So, I'll pretend that it's yellow and refer to it as CYD.

This is a really neat little board driven by an ESP32-WROOM with a ILI9341 320 x 240 screen attached. The screen is also a Resistive Touch screen, which makes it rather nice to hold a GUI or to become a Gaming board.

There seem to be many variants of the CYD out there from many different vendors. The one I got (from Amazon) is made by AITRIP. Just make sure that you get a board that is described as ESP32-2432S028R. There seems to be at least three versions of this board (again from various manufacturers). Mine seems to be revision 3, and has not only the USB-C connector but also the old style USB micro. Both work to power and program the board, so if you don't have a USB-C connector cable yet, you might want to look for the revision 3 board if you can find it.

A quick note here on obtaining the board. There are MANY places that you can get this board from. I used Amazon and got a two-pack of the boards for about $35 USD. There are some places that show getting the board plus a front and back protective plate set for less than $5.00 USD. PLEASE don't fall for that. Even though the entire web page continually says that the board is included, it isn't. Look for the board to cost somewhere between $12 USD and $20 USD in single quantities. **PLEASE remember the old saying "If it seems too good to be true, it probably is".**

As far as I can tell, there are at least four ways to program these boards. The first (and most prevalent on the Internet) is using the Arduino programming language and the Arduino IDE. There are lots of examples of this out there, so I won't deal with this too much this month. The best place I've found is to look at the Random Nerds website (https://randomnerdtutorials.com/cheap-yellow-display-esp32-2432s028r/). This is a really good write up, BUT PLEASE go slowly and carefully. Follow the directions EXACTLY or it won't work for you.

The second way to program the board is to use MicroPython. There are many (but not as many as for the Arduino code) websites for this. The two very best drivers (currently) are at https://github.com/jtobinart/MicroPython_CYD_ESP32-2432S028R and https://github.com/rdagger/micropython-ili9341/. The first link also refers to the second. You should download (or clone) both sites and get the libraries from them into a special working folder. More about this in a moment.

The third way to program the board is to use one of the ESPHome. However, I haven't taken the time yet to investigate this.

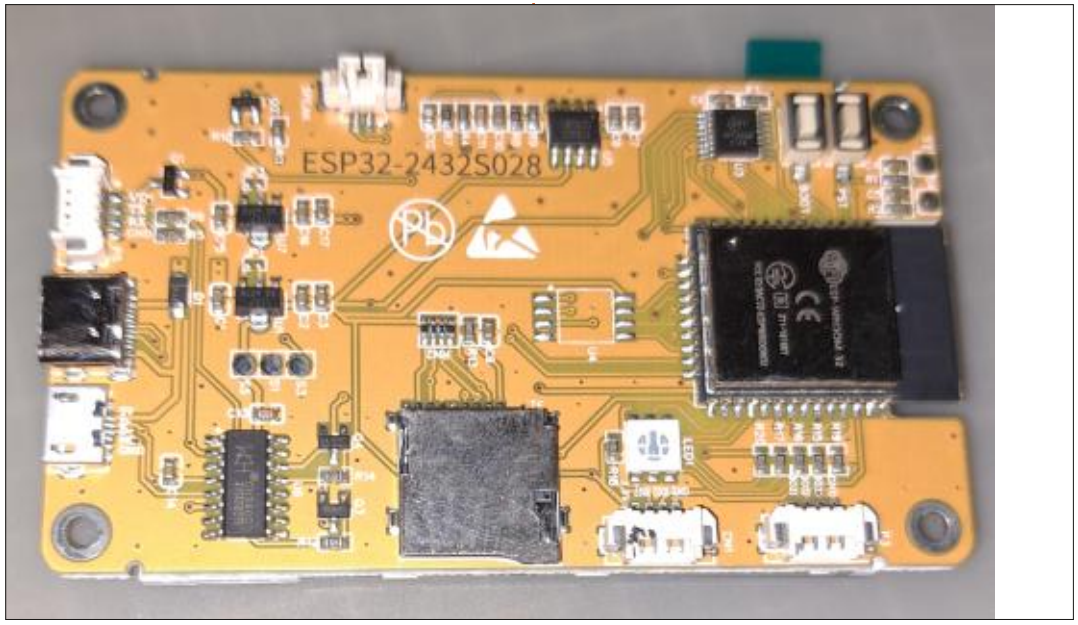
Finally, there is a special GUI library called LVGL which works with this (and many other boards) that, for the moment, is best done using Arduino code. You can find a very good tutorial again at the Random Nerds site at https://randomnerdtutorials.com/lvgl-cheap-yellow-display-esp32-2432s028r/. Again, PLEASE go slowly and follow EVERY step.

There is a newish product called platformIO that is a plugin for Visual Studio code, and there are some good tutorials for the LVGL

programming using this. I'll address this in a future article.

To use LVGL on MicroPython, you must create your own MicroPython firmware cut that includes support for LVGL. Believe me when I say, this is not something for everyone. It requires multiple toolkits to be installed and takes a while to do and test. I'll try to work up a step-by-step instruction set for you in the near future.

Here is what the back of my board looks like. On the left, you can see the USB-C connector in the middle and the old style USB connector towards the bottom.



Connectors

While it looks like there are many available pins for sensors and other connections, there aren't as many as you might think. Along the bottom of the board, in the middle, is the MicroSD slot, and just to the right of that are two JST connectors that appear to be STEMMA Qwiic compliant, but they are not. They are 1.25mm and the normal Qwiic connectors are just a little bit smaller. The two boards that I purchased each came with one connector for this, and most of the boards that I looked at seem to come with one as well. The CN1 connector (closest to the MicroSD slot) is normally used to connect I2C devices. Unfortunately, the "normal" ESP-32 I2C pin sets can't be used, since the backlight takes up one of those normal pins. I've created a "cheat chart" for you…

PIN	Wire Colour	DHT22
Gnd	Black	Gnd
GPIO 22	Blue	**NO CONNECT**
GPIO 27	Yellow	Data
3.3V	Red	3.3V

Using the (hopefully) included JST cable, the pins (looking from the display side of the board and the connector at the bottom) from left to right, are [in the table below].

As I said, you can't use the "normal" I2C pin assignment. You have to "roll your own". Here is the MicroPython code, using an SI7021 Temp/Humidity sensor:

```
i2c = SoftI2C(scl=Pin(27), sda=Pin(22), freq=100000)

si7021 = SI7021(i2c)
```

Of course, you have to import the library first. This can be just about any I2C device as long as you get the pins defined correctly.

If you want to use a DHT11 or DHT22, you can use this pinout as well. Here's (above) a pinout for the DHT22. You only need to use three of the four pins.And the

Pin	Wire Colour	USE
Gnd	Black	Ground
GPIO 22	Blue	SDA
GPIO 27	Yellow	SCL
3.3V	Red	3.3V

MicroPython code to support it…

```
# ========================

# initialize si7021 Temp &
Humidity sensor

# ========================

import dht

d = dht.DHT22(Pin(27))

d.measure()
```

Of course, you can't use the DHT device at the same time for an I2C sensor on CN1.

If you want to use the P3 connector, here (below) is a pinout of it.

There are a couple of things here you need to be aware of. First, the red wire is NOT 3.3v, but a GPIO pin. Don't try to use this to power your device. In addition, the yellow wire is the same GPIO pin as the blue wire on connector CN1. Why in the world they did this, I can not speculate. Just be aware that your best bet for using I2C devices… use CN1.

Pin	USE	Wire Colour	Note
VIN		Red	
GPIO 01?	TX	Yellow	Maybe possible to use as GPIO
GPIO 03?	RX	Blue	Maybe possible to use as GPIO
GND		Black	

One other connector you should be aware of is the P1 connector, which is next to the USB-C Data/ power port. This is mostly to be used as a SERIAL port. From top to button the pins are shown above.

You might wonder why GPIO 01 and GPIO 03 are marked with a trailing question mark. That's the information I have and it's included that way. I wouldn't try to use these pins as GPIO pins at this point. More research needs to be done!

Pin	Wire Color	Note
Gnd	Black	
GPIO 35	Blue	Input only. No internal Pullups!
GPIO 22	Yellow	Also on the CN1 connector.
GPIO 21	Red	Used for the TFT Backlight, so not really usable

Onboard RGB LED

One of the other things I should tell you about is that the screen isn't your "normal" RGB display. It uses color565. You can find more information, and their justification for creating such a thing, at https://rgbcolorpicker.com/565.

Drivers

The best place that I've found to get drivers for MicroPython is https://awesome-micropython.com/.

As I stated earlier, the two very best drivers (currently) can be found at https://github.com/jtobinart/MicroPython_CYD_ESP32-2432S028R and https://github.com/rdagger/micropython-ili9341/.

Make note of the fact that you must have the micropython-ili9341 drivers in order to use the Micropython_CYD driver. More about that in a little bit.

JST Connectors

The speaker connector (P4) requires a 2 pin 1.25mm JST connector which is not usually included.

The IO connectors P1, P3 and CN1 are 4 pin 1.25mm JST connectors. At least one is included with most CYD boards.

Since these JST connectors are NOT the same as "normal" STEMMA QT/Qwiic JST connectors that you can easily find, I dug around on Amazon.com and found a couple of candidates.However, I have NOT verified that these will work.

For the Speaker connector (2 pin), you can try… https://www.amazon.com/Letool%C2%AE30-1-25mm-Female-Connector-Cables/dp/B013JRWCBU

For the IO connectors (4 pin) you can try…
https://www.amazon.com/Micro-Connector-Socket-1-25mm-Female/dp/B09DYLY95R/ref=sr_1_3?s=electronics&sr=1-3

In case you want to "roll your own" connectors, there seems to be a DIY kit that contains 2,3,4,5,6,7,8,9 and 10 pin empty connectors with wires ready to insert into the blank connectors. Again, I don't currently know if this is a good kit. You can check it out at…
https://www.amazon.com/1-25mm-Connectors-Pre-Crimped-Pixhawk-Silicone/dp/B07S18D3RN/ref=sr_1_1_sspa?s=electronics&sr=1-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1

MicroPython Coding

You need to have cydr.py, ili9341.py, xpt2046.py, and the xglcd_font.py on the CYD device, and NORMALLY they are put into a folder named lib. You CAN have them in the root of the device, but it's standard practice to have them in the lib folder.

```
    spi = SPI(1, baudrate=40000000, sck=Pin(14), mosi=Pin(13))
    display = Display(spi, dc=Pin(4), cs=Pin(16), rst=Pin(17))
```

BUT the CYD board has different pins for the SPI configuration.

```
    hspi = SPI(1, baudrate=40000000, sck=Pin(14), mosi=Pin(13))
    self.display = Display(hspi, dc=Pin(2), cs=Pin(15), rst=Pin(0), width=display_width,
height=display_height)
```

Now I'm going to tell you why you need both the CYD and the ili9341 driver sets.

While you can use just the ili9341 drivers, there is a bit of a problem. This was designed to be a very generic low-level driver set, and can be used with any ili9341 display board, not just the one on the CYD board. The CYD driver set uses the ili9341 drivers and wraps all of the functions of the display driver, the touchscreen, and the RGB LEDs, into a higher level library that is MUCH easier to use and focuses on just the CYD board.

The ili9341.py driver concentrates on the Display board and some generic RGB LED functions. There are two other drivers included, which are xpt2046.py which deals with the touchscreen functions and the xglcd_font.py which allows you to use some different fonts instead of a very simple 8x8 font. The ili9341.py driver includes things like drawing lines, rectangles, circles and drawing text.

The CYD driver imports the display driver and touchscreen libraries for you, and provides a single interface to all of them that is (as I said above) MUCH easier to use. If you want to use the special fonts, you will have to import that yourself into your program.

Another reason to use the CYD driver is that the ili9341 driver is so generic that the demo programs won't run on the CYD because the SPI interface uses different pins that the generic interface provides by default. For example, the demos initialize the SPI interface like this (shown above).

You can see that, while the sck and mosi pins are the same between both drivers, the dc, cs and rst pins are all different. The CYD driver is already set up for this.

Using the CYD driver is really easy. First, you have to import the library, then initialize an object of the CDY master object.

```
from cydr import CYD

cyd = CYD(rgb_pwm=False,
speaker_gain=512,
displaywidth=320,
display_height = 240,
wifi_ssid=None,
wif_password=None)
```

Most of the parameters to the CYD object are optional. Notice that there is wifi support built into the CYD driver as well, making it very flexible.

So, now that we have instantiated the CYD object and named it cyd, you can clear the display with a simple call like this…

```
cyd.display.clear()
```

To print text on the display is

just as easy.

```
text = "This is a test!"

cyd.display.draw_text8x8(xpos
ition, yposition, text,
colour)
```

In the initialization line, notice I placed the device in "landscape" mode with the long side (320) of the display along the top and bottom and the short sides (240) on the right and left sides.

In this mode, position (0,0) is at the top-left corner of the display (when it is oriented with the USB plug on the right side of the device).

I've created a github repository at https://github.com/gregwa1953/MTMT-209 that will hold a few of the demo programs that I wrote for my CYD.

One of the demos that I've included is an app that uses the OpenWeatherMap API over a WIFI connection to get the current outside conditions of my location and a DHT22 Temp/Humidity sensor to show the inside temperature and humidity. Of course, they both use a different polling time. Here is a very poor

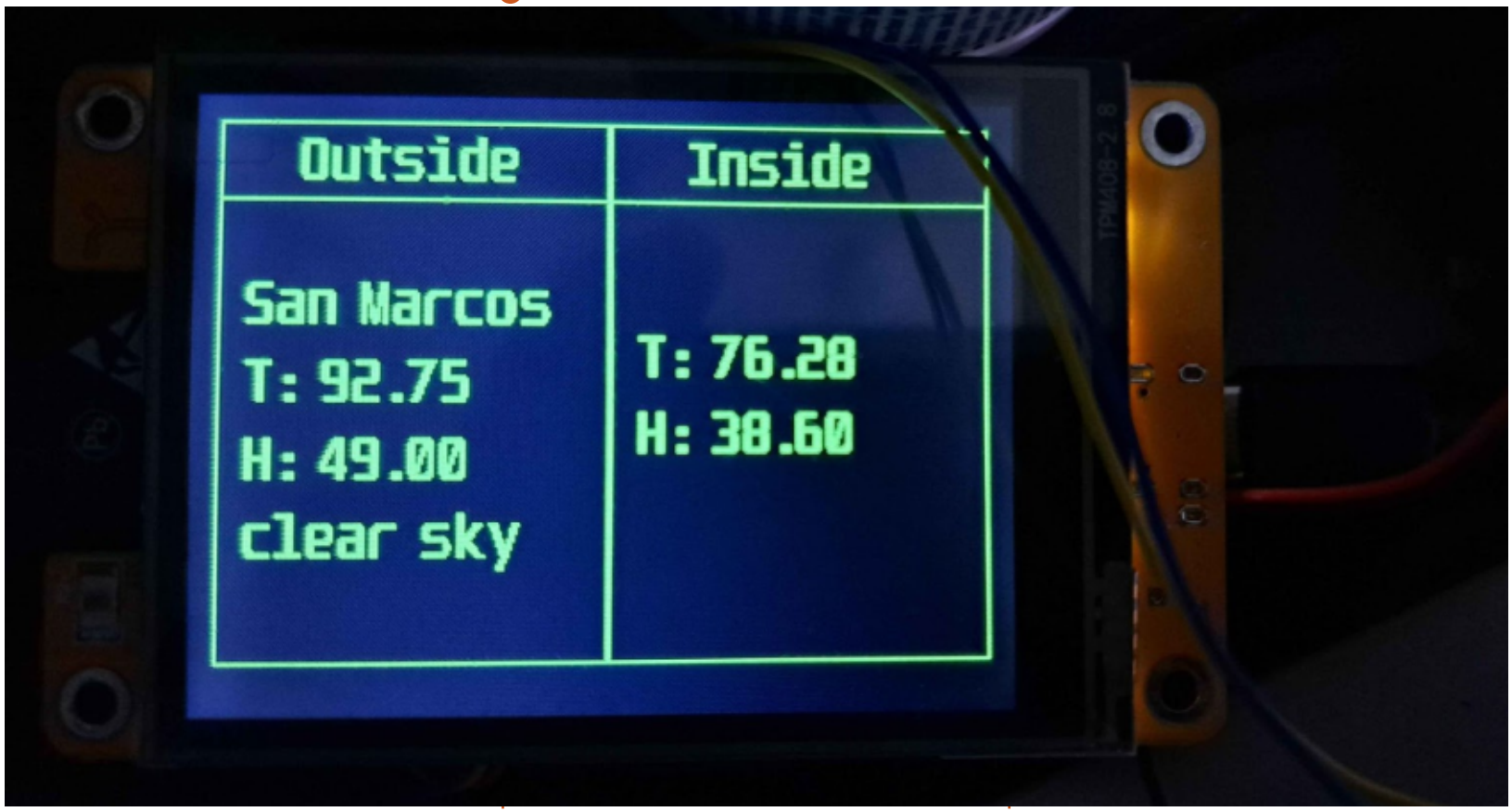


image taken with my cell phone camera of the CYD screen.

That's it for this month. I'm certain that we will readdress the CYD in more than one future article.

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

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

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UBPORTS DEVICES

Written by UBports Team

You may well have noticed the most recent Volla Kickstarter for the Volla Phone Quintus. The Quintus is a marked step-up in specification from the Volla Phone 22 and will again be available in Volla OS and Ubuntu Touch versions. More than that, it is the world's first smartphone with the option for an integrated cloud service that uses networked smartphones.

You will know all about UT but, for those who don't know, Volla OS is based on the Android Open Source Project and has both Aurora Store and F-Droid Store and, if you don't need to use GPS apps, microG can be activated.

To celebrate the release of Volla Phone Quintus, along with our friends at Volla we will again be offering a few incentives to preorder the Quintus and also a raffle later in the year. More details to follow, so keep an eye on our news channels.

The Volla Phone Quintus will be available to preorder from the Volla shop, https://volla.online/de/shop, for those in Europe or from Indiegogo for worldwide purchases.

Also don't forget the Volla tablet is already on Indiegogo and also available from the Volla shop to preorder for October, https://www.kickstarter.com/projects/volla/volla-phone-quintus

Work on our new website is moving at a pace now with the first builds underway. There will be more on the new website in the next newsletter.

Ratchanan Srirattanamet was at COSCUP in Taiwan at the start of the month for UBports and Ubuntu Touch

Ratchanan gave a talk on day two of COSCUP titled “Ubuntu Touch: Freedom of choice in a mobile operating space”, which went down well from what we hear. Unfortunately, no recording was made to watch back.

Focal 20.04 OTA-5

OTA-5 has been released with all the changes and information to be found in the release blog, https://ubports.com/blog/ubports-news-1/post/ubuntu-touch-ota-5-focal-release-3933

OTA-5 has been out for a few weeks now, so you should all have updated and be using and enjoying it by now. This may well prove to be the last OTA for 20.04, as work is concentrating on 24.04 and getting that ready for release.

You may have noticed that the OTA banner and phone background have not changed with this OTA. This is what happens when release occurs during the holiday period. Still it gives you time to enjoy Joan Cibersheeps work for OTA-4 again.

Q&A news

Ubuntu Touch Q&A 144 blog and audio now available

https://ubports.com/blog/ubports-news-1/post/ubuntu-touch-q-a-144-3931

Ubuntu Touch Q&A 147 and 145 blog and audio now available:

https://ubports.com/blog/ubports-news-1/post/ubuntu-touch-q-a-145-3934

https://ubports.com/blog/ubports-news-1/post/ubuntu-touch-q-a-147-3936

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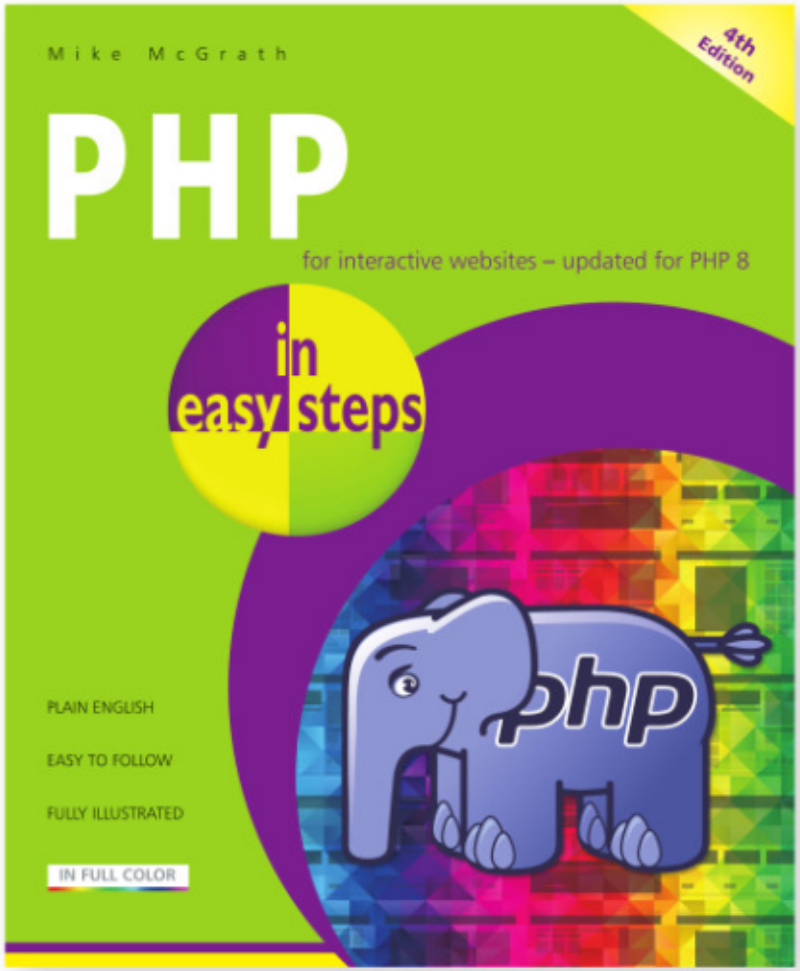

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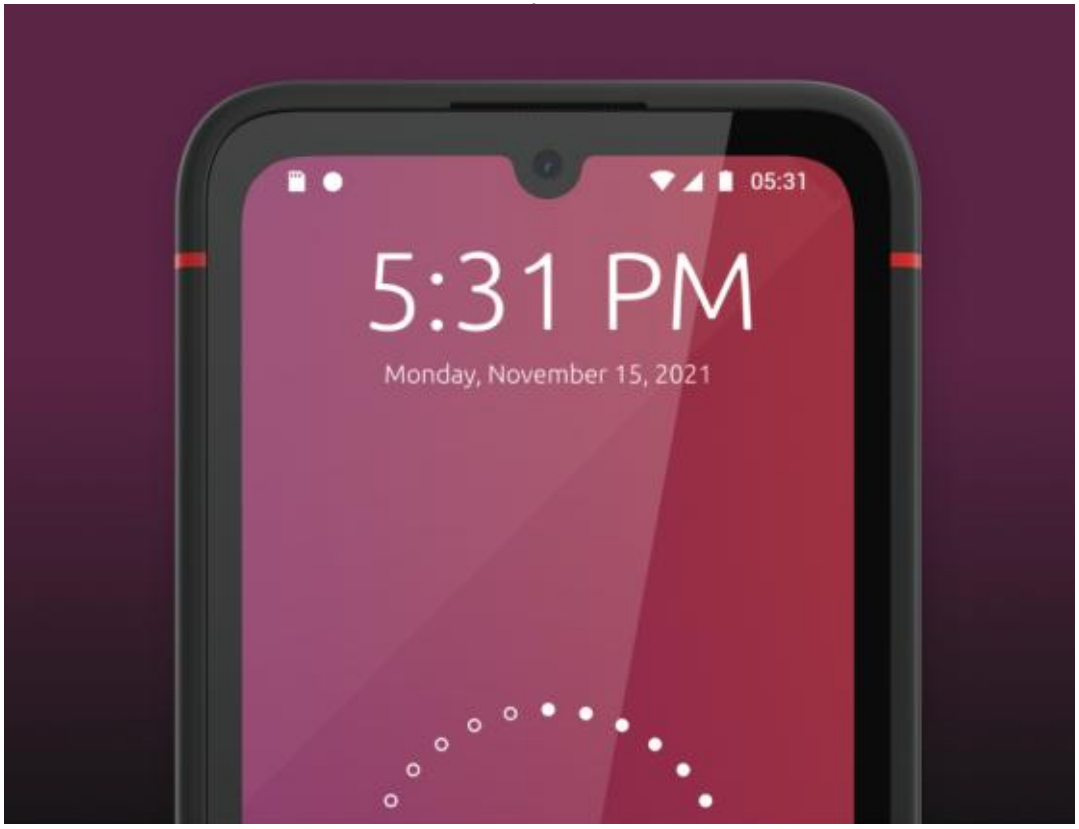
Volla X 23

I first bought a Linux phone in 2014 when Ubuntu announced a phone by BQ, a Spanish company. The 4.5 was what I had been waiting for. It served me well for 10 years. But Ubports announced that they were pushing forward with Ubuntu, and that meant ditching 16.04 for 20.04. My original phone could not perform this function. It was stuck at 16.04. So I had to find another option.

So I bought a Pine Phone. Unfortunately, I was waiting for the Pine Phone to put 20.04 Ubports (Ubuntu) on the Pine Phone, but after 3 years waiting, I gave up. It still has not been achieved.

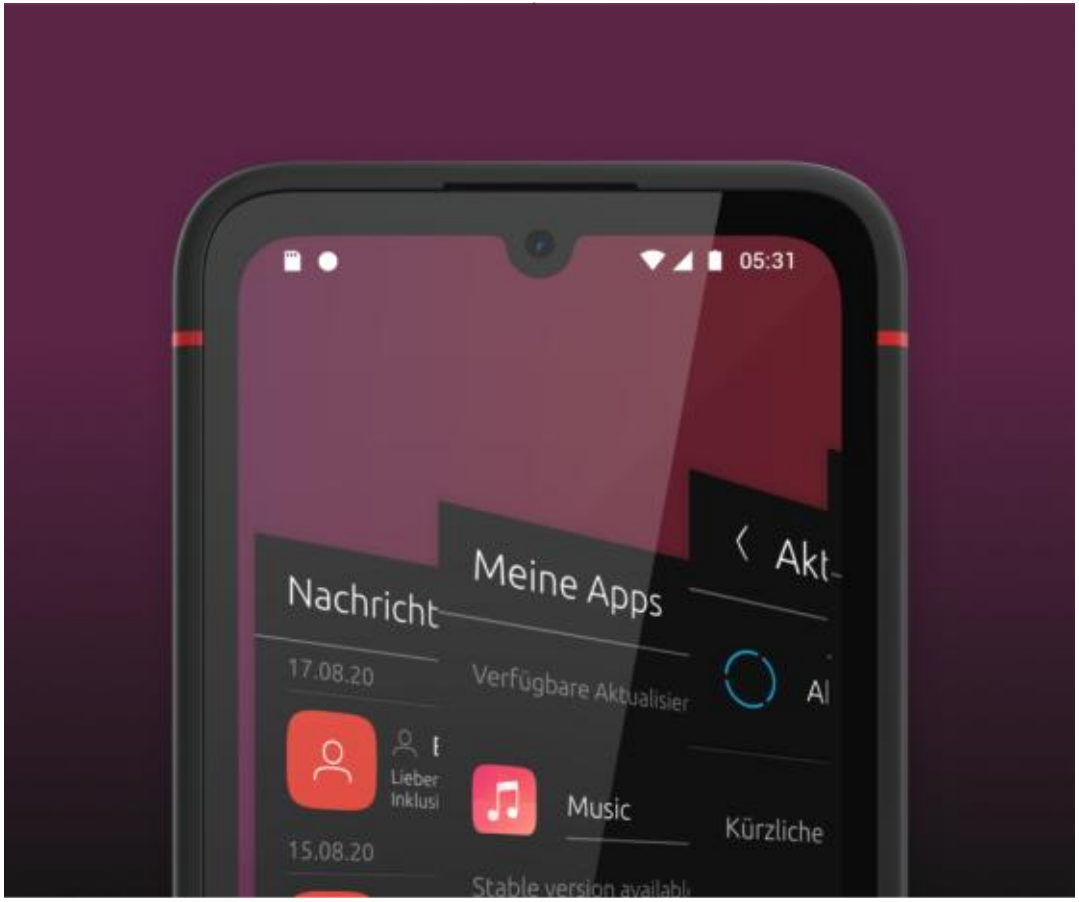
Then, whilst I was looking at the UB Ports website, I noticed another phone, a Volla phone, which had everything Ubuntu had. The X23

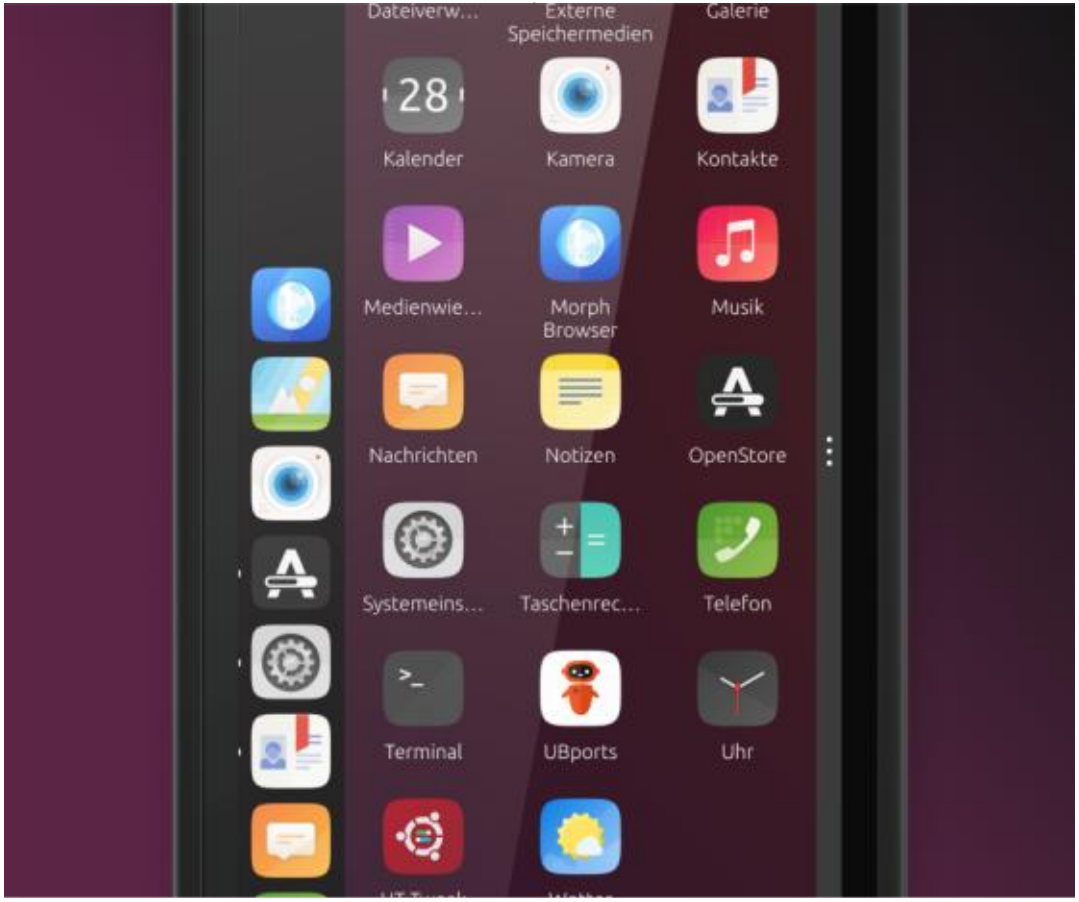


Processor	MediaTek Helio G99 8-core processor (6nm) with 2x A76 up to 2.2 GHz, 6x A55 up to 2.0 GHz and GPU Arm Mali-G57
Display	IPS display with 500 nits (min.) / 550 nits (typ.) brightness and Corning® Gorilla® Glass 5
Display size	6.1 inch with U-Notch, 1560 x 720 pixels
Case	Military-grade MIL-STD-810H + IP68 dust and water resistant
Device dimensions	160.9 mm (h) x 80 mm (w) x 12.2 mm (d)
Weight	270 g
Pre-installed operating system	Volla OS based on AOSP or Ubuntu Touch
Memory	6 + 128GB, expandable up to 1TB with Micro SD Card
Camera	48MP (PDAF) + 8MP (AF) rear dual camera, 16 MP front camera
SIM	Two Nano SIM cards independent of MicroSD memory card
Battery	5000 mAh, fast charging option up to 30W, wireless charging up to 15W
Frequency bands	GSM/2G 850/900/1800/1900, UMTS/3G B1(2100)/B8(900), TDD/LTE/4G B38(2600)/B40(2300) FDD/LTE/4G B1(2100)/B3(1800)/B5(850)/B7(2600)/B8(900)/B20(800)/ B28AB(700)
Radio communications	GPS & A-GPS, Galileo, Beidou, GLONASS, QZSS, Wifi 2.4GHz/5GHz, Bluetooth 5.2, NFC
SAR values	worn on head: 0,625, worn on body: 1,456 W/kg
Sensors	Fingerprint, gravity, distance, light and geomagnetism
Connections:	USB-C, 3.5 mm stereo jack for headset, data connection, and power adapter.

phone seemed like the best, given that I would want to keep this phone for another 10 years, so I bought it for 538 Euros. It was just after I bought it that I discovered that it was delayed until August. So I waited 2 months.

Then, in August, it arrived. I was impressed by the phone. It was rather thick and heavy basically, because it had military style waterproofing and dustproofing, whilst at the same time, it had a replaceable battery. It had all the hallmarks of a modern phone, the 48 megapixel camera, a large display, dual SIM cards, plus, of course, Ubuntu Touch. It is blisteringly fast. You can order it with Volla's own OS (operating system), but I wanted it with Ubuntu Touch. I also bought a screen protector and a cover for the phone.





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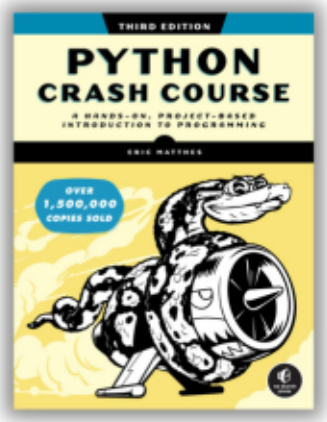

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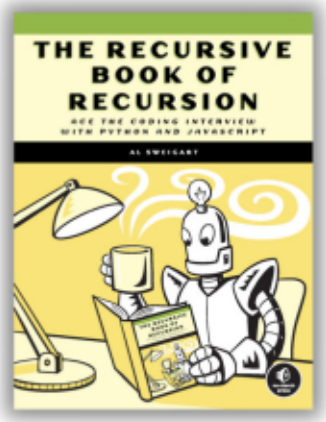

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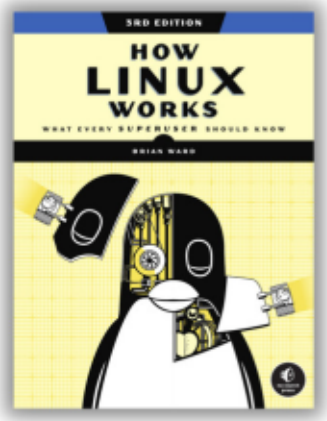

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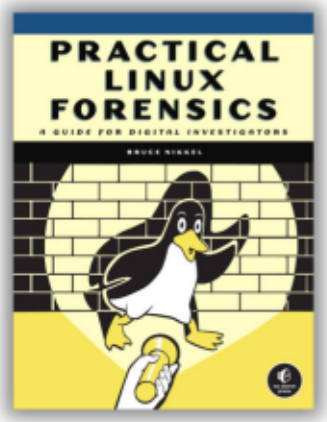

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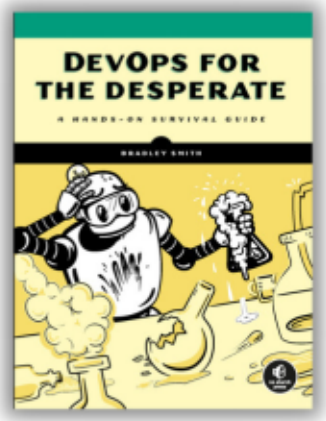

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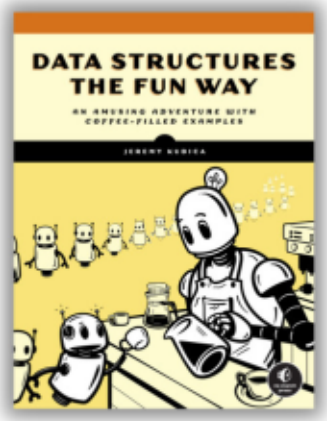

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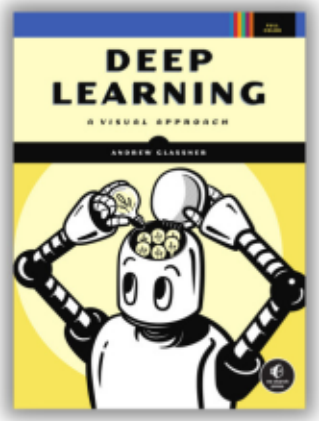

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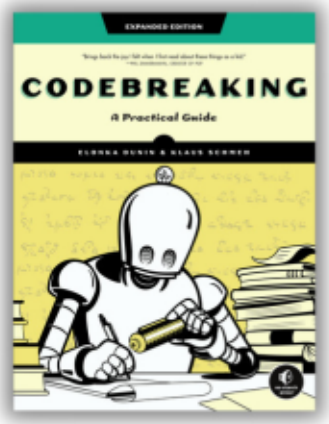

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• There is no word limit for articles, but be advised that long articles may be split across several issues.

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

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

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Games/Applications

When reviewing games/applications please state clearly:

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

Hardware

When reviewing hardware please state clearly:

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

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

Ubuntu Cinnamon vs Linux Mint Cinnamon

Ubuntu Cinnamon and Linux Mint's Cinnamon Edition have a lot in common. Both are based on Ubuntu, both use the Cinnamon desktop, and both are Linux distributions with a solid focus on a simple and user-friendly desktop experience. So is there any difference and, if so, which one is better? I had a close look at both to find out.

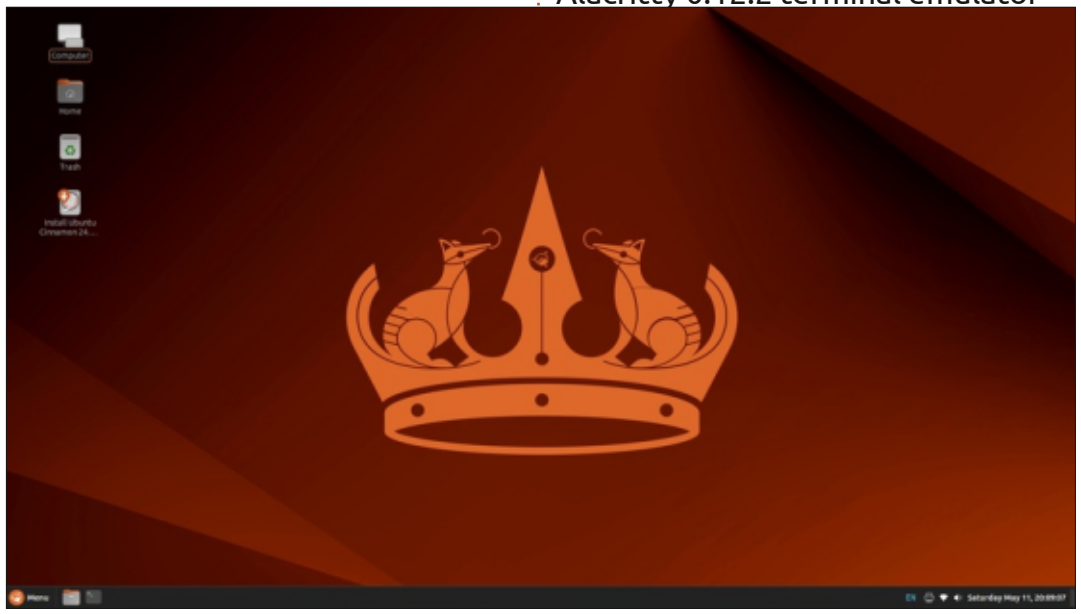
I should probably start out by disclosing that I have been using Ubuntu Cinnamon for a while now, and have become a fan of it, so that probably makes me a bit biased. On the other hand, I had never had a close look at Linux Mint before this joint review.

So, let's start with a review of the latest release of both of these distributions.

Ubuntu Cinnamon 24.04 LTS

Ubuntu Cinnamon 24.04 LTS (long term support) came out on 25 April, 2024 along with all of the other Ubuntu flavors. This is its tenth release and the third one since it became an official Ubuntu flavor.

Like the three interim releases that made up this release cycle, Ubuntu Cinnamon 24.04 LTS brings only some small changes to this long term support version. The upgrades include the newly released Cinnamon 6.0.4 desktop and a new flutter-based installer. Having installed Cinnamon 24.04 LTS on two computers, I can say that the new installer is very simple, clear and easy to use.



Anyone's grandma could install it. The installer includes a minimal installation feature but, in testing it out, I determined that it does not work, and either way you get the full installation.

This release adds experimental support for Wayland plus a few other minor fixes and upgrades.

Applications

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

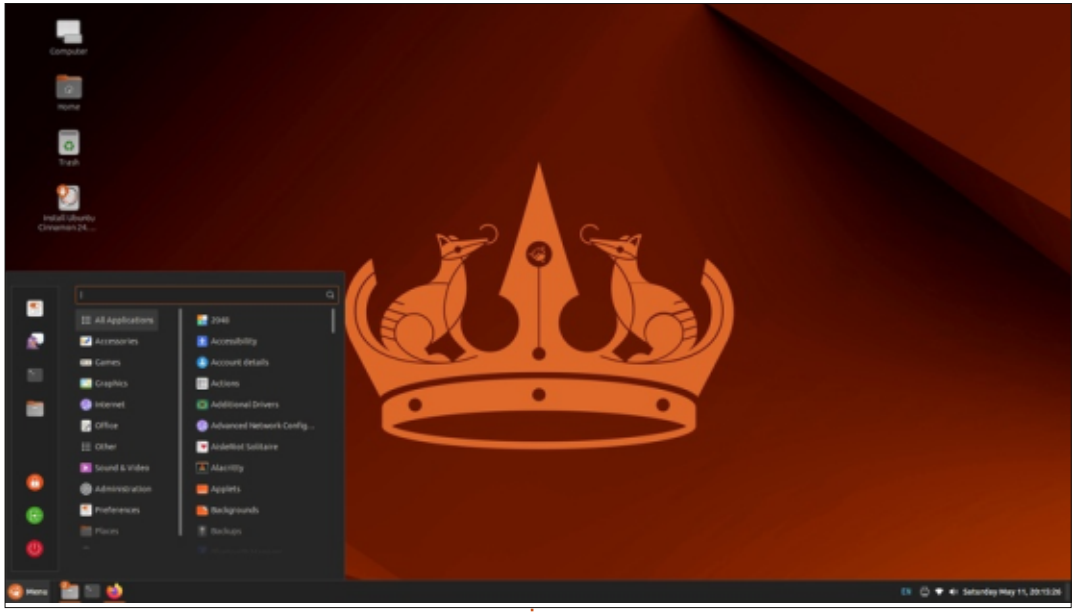
Alacritty 0.12.2 terminal emulator*
Archive Manager (File Roller) 44.1 archiver
Blueman 2.3.5 Bluetooth controller
Brasero 3.12.3 CD/DVD burner*
Cheese 44.1 webcam*
Cinnamon 6.0.4 desktop environment
CUPS 2.4.7 printing system
Document Scanner (Simple Scan) 46.0 optical scanner
Document Viewer 46.0 (Evince) PDF viewer
Firefox 125.0.2 web browser**
Deja Dup 45.2 back-ups
GDebi 0.9.5.7 package installer
GIMP 2.10.36 image editor
GNOME Calendar 46.0 desktop calendar
GNOME Disks 46.0 disk manager
GNOME Software 46.0 package management system
GNOME System Monitor 46.0 system resource monitor
GNOME Terminal 3.52.0 terminal emulator
GNOME Videos 43.0 (totem) video player*
GNote 46.0 note taking application
Gparted 1.5.0 partition editor* ***
gThumb 3.12.6 image viewer
Hexchat 2.16.2 IRC client
Image Magick 6.9.12.98 command

line image editor
Image Viewer 45.3 (Eye of Gnome) image viewer
LibreOffice 24.2.2 office suite
Muffin 6.0.1 window manager
Nemo 6.0.2 file manager
Pidgin 2.14.13 IRC client
Pipewire 1.0.5 audio controller
Remmina 1.4.35 remote desktop client
Rhythmbox 3.4.7 music player*
Shotwell 0.32.6 photo organizer
Sound Juicer 3.40.0 CD ripper*
Synaptic 0.91.3 package manager*
Text Editor (gedit) 46.2 text editor*
Thunderbird 115.10.1 email client**
Transmission 4.0.5 bittorrent client

* indicates same application version used in Ubuntu Cinnamon 23.10
** supplied as a snap, so version depends on the upstream package manager
*** only present in the live session version, not in the normal installation

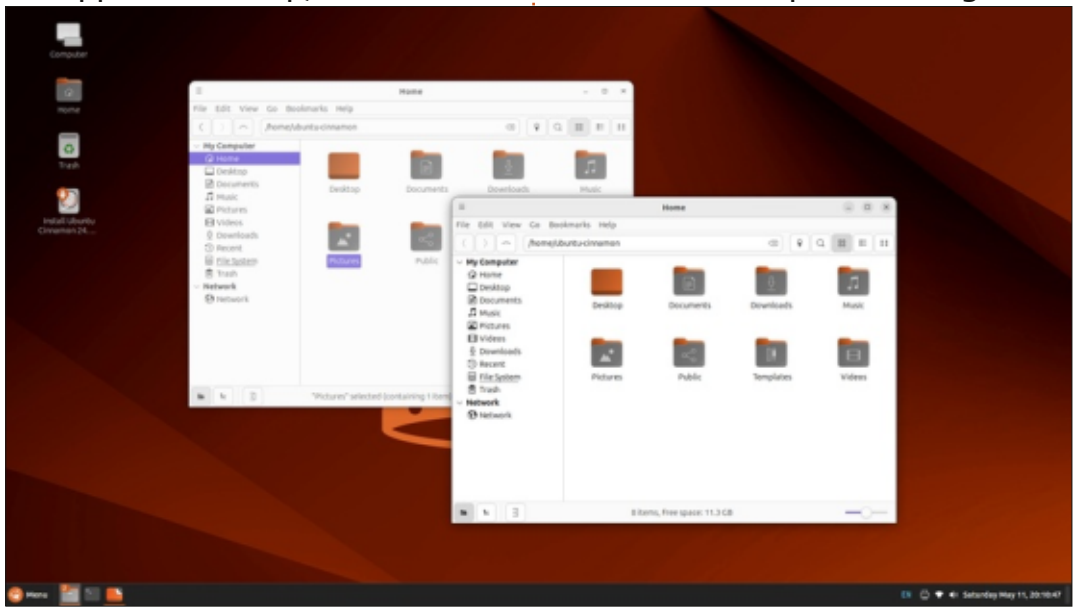
There were some unannounced changes to this long list of applications, one of which was the addition of the Blueman Bluetooth controller. Adding this makes good sense as Ubuntu Cinnamon previously lacked a Bluetooth controller. Another unannounced new addition is the Shotwell photo organizer.

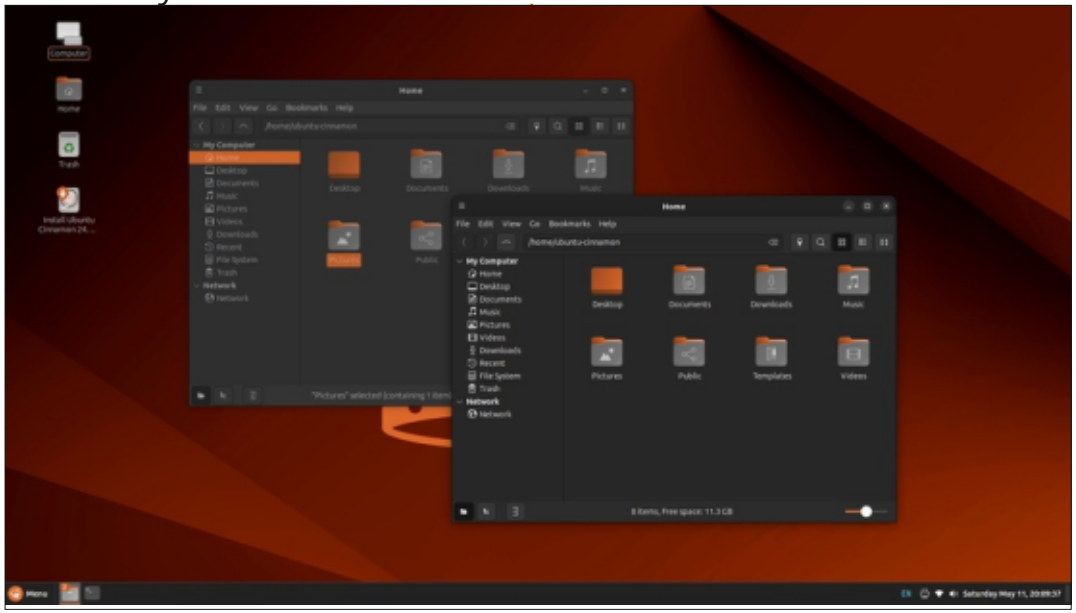
Unannounced application removals are the Celluloid and MPV video players, as well as the GNOME Photos photo manager.



Since the last version of Ubuntu Cinnamon had three video players, cutting it down to just GNOME Videos (Totem) makes good sense. Presumably Shotwell was added to make up for GNOME Photos being removed.

The list of default applications included in Ubuntu Cinnamon is





very long and has just about everything a desktop user could want except perhaps a video editor. There are still a lot of applications included that duplicate other applications, like two terminal emulators, two image viewers, two image editors and two software package managers. There are also 19 games included. I think most users will want to remove some applications to reduce menu clutter and duplication. A true minimal installation would be a welcome feature.

Linux Mint 21.3 Cinnamon Edition

Linux Mint has been around since 2006, so it is pretty tried and trusted. The Cinnamon desktop was actually developed by the Linux Mint team and first released in January, 2012 as a response to the introduction of GNOME 3, the desktop that everyone loved to hate when it first came out in April 2011. Up until that time, Mint had been using the GNOME 2 desktop. The Cinnamon desktop is a worthy successor to GNOME 2.

Linux Mint also has two other desktop editions: MATE and Xfce, although Cinnamon remains their flagship product.

Linux Mint 21.3, code named "Virginia", came out on 12 January, 2024, and is an updated point release to the original 21.0 "Vanessa" from 31 July, 2022. There have been other version 21 point releases: 21.1 "Vera" and 21.2 "Victoria", each based on Ubuntu 22.04 LTS. Yes, each point release has a girl's name for a code name, and within each major release, all versions begin with the same letter of the alphabet. The future Linux Mint 22.0 will be based on Ubuntu 24.04 LTS and called "Wilma". Picking "X" code names for Linux Mint 23 should be interesting. I am not sure what they will do after they hit the letter "Z" with the release of Linux Mint 25.0, though, but stay tuned.

As a point release, Linux Mint 21.3 brings only a few new updates including full support for SecureBoot and wider compatibility with more BIOS and EFI setups, with Grub used in EFI mode and Isolinux/syslinux used in BIOS mode. The Mint tools and the framework employed to produce ISO images have also been updated.

This release uses Cinnamon desktop version 6.0 which adds more file manager actions from the Nemo file manager's right-click menus. Work on support for a Wayland protocol display server has also started, although it is not yet complete. The new desktop version also brings a host of smaller improvements like 75% scaling, window opacity keybinding and additional mouse gestures.

Applications

Some of the applications included with Linux Mint 21.3 Cinnamon Edition are:
Blueman 2.3.5 Bluetooth manager
Celluloid 0.21 video player
Bulky 3.2 file renamer (integrated with Nemo)
Drawing 1.0.2 image editor
Firefox 121.0 web browser
GNOME Archive Manager (File Roller) 3.42.0 file archiver
GNOME Calculator 41.1 calculator
GNOME Calendar 41.2 calendar
GNOME Disks 42.0 disk manager
GNOME Disk Usage Analyzer 41.0 disk usage display
GNOME Document Scanner (Simple Scan) 42.0 optical scanner
GNOME Terminal 3.44.0 terminal emulator
Gparted 1.3.1 partition manager
GUFW 24.04.0 firewall
Hexchat 2.16.0 IRC client
Hypnotix 4.3 television streaming application

LibreOffice 7.3.7.2 office suite
MintInstall 8.2.9 software manager
MintUpdate 6.0.7 update manager
Nemo 6.0.2 file manager
Pix 3.2.2 image organizer
Redshift 1.12 desktop day/night adjuster
Rhythmbox 3.4.4 music player
Synaptic 0.90.2 package manager
Thunderbird 115.6.0 email client
Timeshift 24.01.1 system restore utility
Transmission 3.00 BitTorrent client
Warpinator 1.8.3 file transfer client
xed 3.4.5 text editor
xreader 4.0.2 document viewer
xviewer 3.4.4 image viewer

Linux Mint 21.3 Cinnamon Edition comes with a wide assortment of applications installed including most of what desktop users probably need, but without a lot of duplication. Many of the included applications are basically generic versions of GNOME applications. Some of these are just "debranded" while others are forks. One example is the xed text editor which is a fork of Pluma, which is, in turn, a fork of GNOME's gedit text editor.

Comparison

It can be seen that these two distributions are far more similar than they are different. Both are simple, elegant and easy to use. Let's have a look at the areas where they differ.

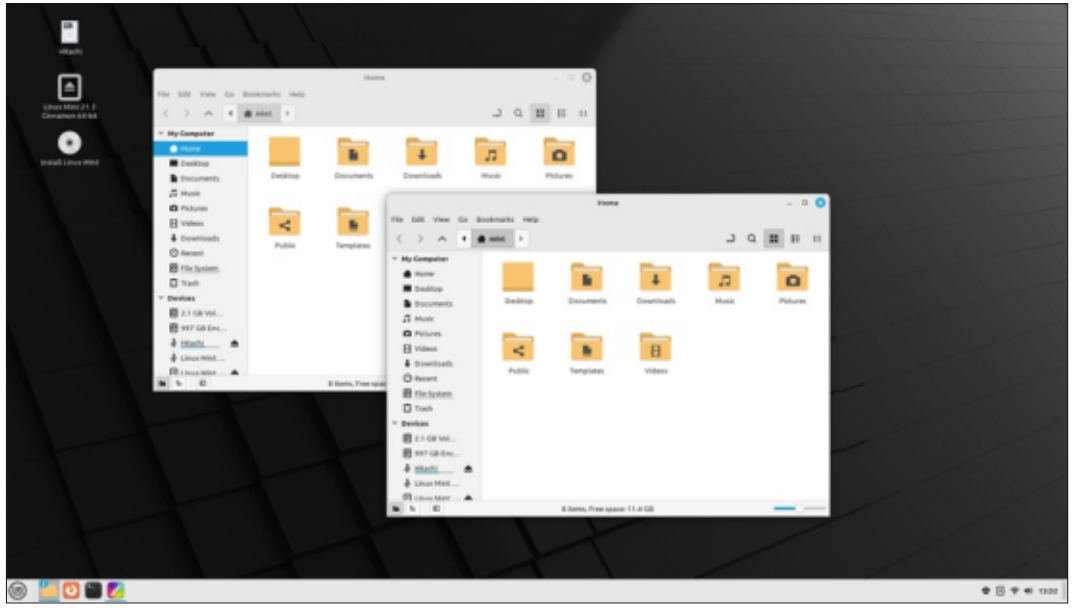
Download Size

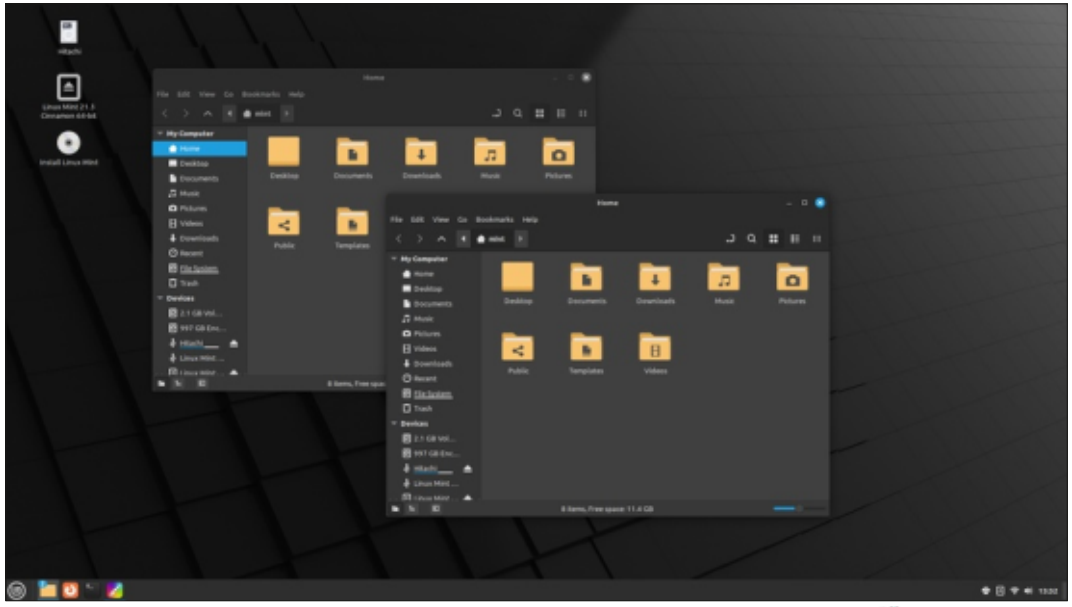
Linux Mint 21.3 has a download size of 3.1 GB while Ubuntu Cinnamon 24.04 LTS has a download size of 5.2 GB. This is a bit of an "apples and oranges" comparison, though. Linux Mint 21.3 is based on Ubuntu 22.04 LTS while Ubuntu Cinnamon 24.04 LTS is based on Ubuntu 24.04 LTS, and Ubuntu has grown in the intervening two-year period. Ubuntu Cinnamon 22.04 LTS was 3.9 GB. I suspect that Linux Mint 22, which will be based on Ubuntu 24.04 LTS, will be bigger. These days, given most people's internet download speeds and disk capacity, I am not sure that it matters.

Live Sessions

New and unwelcome in an Ubuntu Cinnamon 24.04 LTS live session is that it will not mount any drives, including USB drives. This makes it pretty useless to use as a rescue disk, not to mention complicating getting screenshots off the live session for reviewers. In comparison, a Linux Mint 21.3 live session mounts drives fine and allows for the transferring of files between the live session and drives.

Releases and Support Periods





Linux Mint comes out every two years, only as an LTS version, with point releases in between. Support for each major version is for five years. If you need the latest hardware support for a new computer, you can always install the "Edge" version instead which uses a newer Linux kernel.

Ubuntu Cinnamon comes out every six months so a new kernel is always available, if needed for hardware support. Like Mint, Ubuntu Cinnamon has LTS releases every two years, but with three "interim" releases in between. The LTS versions are supported for three years, while the interim versions have nine months of support.

These sound like significant differences, but in practice they are probably not. Most Ubuntu users stick to the LTS versions anyway, unless they need that newer hardware support. Five years of support versus three seems to give an edge to Mint, but most users of either distribution probably run the latest LTS anyway and, with one button upgrades available, that is easy to do. While these releases and their support periods seem different, in practice they are probably a wash. With either distribution, any user can be running the current LTS version without much effort.

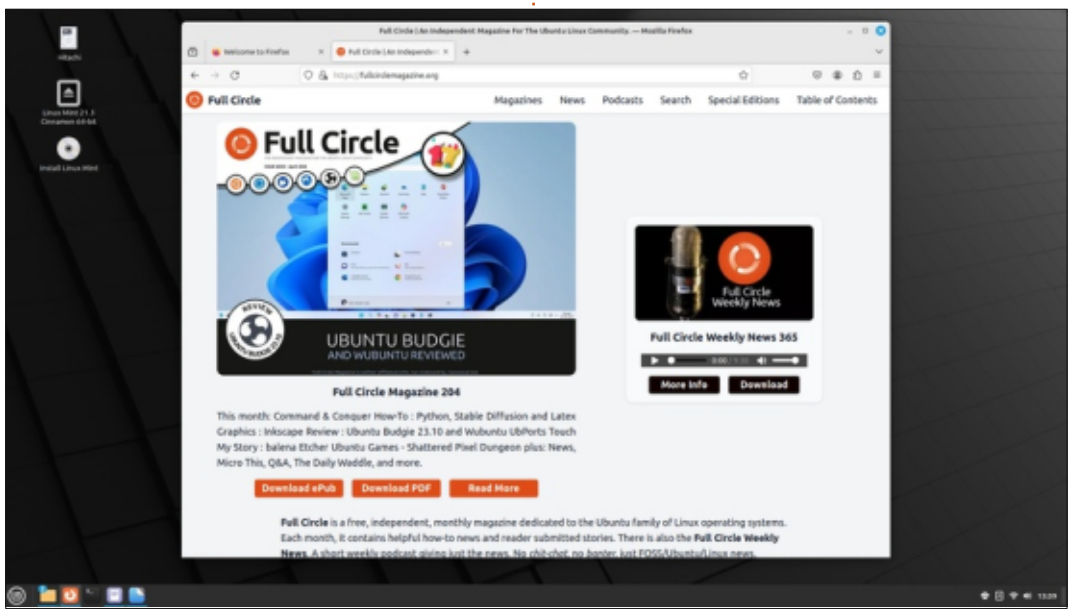
Default Applications

Linux Mint has a carefully curated list of default applications with almost no overlap or duplication among them. While the Mint application list is fairly long, it does provide a very complete desktop out of the box.

Ubuntu Cinnamon's list of default applications is much longer, but not better. It has a lot of odd duplication, although in 24.04 LTS at least a few of the previous duplicate applications have been removed. Ubuntu Cinnamon users will have to do some application cleanup or else live with the extra clutter. Linux Mint is ahead on default applications.

Customization

There is no doubt that while Ubuntu Cinnamon offers a wide range of user customization, Linux Mint offers more. Mint comes with 95 wallpapers compared to Ubuntu Cinnamon's 43, 70 icon themes to 33, 14 cursor themes to 6, 67 window color themes to 35, and 65 bottom panel schemes to 28. With each providing so many choices, does it even matter? I guess the extra choices Mint provides would be important to someone whose favorite theme was not on Ubuntu Cinnamon's list. Personally, I don't



give much stock to the number of wallpapers a distribution has, as they are easy to obtain elsewhere and install.

Snap versus Flatpak

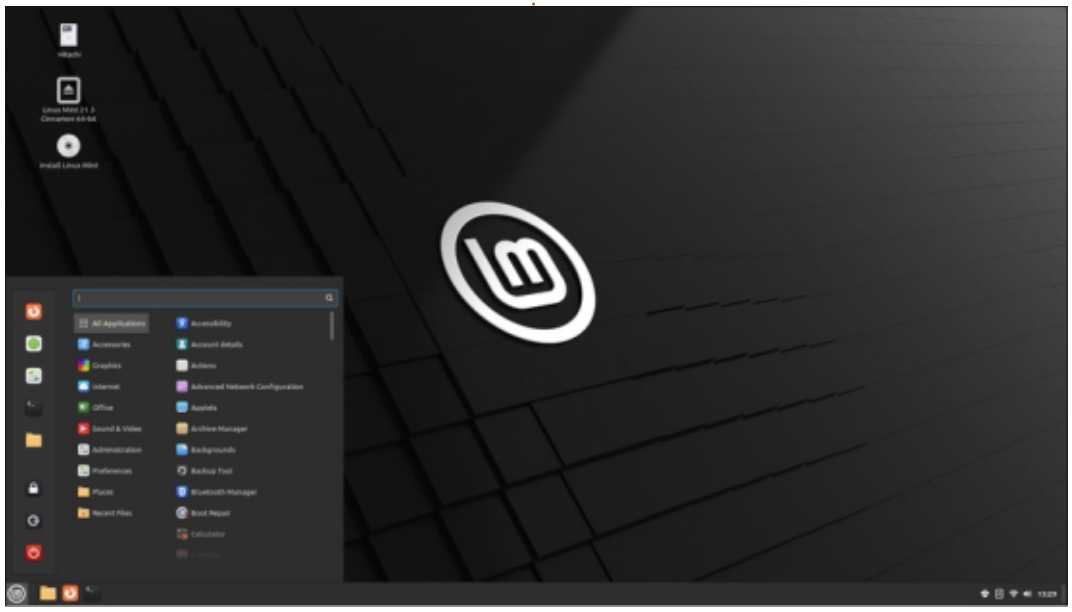
Which is better, Snap or Flatpak? These days this has become an emotional argument more than a technical one. Mint comes with Flatpak installed and ready to use, although no Flatpak applications are actually installed. Ubuntu Cinnamon has Snaps enabled and a few already installed, including Firefox and Thunderbird. Of course, it is easy to enable Flatpak on Ubuntu Cinnamon and even install Snaps on Mint. Objectively, both packaging systems work well these days and are probably functionally equivalent. No need to choose, you can have both if desired so this is a bit of a wash, rather than any advantage.

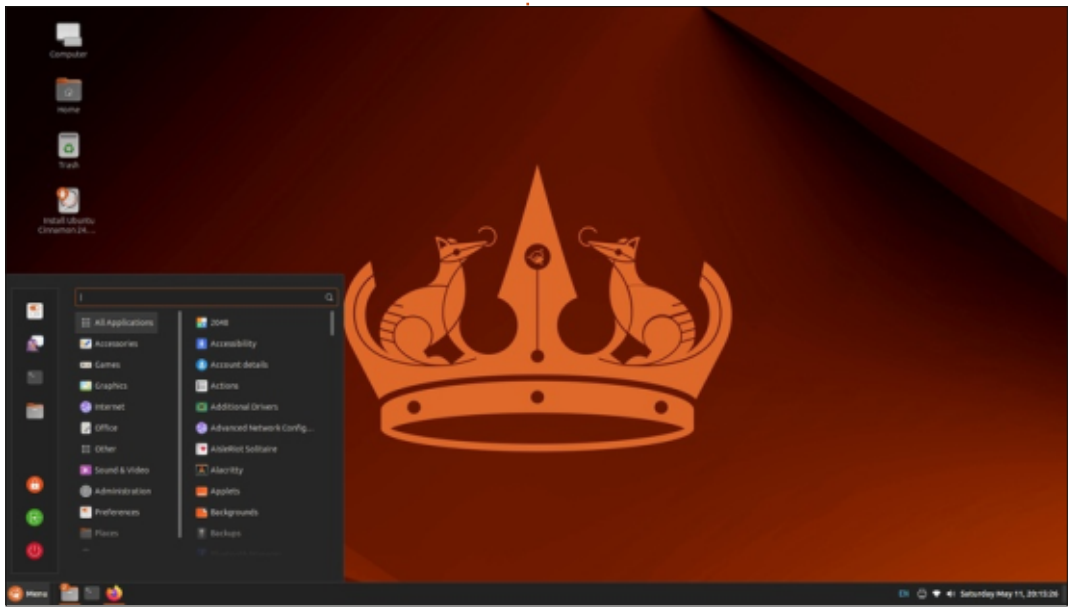
Bulk File Renaming

Linux Mint and Ubuntu Cinnamon both use the Nemo file manager which was developed for the Cinnamon desktop. Nemo is a fork of version 3.4 of the GNOME file manager, Nautilus, now called GNOME Files. On Mint, it is integrated with Bulky to give a bulk file renaming capability, but on Ubuntu Cinnamon, Bulky and that integration is missing. Bulky can be installed on Ubuntu Cinnamon and set so that it works from Nemo, but it takes some user input to achieve.

Which to Choose?

Both operating systems are very functional but, overall, Linux Mint 21.3 Cinnamon Edition works better than Ubuntu Cinnamon straight out-of-the-box. That said, Ubuntu Cinnamon can work as well as Mint with a bit of time invested. For someone who wants to install an operating system and get to work, Linux Mint has the edge over Ubuntu Cinnamon, at least for now.





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.

Ubuntu MATE vs Linux Mint MATE

Ubuntu MATE 24.04 LTS and Linux Mint 21.3 "Virginia" MATE Edition have a lot of things in common. They are both based upon Ubuntu, both use the MATE 1.26 desktop, and are both current releases that you can install today. Given how similar these two Linux distributions, let's look at what differentiates them.

The MATE desktop is basically a continuation of the most popular Linux desktop ever, GNOME 2, which was active from 2002-2011. With its simple, three-menu system, GNOME 2 had captured about half the Linux desktop market and was the flagship desktop on Arch, Debian, Fedora, Slackware, and Ubuntu, until it was replaced by the wildly unpopular GNOME 3 in April 2011. That move energized Linux developers to create alternatives including Ubuntu's Unity, Linux Mint's Cinnamon, and from Argentina, a straight-ahead fork of GNOME 2, named MATE (pronounced "ma-tay") after the local caffeinated drink.

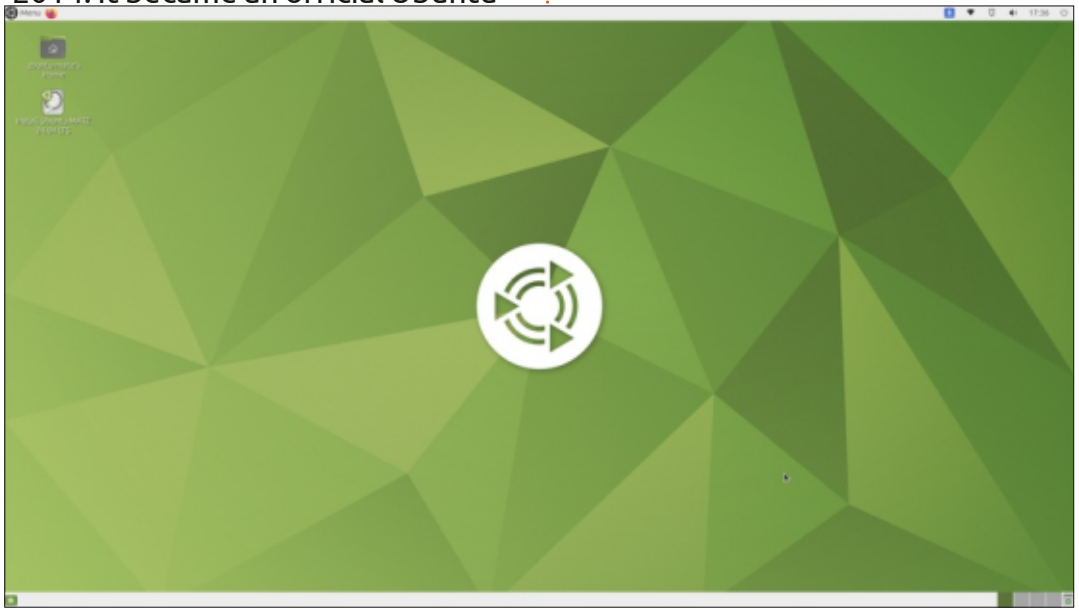
Today, MATE still provides an easy-to-use Linux experience, without the flash and bling of some distributions, but with a smaller memory footprint, better speed, and something hard to find: plain simplicity. MATE is available on many distributions, including Ubuntu and Linux Mint. We'll start with a short look at each one's current release.

Ubuntu MATE 24.04 LTS

This Ubuntu official flavor came out on 25 April, 2024 and is the 21st release, having been around since 2014. It became an official Ubuntu flavor in 2015 with the release of 15.04.

As a long term support (LTS) release, Ubuntu MATE 24.04 LTS is supported for three years, until April 2027.

The improvements incorporated in this version are minimal over the last release, 23.10. It uses MATE Desktop 1.26.2, and has the new Flutter-based installer that is also used in Ubuntu 24.04 LTS. It adds GNOME Firmware and the Ubuntu App Center package management system, which replaces Software Boutique. Also removed is Ubuntu MATE Welcome.



Applications

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

Atril 1.26.2 PDF viewer
Caja 1.26.3 file manager
Celluloid 0.26 video player
CUPS 2.4.7 printing system
Document Scanner (Simple Scan) 46.0 optical scanner
Engrampa 1.26.2 file archiver
Evolution 3.52.0 email client
Eye of MATE 1.26.1 image viewer
Firefox 125.0.2 web browser**
GDebi 0.9.5.7 package installer*
GNOME Disks 46.0 disk manager
GNOME Maps 46.0 mapping
GNOME Weather 46.0 weather display
Gparted 1.5.0 partition editor*
GUFW 24.04.0 firewall controller
MATE Calculator 1.26.0 calculator*
MATE Control Center 1.26.1 settings manager*
MATE Disk Usage Analyzer 1.26.1 (baobab) disk display*
MATE System Monitor 1.26.3 system resource monitor

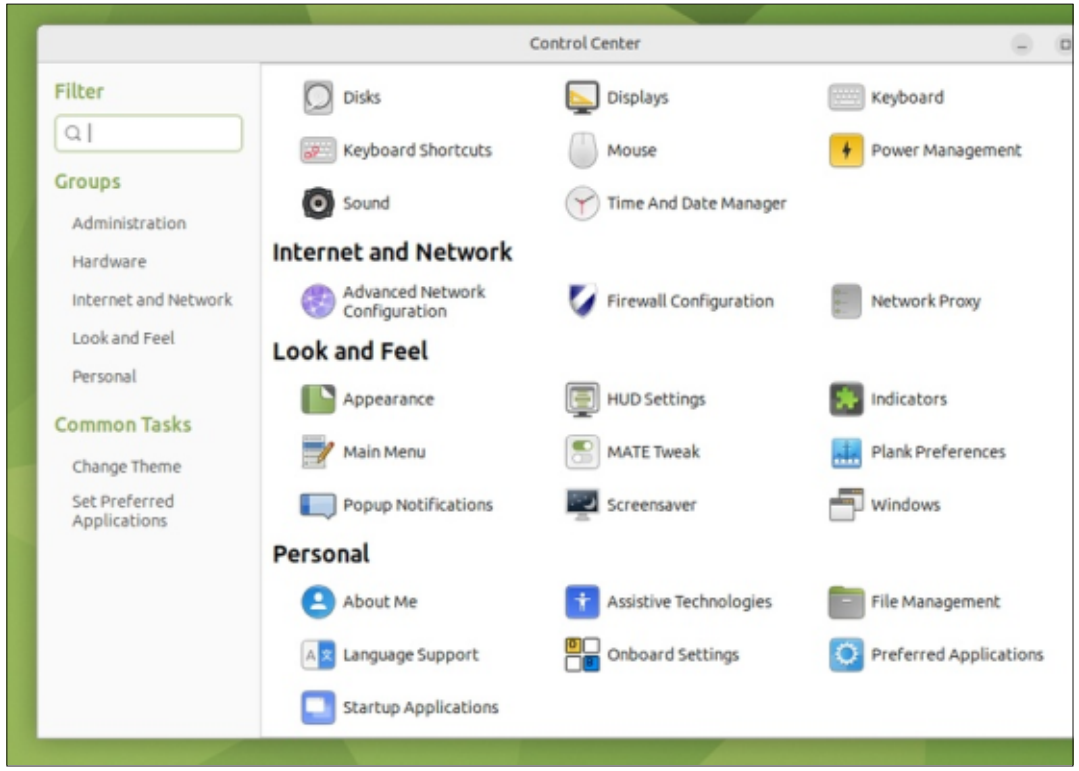
MATE Terminal 1.26.1 terminal emulator*
LibreOffice 24.2.2 office suite
Pipewire 1.0.5 audio controller
Plank 0.11.89 desktop dock*
Pluma 1.26.1 text editor
Redshift 1.12 screen color temperature adjuster*
Rhythmbox 3.4.7 music player*
Shotwell 0.32.6 photo manager
Transmission 4.0.5 bittorrent client
Ubuntu App Center 1.0.0 package management system**
Webcamoid 9.1.1 webcam*

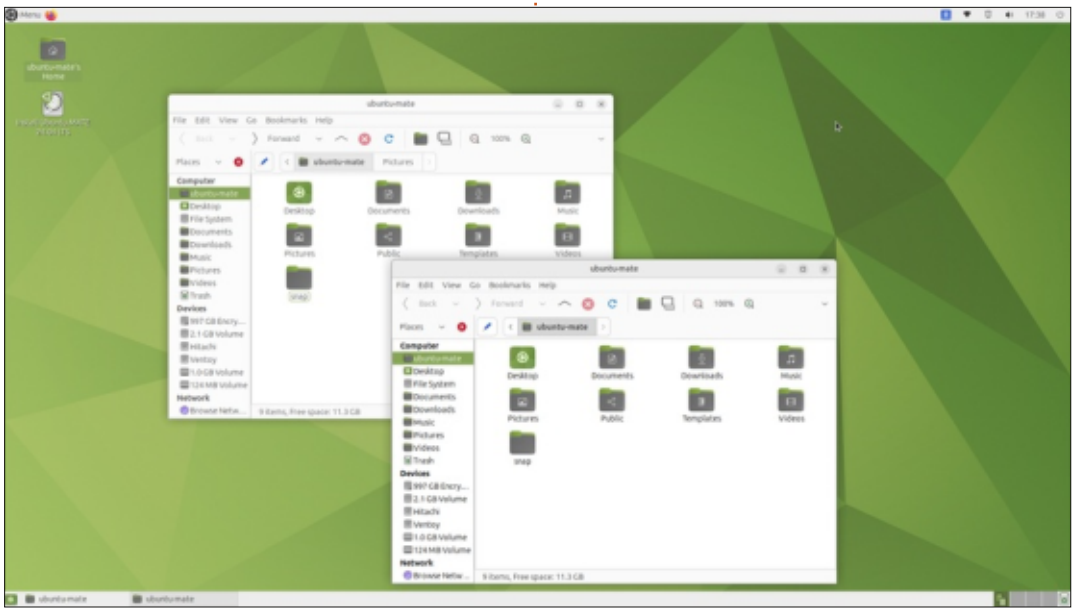
* indicates same application version as used in Ubuntu MATE 23.10
** supplied as a snap, so version depends on the upstream package manager

Ubuntu MATE's list of default applications has just about everything a desktop user needs to get started, without too much bloat and no duplication.

The file browser is the MATE desktop's own Caja file manager. Caja is an earlier fork of Nautilus with some of Nautilus' deleted features reinstated like the "up one level" button. It also includes some useful capabilities like bulk file renaming.

Ubuntu MATE 24.04 LTS has the LibreOffice 24.2.2 office suite complete except for LibreOffice Base, the database program.





Linux Mint 21.3 "Virginia" MATE Edition

This is my second look at Linux Mint 21.3 "Virginia" since my recent comparison of the Cinnamon Edition with Ubuntu Cinnamon 24.04 LTS. This version of Mint has the same back-end based on Ubuntu 22.04 LTS but with the MATE desktop instead of Cinnamon.

Linux Mint 21.3 came out on 12 January, 2024, and is the third point release to Mint 21.0 "Vanessa" from 31 July, 2022.

Linux Mint itself has been around since 2006 and originally

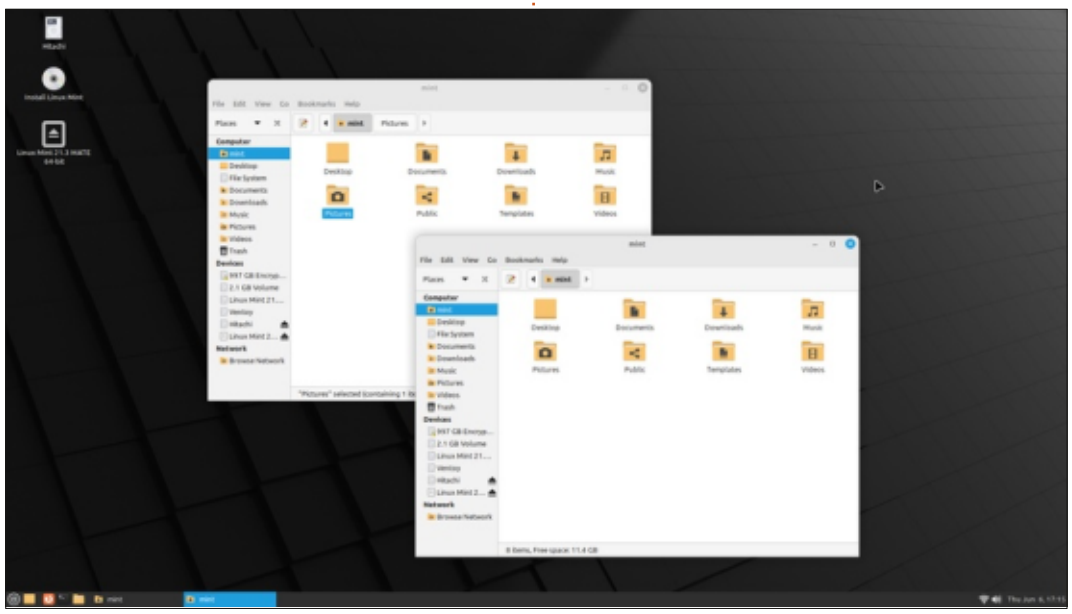
featured the GNOME 2 desktop, so a MATE Edition is a natural continuation. It is also available in editions with the Cinnamon and Xfce desktops as well.

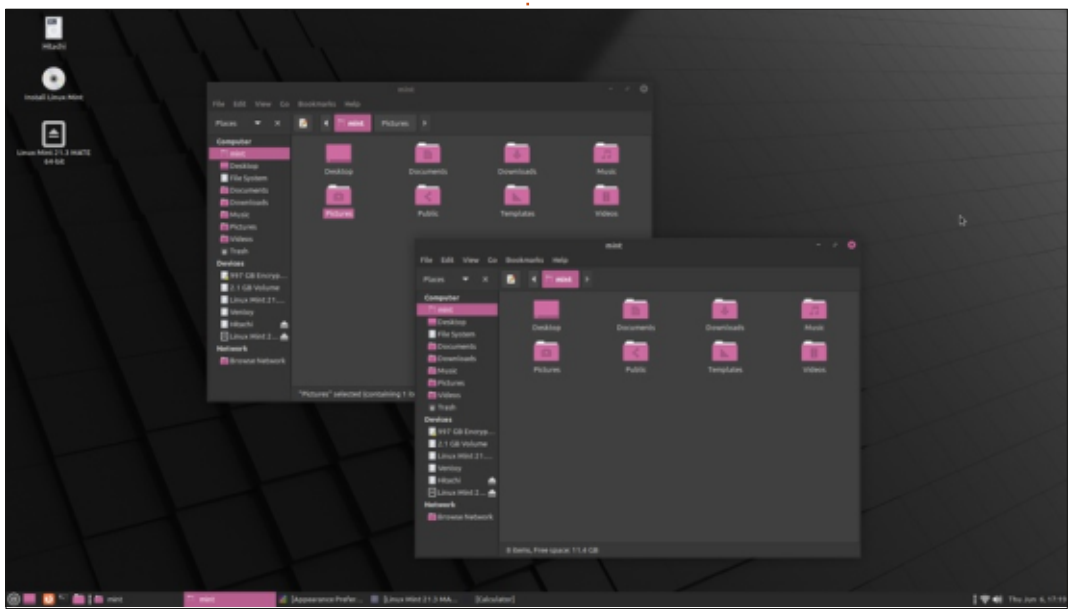
Because it is a point release, Mint 21.3 has only a few updates. These include full support for SecureBoot and wider compatibility with more BIOS and EFI setups, with Grub used in EFI mode and Isolinux/syslinux used in BIOS mode. Furthermore, the Mint tools and the framework employed to produce ISO images have both been updated.

Applications

Some of the applications included with Linux Mint 21.3 MATE Edition are:

Blueman 2.3.5 Bluetooth manager
Bulky 3.2 file renamer
Celluloid 0.21 video player
Caja 1.26.0 file manager
Drawing 1.0.2 image editor
Engrampa 1.26.0 file archiver
Firefox 121.0 web browser





GNOME Calculator 41.1 calculator
GNOME Disks 42.0 disk manager
GNOME Document Scanner (Simple Scan) 42.0 optical scanner
Gparted 1.3.1 partition manager
GUFW 24.04.0 firewall
Hexchat 2.16.0 IRC client
Hypnotix 4.3 television streaming application
LibreOffice 7.3.7.2 office suite
MATE Control Center
MATE Disc System Monitor 1.26.0
MATE Disk Usage Analyzer 1.26.0 disk usage display
MATE Terminal 1.26.0
MintInstall 8.2.9 software manager
MintUpdate 6.0.7 update manager
Pix 3.2.2 image organizer
Redshift 1.12 desktop day/night adjuster
Rhythmbox 3.4.4 music player
Synaptic 0.90.2 package manager
Thunderbird 115.6.0 email client
Timeshift 24.01.1 system restore utility
Transmission 3.00 BitTorrent client
Warpinator 1.8.3 file transfer client
xed 3.4.5 text editor
xreader 4.0.2 document viewer
xviewer 3.4.4 image viewer

Linux Mint 21.3 MATE Edition has a good mix of default applications, many of which are the same as those included in the Cinnamon Edition. The only differences are the use of some MATE desktop-specific applications like the Caja file manager. As with Linux Mint Cinnamon Edition, the MATE Edition comes with most of what a desktop user needs, without any duplication except in package management. Mint has both the MintInstall software store and the more technical Synaptic APT package manager. As is the case in Mint's Cinnamon Edition, some of the included applications are "genericized" versions of GNOME applications, with some "debranded" and others forks. One example is the xed text editor, which is a fork of MATE's Pluma which is, in turn, a fork of GNOME's gedit text editor.

All the default applications provided are .deb files, including a customized version of the Firefox web browser, although Flatpak is enabled as well.

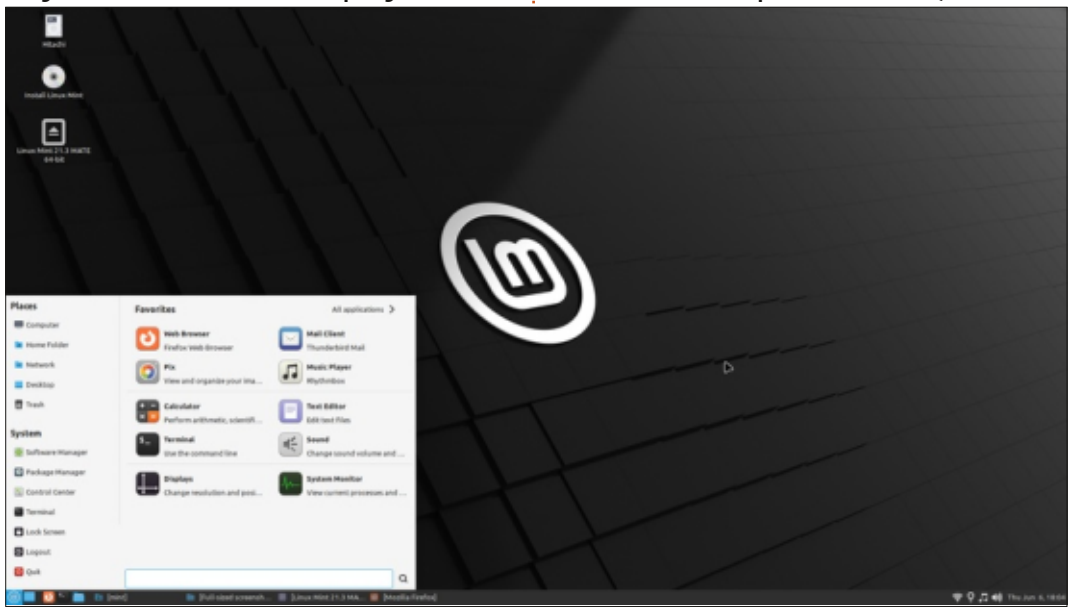
Linux Mint 21.3 comes with the complete LibreOffice 7.3.7.2 office suite, including LibreOffice Base, the database application.

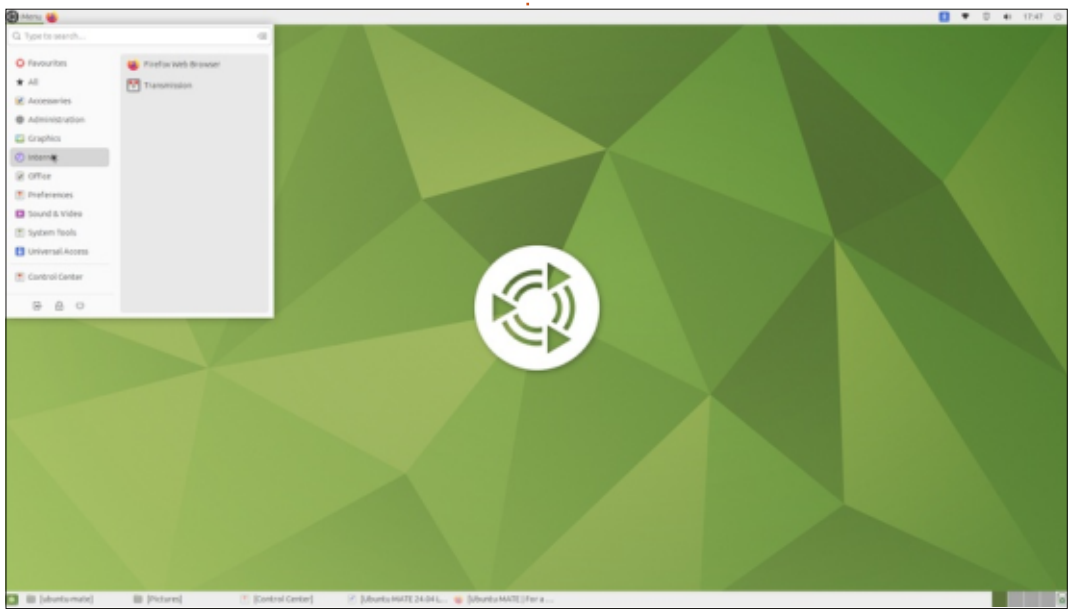
Comparison

These two Linux distributions are much alike in look and use, so let's see the areas where they differ.

Releases & support periods

There are some differences in this area. Linux Mint comes out every two years as an LTS version, with point releases in between, which are basically there to help new users with their installation,





reducing the number of updates. Support for each major Mint version is for five years.

Ubuntu MATE conforms to Ubuntu's release schedule and so there are new versions out every six months, in April and October. Like Mint, Ubuntu MATE is available as an LTS release every two years, but it also has three "interim" releases in between. The LTS versions are supported for three years while the interim versions have nine months of support.

This does mean that, if you want the MATE desktop and have new hardware that the most recent version of Linux Mint MATE does not yet support, then the newest interim release of Ubuntu MATE may have you covered, due to its newer Linux kernel version. Mint does have an "Edge" version with a newer kernel but with the Cinnamon desktop, not MATE.

These support periods do sound different but, in practice, they probably don't make much difference to most users. Users generally seem to stick to the LTS versions unless they need newer hardware support. With five years of support versus three, it seems to give an edge to Linux Mint, but most users tend to upgrade to the latest LTS and, with one button upgrades available, it is easy to do. While these release schedules and their support periods differ, in practice they are probably equal, as anyone using either distribution can run the current LTS version.

Snaps vs Flatpak

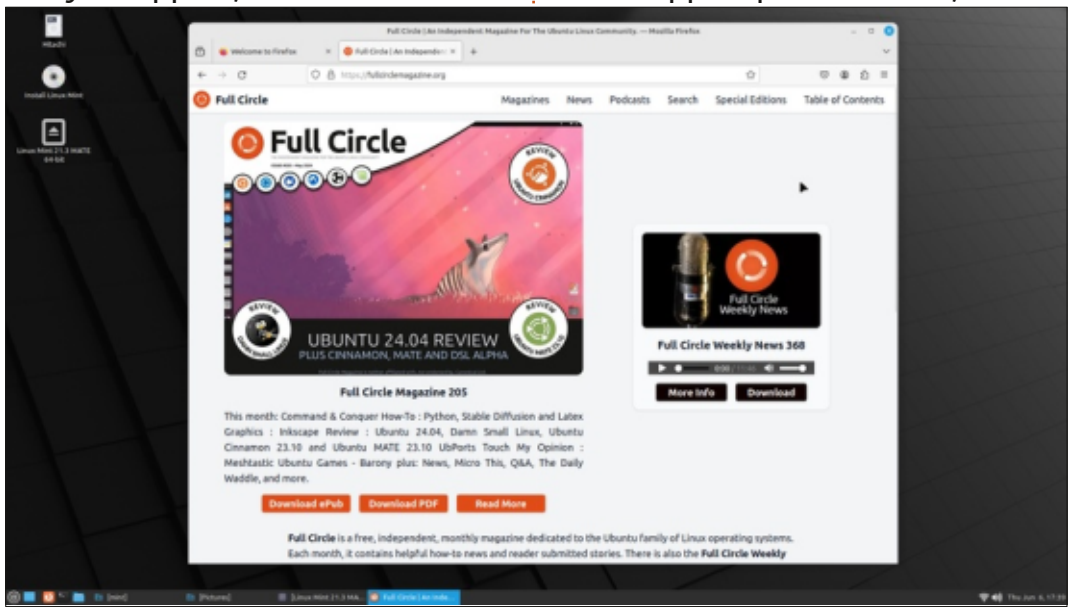
Ubuntu MATE inherits Ubuntu's use of Snap packages and even comes with a couple of them installed: Firefox and the Ubuntu App Center. Mint does not use Snaps, but does have Flatpak enabled, although no Flatpak applications are installed.

While Snap and Flatpak are both competing Linux application packaging formats, these days they are fairly comparable in terms of ease-of-use and the range of applications available. Flatpak can also be installed on Ubuntu MATE and Snaps on Linux Mint.

Customization

Both Linux Mint and Ubuntu MATE have a large number of customization choices, but Mint has more. Mint offers 101 wallpapers, which may be a Linux record, versus Ubuntu MATE with 28 wallpapers. Mint has 65 included icon and window themes to Ubuntu MATE's 23.

A large number of wallpapers is not necessarily a big deal, though, as wallpapers are easy to find on the internet. Both Ubuntu MATE



and Mint also have additional themes that can be installed from the MATE Look website, so, if your favorite theme is missing from the default setup, it can probably be quickly found.

Panels

The default panel arrangement for Linux Mint MATE is a single panel at the bottom of the screen, which optimizes screen space and gives it a more modern look.

By default, Ubuntu MATE comes with two panels just like GNOME 2 did, one each at the screen's top and bottom, but it is not difficult to use the settings to add the needed utilities to the bottom panel and then just delete the top one.

Menus

The default Ubuntu MATE menu is the Brisk menu which is compact, includes search, and works fine, but it is easy to add one (or more) of the several provided alternative menus to the panels, including the original three-menu GNOME 2 menu (applications, places & system).

Mint comes with the mintMenu which, while different from Brisk, works similarly. In a nostalgic nod to the old triple-menu GNOME 2 system, it retains in-menu categories for applications, places & system. Alternative menus can also be installed on the panel.

Dock

On Ubuntu MATE, if you want a desktop dock, then Plank is already installed, ready to be turned on. Just open the Plank preferences and it appears. Plank is easy to turn off, too. Just right-click "quit" on it and it is gone. As docks go, it is fairly unobtrusive, as it is small and hides when a window touches it.

There is no launcher or dock provided in Mint's MATE Edition, such as Plank, although it can always be added.

Download Size

Linux Mint 21.3 has a download size of 3.1 GB, while Ubuntu MATE 24.04 LTS is 4.2 GB. That seems like a bit of a size disparity but you have to consider that Linux Mint 21.3 is based on Ubuntu 22.04 LTS, not 24.04 LTS, and the Ubuntu base has grown in the two years between those releases. I suspect that Linux Mint 22, which will be based on Ubuntu 24.04 LTS, will be bigger, so this too is probably not a real advantage for either distribution. As long as you have a reasonable internet connection speed and the disk space, the download size is probably pretty much immaterial anyway.

Screen zoom, scaling or large text

Both Ubuntu MATE and Mint MATE use the same MATE desktop. One current limitation is that it does not include a "large text" feature, desktop zoom ,or scaling control, which can be a problem if you have a laptop with a small, but high-resolution screen. MATE does however have the ability to adjust system fonts at Control Center - Appearance - Fonts and it solves the problem reasonably well in my testing. Some applications, like Firefox and LibreOffice Writer, may need additional text size boosts within the application.

Which to Choose?

Having tried both of these out, I can honestly say that they are so similar that there is not much to choose between them. Mint comes set up with one panel and has more wallpaper and theme choices but, with a little bit of configuring, Ubuntu MATE can be just as good. Both have very clean and simple MATE desktops without a lot of fancy effects, so take your pick!

External links:

Ubuntu MATE:
https://ubuntu-mate.org/

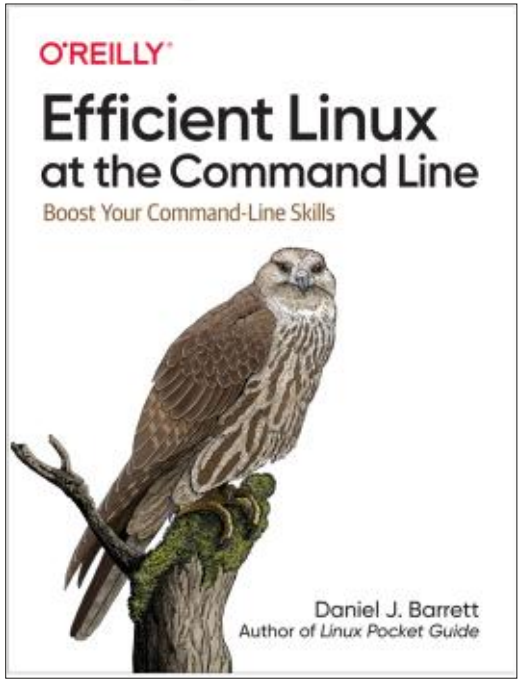
Linux Mint:
https://www.linuxmint.com/

MATE Look:
https://www.mate-look.org/browse/

BOOK REVIEW

Written by Erik

Efficient Linux at the Command Line



Website: https://www.oreilly.com/library/view/efficient-linux-at/9781098113391/

Price: $35 USD

Efficient Linux at the Command Line

by Daniel J. Barrett
Released February 2022
Publisher(s): O'Reilly Media, Inc.
ISBN: 9781098113407

Blurb: "*Take your Linux skills to the next level! Whether you're a system administrator, software developer, site reliability engineer, or enthusiastic hobbyist, this practical, hands-on book will help you work faster, smarter, and more efficiently. You'll learn how to create and run complex commands that solve real business problems, process and retrieve information, and automate manual tasks.*

You'll also truly understand what happens behind the shell prompt, so no matter which commands you run, you can be more successful in everyday Linux use and more competitive on the job market."

We usually cover stuff in FCM that relates to newbies and help them get started with Ubuntu in general. Today, I'm making a slight detour. If you are a newbie, I suggest moving to the next article. This book is squarely aimed at intermediate Linux users. (This does not mean that as a newbie, you should disregard it, simply, get more salted before putting your back to this one.)

I had a look at the preview copy of this book last year and I had not realised it had a final release.

I snagged the epub and opened it in MuPDF, I donned my blue light glasses and started reading. It is really times like these I wish I could afford paper books, but alas.... The book assumes you have bash. So if you have zsh, or fish, or whatever, you need to do your own translations.

Though the book does say that it is *not an introduction, it does start out with core concepts, but not basic concepts. It is followed by a basic introduction to the shell, variables, environment variables, and so on. The examples are simple and easy to follow on a standard Ubuntu install.

We then stop off at the command history and how to interact with it. To be honest, the only time I use it other than the exclamation marks (bang bang) or up arrow, is to look at what someone else had done in the past. How do you use history? Let us know on: misc@fullcirclemagazine.org

There is a bit on 'command line editing', then we are off to 'cruising the file system'. There is an overview, and we build on what we learned in the previous chapters, where we use the way we checked for duplicates in another way. I really like this way of learning as it enforces what is fresh in your mind. There is even a nice (for once) explanation of pushd and popd.

Part II in the book is labelled, "next level skills". It starts off simple, with things like word count, that we use almost every day, and moves into brace expansion. I immediately learned something I did not know. "Square brackets are a pattern matching operator for file names. Curly brace expansion, on the other hand, does not depend on file names in any way. It just evaluates to a list of strings. You can use brace expansion to print file names, but no pattern matching occurs."

Speaking of pattern matching, we get a 'grep' deep dive immediately afterwards – more commands when working with text. Again, nothing you did not know, but stuff you do not use every day (things that you usually look up before attempting).

Chapter six takes us into, "Parents, children and environments". I had a good chuckle with the HALshell example. "I'm sorry Dave, I'm afraid I can't do that." This whole chapter takes place within your shell and shell environment.

Everything you learn or refresh your memory with here, gets build on again in the next chapter, "More ways to run a command".

This is quite an interesting chapter, where you learn, "all commands are strings, but some are more stringy than others". Commands as xargs, commands via ssh, all these types of running commands are explained clearly and concisely with ample examples for you. There are more ways to run commands here, than you can count on your fingers.

Chapter eight is that awesome build a bear, erm I mean bash one liner, chapter. It sort-of outro's with generating test files, which I thought was pretty awesome.

We leverage some text files in chapter nine, and it is not just parsing log files, you create simple databases and even a simple password manager. Chapter ten is "Efficiency at the keyboard". It is just what you expect it to be, yet it still manages to build on the previous chapters. Chapter eleven is labelled "Time savers". I learned how to use 'make' for non-programming tasks! The final part of the book is basically a Linux command refresher, with references conveniently linked.

This is a really awesome book, as usually books covering intermediate subjects are rare. Beginner books and advanced or deep-dive books are plentiful.

If you have the means to buy this, I would recommend that you add it to your bookshelf. Otherwise I recommend finding it at your local library and giving it a once over.

This behavior leads some users to believe that the `export` command creates a global variable. It does not. The command `export WHATEVER` simply declares that the variable `WHATEVER` will be copied from the current shell to any future children.

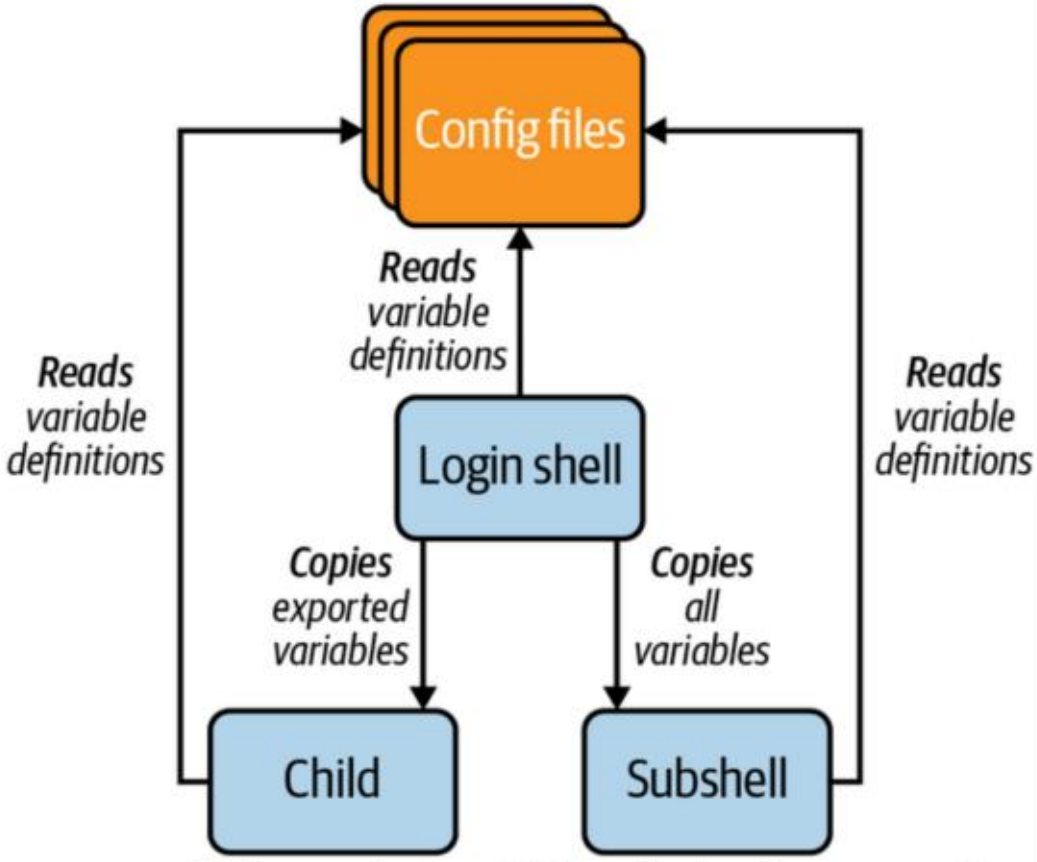


Figure 6-1. Shells may share variables and values by export or by reading the same configuration files

Child Shells Versus Subshells

LETTERS

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

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ubuntuforums.org/forumdisplay.php?f=270

Full Circle Needs You!

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

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

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

Q&A

Compiled by EriktheUnready

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

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

The company that I work for uses Salesforce. Since I knew zero about it, I decided to do a quick course on it this weekend. The frustration is real – the course is presented by a lady (supposedly the CEO) who has 50% of the course designated to personal crap. The handout has the cover page, a page "about me" complete with instagram poses, the next page about "mums", then a whole page for four bullet points, then a project plan, and another whole page for one download link, then a page for pimping more courses that should have been part of this one, then another whole page for "let's get started" followed by a "thank you" page. Good grief! Talk about *not respecting your student's time. I don't care if you are Zapp Brannigan, or you have two arseholes, *you don't matter, what matters is if *you can get the points across. The videos are just her reading off the screen. I feel sorry for kids today who have to learn from a teacher who is more interested in 'selfies' than teaching. If you guys ever feel any of my quickies in the magazine are not teaching you anything, or the content covers more of the pimple on my bum than actual content, you know where to write to, and I will put more effort into the meat and potatoes. Praise the pope (It's a saying, calm down) for the returns policy. If I had to spend money on this nonsense I would be very upset.

Q: If I go and type lsb_release in my terminal, it says that there are no lsb modules available. What does this mean? It used to say things like the codenames – such as hardy heron. Then I found this https://stackoverflow.com/questions/58395566/lsb-release-command-not-found-in-latest-ubuntu-docker-container, but when I tried it, it said it was already installed?

A: lsb is short for Linux Standard Base – it is one of the commands you can use man for (one of the better man pages). In said man page, you will see the -c option, give it a whirl!

Q: I have a bodhi Linux PC on my network. I can see it and communicate with it just fine from Ubuntu, but I was having issues with my old laptop running Kubuntu 16.04, used for watching movies and series. I decided that it was no issue, I'd use my external WD Green drive in a powered USB enclosure to transfer some data. The transfer speeds are all over the place. I have no idea why. My laptop is new, it should motor.

A: Have you tried another enclosure? Some of the cheap Chinese ones have an IC that gets very hot. Feel for it (heat) after a transfer and maybe put a heatsink on? Otherwise if you sure the enclosure is fine, check out: https://smitchell.github.io/how-to-bind-to-the-right-usb-storage-driver

Q: So here goes; I've got an Xubuntu 18.04 laptop, and recently it's had some networking problems. It's on the home wireless router, supplied by the ISP. It uses DHCP, so everything can connect. I can surf to 1.1.1.1, and nowhere else. If I use a name like www.google.com, Firefox says the site is not reachable. I have like one or two static addresses on my network, but that should not matter. I'm scratching my head here.

A: You could go to the network icon, click on 'edit network connections' -> double-click on your

WiFi name and go to IPv6 settings (this is controversial, but hear me out). Set it to disabled. Then go to IPv4 settings and fill in 1.1.1.1 , 8.8.8.8 , 9.9.9.9 (or choose just one – up to you), and click on save. Now reboot and you should surf. If not, ping me on TG again and we can look deeper.

Q: This is going to sound weird but I need to find out what the screensaver was that I had on Ubuntu on XFCE in 2010. I still have the drive backed up, but I don't know where to look for the configuration file. It had to be saved somewhere, right?

A: It *should be in /home/<YOUR USER NAME>/.config/xfce4/xfconf/xfce-perchannel-xml/xfce4-screensaver.xml

Q: Why is Ubuntu not considered free as in Triquel, but Triquel is Ubuntu? And why is it not free as in freedom? Why would I choose Trisquel?

A: One, Freedom does not exist, the cake is a lie. (So I have never understood that one). Two, I think what you are after is "binary blobs", meaning blobs of code that is either proprietary or just not open, that is in the Ubuntu distribution or ecosystem. As someone who has tried Triquel, and struggled with WiFi not working because the drivers were not available as open source, I understand why Ubuntu uses the mixed model, but it is not for any nefarious purposes. With Trisquel, you can look at any of the code and change anything you like; if that appeals to you, great!

Q: After installing Xubuntu 24.04 and setting my password during set-up, I rebooted to log in for the first time. It rejects my password and yet it is the same one I always use. I am completely lost at this point so I repeat the exercise to find the same outcome. Help me please?

A: I was going to suggest checking caps lock (preventing login since 1991), but then I saw this query almost word-for-word. So it may be a bug in one of the ISO's. So I'll steal that answer:

In the recovery menu select root then press ENTER

In the shell below, enter mount -o remount, rw /

Enter passwd your_login

Enter your password twice.

Enter exit to leave the shell

Select resume to boot.

Q: I'm running owntone [https://github.com/owntone/owntone-container] as a docker image on an Ubuntu 20.04 virtual machine on my Ubuntu 24.04 laptop. I'm using Rythmbox as it is supposedly supported. Yet I find that sometimes Rythmbox just skips a file completely and moves on to the next one. Is there a better media player that is supported?

A: My guy, I didn't even know that software existed, you would be better off asking on their forums. The only thing I could point to is check that you have the ubuntu-restricted-extras package installed. It may be that it skips due to a missing codec.

Q: I recently bought a 1TB USB drive off gumtree and try as I might, I can't get Ubuntu to see more than 128GB. I know the drive works as the guy tested it on his windows machine when I bought it. This is fdisk -l output <removed>

A: There are a lot of greedy idiots in this world. Run a lsblk to confirm, but it may be a scammer that has compressed a 128GB drive to appear 1TB, to trick you. If lsblk says it is 128GB, you may have been conned, otherwise try removing all partitions, reboot and partition again. You can also try the partitioning and format on a windows machine to see if it is an Ubuntu issue.

Q: I have an old intel Mac mini that has now seen its end – I have installed Ubuntu as recommended by Action Retro - https://www.youtube.com/watch?v=ipJceL253Fo.

The issue I have is that I liked using Cyberduck and the Ubuntu Alternative is Filezilla, which is ugly. Is there something I can use that has a clean interface?

A: We try and help where we can, but we are not really in the recommendation business. Lots of

software has FTP functionality built in, like dual-pane file managers. I would suggest gftp if you want a standalone application. You did not say which flavor of Ubuntu you are using, but most file managers should 'ftp' without issue.

Q: I have installed Ubuntu on my NTFS drive for compatibility, but I can't figure out how to defrag it.

A: OK, you know more than me; afaik, that does not happen. Do you mean you overwrote your NTFS drive, in which case it will be a Linux compatible filesystem. Generally, Linux does not need defragging, even on mechanical drives. https://www.theregister.com/2021/11/22/install_linux_on_ntfs

The article above says more than I can type here.

Q: Hey, I was looking for something that I had installed, but it was not in my menu (it's an AppImage), so I was thinking that, like in Windows, you can see if something installed by looking inside Program Files, but where do I look in Ubuntu?

A: With generic packages, usually your bin/ folder, but with AppImages it is different, it may actually need to run from that installer file. Maybe look at this? https://github.com/TheAssassin/AppImageLauncher (I have not used it myself, so not too sure)

Editor's note: I use AppImageLauncher all the time. On first running an AppImage it'll ask if you want to just run it and that's it, or if you want to run it and integrate it into your system (ie: add a menu item). It's a great little bit of software.

Q: Hello. I have Xubuntu 20.04.4 on my laptop. I change permissions with chmod +x balenaEtcher-1.7.9-ia32.AppImage, and execute. It does not execute. What else do I need?

A: Hi, your AppImage says: "ia32". You need to get the x64 version. Alternatively, when you download Balena Etcher, there is a section that says need deb files? (Don't worry it will take you to github). Click on that. Then, once github has loaded, click on "releases" to the right, and get the correct package there.

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.

Minami Lane

Website: https://store.steampowered.com/app/2678990/Minami_Lane/

Price: $3.99 USD

Blurb: "*Welcome to Minami Lane! Build your own street in this tiny cozy, casual management sim! Unlock and customize buildings, manage your shops, and maximize the happiness of your villagers to complete quests and fill your street with love! Minami Lane is a tiny street management game made in less than 6 months and priced at $4.99. Every day, you can place or upgrade buildings and manage your shop to try to get the perfect offer. Then the day goes by, with villagers who come and tell you how they feel about your street, trash to pick up, cats to pet, and tanuki hiding as common items to find. The game is composed of 5 missions with simple objectives and no fail states that take between 2 and 4 hours to complete. There is also a sandbox mode for you to build the street of your dreams. To compare it to other games: it's shorter and simpler than traditional management or city builder games, even Kairosoft ones. It's cozier and a bit more puzzle oriented than idle games such as Boba simulator but with less content too.*"

This is a two man game by a guy and his girlfriend. (I'm not counting the "friend" who made the music as it got on my nerves really quickly.)

Blibloop - https://blibloop.carrd.co/
Doot - https://linktr.ee/dodoot
Zakku - https://bento.me/zakku

This title hit me and I didn't even get the number plate! It is a very casual game, where you get to manage a street. I put it on, and played a bit, got tired of the music, played something else in the background, and before I knew it, it was dark! I was so relaxed I got up and washed the few cups I had and the floor too. I packed out the wine racks and wiped down all my bottles. That's how relaxed I was... Though there is a method to the madness, for my first play, I did not do any of it, I built shops and parks and tweaked recipes, picked up litter, and stroked the cat. (I totally missed the fact that you needed to high-five the cyclist.)

Since I'm skipping the music, let's quickly talk about the graphics (the sound design is great though!). You can place houses, where you can define the roof type and the colors. I would have liked to see a bit more variety here, and maybe a few more color options. What they have is not bad in any way, so don't read anything negative into the statement. I just think this game could have launched above the clouds if it did. The same can be said about the upgrades. You get a choice between "stars" and beautification. Obviously you need "stars" to get going or you will not have any income, as more "stars" mean more customers – that equate to more money, so you can buy the next house, for instance. So, it would have been nice if you had a choice when it upgrades, I will elaborate later. The characters are cute, well drawn little cherubs, walking up and down your street. They all also have the same color palette as the street (there are no sharp colors).

Gameplay:

The game is a Sim, but there are some other things, like picking up trash, petting the cat, greeting the cyclist, clicking on lost items, and hearing what the people who frequent your street have to say. I really liked the fact that you could break that fourth wall and pet the cat, and I wished the game leaned a bit more heavily in this direction. For example, feed the ducks or put up birdhouses or whatever. I did find that the people in the street would complain about something, like say, they want more noodles in their ramen. I would oblige, but the next day they would complain there's too much noodles in the ramen; it is like asking my girlfriend what she would like for supper, there is no definitive answer. I liked the dynamic of the young and the old people, where the young ones would be more satisfied if the Kon-bini had soda and corn dogs, as opposed to the old people who liked instant noodles and rice balls.

Now, about that statement earlier, you can make a building more popular or more beautiful. For instance, if you choose more stars, your ramen shop gets a huge sign (a bowl). You have no control over this sign. If you choose beautification, the ramen shop gets paper lanterns and you also have no say, which means that, after a while, things feel a bit cookie-cutter-like. This, other than the music, is my only criticism of the game. It would have been cool if there were synergies too, say putting a few parks together, turn them into something else, but it is a nice to have, not a must. The main gameplay loop is solid, it is fun and I think I only sped up the time on the first day. The element of where's Waldo, every day, did not get old as, one day, it is a lost cellphone in the street, the next it is a lost violin, sticking out behind the stairs.

It also looked like your cherubs get old, as I started with ten fresh ones and soon I had nine freshers and one popcorn topper. The dynamic changed to six and four soon, but I did not follow this as I was trying out different things. Speaking of your little cherubs, when you click on them they have some comment on what happened to them, this bubble goes away too quickly sometimes, and I had to click one dude/dudette twice to read what they liked or did not like and missed another one slipping into a house. As it is a casual game, this does not matter and I did not stress about it, but I can see someone with OCD struggling to keep up trying to click on every little cherub. Though the street signs did appear to repeat a lot, it does not really matter when you are zoomed in. The zooming in and out is flawless, even on Ubuntu, making the overall experience even

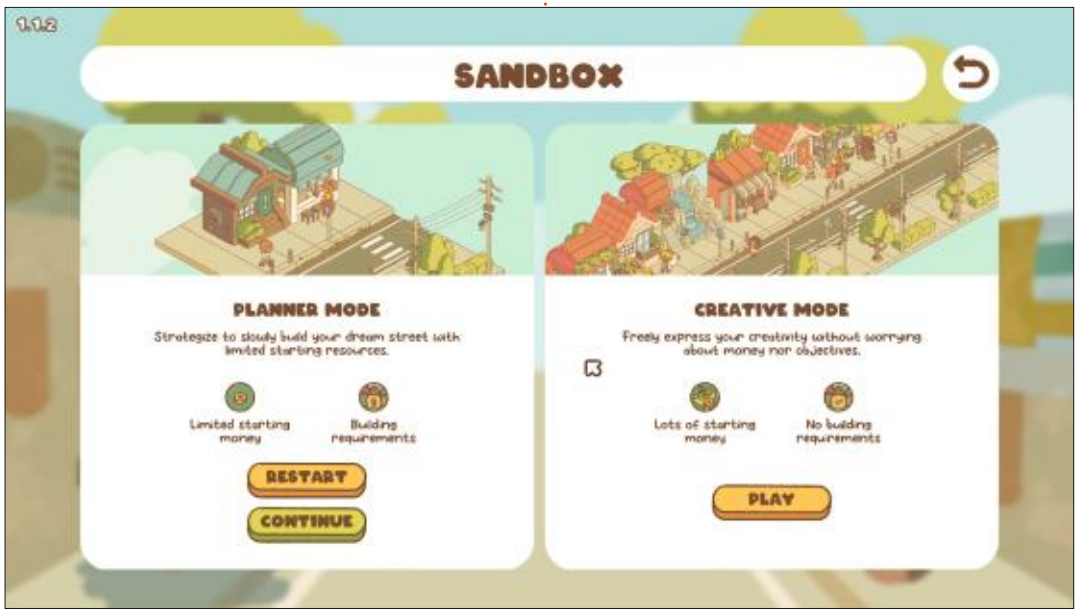
better.

I picked the game up on sale, and for the price, there are no complaints. To the developers, I would gladly cough up that money again if they could add some DLC (I never thought I'd say that, but the game was so cheap, one could spring for DLC, unlike Paradox games!) with a bigger variety of cherubs, and tasks, and buildings, and maybe a touch-up on the art. I am not saying the art is bad, I mean things like the cafe has a pavement on the pavement. It messes with my eye a bit. It could be cool if there was a night cycle too, with cosy lights, etc. Even take it up a notch, with delivery services, and being able to customize the other side of the road too, with different hedges, etc. For everyone reading this and going hmmm... Yes, all I see are cool possibilities here.

Your little street goes from one house to feeling lived in – in no time. Speaking of time, it would be awesome if the background changed from sunrise to sunset. What I liked was that my first frustration with the game I could sort out with a few clicks. You see, by default, the camera will follow a cherub, when you click on them. You can turn this off, or choose one of the other options. There are missions you can play too; I did not, as I had no idea what bubble tea was, so I played in planning mode. The game saves every "evening", so if you made a boo-boo, you can quit and it will revert to the last save.

I played on 4K resolution to test, as well, and I am happy to report that you can choose a large cursor, so it does not get lost on screen. There is a bit of lag on slower systems, just because it is Unity, but your average computer from the last five years should be able to run this.

Is it worth the asking price? Yes, I had fun without realizing 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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