



Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #185 - September 2022



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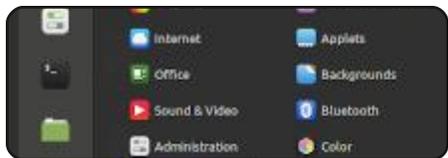
HowTo



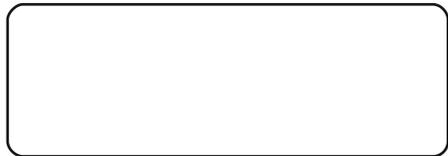
Python p.24



Blender p.29



New Life to 32-bit p.32



p.XX



Inkscape p.34

Graphics



Full Circle

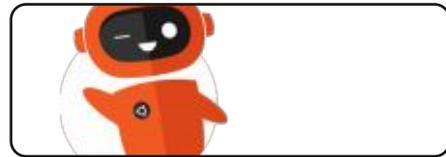
THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

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

Command & Conquer p.22



... p.XX



Ubuntu Devices p.XX



The Daily Waddle p.38



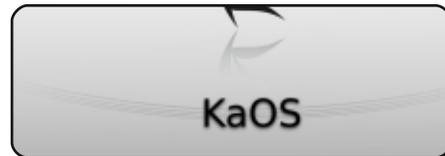
My Opinion p.45



Letters p.XX



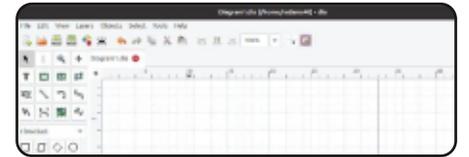
Q&A p.57



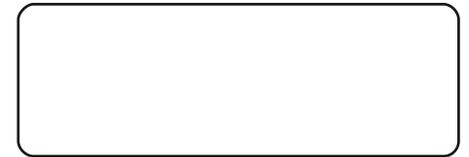
Review p.52



Linux News p.04



Everyday Ubuntu p.39



Micro This Micro That p.XX



Review p.48



Ubuntu Games p.60



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WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

We're back with Python, Blender and Inkscape. No Latex this issue, but it'll definitely be back next month. Same with Greg's Micro series. Filling the third place in the HowTo section is an interesting piece on which distro to look at for a 32-bit machine. Gone are the days of when Ubuntu used to run on anything. Unfortunately, 32-bit machines, which are still capable, are being ignored by most distros. Which is a shame. As it almost encourages people to dump them.

Continuing Adam's reviews of 22.04 *buntu's we have Ubuntu Unity. His non-Debian wildcard this month is KaOS. Richard continues his look at Dia for creating flowcharts. And who doesn't love a good flowchart? Send your answers on a postcard to Richard.

Recently, I bought a 3D printer. I had one many moons ago. I wrote about it in back issues of FCM and while it was good, it was a just too big. That, and the company went belly up. This one is more compact. Yes, it works just great with Linux (using Cuda for slicing). I'll maybe review it, but there's not much to say. Files are copied to a card as the printer is standalone. Anyway, I digress, I decided that it was time to learn CAD for creating my own bits. I chose FreeCAD. I'm hoping to write a short series on using FreeCAD to create basic stuff. Stay tuned!

Don't forget: if you're looking for some help, advice, or just a chit chat: remember, we have a **Telegram** group: <https://t.me/joinchat/24ec1oMFO1ZjZDc0>. I hope to see you there. Come and say hello.

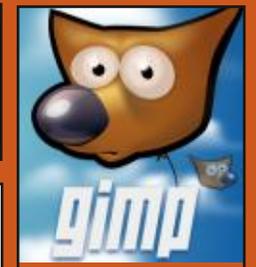
Anyway, all the best, and stay safe!

Ronnie

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HDDSUPERCLONE CODE, SOFTWARE FOR COPYING INFORMATION FROM FAULTY HARD DRIVES:

22/08/2022

The source code of the program, for copying information from faulty hard drives - HDDSuperClone, which allows you to extract stored data from disks with read errors or unstable operation of individual magnetic heads. The reason for the release of the source code is the lack of time to maintain the project. The code is open under the GPLv2 license (license is mentioned inside the code files). The code was published in a tar-archive, but enthusiasts on GitHub have already created a repository, in which they plan to continue the development of the project.

Initially, the project was supplied in binary files under a EULA agreement and developed as an advanced alternative to the GNU ddrescue utility, expanding its capabilities. Previously it was

available only for hardware systems for cloning failures such as DeepSpar DD14 and RapidSpar. HDDSuperClone supports the import and export of files with ddrescue logs, which allows you to switch between these two utilities if necessary.

<http://www.hddsUPERclone.com/sitev1/hddsUPERclone/purchase>

BUDGIE 10.6.3:

22/08/2022

The organization, Buddies of Budgie, which oversees the development of the project after its separation from the Solus distribution, introduced a release of Budgie 10.6.3. Budgie 10.6.x continues to develop a classic code base based on GNOME technology and its own GNOME shell implementation. In the near future, they expect to start the development of the Budgie 11, a branch in which they plan to separate the functionality of the desktop, from the layer that provides visualization and output of information, which will allow you to

abstract from specific graphic libraries, and implement full support for the Wayland protocol. The project code is distributed under the GPLv2 license. You can use distributions such as Ubuntu Budgie, Solus, GeckoLinux and EndeavourOS to familiarize yourself with Budgie.

<https://github.com/solus-project/budgie-desktop>

RELEASE OF CROSSOVER 22:

23/08/2022

CodeWeavers has released Crossover 22, based on the Wine code and designed to run programs and games written for the Windows platform. CodeWeavers is one of the key participants of the Wine project, sponsors its development and returns all the innovations implemented for its commercial products, to the project. The original code of the Crossover 22 open components can be downloaded on this page: <https://www.codeweavers.com/products/more-information/source>

<https://www.codeweavers.com/support/forums/announce/?t=24;msg=266857>

STABLE RELEASE OF MARIADB 10.9:

23/08/2022

The first stable release of the new branch of MariaDB 10.9 (10.9.2) DBMS has been published, an offshoot from MySQL, which retains backward compatibility and the integration of additional storage engines and advanced capabilities. The development of MariaDB is supervised by the independent MariaDB Foundation in accordance with an open and transparent development process, independent of individual manufacturers. MariaDB is shipped instead of MySQL in many Linux distributions (RHEL, SUSE, Fedora, openSUSE, Slackware, OpenMandriva, ROSA, Arch Linux, Debian) and has been implemented in large projects such as Wikipedia, Google Cloud SQL and Nimbuzz.

<https://mariadb.org/mariadb-10-10-1-rc-and-10-9-2-ga-now-available/>

RELEASE OF I2P:

23/08/2022

We just saw the release of the anonymous network protocol I2P 1.9.0 and C++-client i2pd 2.43.0. I2P is a multi-layered anonymous distributed network running on top of the conventional Internet, actively using end-to-end encryption that guarantees anonymity and isolation. The network is built in P2P mode and is formed thanks to the resources (paths) provided by network users, which allows you to do without the use of centrally managed servers. (communications within the network are based on the use of encrypted unidirectional tunnels between the participant and peers).

<https://geti2p.net/en/blog/post/2022/8/22/1.9.0-Release>

THUNDERBIRD 102.2.0:

24/08/2022

The Thunderbird 102.2.0 mail client is available, which includes the following changes:

- Added configuration for mail.openpp.remind_encryption_possible to disable the output of the reminder of encryption support using OpenPGP.
- Work has been done to reduce the launch time.
- The conclusion of the offer for the import of incomplete OpenPGP keys was terminated.
- The selection of dictionaries in the menu associated with the spell check button now does not lead to the sudden closing of the menu.
- Problems with violation of the order of the lines with addresses have been solved.
- The uplifting of the little things in the interface and they improved the design theme.

Thunderbird will no longer offer to import OpenPGP keys that are incomplete

changed

- Selecting or unselecting a dictionary in the Spelling compose toolbar button will no longer immediately close the menu; Making dictionary changes via the editor context menu will continue to close the context menu
- changed

- Contact address lines are now adjusted to appear in the expected order

changed:

- Custom1-4 fields restored to Address Book UI; existing data is preserved from pre-102 profiles

Plus various security fixes

<https://www.thunderbird.net/en-US/thunderbird/102.2.0/releasesnotes/#whatsnew>

FLATPAK 1.14.0 RELEASED:

24/08/2022

A new stable branch of Flatpak 1.14 is out, which provides a system for assembling self-sufficient packages that are not tied to specific Linux distributions and executed in a special container that insulates the application from the rest of the system. Support for Flatpak packages are provided for Arch Linux, CentOS, Debian, Fedora, Gentoo, Mageia, Linux, Alt Linux and Ubuntu. Packages with Flatpak are included in the Fedora repository and are supported in the

GNOME application management program.

<https://lists.freedesktop.org/archives/flatpak/2022-August/002269.html>

CEMU, NINTENDO WII U

EMULATOR:

24/08/2022

The release of Cemu 2.0 emulator, which allows you to run games and applications created for the Nintendo Wii U game console on a conventional PC is out. The release is notable for the opening of the project's source code and the transition to an open development model, as well as providing support for the Linux platform. The code is written in C++ and is open under the free license of MPL 2.0.

The emulator has been evolving since 2014, but has so far been supplied in the form of a proprietary application for Windows. Recently, the development was carried out only by the founder of the project and ate all his free time, leaving no opportunity to engage in other projects. The author Cemu hopes

that the transition to an open development model will attract new developers and turn Cemu into a joint project. At the same time, the author does not stop working on Cemu and intends to continue to develop it, but without spending all his time on it.

There are ready-made binaries for Windows and Ubuntu 20.04. For the rest of the Linux distributions, they propose to build it. The Linux port uses wxWidgets on top of the GTK3. The SDL library is used to interact with input devices. A graphics card with support for OpenGL 4.5 or Vulkan 1.1 is required. There is support for Wayland, but assembly for the environments based on this protocol has not been tested. The plans mention the creation of universal packages in the AppImages and Flatpak format.

https://www.reddit.com/r/cemu/comments/wwa22c/cemu_20_announcement_linux_builds_opensource_and/

LINUX'S CORE IS 31 YEARS

OLD:

25/08/2022

On August 25, 1991, after five months of development, 21-year-old student Linus Torvalds announced in a teleconference comp.os.minix, the creation of a working prototype of the new Linux operating system, for which the port of the bash 1.08 and gcc 1.40 were noted. The first public release of the Linux kernel was unveiled on September 17. The core 0.0.1 had a size of 62 Kb in a compressed form and contained about 10 thousand

lines of source code. The Linux kernel has more than 30 million lines of code. According to a study conducted in 2010 by order of the European Union, the approximate cost of development from scratch of a project similar to the modern Linux kernel would be more than a billion US dollars (calculated when there were 13 million lines of code in the core), according to other estimates - more than 3 billion.

The Linux kernel was created mimicking of the MINIX operating system, which did not suit Linus with its limited license. Subsequently, when Linux became a famous project, ill-wishers tried to accuse Linus of directly copying the code of some MINIX subsystems. The attack was repelled by Andrew Tanenbaum, the author of MINIX, who commissioned one of the students to make a detailed

comparison of the code of the Minix and the first public versions of Linux. The results of the study showed the presence of only four insignificant coincidences of code blocks due to the requirements of POSIX and ANSI C.

Initially, Linus intended to call it Freax, from the words "Free," "freak" and X (Unix). But the name of the Linux kernel was obtained from the light hand of Ari Lemmke, who, at the request of Linus, placed the core on the FTP server of the university, calling the directory with the archive not Freax, as asked by Torvalds, but by Linux. It is noteworthy that the enterprising businessman William Della Croce managed to register the trademark of "Linux" and wanted to collect royalties over time, but later changed and transferred all the rights to the trademark Linus. The official Linux mascot, the Tux penguin, was selected as a result of a competition held in 1996. Tux stands for Torvalds Unix.



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GNOME INTRODUCED A TOOLKIT FOR COLLECTING TELEMETRY:

25/08/2022

Developers from Red Hat announced the readiness of the gnome-info-collect tool to collect telemetry about the systems that use the GNOME environment. Users wishing to participate in the data collection are offered ready-made packages for Ubuntu, openSUSE, Arch Linux and Fedora.

The information will analyze the preferences of GNOME users and take them into account when making decisions related to improving the ease of operation and the development of the shell. With the help of the data received, developers will be able to better understand the needs of users and highlight the areas of activity that should be given priority.

Gnome-info-collect is a simple client-server application that collects system data and transfers it to the GNOME server. The data is processed anonymously, without saving information about specific users and hosts, but to exclude

duplicates to the data, a hash and salt created based on the computer identifier (/etc/machine-id) and user name is attached. Before sending, the data prepared for transfer is shown to the user to confirm the operation. The data that can be used to identify the system, such as the IP address and the exact time on the user's side, are filtered out and not logged on the server.

Among the information collected are: the distribution used, hardware parameters (including manufacturer and model data), the list of installed applications, the list of selected applications (downboard), the availability of support for Flatpak and access to the Flathub in GNOME Software, the types of accounts used in GNOME online, included shared access services (DA, VV, RDP, SSH), virtual desktop settings, the number of users in the system.

<https://blogs.gnome.org/aday/2022/08/25/help-improve-gnome/>

COMPIZ MANAGER UPDATE 0.9.14.2:

25/08/2022

Almost three years after the publication of the last update, a release of the composite manager Compiz 0.9.14.2, using OpenGL to output graphics (windows are processed as textures using GLX_EXT_texture_from_pixmap) and providing a flexible system of plugins to implement effects and expand functionality was announced.

Among the most notable changes in the new version is the implementation of support for properties `_GTK_WORKAREAS_D` number and `_GNOME_WM_STRUT_AREA`, which allows you to improve configurations with multiple monitors. Previously, these properties were added to the GTK library, Mutter window manager and Metacity composite manager.

In addition, Compiz 0.9.14.2 has established build support in new versions of the GCC, solved problems with the operation of plugins blur and opengl on systems with OpenGL ES, stopped the path

change for pkg-config, added support for the assembly mode Unity (Jumbo) in CMake.

<https://launchpad.net/compiz>
<https://lists.freedesktop.org/archives/compiz/2022-August/003539.html>

RELEASE OF LUTRIS 0.5.11:

26/08/2022

The game platform Lutris 0.5.11 was released, providing tools to simplify the installation, configuration and management of games in Linux. The project code is written in Python and distributed under the GPLv3 license.

The project supports a catalog for quick search and installation of game applications, allowing you to run games in one click through a single interface without worrying about installing dependencies and settings. Runtime components for launching games are supplied by the project and are not linked to the distribution used. Runtime is a distribution-based library suite that includes components from SteamOS and Ubuntu, as well as various additional libraries.

It is possible to install games distributed through GOG, Steam, Epic Games Store, Battle.net, Origin and Uplay. At the same time, Lutris itself acts only as an intermediary and does not sell games, so for commercial games, the user must independently purchase the game in the corresponding service (free games can be run with one click from the Lutris graphical interface).

Each game in Lutris is tied to the download script and the handler describing the environment to run the game. It includes ready-made profiles with optimal settings for the launch of games under the control of Wine. In addition to Wine, the games can be run using emulators of game consoles, such as RetroArch, Dosbox, FS-UAE, ScummVM, MESS/MAME and Dolphin.

Improvements in the new release highlights the provision of integration with the Amazon Games service, the addition of components for the launch of emulators such as SheepShaver, Basilik II and Mini vacas, the ability to use variables in the scripts in the URL, the inclusion of the Composite

Server Gamescope on systems with NVIDIA 515+ drivers, the implementation of support for the emulators of the Gnome Console terminal and Deep Terminal.

<https://github.com/lutris/lutris/releases/tag/v0.5.11>

CLOUDFLARE HAS OPENED PGBOUNCER:

26/08/2022

Cloudflare has published the source code of the PgBouncer proxy server, used to maintain a pool of open connections to a PostgreSQL database. PgBouncer allows applications access to PostgreSQL through already installed connections to exclude the constant execution of recurrent opening and closing operations and reducing the number of active connections to PostgreSQL.

The changes proposed in the fork are aimed at more stringent insulation of resources at the level of individual databases (custom load on the CPU, memory consumption and input/output intensity) and provide a limit on the

number of connections in the reference to the user and pool connections. For example, the published fork has the ability to limit the size of the pool of connections for each user, correctly working in configurations with authentication by the host name (HBA, host-based authentication). In addition, support for dynamic changes in restrictions on the number of connections from each user has been added, which allows you to more flexibly reduce users sending many resource-intensive requests.

<https://blog.cloudflare.com/open-sourcing-our-fork-of-pgbouncer/>

RELEASE OF NETWORKMANAGER 1.40.0:

27/08/2022

A stable release of the interface to simplify network settings, is available - NetworkManager 1.40.0. Plugins for VPN support (Libreswan, OpenConnect, Openswan, SSTP, etc.) They are developing it as part of their own development cycle.

Main Innovations include:

The nmc command-line interface implements the "--offline" flag, which allows you to process connection profiles in keyfile format without accessing the NetworkManager background process. In particular, when you create, display, delete and change the settings tied to the network interface, the "nmcli connection" team can now work without accessing the NetworkManager background process via D-Bus. For example, when running the command "nmcli --offline connection add... the nmcli utility will not send a request to the background process for adding a connection profile, but will directly display the corresponding block of settings in the keyfile format in the stdout, which allows you to use nmcli in scripts to generate and change the profiles of the connections. To activate the created profile, it can be saved in the /etc/NetworkManager/system-connections directory.

<https://networkmanager.dev/blog/networkmanager-1-40/>

DEBIAN PROJECT STARTS GENERAL VOTING ON PROPRIETARY FIRMWARE: 27/08/2022

The Debian project announced a general vote of the project developers on the supply of proprietary firmware as part of official installation images and live collections. (Until 2 September) There will be a phase of discussion of the items put to the vote, after which the collection of votes will begin. The right to vote is available to about a thousand developers involved in the support of packages and maintenance of Debian infrastructure.

Recently, equipment manufacturers are increasingly resorting to the use of external firmware downloaded by the operating system, instead of supplying firmware in constant memory on the devices themselves. These type of external firmware is needed by many modern graphic, sound and network adapters. At the same time, the question is ambiguous how the supply of proprietary firmware correlates with the requirement of delivery of only free software in the main

Debian assemblies, since the firmware is performed on hardware devices, and relate to the equipment. On modern computers, loaded with even completely free distributions, there is firmware built into the equipment. The only difference is that in some firmware is loaded by the operating system, while others are already embedded in the ROM or Flash memory.

<https://lists.debian.org/debian-devel-announce/2022/08/msg00001.html>

RELEASE OF GIMP 2.99.12: 28/08/2022

GIMP 2.99.12 is available for testing, which continues the development of the functionality of the future stable branch GIMP 3.0, which made the transition to GTK3, which added standard support Wayland and HiDPI, carried out a significant cleaning of the code base, proposed a new API for the development of plugins, caching of drawings has been implemented, support for the allocation of several layers (Multi-layer) and provided with editing. For installation a package is available in flatpak format (org.gimp.GIMP in flathub-

beta repository), as well as builds for Windows and macOS.

<https://www.gimp.org/news/2022/08/27/gimp-2-99-12-released/>

RELEASE OF MX LINUX 21.2: 28/08/2022

The release of the lightweight distribution, MX Linux 21.2, created as a result of the collaboration of communities formed around the projects of antiX and MEPIS, was announced. The release is based on Debian with improvements from the antiX project and packages from its own repository. The distribution uses the sysVinit initialization system and its own tools for setting up and deploying the system. 32-bit and 64-bit builds (1.8 GB, x86_64, i386) with Xfce desktop are available for download, as well as 64-bit builds (2.4 GB) with KDE desktop and minimalistic builds (1.4 GB) with fluxbox window manager.

<https://mxlinux.org/blog/mx-21-2-wildflower-released/>

RELEASE OF MX LINUX 21.2: 29/08/2022

MX Linux 21.2, created as a result of the collaboration of communities from antiX and MEPIS, is out. The release is based on Debian with improvements from the antiX project and packages from its own repository. The distribution uses the sysVinit initialization system and its own tools for setting up and deploying the system. 32-bit and 64-bit builds (1.8 GB, x86_64, i386) with Xfce desktop are available for download, as well as 64-bit builds (2.4 GB) with KDE desktop and minimalistic assemblies (1.4 GB) with fluxbox window manager.

MX-21.2 is the second refresh of the MX-21 release, consisting of bugfixes, kernels, and application updates since our original release of MX-21. If you are already running MX-21, there is no need to reinstall. Packages are all available thru the regular update channel.

<https://mxlinux.org/blog/mx-21-2-wildflower-released/>

BASED ON SWAY, A PORT OF LXQT, IS BEING DEVELOPED:

30/08/2022

The lxqt-sway project, which ports the components of the user shell, LXQt to work in Sway and a composite manager using the Wayland protocol, has been published. In the current form, the project resembles a hybrid of two. The LXQt settings are converted to a Sway configuration file.

To perform operations such as changing the virtual desktop, splitting and closing windows, additional menus are implemented, which allows you to simplify the management of windows and make the work more understandable for users accustomed to the classical layout of windows, and not used in the Sway mosaic layout with the control of the keyboard.

There is an attempt to port the lxqt-panel panel, with the layer-shell-qt plugin KDE. Instead of lxqt-panel in lxqt-sway, the lxqt-sway is currently offered its own simple yatbfw panel.

<https://cartaslinux.wordpress.com/2022/08/28/lxqt-sway-usando-lxqt-para-hacer-que-sway-sea-mas-amigable/>

FEDORA LINUX 39 PLANS TO DISABLE SHA-1-BASED SIGNATURES SUPPORT BY DEFAULT:

30/8/2022

The developers of the Fedora project have outlined a plan to disable support for digital signatures based on the SHA-1 algorithm in Fedora Linux 39. The disconnection involves the cessation of confidence in signatures that use SHA-1 hashes, but they preserve HMA support with SHA-1 and the ability to enable LEGACY-profile with SHA-1. After the changes, the OpenSSL library will start blocking the generation and verification of signatures with SHA-1 by default.

They are planning to disable in several stages: In Fedora Linux 36 and 37 signatures based on SHA-1 will be excluded from the "FUTURE" policy, the test policy TEST-FEDORA39 to disable SHA-1 at the

request of the user, when creating and verifying signatures based on SHA-1, warnings will be displayed. In the process of preparing the release of Fedora Linux 38 before the building of the beta version in the rawhide repository, a policy will be applied prohibiting the use of SHA-1 signatures, but in the beta and release of Fedora Linux 38 this change will not apply. In the release of Fedora Linux 39, policies with the termination of support for signatures based on SHA-1 will be applied by default.

The plan has not yet been considered by the FESCo (Fedora Engineering Steering Committee), responsible for the technical part of the development of the Fedora distribution. The termination of support for signatures based on SHA-1 is due to an increase in the effectiveness of collision attacks with the given prefix (the cost of the selection of the collision is estimated at several tens of thousands of dollars). To give perspective, in browsers, certificates certified using the SHA-1 algorithm are marked as unprotected since mid-2016.

<https://www.mail-archive.com/devel-announce@lists.fedoraproject.org/msg02882.html>

APACHE OPENOFFICE PASSED 333 MILLION DOWNLOADS:

31/08/2022

The developers of the Apache OpenOffice office package announced surpassing 333 million downloads (according to SourceForge statistics - 352 million), made since the first release of the Apache OpenOffice in May 2012. The frontier of 300 million downloads was reached at the end of October 2020, 200 million at the end of November 2016, and 100 million in April 2014.

Statistics take into account downloads of all versions, starting with Apache OpenOffice 3.4.0 and ending with 4.1.13. Of the 333 million - 297.9 million downloads are made by builds for the Windows platform, 31.6 million - macOS and 4.7 million - Linux. Apache OpenOffice is most popular in the United States (55 million), France (44 million), Germany (35 million),

LTS and Xubuntu 20.04.5 LTS are presented.

In the builds for the desktop the new core and the graphical stack are offered by default. For server builds, a new kernel is added as an option in the installer. It makes sense to use new builds only for new installations - systems installed earlier can get all changes present in Ubuntu 20.04.5 through the system of updating installation.

Recall that for the delivery of new versions of the kernel and graphical stack, a rolling-based update support model is used, where back-ported kernels and drivers will be supported only until the next corrective update of the LTS version of the Ubuntu LTS. So, the Linux 5.13 kernel proposed in the last issue (Ubuntu 20.04.4) was supported until the release of the current version, but now the kernel from Ubuntu 22.04 is proposed, namely 5.15 LTS. Initially, the base core 5.4 will be maintained throughout the five-year cycle of support.

<https://lists.ubuntu.com/archives/ubuntu-announce/2022-September/000283.html>

LINUX FROM SCRATCH 11.2 AND BEYOND LINUX FROM SCRATCH 11.2:

02/09/2022

New editions of Linux from Scratch 11.2 (LFS) and Beyond Linux From Scratch 11.2 (BLFS) edits, as well as LFS and BLFS with systemd management are presented. In Linux From Scratch, instructions are given to create a basic Linux system from scratch, using only the source code of the necessary software. Beyond Linux From Scratch complements LFS instructions with information on how to build and configurate about 1,000 software packages covering various applications, from DBMS and server systems, to graphic shells and media players.

<https://lists.linuxfromscratch.org/sympa/arc/lfs-announce/2022-09/msg00000.html>

RELEASE OF THE OBS STUDIO 28.0:

02/09/2022

OBS Studio 28.0, a package for streaming, compositing and video recording, is out. The code is written in C/C++ and is distributed under the GPLv2 license. The builds are for Linux, Windows and macOS.

The purpose of the development of OBS Studio was to create a portable version of the Open Broadcaster Software (OBS Classic) application, not tied to the Windows platform, which supports OpenGL and is extensible through plugins. The difference is also the use of modular architecture, which involves the separation of the interface and the core of the program. It supports the recoding of original streams, video capture during games and streaming in Twitch, Facebook Gaming, YouTube, DailyMotion, Hitbox and other services. To ensure high performance, hardware acceleration mechanisms (e.g., NVENC and VA-API) can be used.

Support is provided for compositing with the construction of the scene based on arbitrary

video streams, data from web cameras, video capture maps, images, text content of applications or the entire screen. In the process of broadcasting, you are allowed to switch between several predefined scenes (for example, to switch performances with an emphasis on the content of the screen and an image from a web camera). The program also provides tools for mixing sound, filtering with VST plugins, leveling volume and noise suppression.

<https://github.com/obsproject/obs-studio/releases/tag/28.0.0>

RELEASE OF NMAP 7.93, TIMED TO THE 25TH ANNIVERSARY OF THE PROJECT:

02/09/2022

Available now, is the network security scanner Nmap 7.93, designed to audit your network and identify active network services. The release was on the day of the 25th anniversary of the project. Over the years, the project has been transformed from a concept port scanner, published in 1997 in

the journal 'Phrack' into a fully functional application for network protection analysis and the definition of server applications used. The release mainly includes fixes and improvements aimed at improving stability and solving known problems before starting work on the new Nmap 8 branch.

<https://seclists.org/nmap-announce/2022/1>

THE WEBOS OPEN SOURCE EDITION 2.18:

02/09/2022

The webOS Open Source Edition 2.18 platform, which can be used on various portable devices, boards and car infotainment systems, has been published. The Raspberry Pi 4 boards are considered as the reference hardware platform. The platform is developing in a public repository under the Apache 2.0 license, and the development is supervised by the community, adhering to a joint development management model.

The webOS platform was originally developed by Palm in 2008 and was used on Palm Pre and

Pixie smartphones. In 2010, after the acquisition of Palm, the platform passed into the hands of Hewlett-Packard, who tried to use this platform in its printers, tablets, laptops and PCs. In 2012, HP announced the translation of the webOS into an independent open project and in 2013 began opening the source code of its components. In 2013, the platform was bought by LG from Hewlett-Packard and is now used on more than 70 million LG TVs and consumer devices. In 2018, the WebOS Open Source Edition project was founded, through which LG tried to return to an open development model, attract other participants and expand the range of devices supported in webOS.

<https://www.webosose.org/blog/2022/09/02/webos-ose-2-18-0-release/>

RELEASE OF NITRUX 2.4:

02/09/2022

Nitrox 2.4.0, as well as a new release of the MauiKit 2.2.0 library associated with it with components for building user interfaces, is out. The distribution is

built on Debian, KDE technologies and the OpenRC initialization system. The project offers its own desktop NX Desktop, which is an add-on over the user environment of KDE Plasma. Based on the Maui library, a set of typical user applications that can be used on both desktop and mobile devices is being developed. Applimages is being promoted to install additional applications. The size of the full boot image is 1.9 GB, and the JWM window manager is 1.3 GB. The project is distributed under free licenses.

The NX Desktop desktop offers a different style design, its own implementation of the system tray, notification output center and various plasmoids, such as a network connector and multimedia applet to control the volume and control the playback of multimedia content. Of the applications created using the MauiKit framework, note the file manager Index (you can also use Dolphin), text editor Note, Station terminal emulator, VVave music player, Clip video player, NX Software Center application center and Pix image viewer.

<https://nxos.org/changelog/release-announcement-nitrox-2-4-0/>

GOOGLE OPEN SOURCE SOFTWARE VULNERABILITY REWARDS PROGRAM:

03/09/2022

Google has unveiled a new OSS VRP initiative to pay cash rewards for identifying security concerns in open projects Bazel, Angular, Protocol buffers and Fuchsia, as well as projects being developed in Google repositories on GitHub (Google, GoogleAPIsGooglePlats, GoogleCloudPlatform, etc.) and dependencies used in them.

The initiative complements the existing rewards programs, including the Linux kernel, Chrome, Chrome OS, Android and Kubernetes. It is noted that for 12 years of the existence of this program, Google has paid \$ 38 million in rewards for the discovery of more than 13 thousand vulnerabilities. The rewards are between \$100 and \$31337, depending on the dangers of vulnerability and the importance of

the project. For particularly interesting vulnerabilities, the payment amount can be increased.

<https://security.googleblog.com/2023/08/Announcing-Google-Open-Source-Software-Vulnerability-Rewards-Program%20.html>

PETER ECKERSLEY, CO-FOUNDER OF LET'S ENCRYPT, PASSED AWAY:

04/09/2022

Peter Eckersley, one of the founders of the non-profit Let's Encrypt center, a community-controlled community-controlled and certified free of charge to everyone, was missing. Peter was on the board of directors of the non-profit organization ISRG (Internet Security Research Group), which is the founder of the Let's Encrypt project, and has long worked for the human rights organization EFF (Electronic Frontier Foundation). The idea promoted by Peter to provide encryption on the Internet, providing free certificates to all sites, seemed to many to be unrealizable, but the project Let's

Encrypt showed the opposite.

In addition to Let's Encrypt, Peter is known as the founder of many privacy, net neutrality and artificial intelligence initiatives, as well as the creator of projects such as Privacy Badger, Certbot, HTTPS Everywhere, SSL Observatory and Panopticlick.

Last week, Peter was in a hospital that was diagnosed with cancer. The tumor was going to be removed, but Peter's condition deteriorated sharply due to complications that occurred during the preparation for the operation. On Friday night, despite resuscitation, Peter died suddenly at the age of 43.

<https://community.letsencrypt.org/t/peter-eckersley-may-his-memory-be-a-blessing/183854>

THE PLATFORM CODE FOR NOTESNOOK, HAS BEEN OPENED:

04/09/2022

In line with the previous promise, Streetwriters had gifted its Notesnook note platform as an

open project. Notesnook is presented as a completely open alternative to the Evernote system, focused on privacy and supporting end-to-end encryption to stop information analysis on the server. The code is written in JavaScript/TypeScript and opened under the GPLv3 license.

Currently, they published the web-interface code, desktop applications, mobile applications, common libraries, editor of notes and extensions. The server code for synchronizing notes between different devices promises to be published in a separate repository in September. The Web interface is built using the React framework, and the mobile applications are built using React Native.

Login to the application can be protected by a password in order to prevent anyone viewing notes when the device in other people's hands. It is possible to create common notes, including those encrypted with a separate password, as well as special additionally protected notes for storing sensitive data, such as passwords and access keys.

In the notes you can place

FULL CIRCLE WEEKLY NEWS



Join our host Moss Bliss as he presents you with a short podcast (<10min) with just the news. No chit-chat. No time wasting. Just the latest FOSS/Linux/Ubuntu news.

RSS: <http://fullcirclemagazine.org/feed/podcast>



tables, task lists, code blocks, embed multimedia data and arbitrary files, use Markdown/markup. For more convenient structuring of information, the binding of notes to tags, the assignment of color tags, the grouping by projects and the folding of parts of the contents inside the header notes are supported. It supports the consolidation of important notes, binding to notifications and creation of reminders.

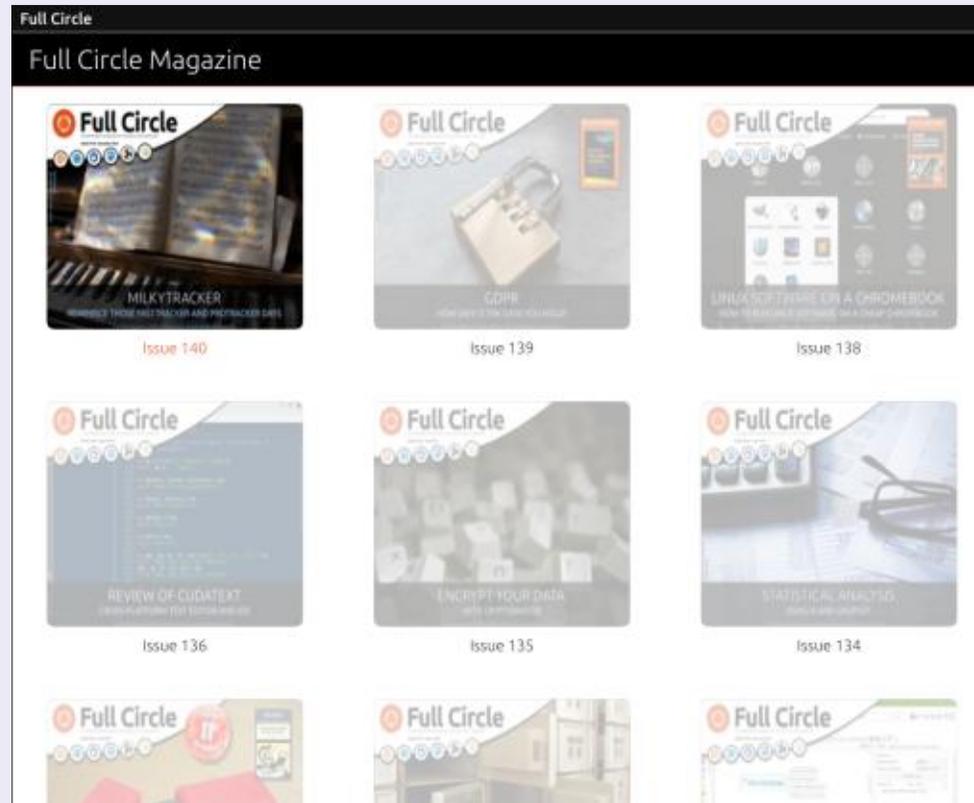
<https://blog.notesnook.com/notesnook-is-going-open-source/>

CONTINUATION OF GNOME SHELL DEVELOPMENT FOR MOBILE DEVICES:

12/09/2022

Jonas Dressler from the GNOME project has published a report on the work done over the past few months on the development of the GNOME shell capabilities, for use on smartphones and tablets with a touch screen. The work is funded by the German Ministry of Education, which provided the developers of GNOME with a grant as part of the initiative to support socially

THE OFFICIAL FULL CIRCLE APP FOR UBUNTU TOUCH - UPDATED!

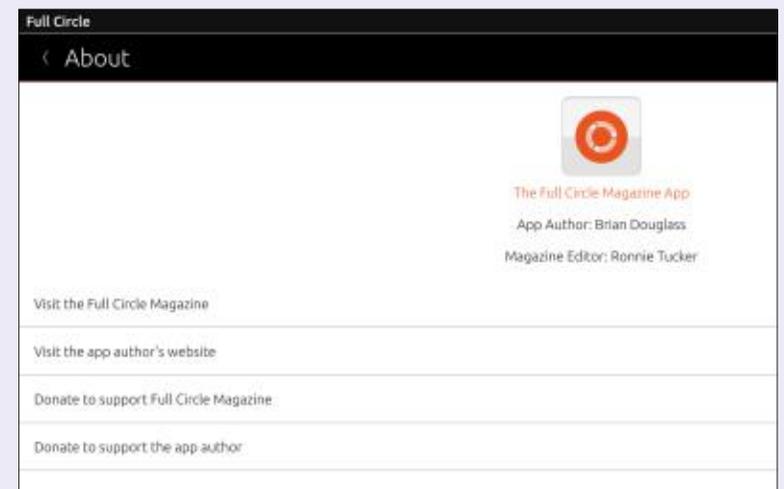
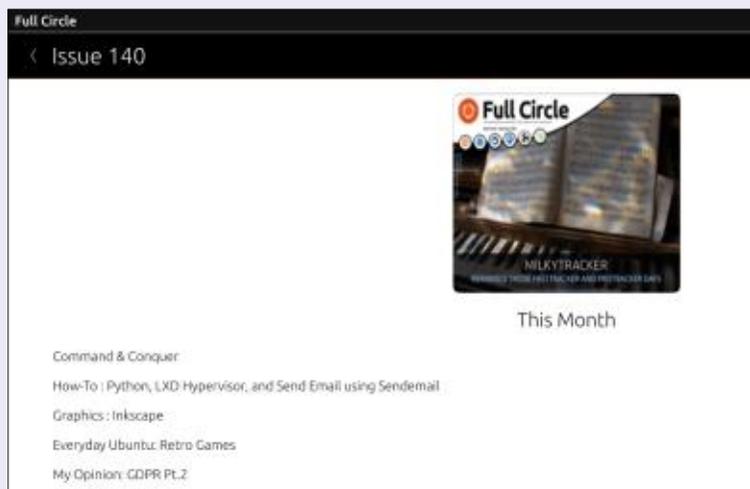


Brian Douglass has updated his FCM app for Ubports Touch devices that will allow you to view current issues, and back issues, and to download and view them on your Ubuntu Touch phone/tablet.

INSTALL

Search for 'full circle' in the Open Store and click install.

HUGE thanks to Brian for this.



Qt library. The code is written in C++ and is distributed under the BSD license. Supported OS's are Linux, macOS, Windows (WSL), Android and Haiku.

The interface is in a classic browser style and supports tabs. The browser is built using its own web-stack, which in addition to LibWeb and LibJS includes a library for drawing text and 2D graphics; LibGfx, an engine for regular LibRegex expressions, an XML parser LibXML, an interpreter of the intermediate code of WebAssembly (LibWasm), a library for working with Unicode LibRegexLibUnicode, an XML parser LibexLibTextCodec(Mibarkdown) and LibCore library with a common set of useful features such as time conversion, input/output and MIME-type processing.

The browser supports the basic web standards and successfully passes Acid3 tests. It supports HTTP and HTTPS. Plans for the future mention the implementation of multi-process operation support, in which each tab is processed in a separate process, as well as performance optimizations and the implementation of advanced capabilities such as CSS flexbox and

CSS grid.

Initially, the project was created in July as a binding in Linux to debug SerenityOS, developing its own browser, the SerenityOS Browser. After a while, it became clear that the development went beyond the debugging utility and can be used as a regular browser (the project is still in development and is not ready for everyday use). It also transformed from SerenityOS-specific development in a cross-platform browser engine.

<https://awesomekling.github.io/Ladybird-a-new-cross-platform-browser-project/>

WD IS DEVELOPING A NVME DRIVER IN RUST:

13/09/2022

At the Linux Plumbers 2022 conference, a Western Digital engineer made a presentation on the development of an experimental driver for SSD drives with the NVMe interface, written in the Rust language and working at the Linux kernel level. Despite the fact that the project is still at an early stage of development, the

testing showed that the performance of the NVMe-driver in the Rust language corresponds to the existing NVMe-driver, written in the C language.

It is noted that the PCI NVMe driver on Rust already provides the functionality necessary for operation, but is not yet ready for wide use, as it requires separate improvements. Among the plans for the future is the redundancy of the unsafe-blocks available, support for device deletion operations and driver unloading, sysfs interface support, delayed initialization implementation, driver creation for blk-mq and experiments using an asynchronous programming model for queue_rq.

https://twitter.com/josh_triplett/status/1569363148985233414

FEDORA LINUX 37 HAS MOVED TO BETA TESTING:

13/09/2022

The beta version of the Fedora Linux 37 distribution began testing. The beta-release marked the transition to the final testing stage, in which only correction of

critical errors is allowed. The release is scheduled for October 18. The release covers Fedora Workstation, Fedora Server, Fedora Silverblue, Fedora IoT, Fedora CoreOS, Fedora Cloud Base and Live collections supplied in the form of spins from the desktop environments like KDE Plasma 5, Xfce, MATE, Cinnamon, LXDE and LXQt. The builds are for x86_64, Power64 and ARM64 architectures.

<https://fedoramagazine.org/announcing-fedora-37-beta/>

SME SERVER 10.1 IS AVAILABLE:

14/09/2022

The release of SME Server 10.1, built on CentOS 7 and designed for use in the server infrastructure of small and medium-sized businesses, is out. The peculiarity of the distribution is the presence of pre-configured standard components, fully ready for operation and customizable through the web interface. Among these components you can note a mail server with spam filtering, a web server, a print server, a file archive, a catalog service, a firewall,

etc. The iso-image sizes are 1.5 GB and 635 MB.

<https://forums.koozali.org/index.php/topic,54884.0.html>

UBUNTU HAS IMPLEMENTED THE ABILITY TO DYNAMICALLY OBTAIN DEBUGGING INFORMATION: 15/09/2022

The developers of the Ubuntu distribution rolled out the service, `debuginfod.ubuntu.com`, which allows you to do without installing debugging from `debuginfo`. With the help of the new service, users were able to dynamically load debugging symbols from an external server directly during debugging. This feature is supported from the release of GDB 10 and Binutils 2.34. Debugging information is provided for packages from `main`, `universe`, `restricted` and `multiverse` of all supported Ubuntu releases.

The `debuginfod` process that provides the service is an HTTP server for the delivery of debugging information from ELF/

DWARF and source texts. When built with `debuginfod` support, GDB can automatically connect to `debuginfod` servers to download missing `debuginfod` information about the processed files or separating debugging files and source files for the debugging file. To use the `debuginfod` server, you should set the `'DEBUGINFOD_URLS'` environment variable before running the `debuginfod.com'` environment variable.

<https://www.mail-archive.com/ubuntu-devel-announce@lists.ubuntu.com/msg01081.html>

RELEASE OF ENDEAVOUROS 22.9: 15/09/2022

The EndeavourOS 22.9 project, that replaced the Antergos distribution, which was discontinued in May 2019 due to the lack of free time to maintain the project at the proper level, is available. The size of the installation image is 1.9 GB (x86_64, the assembly for ARM develops separately). The new release has updated package versions,

including the Linux kernel 5.19.7, Calamares 3.2.61, Firefox 104.0.2, Mesa 22.1.7, Xorg-Server 21.1.4, nvidia-dkms 515.65.01, GRUB 2.06.

Endeavour OS allows the user to install Arch Linux with the necessary desktop without unnecessary complications in the form that it is conceived in, by the developers of the selected desktop, without additional pre-installed programs. The distribution offers a simple installer to install the basic Arch Linux environment with the Xfce desktop by default and the ability to install from the repository one of the typical desktops based like Mate, LXQt, Cinnamon, KDE Plasma, GNOME, Budgie, as well as mosaic window managers i3, BSPWM and Sway. Work is underway to add support to Qtile and Openbox window managers, UKUI, LXDE and Deepin desktops. One of the developers of the project is developing his own window manager, Worm.

<https://endeavouros.com/news/artemis-nova-is-here/>

VULNERABILITY IN THE ENLIGHTENMENT USER ENVIRONMENT: 15/09/2022

The Enlightenment user environment revealed a vulnerability (CVE-2022-37706), allowing an unprivileged local user to execute a code with root rights. At the time of disclosure, the vulnerability remained uncorrected (0-day). The open access is already an exploit tested in Ubuntu 22.04. (It has been fixed since then)

The problem is present in the executable `enlightenment_sys` file, supplied with the `suid` root flag and performing certain allowed commands through the `call` system(), such as mounting the drive utility `mount`. Due to the incorrect operation of the function that forms the string that is transmitted to the `call` system(), quotation marks are cut out from the arguments of the command that you can use to run your code.

<https://www.enlightenment.org/news/2022-09-15-enlightenment-0.25.4>

KDE PLASMA 5.26 DESKTOP TESTING FOR TV

USE:

16/09/2022

Available for testing today is; the beta version of Plasma 5.26 custom shell. You can test the new release through the Live-build from the openSUSE project and build from the KDE Neon (Testing edition) project. Packages for various distributions can be found on this page linked below. The release is expected on October 11.

<https://kde.org/announcements/plasma/5/5.25.90/>

UBUNTU 22.10 INTENDS TO PROVIDE SUPPORT FOR RISC-V SIPEED LICHEE RV:

17/09/2022

Engineers from Canonical are working on an addition to the release of Ubuntu 22.10 - support for the 64-bit board Sipeed LicheeRV, which uses the RISC-V architecture. At the end of August, it was also announced that they would support; Allwinner Nezha and StarFive VisionFive, available

for sale at \$112 and \$179, RISC-V boards. The Sipeed Lichee RV board is available for just \$16.90 and sale on AliExpress, making it very accessible RISC-V architecture.

The Sipeed Lichee RV board is based on SoC Allwinner D1 with single-core XuanTie CPU C906 (1.0GH), equipped with 512MB RAM, has a slot for microSD cards, USB Type-C OTG, SPI for connecting the screen and a M.2 interface, B-KEY 64-pin with wiring HDMI, RMIGI, RGB, MIDI-PI. OIT is named as the main application for th board.

<https://bugs.launchpad.net/ubuntu/+bug/1989595>

RELEASE OF WEBKITGTK 2.38.0 EPIPHANY 43:

17/09/2022

The new stable branch of WebKitGTK 2.38.0, the port of the browser engine the GTK platform is available. WebKitGTK allows you to use all WebKit capabilities through GNOME-oriented softwar.The interface is based on GObject and can be used to integrate web-conceivable tools

into applications, with the use of specialized HTML/CSS parsers, to the creation of full-featured web browsers. Of the well-known projects using WebKitGTK, you can note the regular GNOME (Epiphany) browser. Previously, WebKitGTK was used in the Midori browser, but after the transfer of the project to the Astian Foundation, the old version of Midori on WebKitGTK, was abandoned and by creating a fork of the Wexond browser, they created a fundamentally different product with the same name Midori, but based on the Electron and React platform.

<https://webkitgtk.org/2022/09/16/webkitgtk2.38.0-released.html>

FLOORP WEB BROWSER 10.5.0:

18/09/2022

Floopr 10.5.0, developed by a group of Japanese students and combining the Firefox engine with the capabilities and interface style of Chrome, is out. Notable features of the project is the concern for the privacy of the user and the ability to customize the interface to your taste. The project's code is

distributed under the MPL 2.0 license. Builds are prepared for Windows, Linux and macOS.

<https://blog.ablaze.one/2425/2022-09-17/>

THE PYTORCH PROJECT PART OF THE LINUX FOUNDATION:

19/09/2022

Facebook Company (Prohibited in the Russian Federation) transferred the PyTorch machine learning framework under the patronage of the Linux Foundation, the infrastructure and services of which will be used in further development. The transition under the Linux Foundation wing will save the project from dependence on a separate commercial company and make it easier to work together with third-party involvement. The PyTorch Foundation was established to develop the PyTorch Foundation under the auspices of the Linux Foundation. The support of the project has already been announced by companies such as AMD, AWS, Google Cloud, Microsoft and NVIDIA, whose representatives, along with the

developers from Meta, formed a supervisory board.

<https://www.linuxfoundation.org/press/press-release/meta-transitions-pytorch-to-the-linux-foundation>

LIBREOFFICE PAID VIA THE MAC APP STORE:

20/09/2022

The Document Foundation announced the launch through the Mac App Store catalog of paid assemblies of free office package LibreOffice for the macOS platform. The cost of loading LibreOffice from the Mac App Store is 8.99 euros, while the builds for macOS can also be downloaded from the official website of the project for free.

It is alleged that the funds collected from the paid delivery will be directed to support the development of LibreOffice. The builds placed in the Mac App Store are formed by Collabora and differ from the assemblies from the LibreOffice site by the lack of Java in delivery, as Apple prohibits the placement of external

dependencies. Due to the lack of Java, the functionality of LibreOffice Base in paid builds is limited.

<https://blog.documentfoundation.org/blog/2022/09/19/the-document-foundation-releases-libreoffice-on-apples-mac-app-store/>

RELEASE OF RPM 4.18:

21/09/2022

After a year of development, the release of the package manager RPM 4.18.0. The RPM4 project is being developed by Red Hat and is used in distributions such as RHEL (including derivative projects CentOS, Scientific Linux, AsiaLinux, Red Flag Linux, Oracle), Fedora, SUSE, openSUSE, ALT Linux, OpenMandriva, Mageia, PCLinuxOS, Tizen and many others. Previously, the RPM5 project developed an independent development team that is not directly related to RPM4 and is currently abandoned (not updated since 2010). The project code is distributed under the licenses of GPLv2 and LGPLv2.

<https://rpm.org/wiki/Releases/4.18.0>

RELEASE OF GNOME 43:

21/09/2022

After six months of development, the GNOME 43 desktop environment is available. Specialized Live-assemblies based on openSUSE and installation image prepared as part of the GNOME OS initiative are offered for quick evaluation of GNOME 43. GNOME 43 is also included in the Fedora 37 experimental build.

<http://release.gnome.org/43>

RELEASE OF MESA 22.2, FOR OpenGL AND VULKAN:

21/09/2022

After four months of development, the OpenGL and Vulkan API - Mesa 22.2.0 were released. The first release of the Mesa 22.2.0 branch has an experimental status - after the final stabilization of the code will be released a stable version 22.2.1.

Mesa 22.2 has access to the

Vulkan 1.3 graphics API in anv drivers for Intel's GPU, radv for AMD's GPU and tu for the Qualcomm GPU. Support for Vulkan 1.2 is implemented in an emulator (vn), Vulkan 1.1 - in the software raiser lavapipe (lvp), and Vulkan 1.0 in the driver v3dv (PU Broadcom VideoCore VI from Raspberry Pi 4). Mesa also provides full support for OpenGL 4.6 for drivers 965, iris (Intel), radeonsi (AMD), zink and llvmpipe drivers. Support for OpenGL 4.5 is available for AMD (r600) and NVIDIA (nvc0) and OpenGL 4.3 for virgl (virgl virtual GPU Virgil3D for QEMU/KVM) and vmwgfx (VMware).

<https://lists.freedesktop.org/archives/mesa-announce/2022-September/000687.html>

RELEASE OF WESTON 11.0:

22/09/2022

After eight months of development, a stable release of the Weston 11.0 composite server, a developmental technology that promotes full support for the Wayland protocol in Enlightenment, GNOME, KDE and other user environments, has been published.

Weston's development aims to provide a high-quality codebase and work examples for Wayland in desktop environments and embedded solutions such as platforms for car infotainment systems, smartphones, TVs and other consumer devices. The project code is distributed under the MIT license.

<https://lists.freedesktop.org/archives/wayland-devel/2022-September/042410.html>

RELEASE OF UBUNTU DDE 22.04: 23/09/2022

The Ubuntu DDE 22.04 (Remix) distribution, based on the Ubuntu 22.04 and delivered with the DDE (Deepin Desktop Environment) graphical environment, has been published. The project is an unofficial version of Ubuntu, but the developers are trying to get Ubuntu DDE to be included among the official editions of Ubuntu. ISO-image size is 3 GB. Changes in the new version note the transition to the Ubuntu 22.04 packages with the Linux 5.15 kernel, Deepin Desktop update and

packages, like, LibreOffice 7.3.6.2, the DDE Store and DDE Grand Search applications (activated by "Shift + space"), also a new style of Calamares installer.

<https://ubuntudde.com/blog/ubuntudde-remix-22-04-release-note/>

AUDACITY 3.2: 23/09/2022

The release of the free Audacity 3.2 sound editor, providing audio editing tools (Ogg Vorbis, FLAC, MP3 and WAV), recording and digitizing sound, overlaying tracks and applying effects (e.g. noise suppression, changing tempo and tone) is available. Audacity 3.2 was the second major release after the transition of the project to the hands of the Muse Group. The Audacity code is distributed under the GPLv3 license, binary builds are available for Linux, Windows and macOS.

<https://github.com/audacity/audacity/releases/tag/Audacity-3.2.0>

RELEASE OF THE ONLYOFFICE Docs 7.2.0: 24/09/2022

ONLYOFFICE DocumentServer 7.2.0 server for ONLYOFFICE online editors and collaboration is out. Editors can be used to work with text documents, tables and presentations. The project code is distributed under the AGPLv3 free license. ONLYOFFICE has full compatibility with MS Office and OpenDocument formats. Among the supported formats are: DOC, DOCX, ODT, RTF, TXT, PDF, HTML, EPUB, XPS, DjVu, XLS, ODS, CSV, PPT, PPTX, ODP. It is possible to expand the functionality of the editors through plugins, for example, plugins are available for creating templates and adding YouTube videos. The finished builds are for Windows and Linux (deb and rpm packages).

<https://github.com/ONLYOFFICE/DocumentServer/releases/tag/v7.2.0>

OPEN SOURCING WHISPER: 25/09/2022

The OpenAI project, who engaged in the development field of publicly available artificial intelligence projects, has published the code to the Whisper speech recognition system. It is said that for English speakers, the system provides levels of reliability and accuracy of automatic recognition close to human recognition. (About a third of Whisper's audio dataset is non-English, and it is alternately given the task of transcribing in the original language or translating to English. We find this approach is particularly effective at learning speech to text translation and outperforms the supervised SOTA on CoVoST2 to English translation zero-shot.) The reference implementation code based on the PyTorch framework and a set of already trained models ready for use have been opened. The code has been opened under the MIT license.

<https://openai.com/blog/whisper/>

THE

VIRTUALBOX NETWORKING PRIMER

Connecting and Configuring
Virtual Machines



Robin Catling

The VirtualBox Networking Primer

Connecting and Configuring Virtual Machines

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

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

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Author: **Robin Catling**

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ISBN13 : 9781916119482

Amazon US link:

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Amazon UK link:

[https://www.amazon.co.uk/VirtualBox-Networking-Primer-
Connecting-Configuring/dp/1916119484/ref=sr_1_1?
dchild=1&keywords=virtualbox+networking+primer&qid=16002536
99&s=books&sr=1-1](https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/1916119484/ref=sr_1_1?dchild=1&keywords=virtualbox+networking+primer&qid=1600253699&s=books&sr=1-1)

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primer](https://www.kobo.com/us/en/ebook/the-virtualbox-networking-primer)



COMMAND & CONQUER

Written by Erik

So we were discussing a problem on one of the pods at work, when my coworker made a comment I actually wholeheartedly agreed with. Why can't Linux ship with htop by default? My reason? With modern multicore systems, I prefer seeing my logical CPUs separately when I open up htop. It seems that people who create containers have other ideas, so in that spirit, I would like to go over the basics of top for those of you that don't know. Also as a refresher for me, as top does not 'top' my list, so-to-speak.

On my daily driver I use the GUI version, and my server has htop, so I don't use top other than at work.

All that aside, top is one of those things you HAVE to know, be it for work or that lovely LPI exam you are going to write. Sorry to hear you failed that LPI Mr "I have been using Linux for 20 years" – you know who you are.

Know that you can run top without elevated privileges, but to get the most out of it, rather use

elevated privileges; it just ensures that you have access to everything. Here is a quick factoid, it is called top as it sorts the most CPU intensive PID to the top. The main place top and htop differ is in the header. This is the other place you can find the load average, other than uptime (a favourite LPI question). That load average can be good or bad, depending on the amount of CPUs you have in your system. For you to see the CPUs in top, you need to press "1". This goes for other tools too, like glances, I want to see 'at a glance' what my CPUs (plural) are doing, I don't want to remember key bindings.

That second line gets important when you have a laptop, where you do not want processes burning battery, otherwise more running tasks are not a problem. The abbreviations are usually a sticking point for newbies. I will run through them here quickly, there are screenshots if you don't want to open top on your system. (I'll probably steal it off the Internet as it is a lot of typing).

- us: user cpu time (or) % CPU time spent in user space
- sy: system cpu time (or) % CPU time spent in kernel space
- ni: user nice cpu time (or) % CPU



```

top - 12:35:52 up 1:21, 2 users, load average: 0.58, 0.55, 0.64
Tasks: 211 total, 1 running, 210 sleeping, 0 stopped, 0 zombie
%Cpu(s): 13.1 us, 6.0 sy, 0.0 ni, 80.7 id, 0.2 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3826.0 total, 469.8 free, 1688.9 used, 1667.3 buff/cache
MiB Swap: 2048.0 total, 1976.6 free, 71.4 used, 1855.8 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM    TIME+  COMMAND
 5155 root      20   0 499016 120552 83732 S  18.8   3.1   5:25.86 Xorg
 5541 ed       20   0 691480  96396 77196 S   3.3   2.5   1:16.11 xfwm4
 5626 ed       20   0 1565020 232352 75196 S   3.3   5.9   2:19.98 opensni+
 5629 ed       20   0 545712  41744 32360 S   3.3   1.1   0:18.46 plank
 6004 ed       20   0 617900  51148 38316 S   3.3   1.3   0:07.33 xfce4-t+
12976 ed       20   0 1338216 303048 149708 S   1.7   7.7   1:14.82 soffice+
 5455 ed       20   0 386564   7472  5708 S   0.7   0.2   0:10.30 ibus-da+
13483 ed       20   0  13176   4132  3324 R   0.7   0.1   0:00.08 top
 5119 root      20   0 1685128 50104  8468 S   0.3   1.3   0:22.30 opensni+
 5483 ed       20   0 421412  27104 21504 S   0.3   0.7   0:01.93 ibus-ui+

```

COMMAND & CONQUER

time spent on low priority processes

- id: idle cpu time (or) % CPU time spent idle
- wa: io wait cpu time (or) % CPU time spent in wait (on disk)
- hi: hardware irq (or) % CPU time spent servicing/handling hardware interrupts
- si: software irq (or) % CPU time spent servicing/handling software interrupts
- st: steal time -- % CPU time in involuntary wait by virtual cpu while hypervisor is servicing another processor (or) % CPU time stolen from a virtual machine

True story, I installed Ubuntu Budgie on my cousin's PC as it was slow as molasses with Windows, and I noticed a value in 'wa'. Now this can happen if your system is low on memory, when it constantly writes to the drive, but in his case it was that his BIOS was incorrectly configured and the SATA channel was in "compatible" / "legacy" mode and not AHCI.

The MIB mem and the MIB swap line, is the same as the free command (hello, LPI questions). As you can see from my screenshot, I have 4GB memory in my laptop, with 400MB free and about 1.6GB

in use and cache. I recently opened my music player; it usually takes a second or two to open, but the second time around it is greased lightning as it is in that buff/cache. If you noticed, you would see my swap is starting to be used, which will slow my system down soon. :/ I say soon as usually it is inactive memory pages that get inserted first (my old man gripe about the new programming paradigm where "unused memory is wasted memory" comes into play here).

Anyway, time to make top work for us. Open top and press "f" to see the options.

You should see this busy output – that can scare newbies.

Sorry newbies, you just have to shoulder through it. The selector is your space bar ("Space toggles display", this meant pudding to me

when I first saw it). You can select what you want (and do not want) with it. This becomes important when you need to see more in your limited display window. If you unselect what you don't need, what is left will have more space to display information (so don't select everything, OK?). Just hit the escape key when you are done and your new layout will await you. This is all controllable via a .rc file if you want persistence. Keep in mind that if you ran top with sudo and you run it again without, it will be default. As for the color difference between top and htop, you can use the "z" key to inject some color, but it is red and pink, not something I care about. As you can see, I/O granularity is sorely lacking at a glance, you don't know what program is grinding your disk. Something Linux really needs in top, and yes I know about iotop, but

again, not available in a vanilla container.

The last thing is the mouse support for those key shortcuts at the bottom of top. Sometimes, when F10 press does not work, or you have a keyboard without F-keys, you can click on the F10 for it to exit. This is actually handier than you think and has saved me many times before. This is sorely missing on top. (That sounds weird; it's not inside, it's on top!).

I have never needed to make top persistently look some way, the default is fine, but it is those extra steps that get to me. Why use three steps, when five will do?

Did I make a mistake? Something unclear?

misc@fullcirclemagazine.org

```
Untitled
Fields Management for window 1:Def, whose current sort field is %CPU
Navigate with Up/Dn, Right selects for move then <Enter> or Left commits,
'd' or <Space> toggles display, 's' sets sort. Use 'q' or <Esc> to end!

* PID      = Process Id      PGRP      = Process Group   OOMs      = OOMEM Score c
* USER    = Effective Use   TTY       = Controlling T   ENVIRON   = Environment v
* PR      = Priority       TPgid     = Tty Process G   VMj       = Major Faults
* NI      = Nice Value    SID       = Session Id      VMn       = Minor Faults
* VIRT    = Virtual Image nTH       = Number of Thr   USED      = Res+Swap Size
* RES     = Resident Size P          = Last Used Cpu   nsIPC     = IPC namespace
* SHR     = Shared Memory TIME       = CPU Time        nsMNT     = MNT namespace
* S       = Process Statu SWAP      = Swapped Size    nsNET     = NET namespace
* %CPU    = CPU Usage   CODE      = Code Size (Ki  nsPID     = PID namespace
* %MEM    = Memory Usage DATA     = Data+Stack (K  nsUSER    = USER namespac
```

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.



Sorry for missing last month. Between moving and my health problems, I had to put many things on hold for a while and this, unfortunately, ended up being one of them.

I promised that we would continue with the Styles and Themes series of articles, so that's what we'll do.

The information for each colorset is held in a dictionary. It looks something like that shown top right.

You can see that there is a key that holds the name of the colorset and then another dictionary that holds a background/foreground designation and a hex value of the color. The back/fore color name is the key and the hex value of the color itself is the value of the dictionary entries.

We simply add new colorsets to a global one to keep everything in sync.

```
'Coffee1': {'BG1': '#EDDFB3', 'BG2': '#D8CCA3', 'BG3': '#87805E', 'FG1': 'black', 'FG2': 'black', 'FG3': 'black'}
```

```
newset = {
    response: {
        "BG1": lastbg1,
        "BG2": lastbg2,
        "BG3": lastbg3,
        "FG1": lastfg1,
        "FG2": lastfg2,
        "FG3": lastfg3,
    }
}
ColorSets.update(newset)
```

As you can see, we use the dictionary.update method to add the new one. But how do we save the "master" colorset to a file for retrieval later on? We use the pickle library. However, we have to be careful if we are going to be sharing this file with others, since by default newer versions of Python greater than 3.7 use a higher compression algorithm. Python 3.7 uses a level 4 compression. So to support all Python versions from 3.7 forward, we have to state that the level must be "pickle.DEFAULT_PROTOCOL" (shown right).

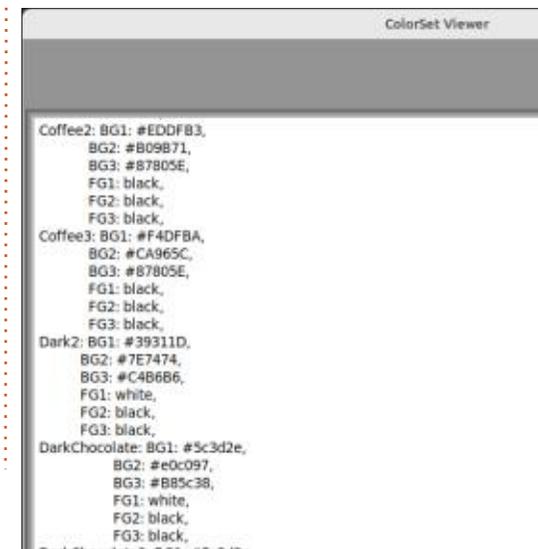
```
# =====
# Saves Pickle file as protocol 4 for compatibility
# =====
with open("mycolorset.pickle", "wb") as file:
    pickle.dump(ColorSets, file, pickle.DEFAULT_PROTOCOL)
LoadCombo()
```

To load the colorset into the program at startup, we read the pickle file and assign the colorset to the global master.

```
def loadcolorsetfile():
    global ColorSets
    # =====
    # Reads Pickle file as protocol 4
    # =====
    with open("mycolorset.pickle", "rb") as file:
        loadedcolorset = pickle.load(file)
    ColorSets = loadedcolorset
```

The program also has a utility that will display the dictionaries in a "viewer" form (shown right).

Because it is a dictionary, the output with all the curly braces won't look very pretty when displayed in text. To make this a bit nicer looking, we can use the pretty print library. Once we have formatted the data the way we want it, we can simply use the tk.text.insert method to place the



HOWTO - PYTHON

data into the widget for display.



The program also provides a way to create a separate file that can be imported into a program that you wrote that will allow you to use a single colorset or multiple colorsets with your own widget list. There is a form to do that from the button menu.

When the “Write File” button is clicked, we create the export file. The first thing we do is to create the import section of the file.

```
import tkinter as tk
import tkinter.ttk as ttk
from tkinter.constants import *
```

Next, we write out the dictionaries for the colorset with

the various sets that were selected.

```
newset={"Greg1": {"BG1": "gray54", "BG2": "gray86", "BG3": "gray64", "FG1": "white", "FG2": "black", "FG3": "black"}, "Vintage1": {"BG1": "#8E3200", "BG2": "#D7A86E", "BG3": "#A64B2A", "FG1": "white", "FG2": "black", "FG3": "black"}, "Vintage2": {"BG1": "#362706", "BG2": "#464E2E", "BG3": "#ACB992", "FG1": "white", "FG2": "white", "FG3": "black"}}
```

Now, we create the function that will apply the colorsets that will be used to all the widgets that happen to be on your form.

```
def do_tk_widgets(Toplevel, colorset):
    style = ttk.Style()
    style.theme_use('default')
    no_AB = ['Entry', 'Message', 'Listbox', 'Text', 'Frame', 'Labelframe']
    # Widgets that have no Foreground attributes
    no_FG = ['Frame']
    TWidgets = [
        'TButton', 'TCheckbutton', 'TCombobox', 'TEntry', 'TFrame', 'TLabel',
        'TLabelframe', 'TMenubutton', 'TPanedwindow', 'TNotebook',
        'Horizontal.TProgressbar', 'Vertical.TProgressbar', 'TProgressbar',
        'TRadiobutton', 'Horizontal.TScale', 'Vertical.TScale', 'TScale',
        'TSeparator', 'Treeview', 'TSizeGrip', 'TSpinbox'
    ]
    Containers = ['Frame', 'Labelframe', 'Tframe', 'TLabelframe']
```

Next, we set the background for the Toplevel widget

```
# =====
# Start with the Toplevel (Toplevel has no foreground attribute)
# =====
Toplevel.configure(bg=colorset['BG1'])
```

```
dat = pprint.pformat(ColorSets, depth=2, compact=True)

chars_to_remove = ["{", "}", "'"]

for char in chars_to_remove:
    dat = dat.replace(char, "")

_w90.Scrolledtext1.insert(END, dat)
```

The first thing we have to do in the function is to apply a ttk style (shown below). In this case, we will be using the “default” style. However, this can be changed to whatever style your system will support. Then we create a number of lists that use the widget classes

for all the possible widgets. There is a list for widgets that don’t support the active background property, one that has the widgets that won’t support the foreground property (which is just a Frame, but there could be more in the future) then we create a list of all the ttk

widgets and finally a list of all the widgets that can be containers.

In order to support the TNotebook and the TButton, we have to supply a map that will allow the various background colors and foreground colors (shown top right).

At this point, we can get a list of all children of the Toplevel form. Once we have the list, we try to set all the background and foreground colors for those widgets (shown bottom right).

While we are working with this widget, we'll check for any children and try to apply the background and foreground colors of them (shown next page, top right).

We then check for specific widgets that need to have special handling, like the TFrame, Treeview, TScrollbars and the TLabel widgets (shown next page, middle right).

Finally, we can do any "standard" tk widgets. Again, we have to check if the widget supports the foreground and active background properties (shown next page, bottom right).

```
# =====  
# Now get all the child widgets of the Toplevel, but  
# don't go into containers yet  
# =====  
style.map(  
    "TNotebook.Tab",  
    background=[("selected", colorset['BG1']), ("active", colorset['BG2']),  
                ("!active", colorset['BG3'])],  
    foreground=[("selected", colorset['FG1']), ("active", colorset['FG2']),  
                ("!active", colorset['FG3'])],  
)  
  
style.map('TButton',  
    background=[('disabled', '#d9d9d9'),  
                ('pressed', colorset['BG3']),  
                ('active', colorset['BG2'])],  
    foreground=[('disabled', colorset['FG3']),  
                ('pressed', colorset['FG3']),  
                ('active', colorset['FG2'])])
```

Now we can set "global" background and foreground colors by using the "." widget class.

```
style.configure('.', background=colorset['BG1'])  
style.configure('.', foreground=colorset['FG1'])
```

```
kids = Toplevel.winfo_children()  
for kid in kids:  
    thiskid = kid.winfo_class()  
    # =====  
    # Try to do the background/foreground colours  
    # =====  
    print(f'This kid: {thiskid}')  
    if thiskid in Containers:  
        tlftext = f'{thiskid}.Label'  
        if thiskid in TWidgets:  
            style.configure(thiskid,  
                            background=colorset['BG1'],  
                            foreground=colorset['FG1'])  
            style.configure(tlftext,  
                            background=colorset['BG1'],  
                            foreground=colorset['FG1'])  
            style.configure(thiskid)  
        else:  
            kid.configure(background=colorset['BG1'],  
                          foreground=colorset['FG1'])  
    print(f'This kid: {thiskid}')
```

HOWTO - PYTHON

Last but not least, we do an update on the Toplevel form so that all the changes will show up.

```
Toplevel.update()
```

This form may be imported into your project. It is named ColorSetImport.py. Now in your own project, you should import it like this.

```
from ColorSetImport import  
newset, do_tk_widgets
```

If your project will be supporting more than one colorset in the newset dictionary, you will need to determine which colorset to use then assign it to a global colorset. The next line assumes that you will use the first colorset in the dictionary.

```
colorset=newset[0]
```

Finally, to apply the colorset, simply call the do_tk_widgets function.

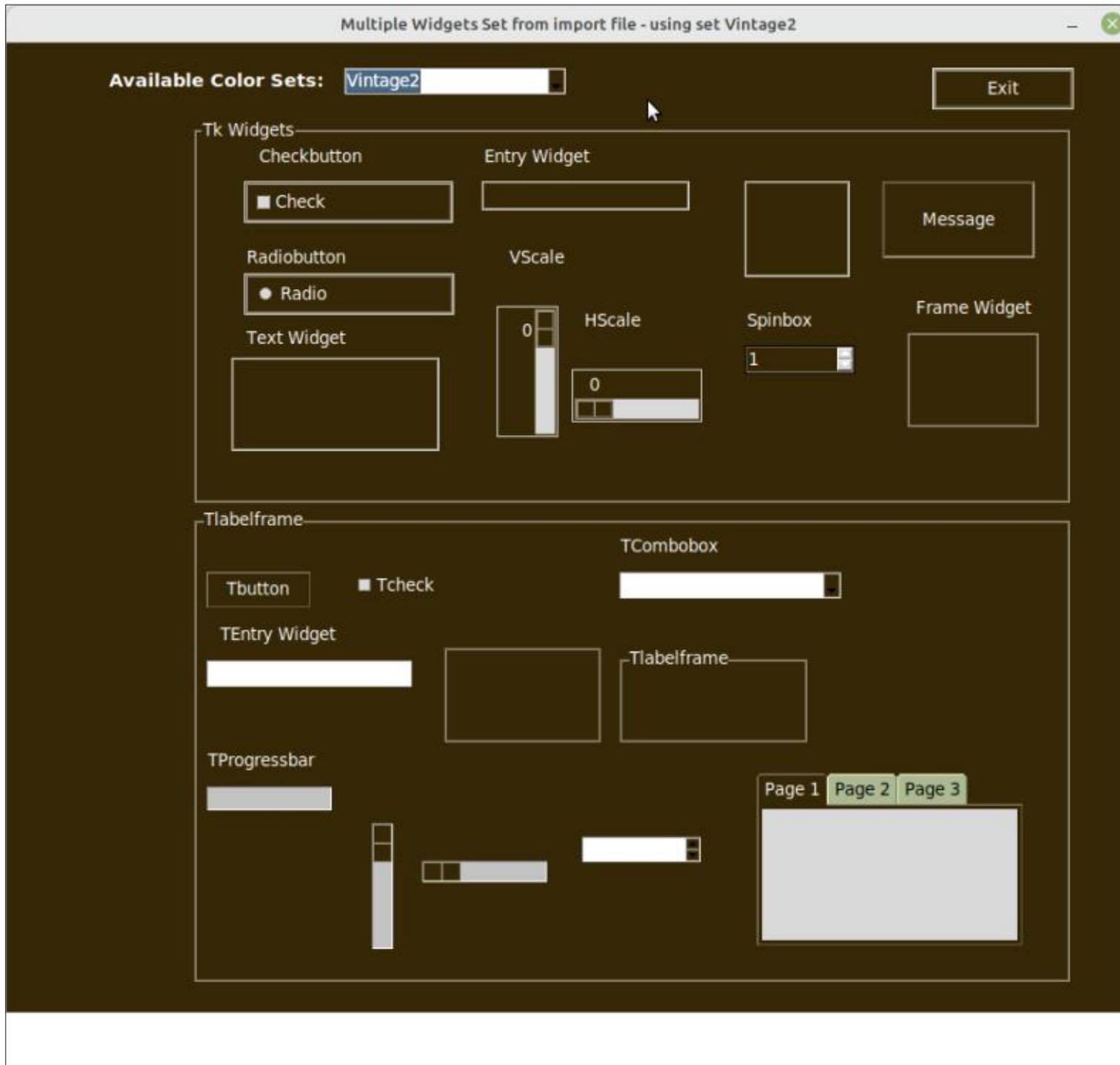
```
do_tk_widgets(_top1,  
colorset)
```

Where the first parameter is the form name and passing the selected colorset in as the second parameter.

```
siblings = kid.winfo_children()  
for sib in siblings:  
    print(f'Working {sib} - {sib.winfo_class()}')  
    # if thiskid not in TWidgets:  
    if sib.winfo_class() not in TWidgets:  
        sib.config(bg=colorset['BG1'])  
        if sib.winfo_class() not in no_FG:  
            sib.config(fg=colorset['FG1'])  
        if sib.winfo_class() not in no_AB:  
            try:  
                sib.config(activebackground=colorset['BG2'])  
                sib.config(activeforeground=colorset['FG2'])  
            except:  
                pass
```

```
else:  
    cls = sib.winfo_class()  
    if cls == 'TFrame':  
        sibs2 = sib.winfo_children()  
        print(sibs2)  
        for si in sibs2:  
            print(si.winfo_class())  
            if (si.winfo_class()  
                == 'Treeview') or (si.winfo_class()  
                == 'TScrollbar'):  
                pass  
            else:  
                si.configure(background=colorset['BG1'],  
                             foreground=colorset['FG1'])  
    if cls == 'TLabel':  
        sib.configure(background=colorset['BG1'],  
                      foreground=colorset['FG1'])
```

```
elif thiskid not in TWidgets:  
    print(f'Thiskid: {thiskid} - Kid: {kid}')  
    kid.config(bg=colorset['BG1'])  
    if thiskid not in no_FG:  
        kid.config(fg=colorset['FG1'])  
    if thiskid not in no_AB:  
        try:  
            kid.config(activebackground=colorset['BG2'])  
            kid.config(activeforeground=colorset['FG2'])  
        except:  
            pass
```



There is a demo program that shows how this works (shown left).

I've put all the source code on my github repository at <https://github.com/gregwa1953/FCM-185>

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.



HOW-TO

Written by Erik

Blender Pt.8

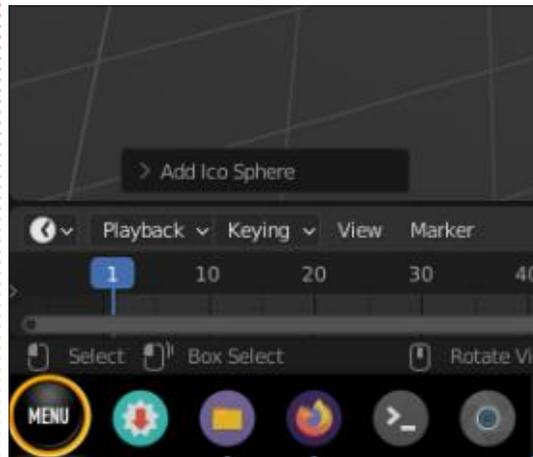
As fate would have it, I cannot locate my previous save right now, but do not discard your egg, I will find it. The reason I chose an egg originally, was to make Dizzy, so do not fret, I will find it, as I still want us to make Dizzy. (<https://yolkfolk.com/article-dizzy-returns/>)

If you could NOT get the "egg" right, do not worry, this issue is your turn to shine. For the rest, you can follow along if you want, or wait until the next issue. After all, this is a beginner series and we are not serious, the goal is for you to learn something whilst having fun (for those who reached out to me on TG, you will see here my body will be everything BUT perfect, and it matters not!).

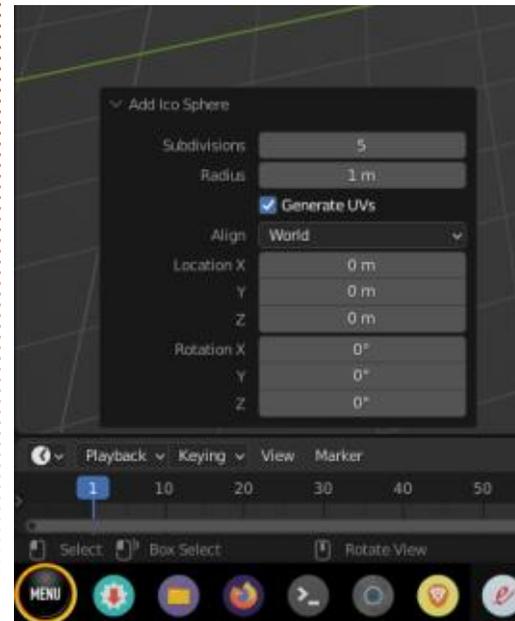
Fire up blender and let's begin (with my PC out of action, I will be using version 3.0 on my Solus OS laptop. As long as your version is not older than 2.8, you should be able to follow along 100%).

First thing is to do a drag-select and select everything. Press delete to clear your workspace. Try to get

comfortable with the key-presses and try to remember them, as they make your life so much easier. Press Shift+a to add an object. You will be choosing Mesh -> ico sphere, and once you pick it, do not click away, as we want to change the 'smoothness' via a little button in the bottom-left. Expand the "Add Ico Sphere" and we will be increasing the subdivisions to 5 or 7. The more you add, the smoother it gets, but so does the computational power, so keep that in mind if you have a little celeron.



Notice how the Ico Sphere changes as you play with the subdivision setting. You did* play with the subdivision setting... If not,



please do it now, to see how it affects your image. My screen is not the biggest on the laptop and since the move was not kind to my big monitor, I'll adapt by switching to the sculpt tab (you still remember where that is, right?), and moving my mouse over the scroll bar on the left. Yes, the scroll bar to the right of all the "orbs", and drag it right, so that they are all on screen. You do not have to, this is just because I don't want to scroll looking for an "orb". This is essentially the same as having 2 "pages" on an e-book reader instead of one. Note that it is very optional. Should screen real-

estate be an issue on your side, know you can close any of the panels. I'll let you figure out how and you can drop us a line at misc@fullcirclemagazine.org and tell us how you did it.

For those who did not try anything other than what we have been doing so far, pick the elastic deform tool (orb) and extrude your ico sphere. You may want to play with the radius in the top-right if you want a semi-decent shape. I chose 100 and yanked that ball into an elongated shape. As we are still making a cartoon penguin, it doesn't really matter if it is all crooked, that is actually the idea. As I mentioned before, this is so you can see that anything goes if you are creative enough. There is no right or wrong today, the theme is "play". I will be honest, I like to fiddle with things sometimes and the results can be fascinating! True, it may have been 6am when I started and now it is 2pm, but hey, it's a Sunday. Pour another glass of wine and turn up the music. This time around, instead of making eyes that fit inside the head, let's

HOWTO - BLENDER

make some exaggerated ones? Also, now would be a good time to save your file.

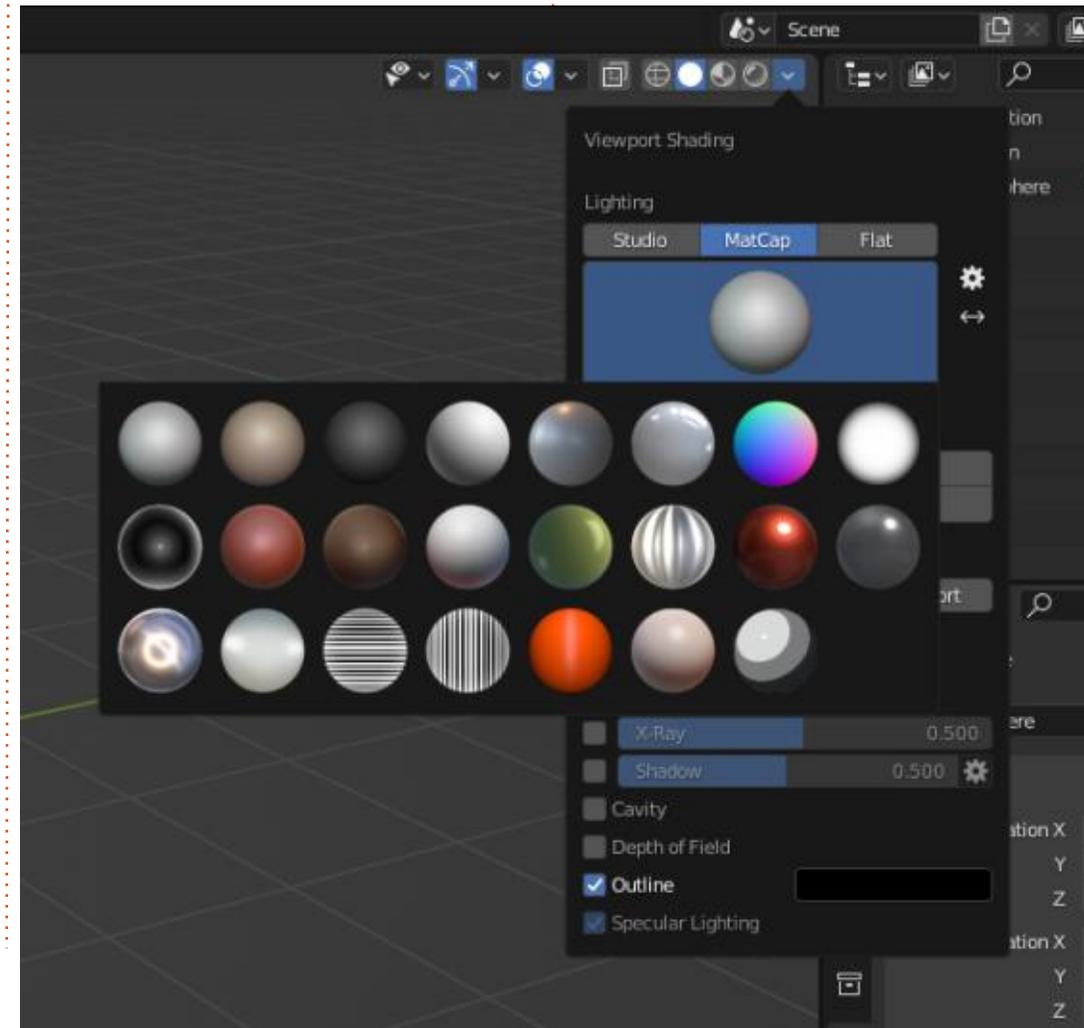
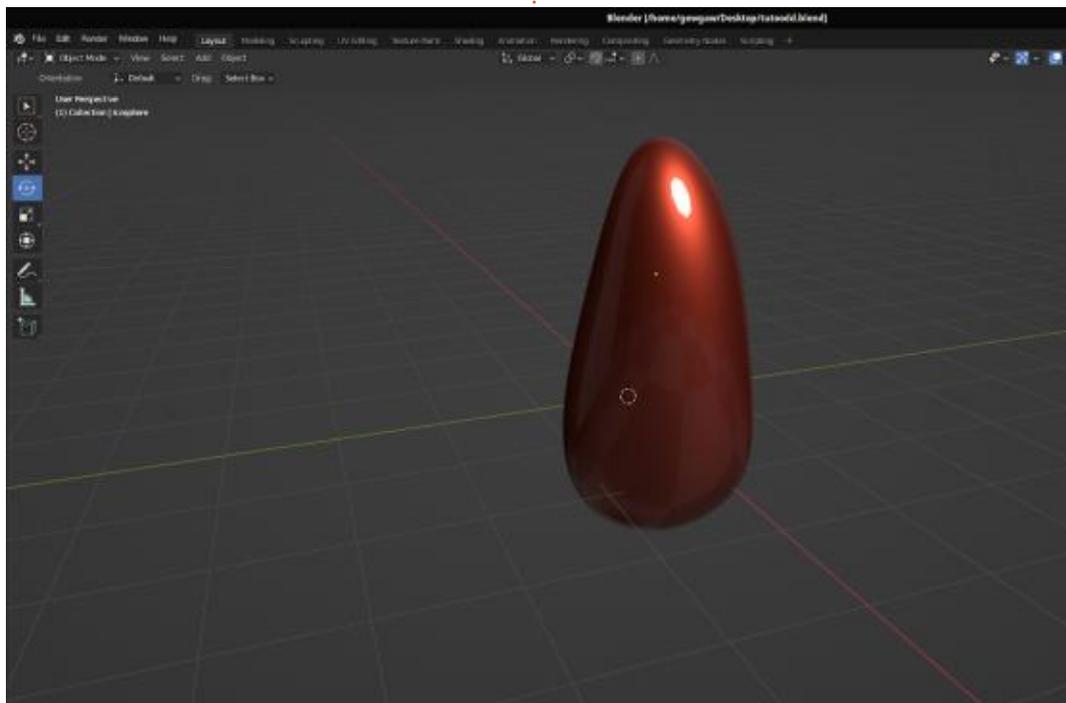
It can be as straight or as wavy as you like, but keep it more-or-less egg or pear shaped, so we have a nice chubby body. If you want to make more than one, say a short one and a tall one, ala Pinky and the Brain, that is fine too, practice makes perfect. I know the gray on gray (or is it grey on grey?) gets on some people's nerves, so to change it there is a hidden option right above "options" on the right. If you press the little downward arrow, the one ABOVE options, not NEXT

to it, there is a panel that says "Studio", "MatCap", "Flat". Chances are you are in Studio. I want you to change that to MatCap. Now please click on the sphere and choose one that you like. Now I'm probably more autistic than artistic, so I'll choose the Zebra stripes. Lines make your depressions stand out more, but please do what makes YOU happy.

OK, so at this point I want to say something, as I got some flak from my proofreader. The reason I chose a vaguely egg shape is that it is easy for beginners like us - you can get as technical as you like in

making your penguin's body, but why complicate things? To understand where I am coming from, look here at this blender artist creating a wine bottle: <https://www.youtube.com/watch?v=BtRsCLGsDHI&list=PLsGl9GczcqBtNd8e8LhflyK80eLW6sOo>

I am not going to pretend I know when it is best to use a UV sphere or when to use an Icosphere, I do what is easiest, as I am lazy. This means I will show you the fastest and most fun way I know instead of heaping on terminology and telling you what you *should do, instead of exploring and finding out what YOU like - I'm not trying to make you



something, I want you to have fun with your computer. That is the reason for this issue, it is OK if you have a bean instead of an egg, I want us to work with what you have and not strive to copy me 100%. (Mine is so misshapen, it is actually hollow on the side you cannot see... XD).

Right, with that out of the way, let us continue.

Moving your sculpture is done via the panel on the left if you are in 'Layout'. Since I am sure you all know how to change from sculpting to layout, I am just going to mosey on.

When you click an action in the panel like 'move', rotate, or scale, you need to click on your object as blender does not know which object you intend to move, should you have multiples. So the process is click the action, then click the object, and once the 'tool' displays inside your object, you can do the action. Does it sound confusing? Try it. If your object is selected, the tool will appear inside your object immediately; if not, you need to click on your object again. Let me explain about the tool. When you click on say, 'move' (which is also

grab – bonus points if you know the keyboard combination!), a red, blue and green crosshair should appear within your object. If it did not, your object was not selected. This confused the heck out of me when I tried it for the first time.

Blender is a power house, so there will be a lot to learn, but the rewards are great too. You can create moving and still wallpapers & backgrounds - that are generated FOR you with a minimum of effort. (Maybe we can look into that after this?). So don't give up yet. Even if you think your penguin body looks like chewed bubblegum, that is fine, move back to previous issues and put some oversized eyes on your penguin and be proud. I'd love to continue chatting with you guys, but I have gone over my space in the Magazine, so be there next issue... we can make magic!



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



HOW-TO

Written by Alan German

Are you running a 32-bit computer? Do you have Linux Mint, perhaps Version 19.3 (Tricia), installed? Linux Mint Version 19.3 is a long-term support version; however, the package will reach end-of-life status in April, 2023.

While newer versions of Mint are available, the problem for 32-bit machines is that mainstream Linux Mint dropped support for such processors as of Version 20 (Ulyana). However, recently, Mint's developers announced the Linux Mint Debian Edition (LMDE 5), codenamed Elsie, that offers a new lease on life for older computer hardware.

Previous versions of Mint have all been based on Ubuntu Linux; however, as the name indicates, LMDE has Debian as its base. The release notes for the package indicate that the intention is essentially to have a backup system should Ubuntu ever cease to be available. The benefits of this strategy for users of previous versions of Mint are that Mint is based on Ubuntu, and Ubuntu is

itself based on Debian. In consequence, the basic features of the distro and many of its embedded applications will be familiar to Mint users.

While Mint's website doesn't appear to provide an end-of-life date for LMDE 5, the Debian 11

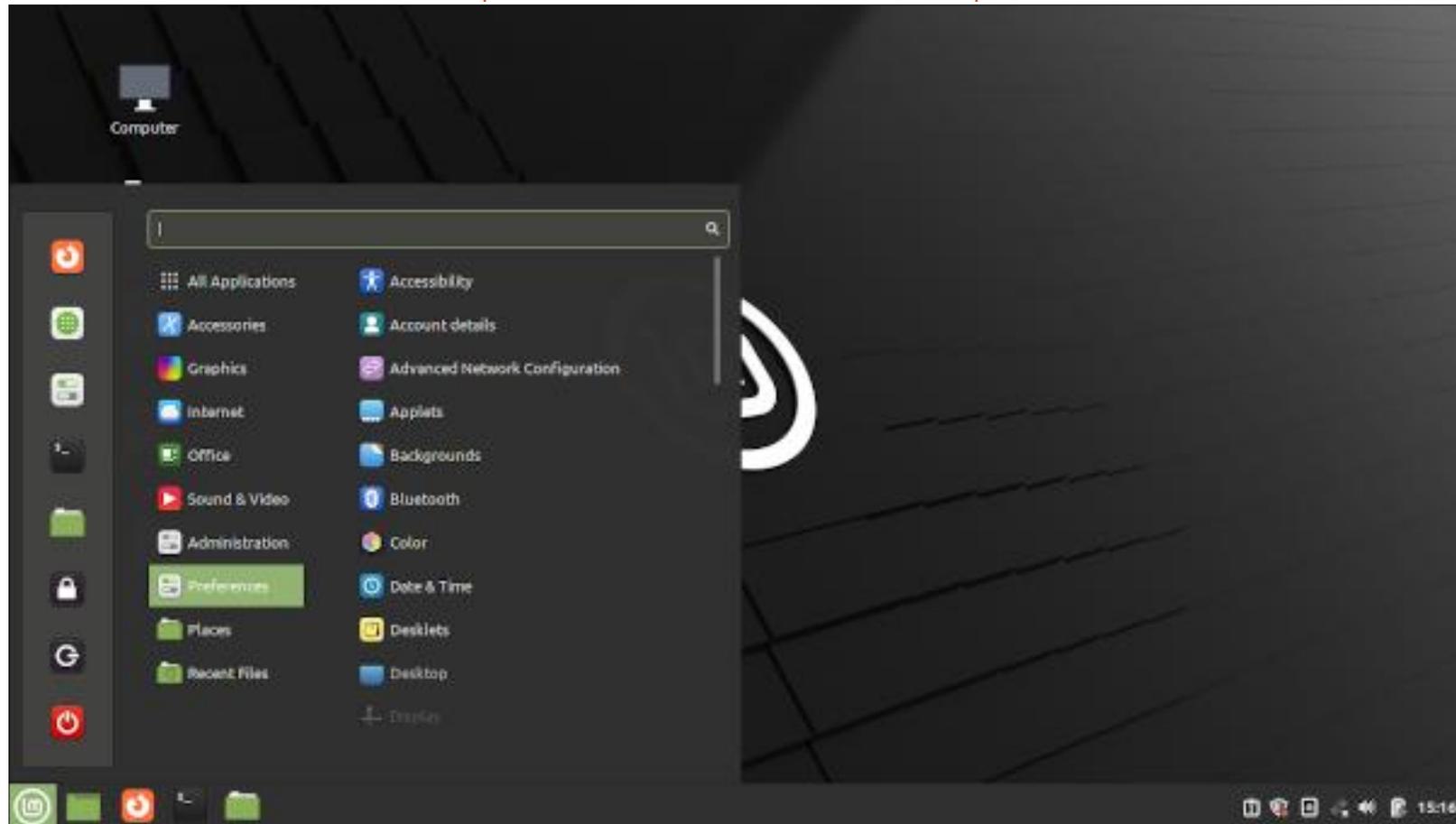
New Life For 32-bit Machines

(Bullseye) base system will be supported until June, 2026 so it seems reasonable to assume that this date will also apply to Elsie.

The desktop environment supplied with LMDE 5 is Cinnamon (Figure 1) which is my preferred version of Mint. An added

advantage for those with older hardware is that both 32- and 64-bit versions of LMDE 5 are available.

Downloading the 32-bit version of LMDE 5, burning it to a USB drive, and booting from this drive so as to activate the installer, are standard operations; however, the



HOWTO - NEW LIFE FOR 32-BIT MACHINES

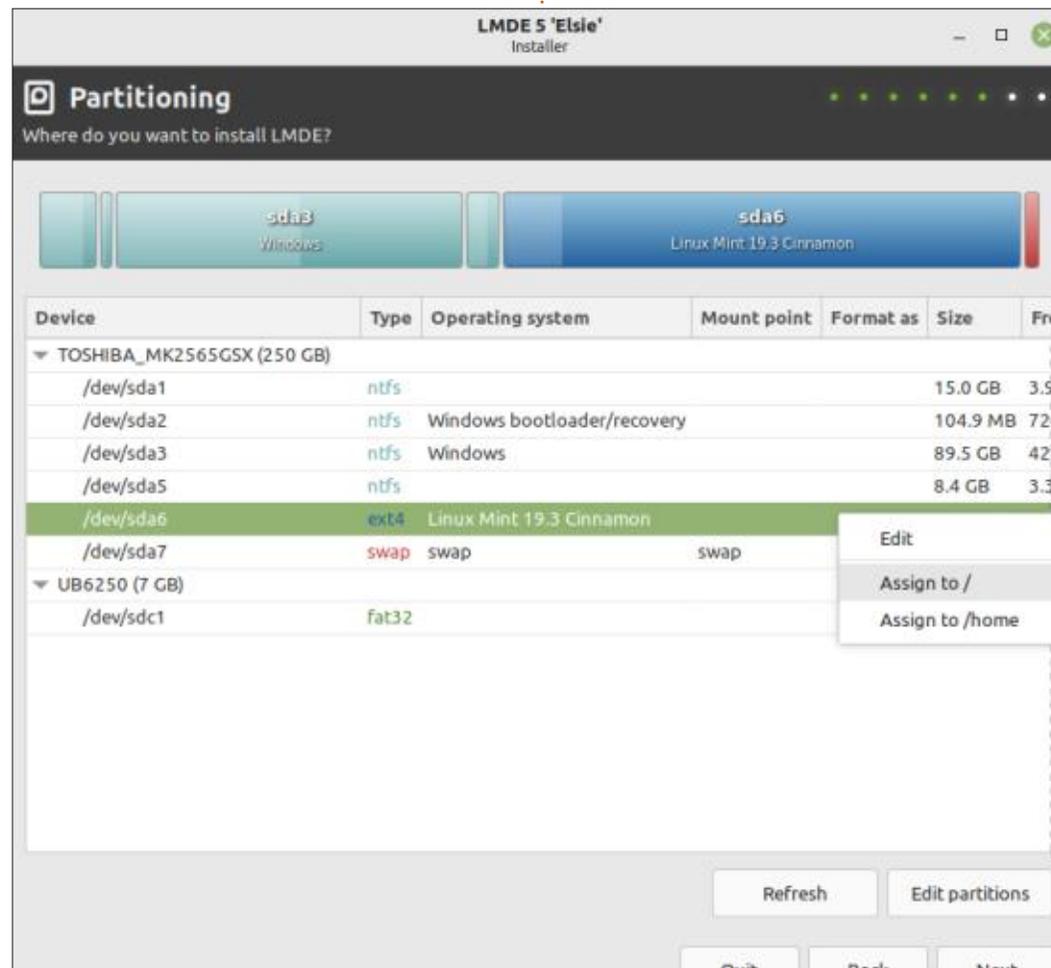
installation process itself differs slightly from that used for Ubuntu-based versions of the operating system. In particular, the options for disk partitioning are different from those used by the mainstream installer, and Mint's installation guide has not been updated to reflect this.

Initially a screen asks where LMDE is to be installed and provides options for Automated installation and Manual Partitioning. In my case, the manual partitioning option was preferable as I wished to overwrite the existing Mint partition with the new version. The next screen (Figure 2) displayed all of the hard drive's partitions and, while it was obvious that the partition to be used for my installation was `/dev/sda6`, there was no indication of how this should be achieved.

The method appears to be to right-click the mouse on the desired partition. This displays a pop-up context menu with one of the options being Assign to `/`. This allows the selection of the partition as root for the installation process.

The rest of the installation is familiar – with a subsequent reboot

providing the dual-boot GRUB menu and LMDE 5 being loaded by default. As suspected, many of the expected applications, such as Firefox, Thunderbird, and LibreOffice, are indeed present out-of-the-box, making Elsie a welcome and very capable update for 32-bit hardware.



Alan is a computer enthusiast based in the Great White North where he maintains the LinuxNorth blog.



HOW-TO

Written by Mark Crutch

Inkscape - Part 125

Interactive Mockup is the only remaining new extension that arrived with version 1.0 for me to discuss in this series. But what I initially thought was going to be a simple topic to cover has thrown up a few questions and issues which will stretch this topic out to more than one article. To start with, though, let's take a look at this extension, what it does, and how to use it.

WEB > INTERACTIVE MOCKUP

This extension is intended to let you use Inkscape to create user interface mock-ups with some limited interactivity. It could also be used to create a simple slideshow, a basic adventure game, or more. It does this by injecting some simple JavaScript into your document, so the final file has to be loaded into a web browser in order to produce the interactivity suggested by its name.

But let's start with a quick definition: the "interactive" mock-

ups I'm referring to here are little more than a series of static images containing clickable regions that let you navigate between them. If you were mocking up a series of dialog boxes to form a "wizard" type of interface, you could use this extension to detect a click on the "forward" and "back" buttons in your images. Each click would switch to another image in the sequence, allowing you to demonstrate how your potential user interface might work before you actually start to code it.

Another example is when mocking up a website. Perhaps you've got a series of images, one for each page in the final site, created using a design tool or from a scanned sketch, but not yet turned into actual HTML code. Using this extension, you could combine those images into a working demonstration of how the page might operate, complete with clickable menus and links for moving between the different pages.

I'm going to use this latter

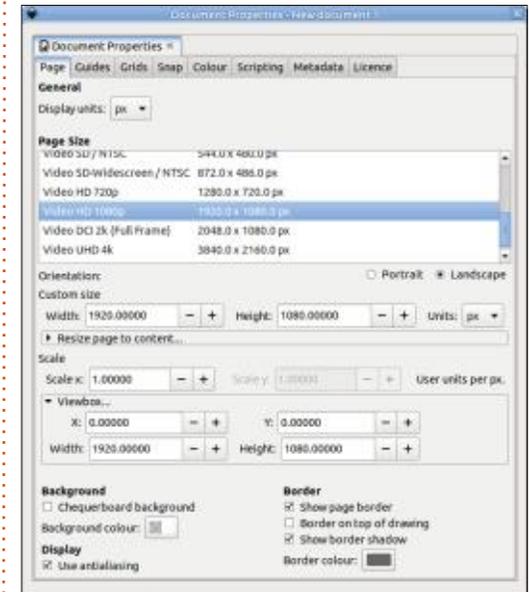
example to show you how this extension operates, by mocking-up a very simple 3-page website. Just make sure you understand that this approach could be used to let you link any series of images together, and isn't restricted to websites. The reason it's found in the Extensions Web submenu is solely because the final result is a file that has to be opened in a web browser in order to work.

Let's start with the main home page for my website. This will be the starting content when the document is loaded into a browser, and will define the physical size for the whole presentation. In this case, I'm going to demo the site using an HD monitor, with the browser set to fullscreen mode (by pressing F11), meaning I'll have every one of those 1920x1080 pixels to play with. To begin with, therefore, I'll open the Document Properties and set my document up as follows:

- Display units: px
- Page Size: Video HD 1080p (1920 x 1080px)
- Scale x: 1.0

Viewbox x, y, width, height: 0, 0, 1920, 1080 (these should be set automatically)

The last two items aren't so important, but ensuring we have a scale value of 1.0 means that we can use specific pixel dimensions in our page design, since there's a 1:1 mapping between each pixel in our drawing, and the corresponding pixel on-screen once the page is rendered by the browser.



Now to add some content to the page, starting with a home page. It



won't win any design awards, but it will do the job for demonstrating this extension (above).

The key part of the design is the section at the top right. That's where I want to have links to navigate between pages. Those are the elements that will become clickable in order to move from page to page in my mock-up. Of course, in order to be able to do this, we actually need some pages to move to! Time to create the second entry in my mock-up: the "About" page.

This is where things start to get a little tricky. We need our new page to have the same dimensions as the first one. If we were creating

these as completely separate files, that would be simple enough - just create a new document with the same properties as the first. In practice, I'd probably just use File > Save As... on the first document, then edit the content to suit, but either approach would create multiple files, each with the same basic page properties. But this extension doesn't link between separate documents, so that approach is no good.

Another sensible method would be to create each image on a separate layer. That way all the images share the same document properties, by definition. But this extension doesn't work with layers,

either.

What it actually does is inject some JavaScript that will change the viewBox attribute on the <svg> element. This is an approach that has been discussed in this column in the past, with respect to "SVG sprites" (part 79, in FCM #139). More specifically, the extension actually only changes the first two numbers in the viewBox - the ones that define the top-left corner of the view. The other two numbers - those that define the width and height - remain fixed, so it's pretty much essential that all our mock-up pages are the same size.

I find that the easiest way to do

this is to enable the snap-to-page option and then draw a rectangle from the top-left corner of the page to the bottom-right. Alternatively, you could simply draw a rectangle anywhere and then set its width and height to the correct dimensions via the tool control bar. In either case, you want to end up with a rectangle that is the same size as your main document page, but you should then drag it outside of the page boundary. Repeat this for each frame you will require in your mock-up, so that the new 'pages' are distributed around the real Inkscape page, and don't overlap. It doesn't matter if they're arranged in a row, column, grid, or randomly



placed, so don't get unnecessarily caught up in the positioning of each page.

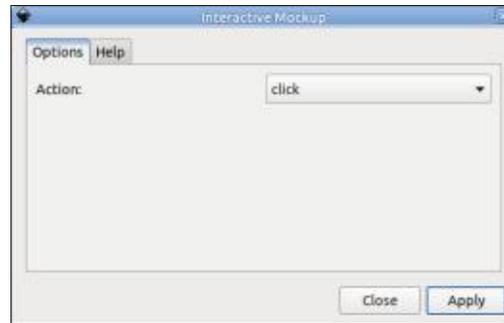
Now you can draw the content of each image within the confines of its rectangle. As you are likely to need some sort of background color in your mock-up (even if that color is only white), I suggest giving each rectangle a solid fill and then locking it, or the layer it lives on, to avoid it being accidentally moved when drawing on top of it.

Following this approach, the selection of pages in my mock-up website ends up looking like the image on the previous page, bottom right.

Now that we have some pages in place, we can start adding a little interactivity using the extension. The first thing I'm going to do is to ensure that the "About" link on the Home page connects to the About page. The extension requires you to have two elements selected: in this case I'll select the "About" text element on my Home page, then hold Shift as I click on the background rectangle that encloses the About page. With those two items selected, I can click on Extensions > Web > Interactive

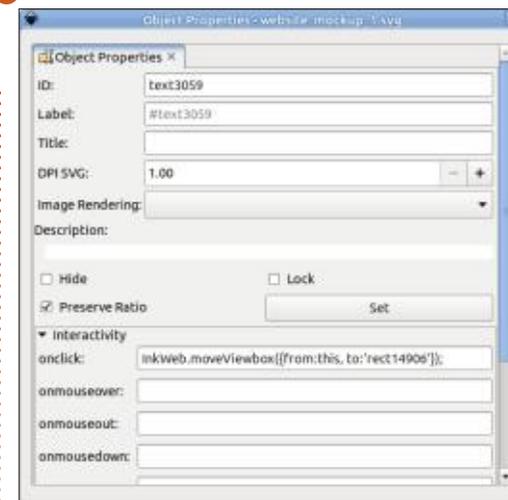
Mockup, to be presented with this rather underwhelming dialog.

As you can see, there's nothing



but a Help tab and an "Action" pop-up. The latter offers various ways in which interacting with the first element in your selection will switch the viewBox to point to the second element in your selection. Most of the time you will probably want to leave this set as "click". In almost all cases, therefore, there's nothing for you to do here but to click on the "Apply" button and close the dialog.

Nothing will have changed visibly in your page, but the extension has added some JavaScript to the first element in your selection. Open the Object > Object Properties dialog and expand the "Interactivity" section; you'll notice a small piece of JavaScript has been added to one of the fields (you may also notice that the list of fields available in



this dialog maps suspiciously closely to the options in the pop-up within the extension dialog).

I'll look at the JavaScript itself in future, but for now it's sufficient to know that this is what is ultimately responsible for changing the viewBox when the first selected element is interacted with (i.e. clicked on, in this case). At this point you can save the file as a normal Inkscape SVG document and load it directly into a web browser. Browsers don't actually make this capability terribly obvious these days, but you can either drag the file directly into the browser window, or hit Ctrl-O to bring up an Open File dialog, just as you might in any other program.

When the page loads in the

browser you'll probably notice that some of it is cut-off.

This might seem a little strange, given that we're working with a scalable image, but it boils down to the fact that we set a specific width and height for the file, in pixels, in the Document Properties dialog. You may recall that the intention was for it to fit the dimensions of an HD screen when the browser is switched to fullscreen mode. Press F11, therefore, and our mock web page fits perfectly!

Now we can test the interactivity. Click on the "About" link and, as expected, the view switches to the relevant mock page in our document. At this point, however, no other links have been set up, so we can't click the "Home" button to return to the previous view. Neither can you use the Back button (or keyboard shortcut) within the browser, since the URL hasn't actually changed – the JavaScript has just dynamically updated the content of our page in order to set the new viewBox.

Let's return to Inkscape and fix some of these issues by adding more links. First we need to add a connection going from the "About"

link on the Contacts page to the rectangle of the About page itself, in just the same way that we did with the previous link from the Home page. With that in place it's now possible to jump to the About page from either of the others. As this shows, it's okay for the same element to be the target of several different links.

We also want both the Home and About pages to link to the Contacts page. We could connect each link item individually, as we've been doing so far, but the extension offers a small shortcut that can help us. If you call the extension with more than two objects selected, the last one is used as the target, and all the others are linked to it. This means that we just have to select the first "Contact" element (on the Home page), then hold Shift while we click on the second one (on the About page), and continue to hold it while we click on the target background rectangle for the Contacts page.

With all three items selected we'll now use another little shortcut, offered by Inkscape itself. We know we don't have to change the single parameter within the extension dialog, so we can just use

Extensions > Previous Extension to run the extension directly, without having to interact with the dialog. The JavaScript is added to both our menu links as one step. This approach makes it quick and easy to finish all the remaining links between our three pages.

With that done, all that remains is to save the file, reload it in the browser, switch to full-screen (F11) if needed, and click the fake links to switch between all three pages of our mocked-up website. Pretty cool stuff, right?

Of course this is all well and good if you've created your mock-ups within Inkscape. You can easily select the individual objects that are to act as triggers. But what if your "page" is actually a bitmap image, exported from a paint program or scanned from a sketch on a napkin? Or it might be a more complex Inkscape image, with your objects nested deeply inside a range of groups, making it tricky to select both the trigger and the target element at the same time. In those cases, there's a simple little trick that can help you out: just draw fresh elements over the top of your page which will act as your triggers and/or destinations.

Start with a simple shape with a colored fill that covers your trigger item completely. It doesn't even need to be a rectangle, if your design calls for something more complex. Give it a little opacity so you can see what you're doing as you start to add more of them to cater for every possible link in your mock-up. Use the extension to add the interactivity then, just before saving, set the opacity way down on these new shapes. You can set it to zero to ensure they're not visible on the page at all, but that does make it trickier to re-select them for editing later. A useful trick is to set their opacity to 1: this is usually so transparent that there's no hint of them on the final page, but they're much easier to select in Inkscape itself if they need to be modified in future.

With this approach, it's fairly trivial to turn even a series of pencil sketches into something that's interactive enough to work as a proof-of-concept demo. Want to improve the UI of your favourite Open Source application? Before wading in with a code editor, you could take some screenshots, edit them in The GIMP, and use this extension to test out your ideas on

other users first.

I'm sure you can see how this simple extension makes it very quick and easy to create interactive mock-ups. For a lot of situations, this may be all that you need, but next time I'll take a look at some of the problems presented by such a simple system, and how they can be addressed with just a little extra effort.



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](https://twitter.com/PeppertopComics)

The daily waddle





This month, we're going to finish our look at one of Ubuntu's drawing programs, specifically for doing diagrams like flowcharts. It's DIA, the open source analogue to Visio.

A QUICK RECAP ON INSTALLING AND LAUNCHING DIA

Hit the key combination CTRL-ALT-T on your keyboard. That key combination will start a Terminal command-line session. In Terminal, type:

```
sudo apt-get install dia
```

and hit Enter. Answer any prompts appropriately and DIA will be installed.

LAUNCHING DIA

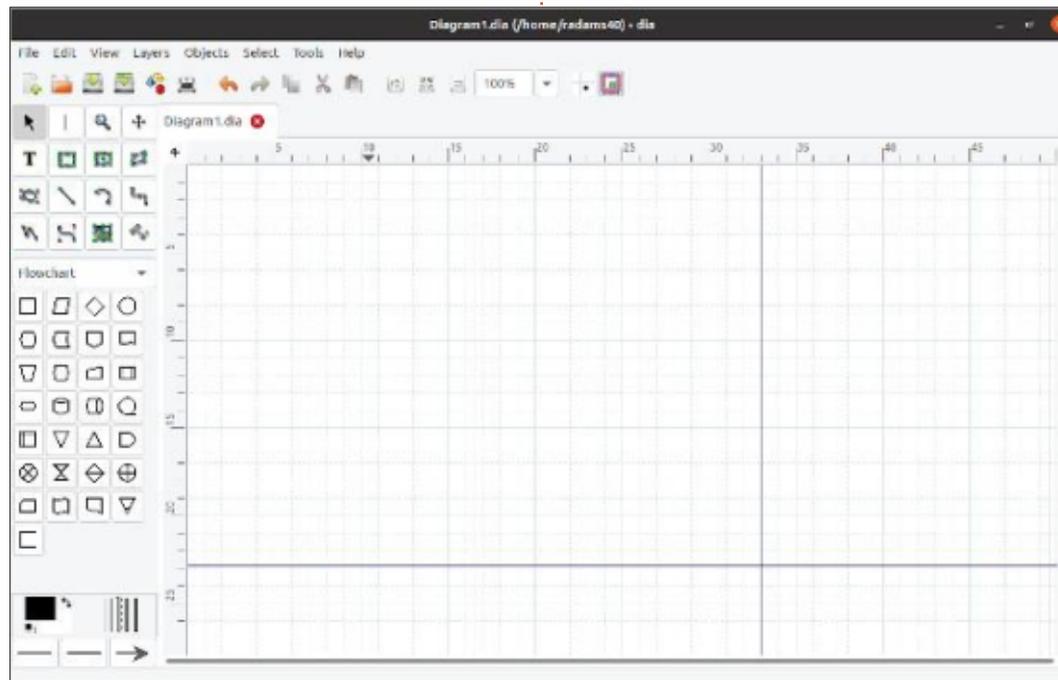
Now that DIA is installed, click the App Drawer (9 white boxes in a grid, bottom left of your screen):

Type DIA at the top of the



screen in the search box (shown above).

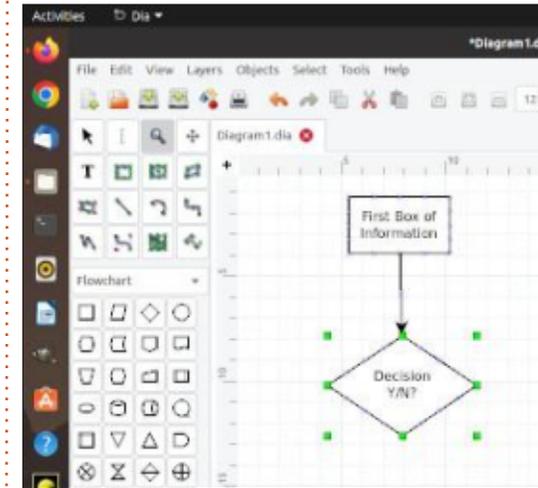
Click DIA and the application will launch:



CHANGING ZOOM LEVEL

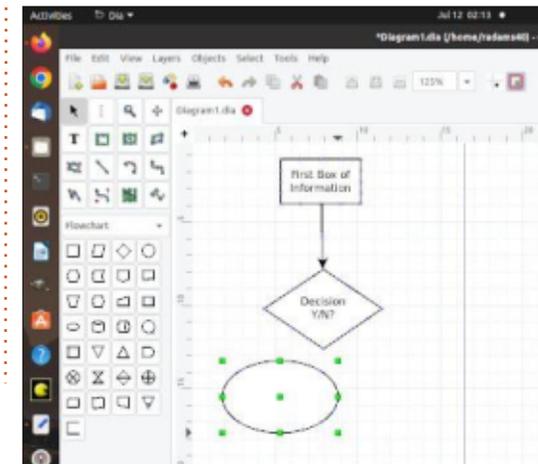
Click the Zoom In button, then drag from corner to corner to

enlarge the page we're working on:

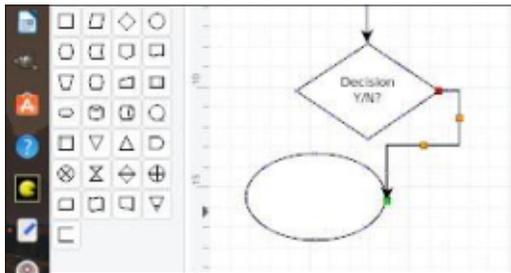


FREEHAND DRAWING TOOLS

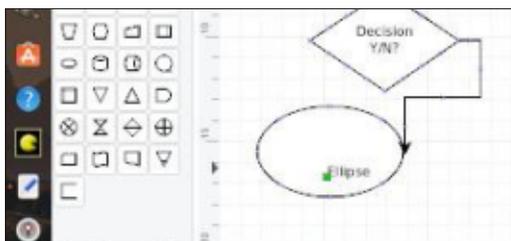
There are also freehand drawing tools. Try the third box in the second row to create an ellipse:



Let's try adding a Zigzag line (3rd row, 4th item). Use the same process to connect the decision box to the ellipse as we used last month to connect the first box to the decision box. Click on a 'node' once you see the first box change color as you hover the mouse, then hover over the second box until the color changes again and click the mouse to 'stamp down' the opposite end. A zigzag line with an arrow from the first node to the second node will be created:



We can also add a label to the ellipse by clicking the Text tool (capital letter T, 2nd row 1st box), then click within the ellipse and type to add the desired label:

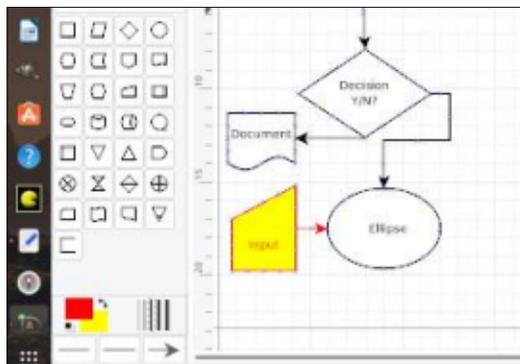


If the text is not quite where we want, we can click the pointer tool again, click the text, and move it to the desired location:



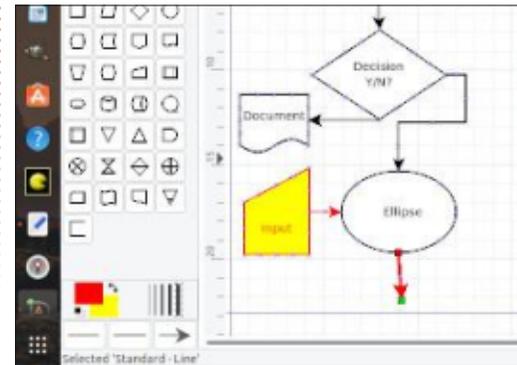
CHANGING DEFAULT COLORS

In the bottom left, you'll see a black and a white box overlapping each other. This is the default color tool. Click the black box and it will bring up a dialogue box allowing you to choose a new foreground color, clicking the white box will let you establish a new background color. Click the Document figure on the Flowchart palette (2nd row, 4th item), then 'stamp' it down on the page, and you'll see the new figure has the new color scheme:



CHANGING LINE WIDTHS

To the right of the color boxes, you can change the default line width. The next line you draw after making the change will have the new line width by default, and will now use the newly chosen default color, as well:



In conclusion, DIA is a powerful diagramming/flowcharting tool. We barely scratched the surface the last two months of what it's capable of. I encourage you to try it and see how useful it can be.

Next month: Maybe the retro-gaming column we teased a month before last? Be here and see.



Richard 'Flash' Adams lives in rural north Alabama and has been a computer support technician, a business analyst, a software salesman, a sales analyst, a QC team lead, and is now disabled/retired. He enjoys reading, NFL football, computer and video games, cooking, and playing with Baby, his cockatiel. Feedback and suggestions are welcome at acer11kubuntu@gmail.com.



MICRO THIS MICRO THAT

Written by Greg W. Walters

Pt.15

BACK NEXT MONTH



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.



Linux on Your iPad

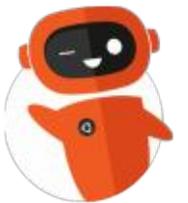
For as low as \$4.95, you can have your own personal Linux cloud computer in minutes on any device.





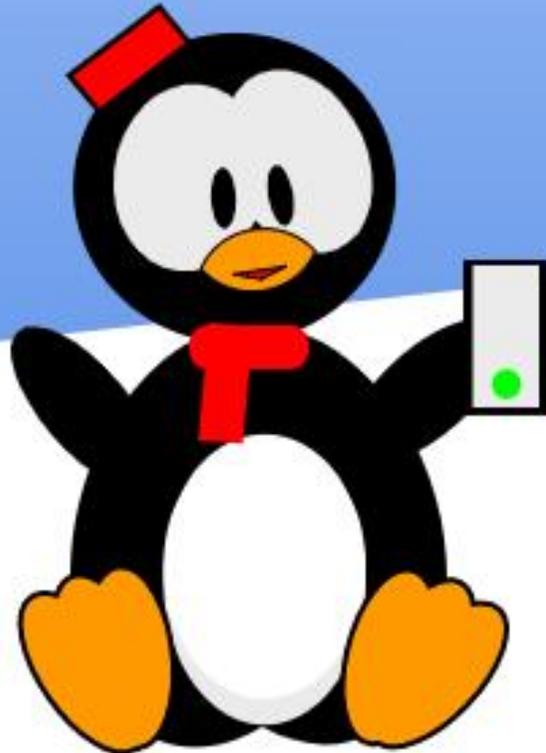
UBPORTS DEVICES

Written by UBports Team



The daily waddle

YOU ARE A PRISONER TO THAT
THING, NO WONDER IT'S CALLED
A CELL PHONE





MY OPINION

Written by Erik

'Free' Linux and Linux Charity

As you may know, I worked for an OEM, we supplied machines to large entities as well, like governments, and I had to deal with government officials regarding computers for schools, etc. A favourite tactic of theirs is to take the cheaper machines with Linux and renege on the agreement as soon as payment is due, regardless of the contract, insisting they wanted Windows as we are pawning off SUB-STANDARD!!! goods on them in the form of Linux. (You have to remember these people are showered with junk from Microshaft, lanyards, flash drives, mugs, etc, that Linux does not give.)

This kind of thing carried over to large companies I used to work for, donating all their old workstations to schools, with SkoleLinux (or PCLinuxOS) loaded for the schools, by yours truly, and set up with all the necessary accounts and software before shipping it to them (this is a lot of labour). Usually within a week, those machines have pirated copies of Windoze on them, the 'excuse' being that the kids

need to learn to use what they would use in a 'real' business.

Again, shipping shipping-container-classrooms, filled with Linux laptops (OLPC clones) to various African countries, to find that within a week or so you cannot do remote administration any more. You find they have been loaded with Windows, no matter that it is

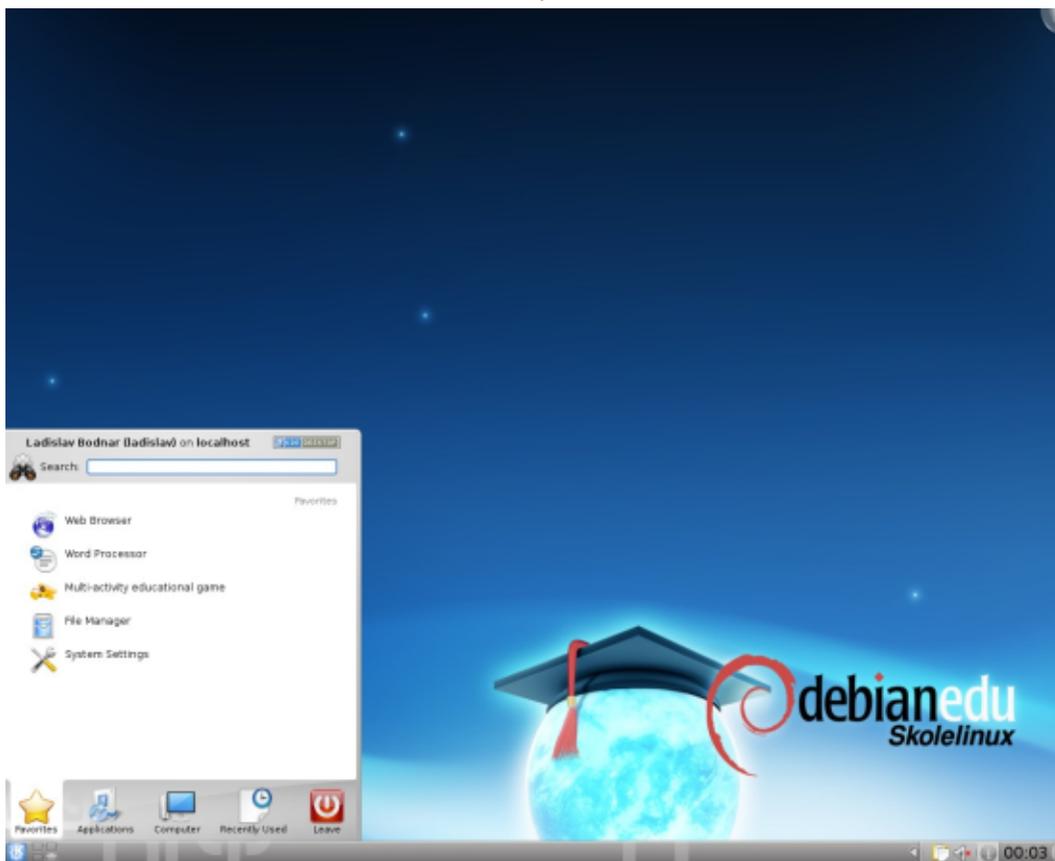
now useless, basically turtles stampeding through peanut butter, it is perceived you are dumping some operating system to keep the kids back, instead of it being the other way around. Because THEY (the receivers) now loaded say Windows 7 with Office 2010 on a machine with 512MB of memory and tiny flash drive, made for Linux, NOT Windoze, you are now the big

bad, labelled as dumping junk on Africa.

There is a perception that Linux is inferior because it does not work with X, Y or Z, by your average stiff. Though the Linux kernel probably runs more devices than any other OS, opinions are 'me' centric, as users do not care; they want to walk into their local Walmart (just an example), pick up the cheapest, crappiest printer (insert peripheral here), without looking at the compatibility, go home and it must work. Here Microshaft with its bottomless wallet rules the roost, paying manufacturers to get that Works with Windows logo on their goods and getting drivers. Once they have gained the monopoly, they have now changed it around where the manufacturers have to pay Microshaft to be certified. However, the rabbit hole is deeper.

Now for the unpopular opinion.

Now don't get me wrong, these people on the receiving end will pose for photos and smile big smiles, etc, as long as stuff is free,



MY OPINION

and badmouth you as soon as you leave. I used to see it all the time as I used to do project management for the logistics for well meaning European organizations. I found that some places just keep on giving, regardless; example: ABET Centres (Adult Based Education & Training). The computers are stolen the night after delivery, and more are sent, and this process just repeats until the computers are found on trash heaps as the stolen market is saturated. (This does not stop them from being stolen, weirdly, or the donors to stop sending.) Because things are handouts, and nobody works for them, there is no incentive to look after them. I understand charity, but I think there should be some sort of exchange (It does not have to be money), to give the Linux PCs donated by well meaning souls, a value. So here is my opinion, Linux is perceived to have no value, and Windows as valuable, because all these “free” PCs come with it. (Now my opinion is based on projects in Africa, from Uganda to Angola and many places in-between, I cannot comment on other places in Asia, etc).

My reason for saying this is that during one of Mark Shuttleworth’s

Linux Days (remember the freedom toasters?), we handed out free CDs, to find 80% of them in the trash at the shopping centre we were at. The next day we “sold” them for a 50c donation and suddenly there were none in the trash. They now had a “value”, little as it was – it was “valuable”.

Am I too harsh? Am I looking at it the wrong way? It’s only an opinion after all.



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



HOW-TO

Written by Ronnie Tucker

Write For Full Circle Magazine

GUIDELINES

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

RULES

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

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

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

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

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

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

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

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

TRANSLATIONS

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

REVIEWS

GAMES/APPLICATIONS

When reviewing games/applications please state clearly:

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

HARDWARE

When reviewing hardware please state clearly:

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

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



This fifth release of Ubuntu Unity is its second long term support version (LTS) and the good news is that it is better than the last release, correcting some issues.

Being an LTS, Ubuntu Unity 22.04 LTS is supported for three years, until April, 2025.

INSTALLATION

I downloaded Ubuntu Unity 22.04 LTS from the official BitTorrent repository on fosstorrents.com. There is now only one .ISO file for both BIOS and UEFI use so that makes it easy to figure out which one to get.

I did an MD5 sum check on the downloaded .ISO file from the command-line, as that is the only checksum provided, and it proved that the download was good.

I used a USB stick equipped with Ventoy 1.0.73 to test out this release. Ventoy allows dragging and dropping as many Linux or BSD distributions as will fit on the stick and gives a choice of which one to

try out on boot-up. That makes testing all very easy!

SYSTEM REQUIREMENTS

Ubuntu Unity does not state any minimum system requirements but it is probably reasonable to assume that it is the same as the mainstream Ubuntu: a dual core 2 GHz processor and 4 GB of RAM.

I tested it on a nine-year old desktop PC with a dual-core 3.3 GHz processor and 6 GB of RAM and it performed well.

NEW

As with all past releases, there is a new wallpaper included, with a “Jammy Jellyfish” in dark purple shades. There are 23 different wallpapers provided, or you can use your own favorite wallpaper instead.

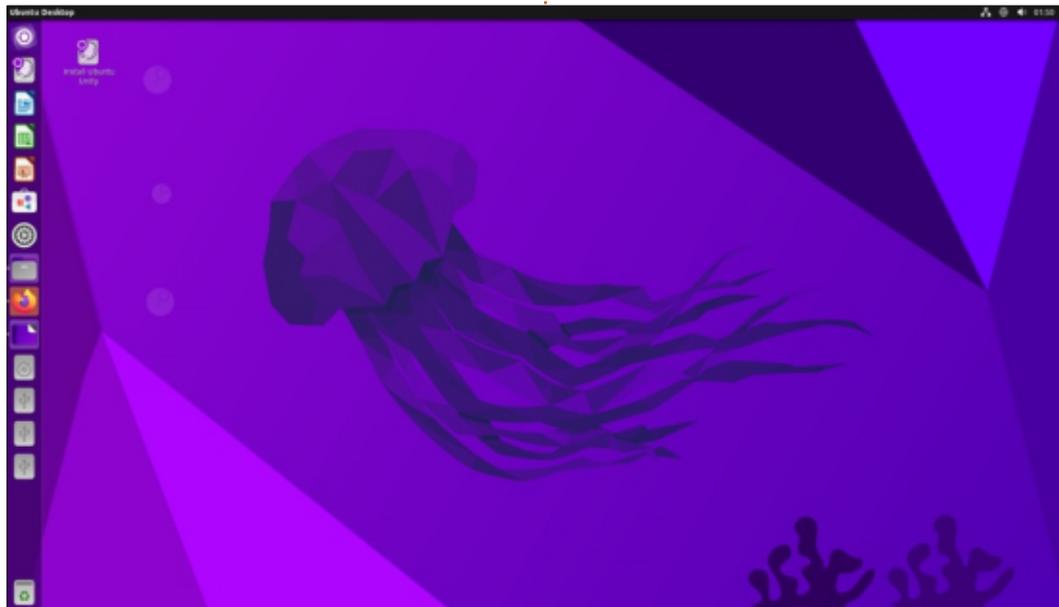
Aside from some bug fixes, this release includes Flatpak support and has the Flathub repository enabled by default.

The project announced in October, 2021 that it was establishing its own snap store to be called the “lol snap store”, but there has been no further news on that and the related website <https://lolsnap.org/> is not up and running yet.

Most of the rest of the changes relate to the choice of applications provided, described below.

SETTINGS

Ubuntu Unity has, from the start, offered a great deal more user setting choices than Ubuntu itself does, both in wallpaper and themes. Ubuntu Unity 20.10 introduced the use of the Unity Tweak Tool to give better user control of the options, and it worked well until the last release, Ubuntu Unity 21.10. In that version, the tweak tool was absent, and when installed it just crashed. The release announcement did not mention the issue. This deficiency limited theme choices and also meant that once you selected a



REVIEW

new theme, the default theme could not be restored. One of the main roles for “standard” releases like 21.10 is to get things working so that the LTS is flawless.

In this case, the LTS is not totally flawless, but it is pretty good. Ubuntu Unity 22.04 LTS brings the Unity Tweak Tool back, and it works! The only incongruity is that the regular theme menu at Settings Appearance offers two window themes, Adwaita and High Contrast, and the Tweak Tool offers two different ones, the light-color Yaru-unity and the dark theme Yaru-unity-dark. Once you figure out that you have a choice of four window themes, and that they are selected from two different places,

it all works fine.

The Tweak Tool also offers 36 icon sets and six cursor styles, so Ubuntu Unity 22.04 LTS retains its focus on providing lots of user choices.

APPLICATIONS

Some of the applications included with Ubuntu Unity 22.04 LTS are:

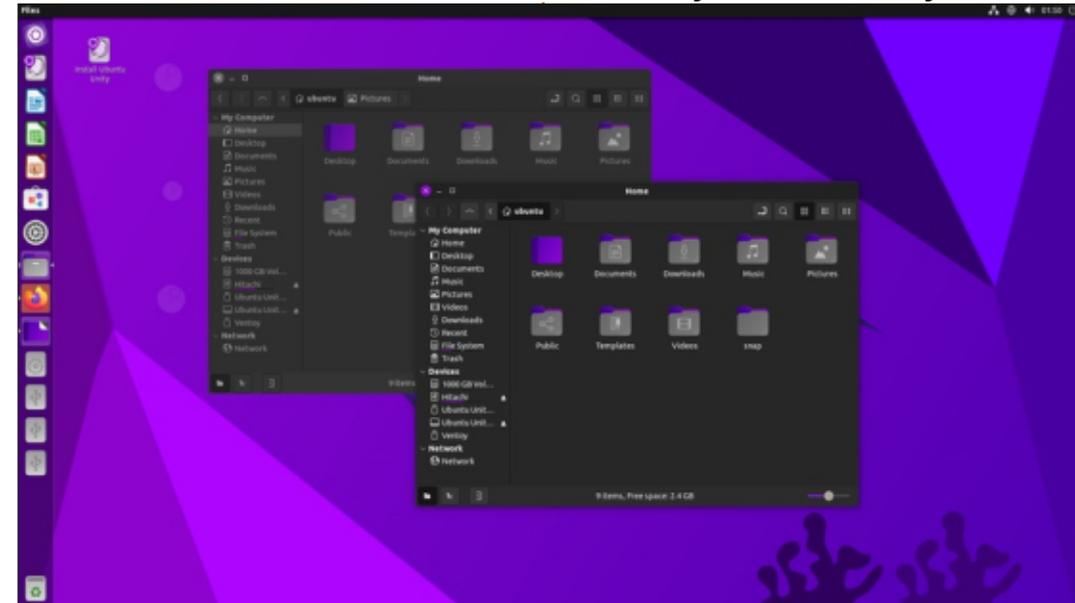
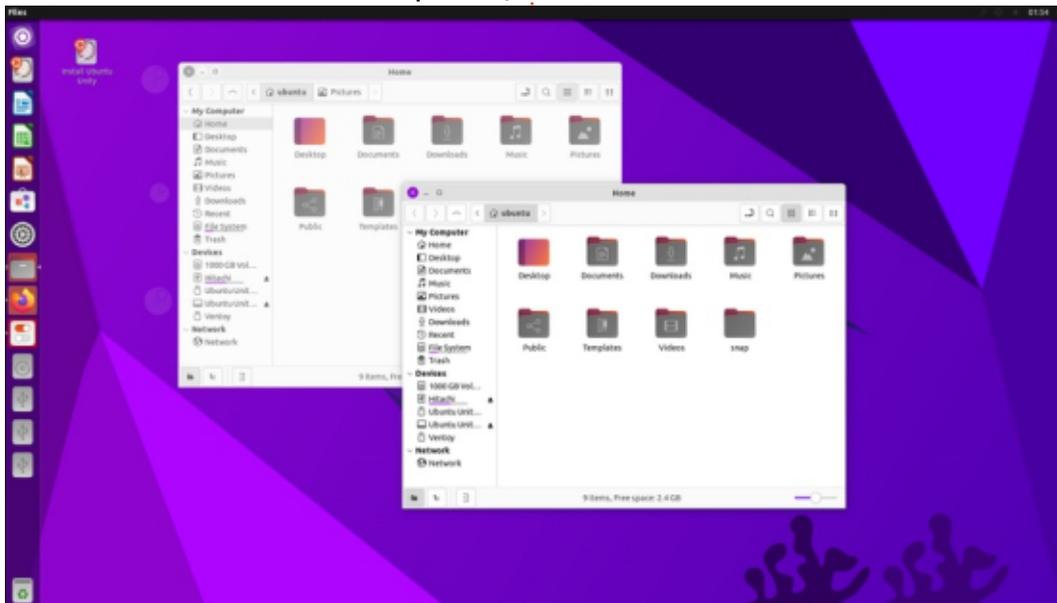
- Archive Manager (File Roller) 3.42.0 file archiver
- Atril 1.26.0 PDF viewer
- CUPS 2.4.1 printing system
- Document Scanner (Simple Scan) 40.5 optical scanner
- Firefox 99.0.1 web browser**

- Gnome Disks 42.0 disk manager
- Gnome Terminal 3.44.0 terminal emulator*
- Gparted 1.3.1 partition editor
- Image Viewer (Eye of MATE) 1.26.0 image viewer
- LibreOffice 7.3.2 office suite
- MATE System Monitor 1.26.0 system monitor
- Nemo 5.2.4 file manager
- Pluma 1.2.6 text editor
- PulseAudio 15.99.1 audio controller
- Remmina 1.4.25 remote desktop client
- Rhythmbox 3.4.4 music player*
- Shotwell 0.30.14 photo manager
- Startup Disk Creator 0.3.13 USB ISO writer
- Thunderbird 91.8.0 email client
- Transmission 3.00-1 bittorrent client*

- Ubuntu Software (Gnome Software) 41.5 package management system
- Unity 7.5.1 interface
- Unity Tweak Tool 0.0.7 settings manager
- VLC 3.0.16 movie player

* indicates same application version as used in Ubuntu Unity 21.10
** supplied as a snap, so version depends on the upstream package manager

Removed this release are:
Cheese webcam application
Evince PDF viewer*
GDebi .deb package installer
Gnome Calendar desktop calendar
Gnome Screenshot screenshot tool
Gnome System Monitor system



REVIEW

monitor*
Image Viewer (Eye of Gnome)
image viewer*
Synaptic package management system
Text Editor (gedit) text editor*
Videos (Totem) movie player*

* mentioned as removed in the release announcement

Added this release are:
Atril PDF viewer*
Image Viewer (Eye of MATE) image viewer*
MATE System Monitor system monitor*
Pluma text editor*
VLC movie player*

* mentioned as added in the

release announcement

This release continues with the Unity 7.5.1 interface which, as noted, is not a new version this time around. Unity 7 continues to be a really solid desktop that still looks very modern and is very efficient to use with its keyboard shortcuts. There was an announcement last year that work is proceeding on a replacement for Unity 7, called Unity X, but there has been no news since August 2021 on how that is proceeding. At this point, Unity 7 works so well that there is really no need to quickly replace it.

LibreOffice 7.3.1 is, once again, supplied complete, lacking only the LibreOffice Base database

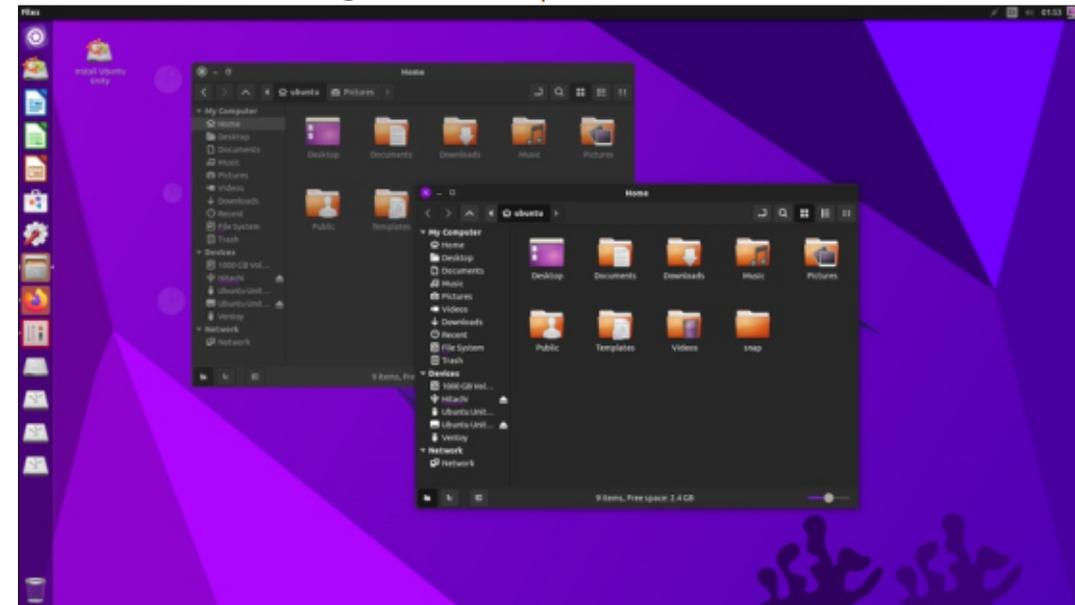
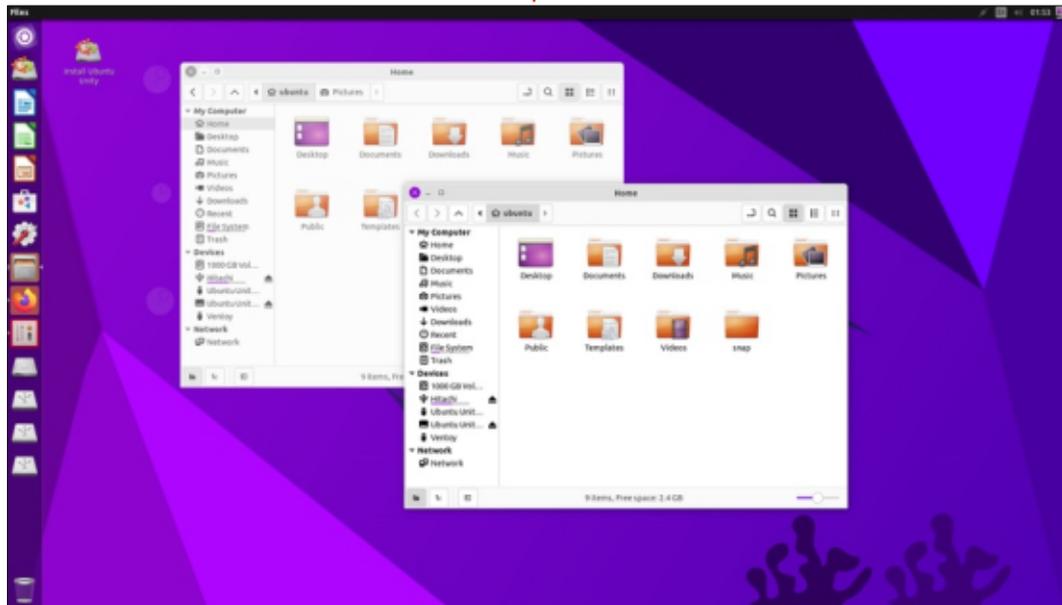
application, which can also be installed from the Ubuntu repositories, if needed.

As can be seen from the lists above, five GNOME applications were removed and replaced with five equivalents from the MATE desktop. These changes were described in the release notes. MATE is, of course, a fork of the old GNOME 2 desktop, and these five added applications are all forks of their GNOME equivalents and all look and work similarly. The release notes say this was done because they "fit in with Unity's UI better".

A number of unannounced removals without replacements were also made, leaving Ubuntu

Unity 22.04 LTS with no default webcam application or screenshot tool. It is not clear why these, and some of the other removals like Synaptic and Gdebi, were made, but they can be reinstalled from the repositories if needed.

The overall trend seems to be to replace GNOME applications with MATE ones but it will be interesting to see how the application mix changes over the next development cycle leading to Ubuntu Unity 24.04 LTS due out in April, 2024. As noted in the past, a bit more information in the release notes would be helpful to both users and reviewers.



REVIEW

CONCLUSIONS

Ubuntu Unity 22.04 LTS is a solid release with no obvious bad habits or issues identified. The return of the Unity Tweak Tool is a welcome addition to this release, as it works well, and this means Ubuntu Unity 22.04 LTS is better than its predecessor, 21.10.

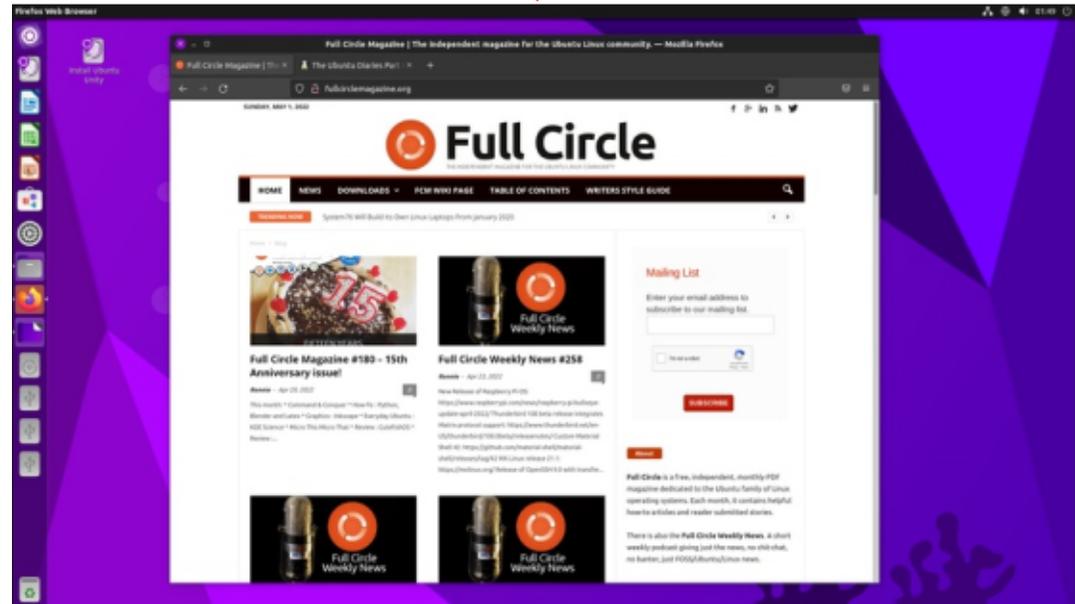
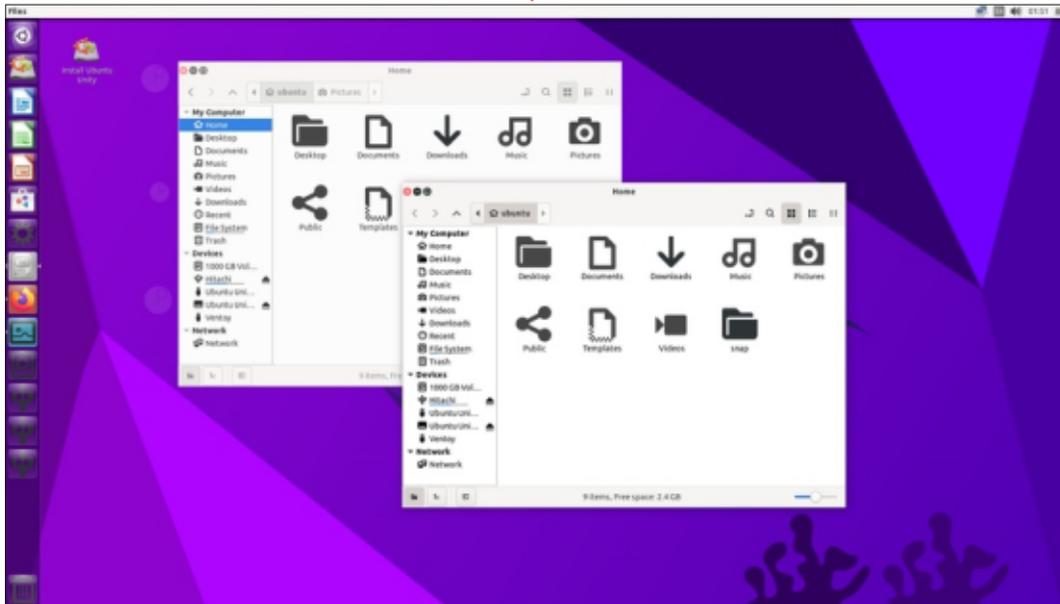
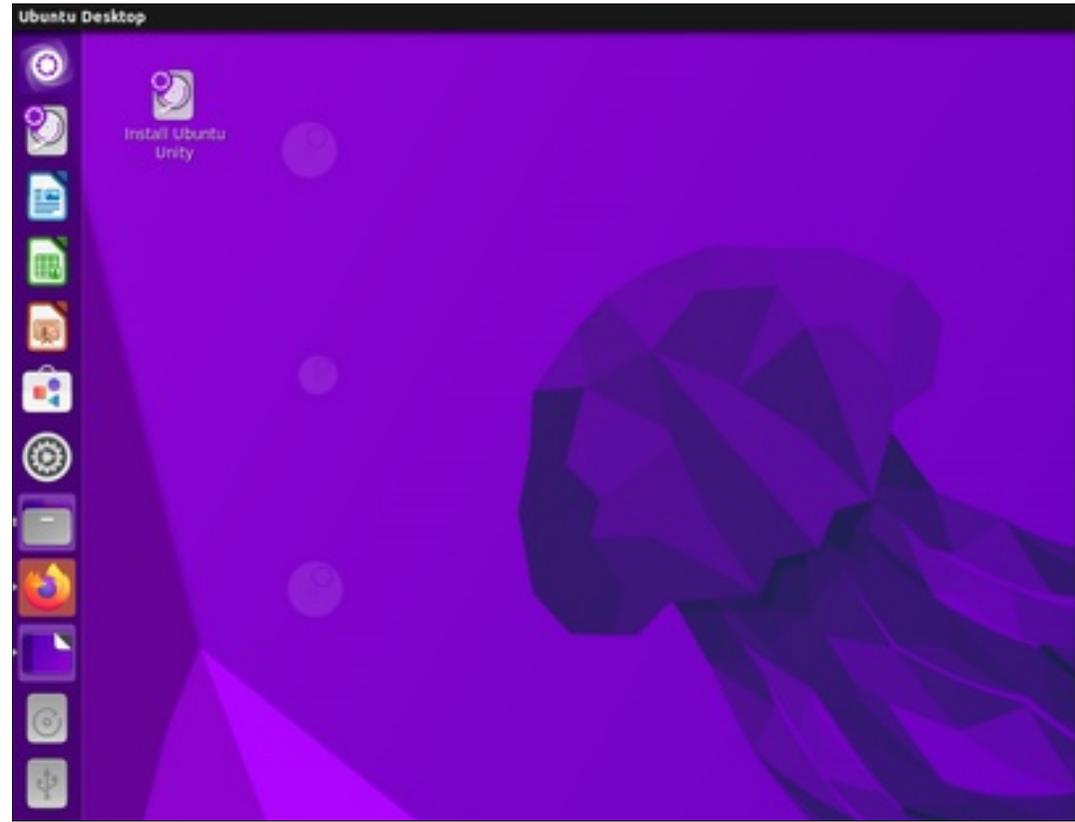
Ubuntu Unity continues to offer its users a lot of customization choices, plus a unique mix of default applications from the GNOME and MATE desktops. It is going to be interesting to see how this distribution continues to evolve over time as the next development cycle ramps up.

EXTERNAL LINKS

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



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





Note: Due to the respectful and reverential tone used in Full Circle, almost no Get Smart jokes will be made.

Continuing our series about Linux distributions that are not from the Debian and Ubuntu family, this month we look at KaOS, an independent Linux distribution with some interesting goals that set it apart from most other current distributions. It aims to use one toolkit, one desktop, and one hardware architecture, to produce the best possible result for users, without many compromises.

The toolkit is Qt, the desktop is KDE, and the architecture is x86_64, which means it will run on Intel and AMD processor-powered 64-bit computers. This sharply focused set of aims, plus nine years as a rolling release, means that you would expect a distribution that is highly refined and it truly is.

BACKGROUND

KaOS was started in 2013 and was initially called KdeOS for “KDE Operating System”. The name caused some confusion with the KDE desktop itself and potential copyright issues, too, so in September 2013, the name was changed to KaOS.

Because KaOS is a rolling release, there are no specific point releases. Instead, users get regular updates including application updates and, every four to six weeks, a new download version is posted for newcomers to use for installation. Each posted ISO file



just incorporates the updates to that point in time, thus reducing the updates needed after installation. Once you have KaOS installed, the regular update process will keep it up-to-date, and there is no need to install a new version, ever.

While the rolling release concept does make managing your installation easy, it has the potential downside that as the software gets updated, particularly the kernel, old hardware may fall out of support and the operating system may stop working.

KaOS is a Linux distribution, so the kernel that powers it is Linux, of course, but the developers have their eyes on, one day, moving to the Unix Illumos kernel.

Being an independent distribution, KaOS is not based on another, “up-stream” distribution; instead it is built from scratch. The developers have also created their own software repository with 2,212 applications currently, which are each custom maintained for KaOS.

Despite the focus on applications that use the Qt toolkit, the KaOS developers admit that there are some GTK toolkit-based applications for which there is no Qt equivalent, like the Inkscape vector graphics editor. Also, while there are a few Qt-based web browsers, they tend to be lacking in features compared to their GTK cousins, and so downloads for those are provided in the repository.

The official website provides good documentation, including a

REVIEW

page to search for application packages available, and even a complete applications list.

GETTING KAOS

The advantage of the one desktop-one toolkit-one architecture focus is that KaOS offers only one download – so it's easy to figure out which version to download. The website download page points you to a number of mirrors that host the single ISO file, all using https for download, with no bittorrent options.

I got the KaOS-2022.02-x86_64.iso file, which is the February 2022 update, from the

SourceForge mirror. The download is a fairly hefty 2.8 GB in size, so you expect it will come with lots of applications and features and it actually does.

An SHA 256 sum is provided and it is always a good idea to run the test to make sure you have an uncorrupted ISO file to work with.

INSTALLING

I used Ventoy 1.0.72 to put the ISO file onto a USB stick for booting. With a Ventoy-enabled stick, you just have to copy and paste the ISO file to the stick using your file browser. There is no unpacking or installation process, as

Ventoy handles everything seamlessly on boot-up. I tested out KaOS over a series of live sessions.

The KaOS website notes that neither Unetbootin nor the Rufus ISO writer for Windows will work with KaOS, but I can report that Ventoy works perfectly.

SYSTEM REQUIREMENTS

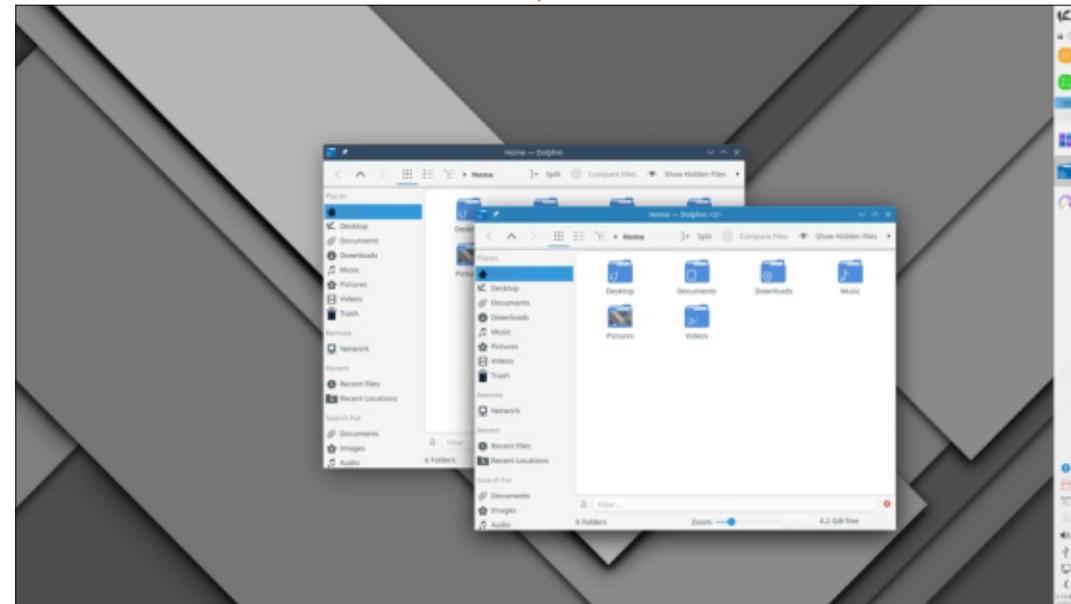
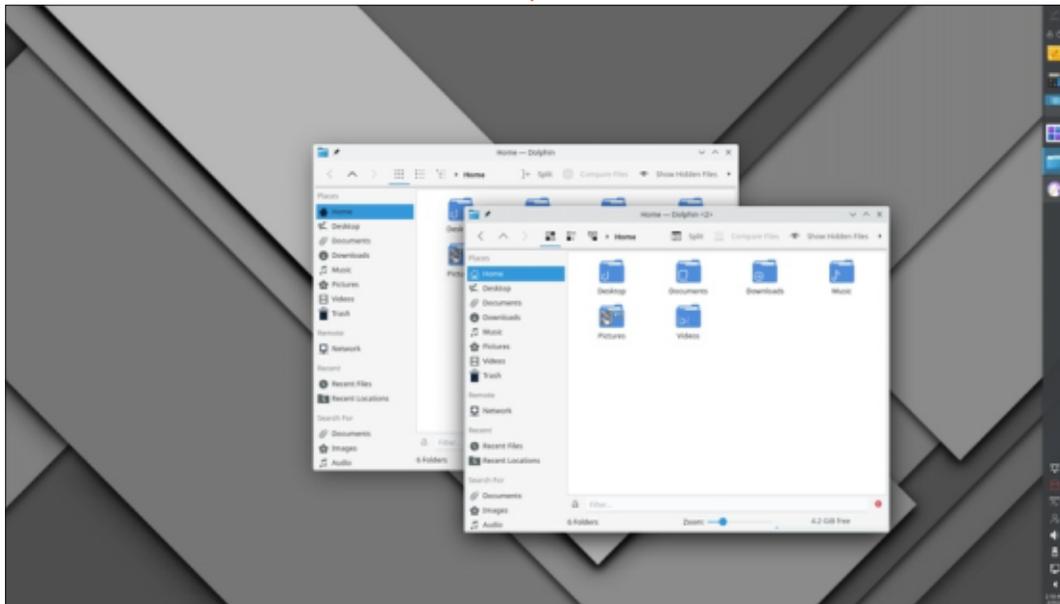
Despite having reasonably good documentation on its website, KaOS has no specified minimum hardware, probably because, in a rolling release over its nine-year history, system requirements are a moving target.

I tried KaOS out on a nine year-old desktop PC with a dual-core Intel Core i3-2120 3.30 GHz processor and 6 GB of RAM and I can report that it ran well.

TRYING OUT KAOS

On first boot-up KaOS presents a very clean-looking KDE desktop, with the task manager bar unusually located on the right side of the screen, putting the menu button at the top. The default wallpaper is an abstract, gray, geometric design. The initial impression is clean simplicity.

The version of KaOS I got was about six weeks old at the time of



my download and there was already over 1 GB of updates available for installation. Rolling releases do tend to have lots of updates as new application versions become available.

Because it is basically an unmodified KDE desktop, the usual method of launching applications is from the main menu, which works well. There, applications can be searched and selected from categorized sub-menus or from the “all applications” sub-menu. It is flexible and unobtrusive. Some icons have also been put on the taskbar, including for the web and file browsers, for quick access.

This KaOS version came with KDE Plasma 5.24, Linux kernel 5.14.21, and uses an implementation of the Wayland protocol display server by default. The initialization system is systemd 250.3, and the command-line package manager is Pacman.

KaOS does not use the very latest stable Linux kernel, but intentionally lags for at least six weeks until the next major update. As the developers explain, “the kernel is about the biggest cause for breakage in a rolling

distribution, that is why this policy.”

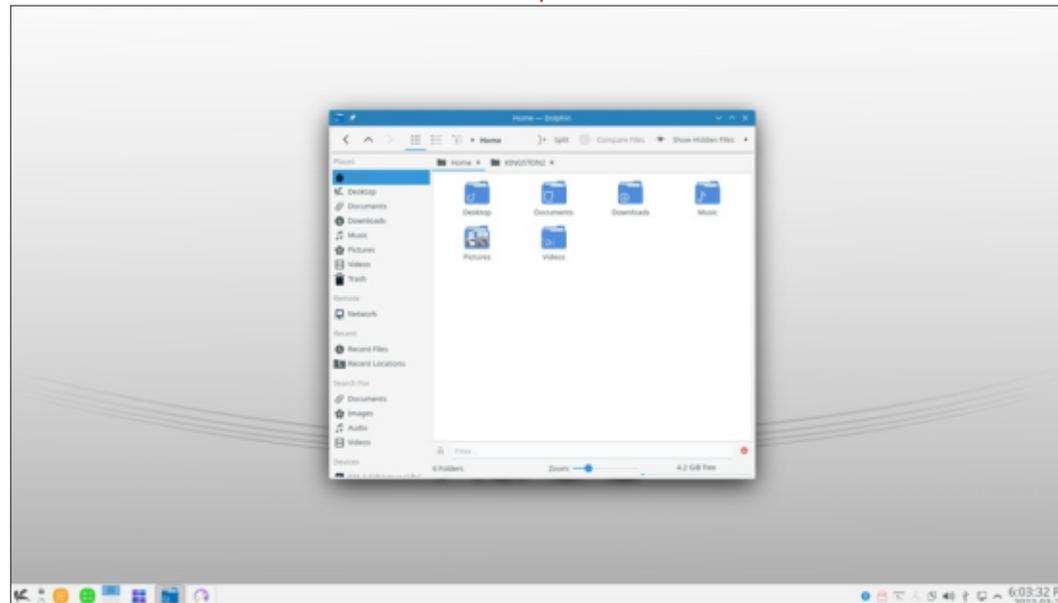
SETTINGS

Because KaOS uses the KDE desktop, it has a huge array of user choices for customization including two themes (light and dark), and five global themes, with Midna as the default plus Breeze, Breeze Dark, Breeze Twilight, and MidnaDark. There are also seven Plasma styles, 40 window border color choices, six window decoration schemes, five icon themes, two different cursor schemes, three different boot-up splash screens, and 48 really tasteful wallpapers. I think this helps explain why it is a 2.8 GB

download!

Finding the task bar on the right side of the screen is a little unconventional. It can be relocated to any screen edge, though, so I moved it to the bottom which puts the “K” menu button in the bottom-left corner. That looked better to me but it might just be my LXQt user prejudices. Icons and the bar width can also be made bigger or smaller.

KaOS offers a lot of user choices, so it is easy to make it look and work pretty much how you want. The impression it gives is of being elegant and well-considered.



APPLICATIONS

Unlike some distributions I have recently reviewed, including Fedora, SliTaz and Void Linux – which all come with a minimal list of applications, KaOS actually arrives pretty complete.

The default applications include:

- Arc 21.12.2 archiver
- Calamares 3.2.51 operating system installer
- Croeso 1.10 appearance and package controller
- Dolphin 21.12.2 file manager
- Elisa 21.12.2 music player
- Falkon 3.2.0 web browser
- Gwenview 21.12.2 image viewer
- Haruna 0.7.3 video player
- K3B 21.12.2 CD/DVD burner
- Kamoso 21.12.2 webcam
- Kate 21.12.2 text editor
- KDE Partition Manager 21.12.2
- Konsole 21.12.2 terminal emulator
- Kwrite 21.12.2 text editor
- LibreOffice 7.3.0.3 office suite
- MPV 0.34.1 media player
- Octopi 0.13 software manager
- Okular 21.12.2 PDF viewer
- Quassel 0.14.0 IRC client
- SimpleScreenRecorder 0.4.3 screen video recorder
- Spectacle 21.12.2 screenshot utility
- Vim 8.2.4227 text editor

As long as that list is, it has some oddities. For instance, it has three different text editors but no bittorrent client, although Transmission-Qt is in the repositories if needed.

The default web browser is Falkon, in its current 3.2.0 version, which dates to 31 January 2022. Falkon is a browser with good potential and one of the few Qt-based ones available right now, but it has some drawbacks. Notably it has few extensions and can be a bit of a RAM hog. A bigger concern is that version 3.2.0 is the first release in almost three years and Falkon was starting to look like “abandonware” there for a while. Web browsers are sensitive to security issues and most get updated every four to six weeks. Falkon otherwise works well and has a nice interface, it just needs a dedicated development team to provide it with more regular attention.

The KaOS developers do acknowledge the shortcomings of Falkon and so the Croeso software store and the Octopi software manager (which is similar to the GTK Synaptic) offer some alternate

GTK-toolkit browsers, including Firefox, Chrome, and Opera, plus the Qt-based Otter Browser.

The release notes for the 2022.02 download indicate that this is the first time Wayland has been offered by default. Quite a number of accommodations were required to switch from the X display server to Wayland. All the bugs are not quite resolved and, when you open SimpleScreenRecorder, for instance, you are warned that it doesn't support Wayland, only X.org.

Of interest, LibreOffice is supplied complete, including the LibreOffice Base database application that many Linux

distributions omit, due to being rarely used. I suspect that just providing LibreOffice complete simplifies package administration, more than fitting a particular user case.

Even though there are a limited number of packages provided, the use of the Pacman package manager allows users to compile their own packages to fill in any needs.

CONCLUSIONS

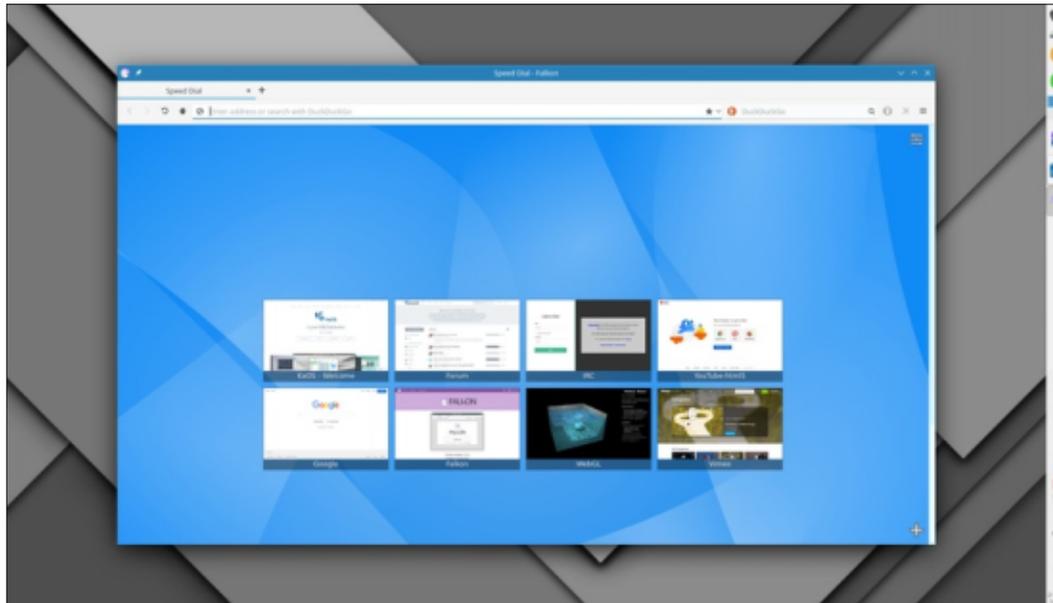
Overall, the approach of using a single toolkit, desktop, and architecture, seems to work well for this distribution, giving it a

sharp focus. Not having to make a lot of compromises to provide software that is not a good fit, or that causes packaging issues, also contributes and cuts down the support requirements by limiting the number of software packages. The end result is a precise and elegant distribution.

If you are looking to get a smart Linux distribution that puts you in control, then KaOS is definitely worth a closer look.

EXTERNAL LINKS

Official website: <https://kaosx.us/>



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



LETTERS

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

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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.

I am rather peeved as I sit down to answer the questions received, as well as re-write questions already answered from clients. FCM is run by community volunteers. This means we do not get paid, and even if we did, we are not at your every beck-and-call and will not stand for abuse. If you reach out to someone on Telegram, the least you can do is be friendly. Telling me what I WILL do, will get you blocked, because that is the only 'WILL' I will do. I don't know if it is me just getting older or the next

generations just getting too entitled, but asking me for help then threatening me if you don't get your way, like a spoiled child, will get you no help at all. Remember, I cannot see your machine, I don't know what you did, if you don't tell me - and the tutorial you are following, may have an error. They could also assume, like I saw in the last one, that you, for instance, had Lua pre-installed, that does not ship with Ubuntu by default. So stamping your little foot and telling me to "fix it", whilst telling me how s#1t Ubuntu is, I rather think you are not worth my time. Also, complaining that no-one will teach you Linux and then being a total asshat about it when someone recommends you read about a command only wanting instant fixes without putting effort in will get you nowhere. Show you did, or tried something, yourself; I tried a,b and c, but it did not work, or, it gave me this error. It may be totally wrong, but at least it shows you are not a grabber only. If you don't know what an application does, either say you don't or don't say anything at all. Just because

you saw something on a video, does not mean it does it by default. Spectrum analysers only display an output if they receive some sort of input. I am a person who enjoys following tutorials also, but usually I like to know "how it works", so I can do my own thing. I don't want what everyone else has and then try to show it off on my own. Monkey see, monkey do is one thing, but understanding brings freedom. I am honestly getting tired of people thinking we are withholding something, when there is no one command fix. Mainly, stop demanding, nobody owes you anything. I've said my peace, now let's help people who have manners.

Q: I'm learning Java and I decided to write an Anydesk clone for Ubuntu, to learn about the inner workings of sockets and networking and display. I'm really bad at it and wanted to know if anyone can point me in a direction to start. Google was helpful up to a point, but now I'm stuck in the mud. Can you help me out?

A: I'm not sure that I CAN help you out. However, if you have to steal, steal with your eyes. Trawling the interwebs gave me this: <https://github.com/retgal/dayon> -written in Java and the code is available for you to peruse and learn from.

Q: Where can I learn to use the terminal? It seems that everything in Linux can be done better and faster from the terminal.

A: You probably mean where can you learn bash - I'd suggest spending \$10 at Udemy and take one of their bash introduction courses. By default Ubuntu ships with bash and once you know bash, it is easy to swop over to another shell in your terminal.

Q: Ubuntu software centre is a bit lacking and I found that the snap store has later versions. How can I take my current deb-apps and

convert them to Snaps? I was specifically looking at Blender, but I can upgrade more than just Blender.

A: If lacking versions is your only concern, then maybe try to find a PPA? Anyway, back to your question, you need to install your Snap fresh, then copy your dot files and configuration files and data files to where the Snap file stores theirs. Pay attention to where your blender brushes etc. are stored, as you will need to replicate the folder structure. The same will go for other applications.

Q: I have been Using Ubuntu on and off for about 8 years now and decided to cut the cord with windows. One thing that stayed by me was the online applications I used, so the OS was not a huge issue. I tried, and really liked novlr, but \$10 a month is getting too much as they don't do regional pricing and the dollar is getting too expensive, it's 350 to 1 at the moment. What free Ubuntu software can I use to replace it?

A: Man! I thought 18 to 1 was bad, but you take the cake. OK, you need to look outside the Ubuntu software centre. Maybe Focus writer is there, but try Bibisco, I think we did a review on it in a previous issue. <https://bibisco.com/> or "oStorybook"; <https://ostorybook.tuxfamily.org/v5/?lng=en>

Q: Greetings! I have been distro hopping a bit and I find that Ubuntu – I am currently using Kubuntu – has the most boring man pages ever. I have tried a few tutorials on making my terminal pretty, but the man pages stay bland.

A: Hi yourself, without me reinventing the wheel, I will point you here, it is the pager you are using: <https://unix.stackexchange.com/questions/396950/how-to-configure-the-keybindings-of-most-a-pager-in-linux>

Q: I tried upgrading Ubuntu 19.10 to Ubuntu 22.10, but I don't see how. Can you help me?

A: Yes and No. Ubuntu 19.10 won't go straight to 22.10, you will need to go to the next version first. That said, 22.10 is not available for upgrade. See: <https://www.omgubuntu.co.uk/2022/08/ubuntu-22-10-release-new-features>

Q: I recently installed Ubuntu 20.04 alongside windows. I had this setup before with 18.04 and I had no issues. Now I can't access files between operating systems. This is my dmesg <removed> and this is my specs <removed>. This is my windows version <removed> it updates itself.

A: A Quick glance at your texts reveal that you are using a file system / Partition, that Windows is too dumb to read. Install your Ubuntu with EXT4 and you should be golden, the tools on Windows side can read EXT2,3 and 4.

Q: So I am a bit confused as to how I am supposed to run applications as root in Ubuntu. I was using Ubuntu 14.04 until now, due to an automation application not running on later versions, but it

seems that gksu is not available in Ubuntu 22.04 any more. The application needs to run as root and is not an issue as it is on a closed network behind a locked door, so no need to lecture me on security.

A: No Lecture. It has been a while already. See <https://itsfoss.com/gksu-replacement-ubuntu/>

Q: I am using youtube-dl to grab some stuff I want to learn as I have an issue with my wifi, it will hang every hour or so then I need to turn the wifi off and on again for it to work. Can I go to prison for it?

A: When you want to hit a dog, you will find a stick. That said, if a tree falls in a forest and no-one hears it, did it still make a sound? Solicitors we are not, and any advice we give on legal matters, should be ignored by everyone, including dogs.

Q: On windows 7 , my laptop HP 650, used to disable and enable bluetooth and wireless with the same switch, the one after the

Q&A

other. In Ubuntu, it is turned into an on/off switch for both ... at the same time. I can't control them separately like I used to. Is there a way to fix this?

A: Yes, petition HP to write you a driver if you cannot find one on their website. It is a driver issue and they probably did some coding to make it do a three-take instead of on/off. You can also put a bounty on it for one of the programmers to make it for you for Linux.

Q: When I close my laptop lid, my machine goes to sleep, but opening the lid, machine seems to wake up, the power led turns on and the disks spin, but not the display. Nothing happens if I press the power button, so I have to hold the power button to shut down, then restart the damn thing. It is making me hate 22.04.

A: Since you did not provide me with much to go on, I'd suggest start by turning off things like screen savers and CPU savers. Then look at things that do power saving. I rather suspect your issue is something other than the OS. You

can test it by booting off your install medium and testing it there and then. If it works, it is some application misbehaving.

Q: Is my drive bad? I have one of the first generation SSD's installed, so it may be crap. I ran `fsck`, and I'm not sure why, but it would not. Then,
`Rowan > studio ~ sudo tune2fs -l /dev/sd2 | grep checked`
Password:
`tune2fs: No such file or directory while trying to open /dev/sd2`
Couldn't find valid filesystem superblock.

How can I fix it please?

A: Typo. Usually in Ubuntu, drives are named `sda2` or `sdb2` you have got just "sd2" there, meaning Ubuntu has no such drive available to scan. `fsck` will not run while your drive is mounted. Type:

```
sudo touch /forcefsck
```

on the root partition and reboot.

Q: I was using Voyager Xubuntu for the last few years, but the

new one is not Xubuntu but Gnome, so I installed base Xubuntu and did some prettying before I ran into an issue with my keyboard layout in FF. If I now switch keyboard layouts in Ubuntu, FF does not follow as before. What am I missing?

A: As someone who also used to use Voyager, it is probably that Voyager comes with all the language locales already installed in Firefox, I used to remove them as I did not use them.

Q: I got a message in my Gmail about welcome to Chrome and Windows, but I don't use either. So I changed my password, yes I was sloppy paul1234567890-, to something better, but now I need to change it in Thunderbird. This is not valid for me any more: <https://support.mozilla.org/gu-IN/questions/1366740> (google results)

A: You need to go to "Edit" > "settings" (not "account settings") > "Privacy and Security" > "Saved Passwords" It is hidden here in the new versions.

Q: My libreOffice has just stopped working. I get a banner and that is all. No error, no warnings, nothing. It was working yesterday.

A: I would suggest scheduling a `fsck` on your disk for next boot and reboot ASAP. If it still gives you issues, I'd suggest trying another version, like a Snap or Appimage. If that works, maybe uninstall LibreOffice and rebooting and then reinstalling it.



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



Website: <https://stoneshard.com/>

Price: \$10-25 USD

Blurb: *"Stoneshard is a challenging turn-based RPG set in an open world. Experience the unforgiving life of a medieval mercenary, travel across the war-torn kingdom, fulfil contracts, fight, mend your wounds, and develop your character without any restrictions."*

Having played the demo two years ago, I thought it may be time to give it another once-over, as it natively supports Ubuntu. Though the game is still in beta, it is quite playable. (There are obviously still bugs).

First of all, the game looks gorgeous. A lot of effort has gone into the pixel art. No, seriously, a butt-load. Also it is fun to play. I mean I still play pixel dungeon, for crying in a bucket, and this has way more depth.

INSTALLATION:

Both GoG and Steam installers work like a charm on Ubuntu. No need to fuss and even if the web page says Ubuntu 18.04, it works quite fine on other versions. You can grab the demo off Steam if you

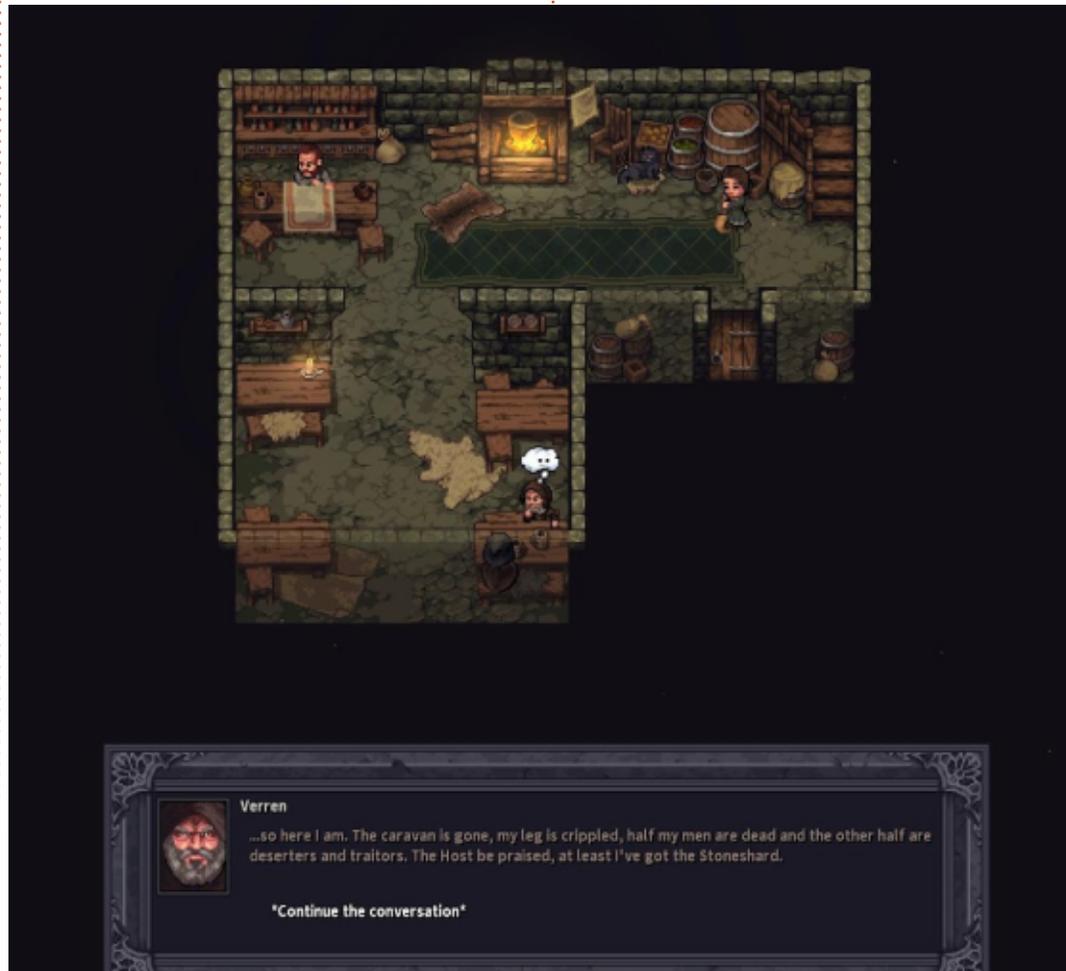
want to have a go at it, but I will be using the GoG in-development version for this test (version 0.8.0.xx). As with GoG installers, it is a simple next-next-next and you have a desktop icon and you are ready to go. With Steam, the Steam installer did all the heavy lifting and

it was also click and play. The game does not seem to be available anywhere else.

SOUND:

As you may recall from the last review, I stumbled across this title by the soundtrack. Have a listen: <https://www.youtube.com/watch?v=Gqu6c-AHLsQ>

The main theme by Norihiko Hibino – Stoneshard is haunting and AAA game quality. Masterful. Pawel Perepelica provides all the atmospheric music during the game and Kirill Akimov, the little upbeat tavern music. Honestly, I am listening to Neon Abyss OST at the moment, as I need to get up-n-at 'em, but Stoneshard will be on the menu tonight, mark my words! The voice acting is on par and I like it. Yup, voice acting is rogue-like, though this has RPG elements. Because the game is "early access", I did have a bug where my sound went away completely. It is fixed by restarting, but we will see when 1.0 rolls around.



GRAPHICS:

This is where the game already shines. Even though the game went for the paper cut-out aesthetic when it comes to animation, it is still a feast for your eyes. They also made their own character portraits. While I am saying all of this, nothing is set in stone, only shards, pun intended, as the disclaimer will tell you. Everything is subject to change before the final release.

Things like candles provide light, and the lighting effects can be seen passing close to a light source. Text is nice and clear, in brilliant white, and reactions in bright yellow. Passing behind objects makes them semi-transparent, though it is hard to make out what is hidden sometimes. I have often found a coin (crowns), that I know had dropped, difficult to find behind an

object. On the plus side, any weapons and armour that your character equips, is reflected on the graphic, always a nice touch. The "prologue", aka, the tutorial, has not really changed, but the main game has a lot of changes. The menus are large and informative and easy to navigate, making it simple to pick up and play the game. The HUD is clear and easy to see and navigate, and it does not interfere with the viewport.

GAMEPLAY:

Fun.

(Spoiler alert!) I wasn't going to say more, but the fact that the game comes with a tutorial level that WILL kill you in the end, it beats out other rogue-likes that kill you in the first few turns. You get a chance to experience everything; heh, I got 'drunk' twice just to experience the effect (which honestly, was more like a horror game, but interesting none-the-less!).

I noticed that there were a lot less 'diary pages' laying about, thus not slowing the game down as before. This means the pace of the game is a peppy loot-n-shoot from the old dungeon crawl. If I were to compare it to Dungeon Crawl Stone Soup (often referenced as one of THE top rogue-like games for Linux), I honestly think this feels better, but keeping the same gameplay. I understand the static models, where people try to mimic tabletop gaming, but if you want to immerse the next generation, you cannot have graphics from 1984,



sorry Stone Soup. That said, there is a lot of stiff competition out there when it comes to the gameplay and graphics in modern Indie rogue-likes.

I know some of our readers like (even prefer!) a little 'c' in the terminal, depicting your character and having their imagination do all the work. Sometimes, I just want to sit back and enjoy, without too much effort, and this scratches that

itch. Beware!! The game is addictive, and with all the eye-candy, you may miss supper. I speak from experience, having to drink cold coffee more than once.

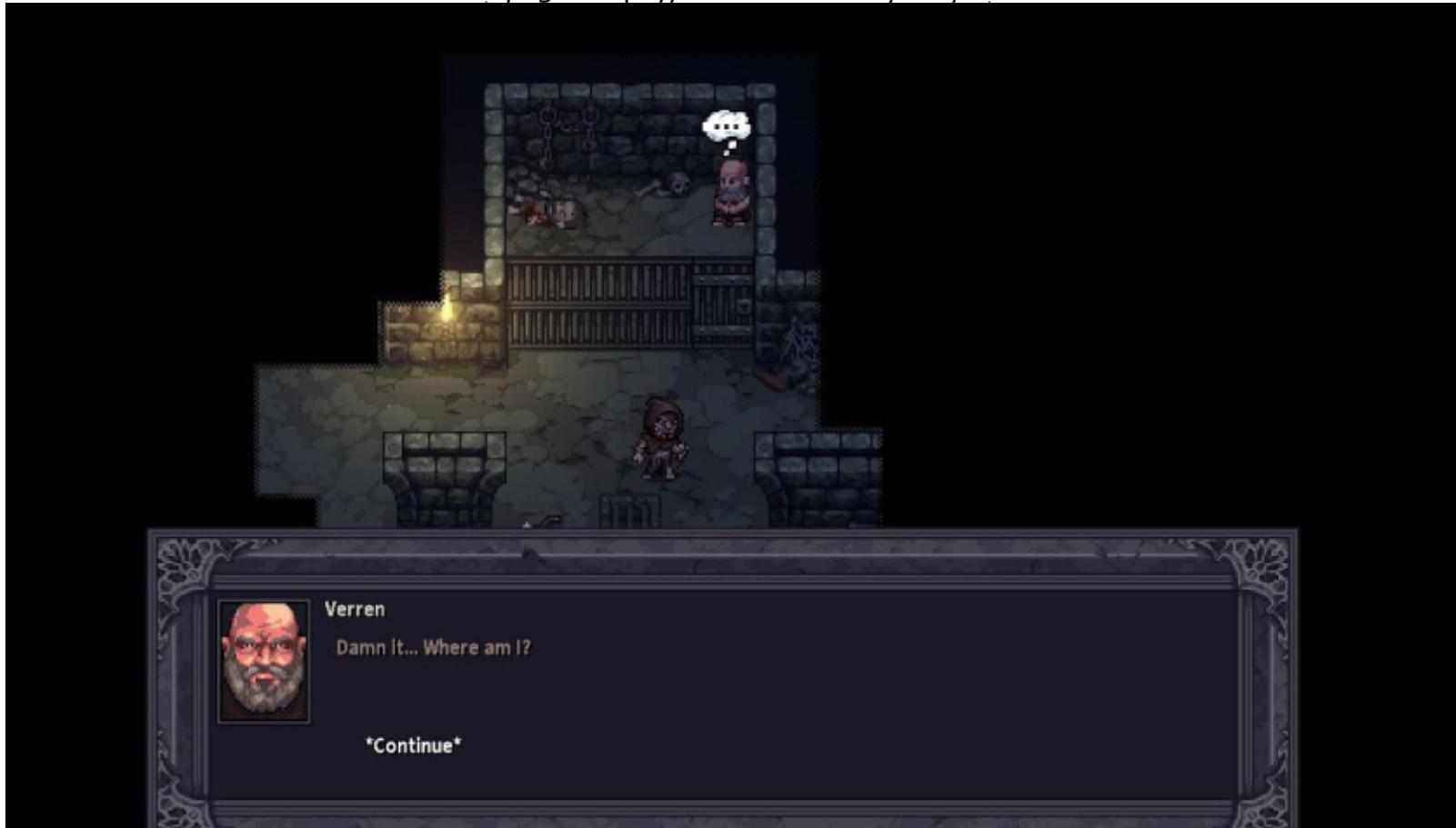
OVERALL:

The title feels polished and will hopefully get even more polish before the 1.0 release. It feels professional (have a look at the wiki page: <https://stoneshard.com/wiki/>

Stoneshard_Wiki), and make up your mind. I'd say, if you can get a deal on it, take it! The \$24.99 at GoG at the time of writing is too rich for my blood, I have other things I can play, like the Amazing (so far) Anvil Saga.

There are some nice touches, such as the character selection screen (see tavern image below), where you remain nameless and faceless until you choose your

character. So be sure to watch out for that.



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



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The current site was created thanks to **Lucas Westermann** (ex-Command & Conquer) who took on the task of completely rebuilding the site, and scripts, from scratch, in his own time.

The Patreon page is to help pay the domain and hosting fees. The yearly target was quickly reached thanks to those listed on this page. The money also helps with the new mailing list that I set up.

Several people have asked for a PayPal (single donation) option, so I've added a button to the right side of the website

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



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