



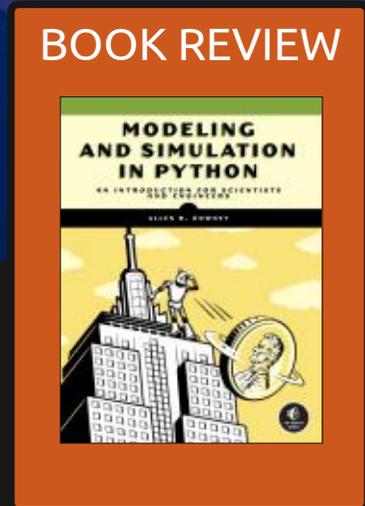
Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #196 - August 2023



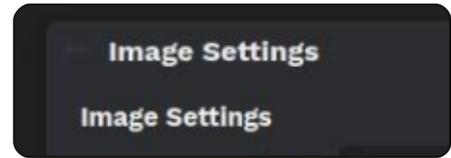
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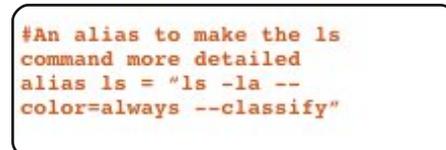
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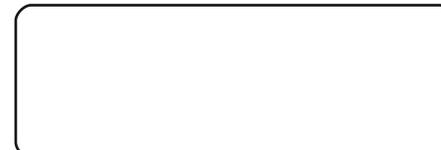


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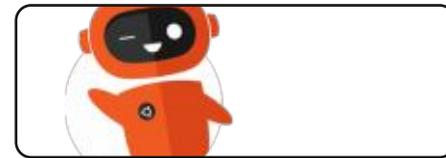
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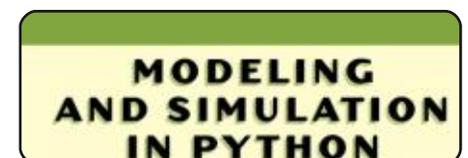
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WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

This month, for your pleasure, we have; Python, Stable Diffusion, Micro This Micro That, and Inkscape. No Latex this month I'm afraid.

Starting this month, we have the start of a short three-part series on the various ways of trying Linux. Always good for showing the Linux curious without destroying their current setup. You've got to move things a small step at a time.

Adam continues his distro reviews with Xubuntu 23.04, we have a review of Notable (for those of you, like me, who have to note everything down), and another Python book review from Greg.

The Ubports team have released OTA-2 for their mobile Touch OS. Unfortunately, I still can't try it as there's no version for my BQ M10 or my Meizu MX4. And I'm certainly nowhere near smart enough to do the deed. I'll keep my fingers crossed.

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

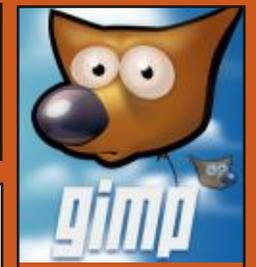
All the best for 2023!

Ronnie

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DEBIAN SUPPORT FOR RISC-V ARCHITECTURE:

24/07/2023

The developers of the Debian project announced the status of the official port of the distribution for systems based on the 64-bit RISC-V architecture (riscv64). Packages for RISC-V are available for installation from the Debian Sid (Unstable) repository. Currently, RISC-V systems have a build of about 96% of the total number of original packages present in Debian repositories.

The process of integrating the new port with the official Debian archive will be carried out gradually. For the first stage, they plan to collect a minimum set of about 90 original packages, transfer it to the official archive and sign it with a separate GPG key. At the second stage, the build infrastructure used for the development, they plan to switch to the publication of builds in the official archive for the riscv64 port. Finally work on the polishing of

packages and the elimination of detected errors will begin. If there are no unforeseen problems, the first release with official support of riscv64 port will be made in about two years and will be part of the release of Debian 13.

RISC-V provides an open and flexible machine instruction system that allows you to create microprocessors for arbitrary applications. RISC-V allows you to create fully open SoC and processors. Currently, there are RISC-V specification by different companies and communities under various free licenses (BSD, MIT, Apache 2.0), several dozen variants of microprocessor cores, more than a hundred SoCs and already produced as chips are developing. Support for RISC-V is available from the releases of Glibc 2.27, binutils 2.30, gcc 7 and Linux 4.15 kernels.

<https://lists.debian.org/debian-riscv/2023/07/msq00053.html>

RELEASE OF MPV 0.36:

24/07/2023

The release of an open MPV 0.36 video player was announced. MPV focuses on developing new features and ensuring the constant transfer of innovations from MPlayer repositories, without worrying about maintaining compatibility with MPlayer. The MPV code is distributed under the LGPLv2.1+ license, some parts remain under the GPLv2, but the process of transition to the LGPL is almost complete and the remaining GPL can be used to disable the option "-enable-lgpl."

<https://github.com/mpv-player/mpv/releases/tag/v0.36.0>

INKSCAPE 1.3:

24/07/2023

After 14 months of development, the release of the free vector graphic editor Inkscape 1.3 was published. The editor provides flexible drawing

tools and provides support for reading and saving images in SVG, OpenDocument Drawing, DXF, WMF, EMF, sk1, PDF, EPS, PostScript and PNG formats. Ready-made Inkscape builds are prepared for Linux (ApplImage, expected publication of Snap and Flatpak), macOS and Windows.

<https://inkscape.org/news/2023/07/23/inkscape-launches-version-13-focus-organizing-work/>

NEW WEAPONS FOR RE-SPAWN TOURNAMENT

25/07/2023

Quinton Delpeche, developer behind the Linux friendly arena shooter, Re-Spawn Tournament has again announced new models and updates for the game. Re-Spawn Tournament is a competitive, arena-style multi-player first person shooter game with fast-paced, high energy combat that requires both reflexive skill and tactical thinking.

With their unique handicap system, Re-Spawn Tournament will appeal to veterans and new players alike, you take on more experienced players with no disadvantage. Though the game is in early access, it is at a bargain price with updates every month.

https://store.steampowered.com/app/1590010/ReSpawn_Tournament/

<http://www.respawntournament.com/>

RELEASE OF PASCALABC.NET 3.9.0

DEVELOPMENT

ENVIRONMENT:

26/07/2023

The release of the PascalABC.NET 3.9.0 programming system, which offers the Pascal programming language with support for code generation for the .NET platform, the ability to use .NET libraries and additional features, such as generalized classes, interfaces, overload operations, ?-expressions, exceptions, garbage collection,

extension methods, nameless classes and autotools is available. The project is mainly focused on education and research. The package also includes a development environment with code prompts, auto-formatting, debugger, form designer and code samples for beginners. The project code is distributed under the LGPLv3 license. You can build it in Linux (based on Mono) and Windows.

https://pascalabcnet.github.io/mydoc/release_notes/3.9.0.html

MLS PROPOSED STANDARD:

26/07/2023

The IETF (Internet Engineering Task Force), which is engaged in the development of Internet protocols and architecture, completed the formation of the RFC for the MLS (Messaging Layer Security) protocol and published the RFC 9420 specification. The specification has received the status of the "Proposed Standard." After this, work will begin on giving the RFC the status of a draft standard, which actually means the complete stabilization of the

protocol and the considerations made.

The main purpose of creating a new protocol is the unification of means for end-to-end encryption and the introduction of a single standardized and verified protocol, which can be used instead of individual protocols developed by different manufacturers, solving the same tasks, but not compatible with each other. MLS allows you to use already proven ready-to-use implementations of the protocol in different applications, as well as organize their joint development and verification. The application-level tolerability is proposed to be implemented at the level of authentication, key acquisition and confidentiality (compatibility at the transport and semantics level goes beyond the standard).

<https://datatracker.ietf.org/doc/html/rfc9420>

NETWORK SECURITY

TOOLKIT 38:

26/07/2023

After a year of development, the release of the Live

Distributive NST 38 (Network Security Toolkit), designed to analyze the security of the network and monitor its operation, was published. The loading size of the ISO image (x86_64) is 4.8 GB. For users of Fedora Linux, a special repository has been created, which makes it possible to install it all, within the NST project in the already installed system. The distribution is based on Fedora and allows the installation of additional packages from external repositories compatible with Fedora Linux.

The distribution includes a large selection of applications related to network security (for example: Wireshark, NTop, Nessus, NORS, NM, Kismet, TcpTr, Etherape, nsttracroute, Ettercap, etc.). A special web-interface has been created to manage the security check and automate the need for a security check and automate the utility, which also integrates a web front-end for the Wireshark network analyzer. The distribution graphical environment is based on FluxBox.

<https://sourceforge.net/p/nst/news/2023/07/nst-version-38-13644-released/>

UBUNTU, OPTIMIZED FOR INTEL CORE PROCESSORS:

26/07/2023

Canonical has announced the preparation of new Ubuntu builds optimized for real-time tasks on systems with Intel Core processors. To improve performance and reduce the impact of third-party load on applications that are sensitive to data processing and delivery, optimizations are involved in builds that increase the priority of access to cache, memory and network operations for applications running in real time.

To ensure predictable event processing time, the Linux kernel with RT patches ("Realtime-

Preempt," PREEMPT_RT or "-rt") is used in the builds. The specific Intel optimization equipment is based on the use of TCC (Time Coordinated Computing) and TSN (Time-Sensitive Networking) technologies. The builds are based on the Ubuntu 22.04 LTS distribution and are distributed via Ubuntu Pro.

<https://canonical.com/blog/optimised-real-time-ubuntu-is-now-generally-available-on-intel-socs>

OVERLAYFS IN UBUNTU HAS LED TO VULNERABILITIES:

27/07/2023

The Linux kernel packages supplied in Ubuntu revealed vulnerabilities caused by the introduction of Ubuntu-specific patches to the OverlayFS module.

Vulnerabilities allow an attacker to increase their privileges in the system and, according to the identified problems of researchers can happen in about 40% of Ubuntu installations. Vulnerabilities appear only in packages with the kernel for Ubuntu and are eliminated in the updates released on July 26 (Ubuntu 23.04, 22.04, 20.04, 18.04, 16.04, 14.04, etc.).

The vulnerability CVE-2023-2640 is caused by the addition in 2018 of the Ubuntu-specific modification to the OverlayFS module, which implements features for installing and deleting individual advanced file attributes (trusted.overlayfs.*xattr) without checking access rights. Since the performance of this function requires a pre-blocking of inode, it was implied that the calling

function already has the privileges necessary for low-level work with the FS.

Initially, this change applied only to the attributes of trusted.overlayfs.* and did not pose a danger. But in 2022, a patch was added to the main implementation of the Linux kernel, in conflict with Ubuntu-specific patches, after which the verification was disabled for all advanced attributes, not just trusted.overlayfs. Through manipulation with user namespace (user namespace) an unsemiligated user could mount OverlayFS and install advanced attributes for files in the mounted FS, as a result, these attributes were also transferred for files in the higher layer of Overlay.

The second vulnerability of the CVE-2023-32629 is also caused by the lack of proper authority checks. Checks were not performed in the function ovl_copy_up_meta_inode_data due to the call of the procedure ovl_do_setxattr instead of vfs_setxattr, not only when access to the internal extended attributes of the overlay layer. As with the first vulnerability, the fix originally



DistroWatch.com

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

made for Ubuntu did not lead to a vulnerability and the problem appeared only after the major implementation of OverlayFS, produced in 2019.

<https://www.wiz.io/blog/ubuntu-overlayfs-vulnerability>

WXMEDIT 3.2:

27/07/2023

After seven years of development, the release of the cross-platform editor wxMedit 3.2, which provides functions for editing text and hexadecimal dumps, was published. The project continues the development of the editor MadEdit, which was discontinued in 2011. The project code is written in C++ using the wxWidgets framework and distributed under the GPLv3 license. The builds are formed for various distributions of Linux, FreeBSD, ReactOS, Windows and macOS.

wxMedit has several editing modes (text/columns/sixteen-three-three-three-year) and features such as bookmarks, syntax highlighting, text encoding

conversion (UTF8/16/32, ISO-8859-x, CP125x, KOI8, etc.), translations of words, and downloads, and downloads with multiple files, and downloads with multiple downloads.

<https://wxmedit.github.io/downloads.html>

KDE PLASMA 6 PLANS TO REMOVE SOME FEATURES:

27/07/2023

Nate Graham, a quality control developer in the KDE project, has published an overview of the functionality that is scheduled to be removed in the KDE Plasma 6 release, scheduled for the fall of 2023. Mostly outdated opportunities that interfere with the development of KDE and do not work properly are subject to removal. The removal of such components will allow you to release resources to promote innovations.

<https://pointieststick.com/2023/07/26/what-we-plan-to-remove-in-plasma-6/>

RELEASE OF ZORIN OS 16.3:

27/07/2023

The release of the Linux distribution Zorin OS 16.3, based on Ubuntu 20.04, was announced. The target audience of the distribution are novice users, accustomed to working in Windows. They have a special configurator that allows you to give the desktop a different view, typical of different versions of Windows and macOS, and includes a selection of programs close to programs that Windows users are accustomed to. To integrate the desktop with a smartphone, the Zorin Connect application (based on KDE Connect) is available. In addition to deb and Ubuntu repositories packages, support for Flatpak, AppImage and Snap formats are enabled by default. The size of the bootable iso-image is 2.9 GB (four builds are available - ordinary based on GNOME, "Lite" with Xfce and their options for educational institutions).

<https://blog.zorin.com/2023/07/27/zorin-os-16.3-is-released/>

GNOME PLANS TO CHANGE THE WINDOW MANAGEMENT MODEL:

28/07/2023

Tobias Bernard from the team responsible for the design of the GNOME user interface, summarized the results of the developer's discussion of plans to modernize windows management in GNOME. You may note that the now-default window management model is built on concepts of 50 years ago to perform unnecessary actions related to the size setting and movement of windows.

Despite the fact that many users are accustomed to such a model, it is not optimal and creates difficulties for beginners who face the need to manually dismantle the emerging heap from overlapping small windows or look for the right window, covered with other windows. Ideally, the system should optimally place the windows in such a way that the user can immediately start work and see the windows necessary to solve the current problem, without the need to spend time on manipulating the windows, achieving their acceptable location

and size. The now applied approach for working with windows is characterized as "a mess".

<https://blogs.gnome.org/tbernard/2023/07/26/rethinking-window-management/>

RELEASE OF SYSTEM MANAGER SYSTEMD 254 WITH SOFT REBOOT SUPPORT:

28/07/2023

After five months of development, the release of systemd manager 254 is presented. The most notable change in the new version was the support for the soft reboot mode (systemctl soft-reboot command), which leads to restarting of only the components of the user's space, without touching the Linux kernel. The new mode allows you to complete the work of all processes in the user's space, then replace the image of the root FS with a new version (mounted in /run/nextroot/) and start the system initialization process without reloading the kernel. Keeping the state of a working core when

replacing a user environment makes it possible to implement the update of some services in live mode (without stopping), allowing the transfer of file descriptors and listening network sockets for these services from the old environment to new ones. To update the kernel in combination with a soft reboot, they propose to use the livepatch mechanism to make corrections to the Linux kernel without rebooting and without stopping the applications.

<https://lists.freedesktop.org/archives/systemd-devel/2023-July/049310.html>

PASSIM CACHING THE SERVER:

29/07/2023

Richard Hughes, creator of the PackageKit framework, color management system, UPower service, LVFS firmware delivery systems and applications such as GNOME Software, GNOME Power Manager and GNOME Color Manager, presented his new project - Passim. Passim is a caching server for distributing files that uses the hash from the content,

similar to IPFS (InterPlanetary File System). The mDNS (Avahi) protocol is used to determine the presence of files in the repository. The project code is written in C and distributed under the LGPLv2.1 license.

Passim can be used to improve the efficiency of applications that periodically download metadata and files required to process other requests. The basic idea in using Passim as a caching local content delivery system used to distribute frequently requested files to the local network, without directly accessing major servers and without engaging in global CDN. For example, Passim can be used to optimize the distribution among user firmware updates, metadata of ad blocking systems and packet managers. In practice, Passim plans to use for the organization of delivery of firmware in tools fwupd and LVFS project.

<https://blogs.gnome.org/hughsie/2023/07/28/introducing-passim/>

4MLINUX 43.0:

29/07/2023

A new version of 4MLinux 43.0, a minimalistic user distribution that is not an offshoot from other projects and uses a JWM-based graphical environment, is presented. 4MLinux can be used not only as a Live environment to play media files and solve user tasks, but also as a system for recovery after failures and a platform for running LAMP servers (Linux, Apache, MariaDB and PHP). Three live images (x86_64) with a graphical environment (1.2 GB), a selection of programs for server systems (1.3 GB) and a trimmed environment (14 MB) were prepared for download.

<https://4mlinux-releases.blogspot.com/2023/07/4mlinux-430-stable-released.html>

UBUNTU TOUCH OTA-2 FOCAL FIRMWARE:

30/07/2023

The UBports project, which took over the development of the Ubuntu Touch mobile platform,

after it was removed from Canonical, published the firmware; OTA-2 Focal (over-the-air). This is the second release of Ubuntu Touch, based on the Ubuntu 20.04 package base (old releases were based on Ubuntu 16.04). The project is also developing an experimental port of Unity 8, which is renamed Lomiri.

The update of Ubuntu Touch OTA-1 Focal is made for the Fairphone 3 and 4, F(x) smartphonestec Pro1 X, Google Pixel 3a, Vollaphone 22, Vollaphone X23, Vollaphone X and Vollaphone. Builds for the Pine64 PinePhone, PinePhone Pro and PineTab are formed separately and for PinePhone and PineTab, a stable update with the "OTA-2" label will not be released.

<https://ubports.com/en/blog/ubports-news-1/post/ubuntu-touch-ota-2-focal-release-3894>

THE MOST ACTIVE DEV LEAVES ALPINE LINUX:

31/07/2023

The most active dev in the Alpine Linux distribution, who

worked under the nickname psykose, resigned, blocked his accounts and stopped working in the project. After the departure of psykose, about 400 packages remained unmaintained. According to the project statistics for 2023, the departed developer produced more than half of all changes in the scripts of the aports package build (13894 of 26893). For comparison, the second-placed most active dev made 2054 changes, and in third place - 894. Apparently, the reason is emotional burnout, the desire to change activity, with his plans mentioning only the intention to sleep.

The Alpine Linux distribution is based on the Musl system library and a set of BusyBox utilities, features increased security requirements and is assembled with SSP (Stack Smashing Protection). OpenRC is used as an initialization system, and apk own packet manager is used to manage packages. Alpine is used to form official Docker container images and in the PostmarketOS project.

<https://github.com/alpinelinux/aports/commit/9e88698cc296a8492a8f70938c58f5755f39609d>

UNOFFICIAL GNU BOOT

RENAMED:

31/07/2023

Adrian Bourmault, founder of the GNU Boot project, sent Leah Rowe, the developer of the Libreboot distribution, a requirement to stop using the GNU Boot name to distribute its build. Two weeks ago, Leah published a trimmed build of Libreboot under the name GNU Boot, providing it with the "unofficial" mark. The claim indicates that Leah is not the mainmainer of GNU Boot and does not have the right to publish releases on behalf of this project. If you wish to participate in the development, you should send patches for review, not create your own release.

The official GNU Boot project was created in June 2023, a month before Leah's build, and has not yet had time to form its own release. The GNU Boot project planned to develop a fork Libreboot, which uses more stringent requirements to include binary components, and the proposed build solved this problem. Leah explained that by

creating her unofficial build, she only wanted to help the new project - it was assumed that the creators of GNU Boot would be able to use the published code in their project. Despite the use of the same name, the "unofficial" label was added to the build.

<https://savannah.gnu.org/projects/gnuboot/>

RELEASE OF MX LINUX 23:

01/08/2023

A release of the lightweight distribution, MX Linux 23, created as a result of the collaboration of communities formed around antiX and MEPIS projects, has been published. 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 (2.2 GB) are available for download, as well as 64-bit builds with the KDE desktop (2.6 GB) and builds (1.7 GB) with Fluxbox window manager.

<https://mxlinux.org/blog/mx-23-libretto-now-available/>

RELEASE OF GNU EMACS 29.1 WITH WAYLAND SUPPORT

01/08/2023

The GNU project published the release of GNU Emacs 29.1 (the first version of the 29.x series, branch 29.0 was used for development). Until GNU Emacs 24.5 was produced, the project was developed under the personal leadership of Richard Stallman, who handed over the post of project leader John Wiegley in the fall of 2015. The project code is written in the C and Lisp languages and is distributed under the GPLv3 license.

<https://www.mail-archive.com/info-gnu@gnu.org/msg03207.html>

PIXAR, ADOBE, APPLE, AUTODESK AND NVIDIA BEGAN JOINT PROMOTION OF THE OPENUSD PLATFORM:

02/08/2023

Pixar, Adobe, Apple, Autodesk and NVIDIA announced the creation of the AOUSD (Alliance for OpenUSD) alliance, focused on the joint promotion of OpenUSD (Universal Scene Description), its development and the development of related standards. The Alliance was created at an independent platform under the auspices of the Joint Development Foundation, which is supervised by the Linux Foundation.

The goal of the alliance is to improve the portability between applications for working with 3D graphics, as well as the development and standardization of universal means for transferring 3D data between applications. Interested in ensuring the portability of their products, the companies intend to prepare a specification that describes in detail all the capabilities of OpenUSD, which is planned to be approved in the International

Organization for Standardization as a standard.

<https://www.linuxfoundation.org/press/announcing-alliance-for-open-usd-aousd>

UBUNTU WILL REDUCE THE TIME TO ELIMINATE VULNERABILITIES IN PACKAGES WITH THE LINUX KERNEL:

02/08/2023

Keber Souza, an engineer from Canonical, working with the Linux kernel for Ubuntu, announced the transition to a new cycle of kernel updates. The new cycle, which has been coded "4/2," provides for the formation of additional SU-update packets with the kernel (Security Update), including corrections to emergency problems and vulnerabilities marked as dangerous and critical.

According to the new scheme, SRU-updates (Stable Release Updates) packages with a kernel will be published every 4 weeks, transferring fixes from the corrective releases of the Linux

kernel.

It is expected that the new scheme will accelerate the delivery of vulnerabilities corrections to users and increase the predictability of the development process. When using the old scheme, which used a three-week development cycle, there were problems with the prompt correction of vulnerabilities. If the old schedule was kept, users had to wait for the correction of non-critical vulnerabilities for up to three weeks.

<https://discourse.ubuntu.com/t/ubuntu-kernel-4-2-sru-cycle-announcement/37478>

RESIGNATION OF THE XFS FILE SYSTEM MAINTAINER:

02/08/2023

Darrick Wong has announced his resignation as maintainer of the XFS file system in the Linux kernel. According to him, he took on an unbearable burden and burned out, trying to combine the role of the developer, reviewer, tester, release manager and contact person. It is noted that the

XFS subsystem has enough work for 20 people, but in fact, the same work has to be done by half the team.

<https://lore.kernel.org/linux-xfs/169091989589.112530.11294854598557805230.stgit@frogsfrogsfrogs/T/#m3890eb55a7ce45afa1830ed98decd98d0c8772c6>

FREE CAD FREECAD 0.21:

02/08/2023

After more than a year of development, the release of the open system of parametric 3D modeling, FreeCAD 0.21, which is characterized by flexible customization and functionality through the connection of additions, was published. The interface was built using the Qt library. Add-ons can be created in Python. It supports the preservation and loading of models in various formats, including STEP, IGES and STL. The FreeCAD code is distributed under the LGPLv2 license, Open CASCADE is used as a modeling core. Ready-made builds will soon be prepared for Linux (ApplImage),

macOS and Windows.

FreeCAD allows, by changing the parameters of the model, to view various design options and evaluate the work at various moments of the model development. The project can be a free replacement for commercial CAD, such as CATIA, Solid Edge and SolidWorks. Despite the fact that the main purpose of FreeCAD is engineering and design of new products, the system can be used in other areas, such as architectural design.

<https://blog.freecad.org/2023/08/02/freecad-0-21-released/>

THUNDERBIRD 115.1:

03/08/2023

The Thunderbird 115.1 mail client was released, which by default has a new panel for quick message filtering displayed above the message list. To display this panel, click the "Quick Filter" button.

<https://www.thunderbird.net/en-US/thunderbird/115.1.0/releasesnotes/>

LXD CONTAINER CONTROL SYSTEM FORK:

05/08/2023

Alexa Sarai, who works at SUSE and supports packages with LXD in the openSUSE project, has created the Incus repository, which intends to develop a fork of the LXD container control system. The fork was created after Canonical, who is the creator and main developer of LXD, decided to withdraw LXD from development as part of the Linux Containers community and develop LXD in the future as a corporate project.

The fork is created due to fears that Canonical will stop supporting other distributions in LXD. In particular, plans have already been announced to concentrate work on the supply of LXD in snap format, which is positioned as the main format for installing LXD. Currently, Incus has been working to remove unnecessary dependencies and disconnect bindings to tools and technologies specific to Canonical products. The fork will be developed with the participation of the community and

taking into account the interests of third-party projects.

It is noteworthy that the largest number of LXD users are not on Ubuntu, but on the ChromeOS platform, which uses the build toolkit ebuild/portage from Gentoo Linux.

<https://news.ycombinator.com/item?id=36985384>

KEY DEVELOPER OF VIM HAS DIED:

05/08/2023

Bram Moolenaar, author of the text editor Vim, died. Of his 62 years, Bram devoted 31 to the development of the Vim project, to which he made the vast majority of the changes (for comparison, Bram contributed 16,500. Commits added 3.5 million lines of code, while the second most active developer Vim added 239 Commits and 69,000 lines of code. Bram's last comment on the Vim repository dates back to July 8. Judging by the announcement of Bram's relatives, the cause of death was a rapidly progressive disease.

https://groups.google.com/g/vim_announce/c/tWahca9zkt4

EXPERIMENTAL BUILDS OF KDE NEON WITH KDE 6:

05/08/2023

The KDE Neon project, who make Live-builds with current versions of KDE programs and components, announced the creation of experimental builds with a custom environment based on the KDE Plasma 6 shell and applications ported to KDE Frameworks 6. Previously, the KDE Neon project had already produced builds with KDE Plasma 6, but they had the status of unstable. The difference between the new builds is to the clearer separation of KDE Framework 6 applications with "pre-alpha" and a more stable desktop Plasma 6.

The key change in KDE 6 is the transition to Qt 6, changing some basic default settings and supplying an updated basic set of libraries and runtime components KDE Framework 6 forming the KDE software stack. KDE Plasma 6 is expected in the autumn of 2023.

<https://blog.neon.kde.org/2023/08/04/announcing-kde-neon-experimental/>

GTK 4.12 IS AVAILABLE:

07/08/2023

After five months of development, a release of a multi-platform toolkit to create a graphical user interface - GTK 4.12.0 - was published. GTK 4 is part of a new development process that is trying to provide application developers with a stable and supportable API that can be used without fear that applications will have to be reworked every six months due to changes to the API in the next GTK branch.

At the end of the year, they plan to form an experimental 4.90 branch, which will develop functionality for the future release of the GTK5. The GTK5 branch will include changes in API-level breaking compatibility, for example, the translation of some outdated widgets, such as the old file selection dialog. They also discussed the possibility of stopping support of the X11 protocol in the GTK5 branch and

only working using the Wayland protocol.

<https://gitlab.gnome.org/GNOME/gtk/-/tags/4.12.0>

RELEASE OF WINDOW MAKER 0.96.0:

07/08/2023

Even and a half years after the formation of the 0.95 branch, the release of the window manager, Window Maker 0.96.0, that provides an interface in the style of NEXTSTEP, was published. Features of Window Maker include: stack layout of windows with semi-automatic control mosaic layout, low resource consumption, flexible configuration capabilities through the GUI configurator or text configuration file, dynamic generation of application content, support for the ICCM standard (Inter-Client Communication Conventions Manual), localization support, the ability to integrate with the desktops GNUstep, GNOME, and KDE, and MEX-styled design. The project code is written in C and distributed under the GPLv2 license.

<http://windowmaker.org/>

LXD AND THE LINUX CONTAINERS COMMUNITY:

07/08/2023

The development of the LXD container management system, came under the wing of the Linux Containers community, which oversaw the development of LXD before Canonical decided to develop LXD as a corporate project. The fork will be developed under the name Incus in the repository: github.com/lxc/incus. The same infrastructure that was previously used for LXD will be used for Incus. The aim of the project is to provide an independent community-managed alternative to the LXD project, controlled by Canonical. As part of the Incus project, they also plan to eliminate some conceptual errors made during the development of LXD, which previously could not be corrected without violating backward compatibility.

Incus included St'phane Graber (ex Canonical), Aleksa Sarai (a SUSE engineer who supports LXD packages in openSUSE), Serge

Hallyn (one of the main developers of LXC), Christian Braun Braer (one of the key developers and accompanying LXD and LXC) and the developers. In fact, the entire team that once created LXD is included among those accompanying the Incus project.

<https://linuxcontainers.org/incus/>

RELEASE OF VCM1 1.3.0:

08/08/2023

The release of the VCM1 1.3 project, which develops an open game engine. compatible with the data format used in Heroes of Might and Magic III games, is available. An important goal of the project is also to support mods, that allow you to add new cities, heroes, monsters, artifacts and spells to the game. The original code is distributed under the GPLv2 license. It is supported in Linux, Windows, macOS and Android.

<https://vcmi.eu/news/vcmi-1.3.0-release/>

RHINO LINUX IS AVAILABLE:

08/08/2023

The first stable release of the Rhino Linux distribution, which implements the continuous delivery of updates to provide access to the most recent versions of programs, is out. New versions of applications are mostly carried from the devel-branch of Ubuntu repositories, which build packages with new versions of applications synchronized with Debian Sid and Unstable. Installation images that can run in Live mode are prepared for x86_64 (2 GB) and ARM64 (1.9 GB) architectures. Available separately are builds for ARM-devices PineTab, PineTab2, PinePhone and Raspberry Pi.

Package management is carried out with the help of its own package manager rhino-pkg (rpk), which implements straps on package managers APT, Pacstall, flatpak and snap. Rhino-pkg allows you to use one universal utility to perform typical operations with different package formats, for example, to install, delete, update and search packages. For building the distribution, the LiveBuild toolkit from the Debian project is

used with modifications borrowed from VanillaOS. The Calamares installer is used to install the distribution.

Desktop components, Linux kernel, boot screensaver, design themes, Firefox browser and project-developed utilities are distributed through a separate Pacstall repository. The Pacstall package manager is positioned as an analogue of the AUR (Arch User Repository) repository for Ubuntu and allows third-party developers to distribute their packages without being included in the main distribution repository.

<https://rhinolinux.org/news-6.html>

RELEASE OF NETWORKMANAGER 1.44.0:

08/08/2023

A stable release of the network interface widget is available, to simplify the configuration of network settings - NetworkManager 1.44.0. Plugins for VPN support (Libreswan, OpenConnect, Openswan, SSTP, etc.) Plugins are developing as part of their own development cycles.

<https://gitlab.freedesktop.org/NetworkManager/NetworkManager/-/tags/1.44.0>

RECORDING COMPANIES BLOCK YOUTUBE-DL:

08/08/2023

The German provider Uberspace, which provides youtube-dl hosting, blocked youtube-dl.org after receiving a court order for the blocking, which was achieved by the recording companies Sony Entertainment, Warner Music Group and Universal Music. An alternative page of the project ytdl-org.github.io and the repository on GitHub remain available. The solution does not apply to the domain registrar youtube-dl.org, so the Youtube-dl project can transfer the site to another hoster at any time.

The court decision was made on the pretext that youtube-dl is a tool for copyright infringement. Earlier, the Recording Companies Association of America (RIAA) has already tried to block Youtube-dl on GitHub, but supporters of the project managed to challenge the

blocking and return access to the repository. In 2020, Sony Entertainment, Warner Music Group and Universal Music also tried to block youtube-dl.org out-of-court, but Uberspace's provider refused to comply with their demands.

The decision to block was made in March, but Uberspace's provider decided to appeal and postponed the execution of the order. After this action, in case of non-fulfillment of the requirement, the provider was threatened with a fine of \$250,000 and possible criminal prosecution. As a result, the provider has no choice and they blocked the site youtube-dl.org. At the same time, Uberspace intends to continue the proceedings and is preparing to file an appeal to the higher instance.

<https://torrentfreak.com/youtube-dl-site-goes-offline-as-hosting-provider-enforces-court-ordered-ban-230809/>

RELEASE OF OUTWIKER 3.2

NOTES:

08/08/2023

A new stable version of OutWiker 3.2 notes storage software, has been published. The peculiarity of the program is that the notes are stored in the form of directories with text files and to each note you can attach an arbitrary number of files. The program allows you to write notes using different notations: HTML, wiki, Markdown (if the corresponding plugin is installed). Also, with the help of plugins, you can add the ability to place formulas in LaTeX format on wiki pages and insert a block of code with syntax highlighting for different programming languages. The program is written in Python (the interface on wxPython), distributed under the GPLv3 license and is available in builds for Linux (snap and flatpak) and Windows.

<https://jenyay.net/Soft/Outwiker>

ROCKY LINUX, ORACLE AND SUSE HAVE CREATED A

JOINT REPOSITORY:

10/08/2023

CIQ (Rocky Linux), Oracle and SUSE have announced the OpenELA (Open Enterprise Linux Association) distribution developers, aimed at jointly developing a package base that is compatible with Red Hat Enterprise Linux. The aim of the association is to unite the efforts of developers of distributions to ensure compatibility with RHEL. Among other things, the project has created a jointly maintained public repository with package source code that can be used to build distributions that are fully binaryally compatible with RHEL, identical in behavior (level) with RHEL and suitable for use as a replacement for RHEL.

The new repository can be considered as the discontinued repository git.centos.org. The OpenELA repository will publish all the necessary source code that may be required to create distributions that are compatible with the RHEL 8 and 9 branches.

https://openela.org/news/hello_world/

QUAKE II RE-RELEASE OPEN:

08/08/2023

id Software has GPLv2 licensed the original code of the game Quake II "Rerelease," which is an updated, improved and expanded edition of the classic Quake II. It is assumed that the code may be useful for creating mods and new variants of the game. In addition to the PC build, the new edition added support for the PlayStation 4, PlayStation 5, Xbox One, Xbox Series XS and Nintendo Switch.

<https://github.com/id-Software/quake2-rerelease-dll>

RELEASE OF UBUNTU 22.04.3 LTS:

11/08/2023

An update to the Ubuntu 22.04.3 LTS distribution was made, which includes changes related to improved hardware support, Linux kernel and graphical stack, fixes in the installer and downloader. The updated ISO also

includes up-to-date updates for several hundred packages related to the elimination of vulnerabilities and problems affecting stability. Similar updates to Ubuntu Budgie 22.04.3 LTS, Kubuntu 22.04.3 LTS, Ubuntu MATE 22.04.3 LTS, Ubuntu MATE 22.04.3 LTS, Ubuntu Studio 22.04.3 LTS, Lubuntu 22.04.3 LTS, Ubuntu Kylin 22.04.3 LTS and Xubuntu 22.04.3 LTS were made.

<https://lists.ubuntu.com/archives/ubuntu-announce/2023-August/000294.html>

MIDNIGHT COMMANDER 4.8.30

14/08/2023

After eight months of development, the release of the console file manager, Midnight Commander v4.8.30, with distributed source code under the GPLv3+ license, was published.

GNU Midnight Commander was conceived as a free clone of John Socha's

Norton Commander. It also takes the best from more recent software with similar interfaces. GNU

Midnight Commander comes with mouse support on xterm and optionally on the Linux console.

<https://github.com/MidnightCommander/mc/releases/tag/4.8.30>

VIM FUTURE:

14/08/2023

Members of the community locked hands in the development of the text editor Vim, after the death of Bram Moolenaar (Bram Moolenaar), who alone led the development and made the vast majority of changes (Bramm was added 16.5 thousand. Commits and written 3.5 million lines of code, which is 50 times more than the contribution of all other developers combined. Relatives of Bram Molenaar handed over the account data to the repository to the community, site and infrastructure elements, which allowed the development of Vim to revive.

https://groups.google.com/g/vim_dev/c/dq9Wu5jqVTw

PROMOTING THE NEW UBUNTU STORE APP

MANAGER:

14/08/2023

The developers of Ubuntu intend to use, by default in the test builds of Ubuntu 23.10 next week, a new Ubuntu Store application manager written in Dart language using the Flutter framework and distributed under the license of the PLAv3. In the LTS-release of Ubuntu 24.04 by default they will leave the classic Ubuntu Software application manager, based on GNOME Software.

Ubuntu Store provides a combined interface for working with packages in DEB and Snap format. It allows you to search and navigate the catalog of snapcraft.io packages and DEB-repositories. It allows you to manage the installation, deletion and update of applications, install separate deb-packages from local files. The interface is built using adaptive methods, which allow you to optimally position elements on both large monitors and smartphone screens. A dark theme

is supported in the design.

The application is noteworthy for the new rating system and focus on primary support for Snap packages, which are offered for installation in the first place (when there is one program in deb and snap packages, snap is selected by default). Unlike the old application manager in the Ubuntu Store, no five-point score scale is used, and the voting is in the format of likes / dislike (+1/-1), on which the virtual five-star rating is based.

<https://discourse.ubuntu.com/t/update-on-app-store-ubuntu-store/37770>

RELEASE OF DEVUAN 5.0:

15/08/2023

The release of the Devuan 5.0 distribution "Daedalus," the Debian GNU/Linux fork, supplied without systemd, is presented. The new branch is notable for the transition to Debian 12 "Bookworm." To download, Live-images and installation Iso-images for i386, amd64, armel, arm, arm64 and ppc64el architectures are prepared.

The project supports branches for about 400 Debian packages, which are modified to get rid of systemd, rebranding or adaptation for Devuan infrastructure. Two packages (devuan-baseconf, jenkins-debian-glue-buildenv-devuan) are present only in Devuan and are associated with the configuration of repositories and the workings of the assembly system. Otherwise, Devuan is fully compatible with Debian and can be used as a base for creating dedicated Debian builds without systemd. The packages specific to Devuan can be downloaded from the packages.devuan.org repository.

<https://www.devuan.org/os/announce/daedalus-release-announce-2023-08-14>

DEBIAN GNU/LINUX IS 30

YEARS OLD:

16/08/2023

The Debian project celebrates its thirtieth anniversary. The distribution was first announced by Ian Murdock on August 16, 1993, on the comp.os.linux.development

mailing list. The main goal of the project was to develop a distribution developed in accordance with the spirit of complete openness inherent in Linux and GNU, as well as the desire for technical perfection and reliability.

During the existence of Debian, there were 18 releases, support for 26 hardware architectures was provided, repositories of more than 60,000 packages were formed. The total size of all the source code proposed in the distribution is 1.3 billion lines of code. The total size of all packages is 365 GB. The project involves more than 1,000 developers, about 400 derivative distributions have been created on Debian technologies, not counting numerous offshoots from Debian-based distributions such as Ubuntu.

<http://groups.google.com/group/comp.os.linux.development/msg/a32d4e2ef3bcdcc6>

RELEASE NGINX 1.25.2:

16/08/2023

A release of the main branch nginx 1.25.2 has been built,

where the development of new opportunities continues. In parallel to the supported stable branch of 1.24.x, only changes are made related to the elimination of serious errors and vulnerabilities. In the future, a stable 1.26 branch will be formed based off the main 1.25.x branch. The project code is written in the C language and distributed under the BSD license.

<http://nginx.org/#2023-08-15>

RELEASE OF FHEROES2 - 1.0.7:

16/08/2023

There is a new skin, I mean game out based on HOMM, in early access called Silence of the Siren check it out here if you are a fan: https://store.steampowered.com/app/2147380/Silence_of_the_Siren/

The release of the fheroes2 1.0.7 project is available, which recreates the Heroes of Might and Magic II engine from scratch. The project code is written in C++ and distributed under the GPLv2 license. To start the game, it requires files with game resources,

which can be obtained from the original game Heroes of Might and Magic II

<https://github.com/iHub/fheroes2/releases/tag/1.0.7>

RELEASE OF CROSSOVER 23.0 FOR LINUX:

16/08/2023

CodeWeavers has released Crossover 23.0, based on the Wine code and designed to execute programs and games written for the Windows platform. CodeWeavers is one of the key participants of the Wine project, sponsors its development and returns to the project all the innovations implemented for its commercial products. The source codes for the Crossover 23.0 open components can be downloaded on this page:

<https://www.codeweavers.com/support/forums/announce/?t=24;msg=286453>

DEBIAN ADDED SUPPORT

FOR LOONGARCH

ARCHITECTURE:

16/08/2023

The developers of the Debian project announced the implementation of the loong64 port for systems based on the LoongArch set of commands architecture used in Loongson 35,000 processors and implementing RISC ISA, similar to MIPS and RISC-V. Support for the new port is added to the build infrastructure and the official Debian archive. At the current stage of integration, based on the package base available in the debian-ports for LoongArch, a set of about 200 packages is already built, which will be gradually expanded.

<https://lists.debian.org/debian-devel-announce/2023/08/msg00000.html>

NEW VERSION OF CLAMAV:

17/08/2023

Cisco has published new releases of the free antivirus package ClamAV 1.1.1, 1.0.2, 0.103.9, in which the vulnerability

CVE-2023-20197 has been eliminated, leading to denial of service when scanning files with specially designed disk images in HFS+ format. This is the second vulnerability in the HFS+ in the year: the previous problem allowed you to execute some code with the ClamAV process rights and was awarded the Pwnie Awards as the best vulnerability for the year leading to remote code execution.

The release of ClamAV 1.0.2 also eliminates the 1.0.x-specific vulnerability CVE-2023-20212 leading to service failure when parsing AutoIt. Of the non-security-related fixes, we can note an improvement in the support of compilation with OpenSSL 3.x on the macOS platform, troubleshooting with Windows build when using Rust 1.70+ tools, and providing support for Rust toolkit.

<https://blog.clamav.net/2023/07/2023-08-16-releases.html>

RELEASE OF SYSVINIT 3.08:

18/08/2023

The release of the classic SysVinit 3.08 initialization system, which was widely used in Linux distributions in the time before systemd and upstart, is available. It now continues to be used in distributions such as Devuan, Debian GNU/Hurd and antiX. Versions used in conjunction with sysvinit utilities insserv and startpar have not changed. The insserv utility is designed to organize the download process, taking into account the dependencies between init scripts, and startpar is used to allow parallel run of several scripts during the system loading.

<https://lists.nongnu.org/archive/html/sysvinit-devel/2023-08/msg00000.html>

RELEASE OF SIDUCTION 2023.1:

18/08/2023

Siduction 2023.1 was released, developing a desktop-oriented Linux distribution built on Debian Sid (unstable). Siduction is an

Aptosid fork, separated in July 2011. The key difference from Aptosid was the use as a custom environment of a more recent version of KDE from the Qt-KDE experimental repository. To download, KDE-based builds (3.1 GB), Xfce (2.7GB) and LXQt (3GB) are offered, as well as a minimalist assembly "noX" (1GB), supplied without a graphical environment and designed for users who want to arrange their system themselves. Unofficial builds with GNOME, Cinnamon and MATE are built separately.

In the new release, the package database is synchronized with the Debian Unstable repository. Versions of the Linux 6.4 kernel, systemd manager systemd 254 and Calamares installer have been updated. KDE Plasma 5.27.7.1, LXQt 1.3.0 and Xfce 4.18 are offered for desktops.

<https://siduction.org/2023/08/release-notes-2023-1-0-standing-on-the-shoulders-of-giants/>

SUSE WILL BE CONVERTED FROM PUBLIC TO PRIVATE

COMPANY:
18/08/2023

Marcel LUX III SARL, a majority shareholder of SUSE, which owns 79% of the shares, announced the conversion of SUSE from a public company to a private company that does not participate in trading on the stock exchange. Those who do not want to sell their shares after the conversion will be able to remain among the shareholders of a private company. The Board of Directors and SUSE supported the transformation and said that leaving the exchange will allow the company to focus on operating activities and the implementation of a long-term strategy.

<https://www.suse.com/news/EQT-announces-voluntary-public-purchase-offer-and-intention-to-delist-SUSE/>

QUTEBROWSER 3.0:

19/08/2023

The release of qutebrowser 3.0, that provides a minimal graphical interface that does not distract from the viewing of the content, and the Vim text editor navigation system built entirely on keyboard combinations, has been published. The code is written in Python using PyQt5 and QtWebEngine. The source code is distributed under the GPLv3 license. The use of Python does not affect performance, as the rendering and analysis of content is carried out by the Blink engine and the Qt library.

A major change in the version number is due to the termination of support for older versions of Qt, PyQt, QtWebEngine and Python, as well as increased requirements for operating systems. In particular, qutebrowser now only supports releases of Qt 5.15 and newer (QtWebEngine > 5.15.2) and with Python versions starting with 3.8. Support for macOS platforms to version 11 and Windows to version 10-1607 has been discontinued. Support for 32-bit builds for Windows has been discontinued.

<https://github.com/qutebrowser/qutebrowser/releases/tag/v3.0.0>

KDE TRENDS:

19/08/2023

In the code of the user environment KDE Plasma 6, the behavior to activate the icons on the desktop has been changed. To open files and directories by default, you now need a double-click your mouse. Before, a single click was used, now in the new KDE it only leads to the allocation of the icon. According to the developers, the change will simplify the adaptation of beginners who have moved to KDE from other systems. Old users (of the system, not Moss) can return the opening with one click method, in the settings.

<https://pointieststick.com/2023/08/18/this-week-in-kde-double-click-by-default/>

RELEASE OF BUDGIE 10.8:

20/08/2023

The organization, Buddies Of Budgie, which oversees the

development of the project after its separation from the Solus distribution, published an update to the Budgie 10.8.0 desktop environment. The user environment forms separate components supplied with the implementation of the Budgie Desktop, a set of Budgie Desktop icons, a Budgie Desktop View interface, an interface for configuring the Budgie Control Center (GNOME Control Center) and the Budgie Screensaver (gnome-screensaver fork). The project code is distributed under the GPLv2 license. You can use distributions such as Ubuntu Budgie, Fedora Budgie, Solus, GeckoLinux and EndeavourOS to familiarize yourself with Budgie.

<https://buddiesofbudgie.org/blog/budgie-10.8-released%22>

ACCELERATE FREEBSD:

21/08/2023

In FreeBSD, a change was adopted, that changes the algorithm of sorting arrays in the code of the kernel initialization (sysinit). Instead of the previously used bubble sorting algorithm in

sysinit, it involved a more efficient fusion sorting algorithm, which allowed a reduction of 2ms the loading time of the core in Firecracker virtual machines.

The use of sorting by merging made it possible to eliminate this delay, as this algorithm solves the same problem about 100 times faster. In addition to changing the algorithm to reduce the sorting time and reduce memory allocation operations in the core, optimization based on the merging of the sorted lists is also involved, instead of re-sorting each updated list.

<https://cgit.freebsd.org/src/commit?id=9a7add6d01f3c5f7eba811e794cf860d2bce131d>

RELEASE BAZZITE 1.0:

21/08/2023

The first release of the Bazzite project, which develops the specialized build of Fedora Linux 38, optimized for the launch of computer games, is presented. The build is based on Fedora Silverblue technologies, it uses the basic

OSTree repository ublue-os without separating into separate packages, and is updated in atomic mode through system image replacement. The installation image is formed for the x86_64 architecture (685 MB).

<https://universal-blue.org/blog/2023/08/20/bazzite-10/>



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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.

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Complete with principles, practice, examples and glossary, The VirtualBox Networking Primer takes the frustration and confusion out of connecting real-world projects.

Author: **Robin Catling**

Publisher: Proactivity Press

ISBN13 : 9781916119482

Amazon US link:

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

Amazon UK link:

[https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/1916119484/ref=sr_1_1?
dchild=1&keywords=virtualbox+networking+primer&qid=1600253
699&s=books&sr=1-1](https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/1916119484/ref=sr_1_1?dchild=1&keywords=virtualbox+networking+primer&qid=1600253699&s=books&sr=1-1)

Kobo:

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



COMMAND & CONQUER

Written by Erik

Nginx

As per the previous issue (FCM#194), the instructions are here: <https://ubuntu.com/tutorials/install-and-configure-nginx#1-overview>

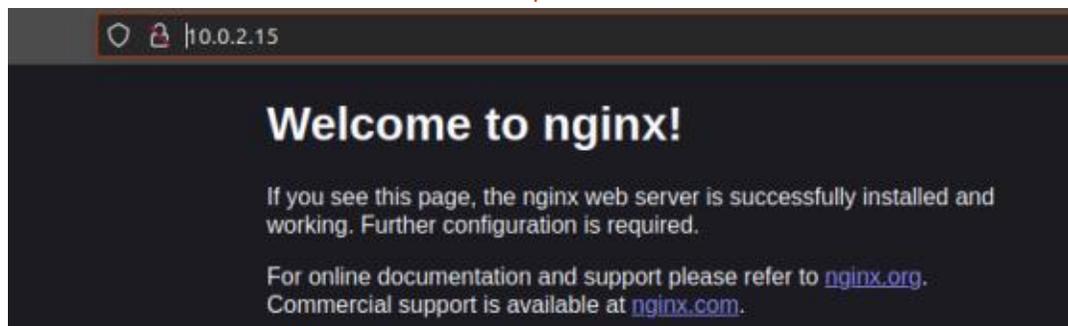
At the end of the day, it comes down to which one you prefer, but for what we will be doing, it won't matter, thus I am showing you both sides of the coin.

Now it is really as easy as:

```
sudo apt install nginx
```

Please take your time and follow along on the few pages there are, there is more I want to

```
ed@lab1:~$ ps aux | grep nginx
root        2963  0.0  0.3 57580 12928 ?        S    16:41   0:00 nginx: master process /u
sr/sbin/nginx -g daemon on; master_process on;
www-data    2965  0.0  0.1 58324 5608 ?        S    16:41   0:00 nginx: worker process
www-data    2966  0.0  0.1 58324 5736 ?        S    16:41   0:00 nginx: worker process
ed          3178  0.0  0.0 17736 2304 pts/0    S+   16:49   0:00 grep --color=auto nginx
ed@lab1:~$
```



show you, but take your time, make sure you understand what you are doing.

Now, while that goes, just know that this method does not allow you to install modules, etc. For that, we need to build it from source. That said, for what we are about to do, it is more than enough. Once the installation has completed we can check to see if all went to plan. Type:

```
ps aux | grep nginx
```

If you see something similar to mine, you are golden (below left).

Fire up your browser and type your IP address in the address bar. If you don't know what your IP is, simply type:

```
ip a
```

in the terminal. Here you can see mine working (bottom left).

You should also see all the config files in /etc/nginx

To see the options, you can type:

```
nginx -?
```

At any time, you can call up the nginx website for help. <https://www.nginx.com/resources/wiki/start/topics/examples/initscripts/>

```
ed@lab1:~$ systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; preset: enabled)
   Active: active (running) since Sun 2023-07-16 16:41:02 SAST; 27min ago
     Docs: man:nginx(8)
   Process: 2876 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Process: 2877 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Main PID: 2963 (nginx)
    Tasks: 3 (limit: 4588)
   Memory: 3.9M
     CPU: 21ms
   CGroup: /system.slice/nginx.service
           └─2963 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
             └─2965 "nginx: worker process"
               └─2966 "nginx: worker process"

Jul 16 16:41:02 lab1 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Jul 16 16:41:02 lab1 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
ed@lab1:~$
```

Let's say you try this on a different distro in a VM.

Let us continue on Ubuntu. Since nginx runs as a service, you can check it any time with the systemctl command.

Type:

```
systemctl status nginx
```

(so if it misbehaves, you can restart the service at any time.)

This is a bit of an image heavy edition, but I know I want to see that mine is exactly like the person showing me - so look at the image below.

We may need to start the service next time we boot, but

COMMAND & CONQUER

that's OK. I don't want mine running all the time. If you do, then use `systemctl enable`.

If you do not see the welcome to nginx static page, you may need to start/restart the service.

Step 3, (<https://ubuntu.com/tutorials/install-and-configure-nginx#3-creating-our-own-website>) a.k.a. Let's get rid of the default page.#

I am going to use nano, my preference, you can use whatever editor you have installed (see image below).

Or use `vi` as per the instructions (bottom right).

OK, step 4 is creating a virtual host. The virtual host will serve something static from a directory on our machines. This is where I need to point out our first deviation. I do not see `nginx.conf`, usually this is the file I edit, but let's run with the tutorial.

Please have a look at the default file in the path `/etc/nginx/sites-enabled/` with nano. Just use normal nano, do not sudo, we just want to look and that way, should you press a key by mistake, you cannot save the error. Great, let's create the file as per the tutorial.

Check yours against mine as per the image top right. Aaaaand just like the previous Ubuntu tutorial, it does not work.

Troubleshooting time. Type `nginx -t` to diagnose any configuration errors.

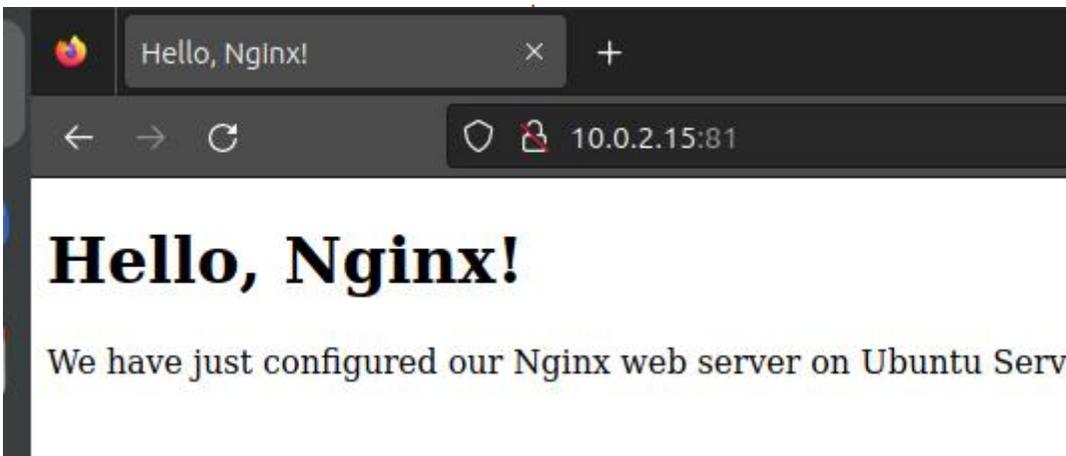
However, this time it did not work as I was slow. We edited our file to point to port 81, not the default 80, so we need to append `:81` to the end of the IP address in the url.

Now I feel so much better showing you BOTH ways, so meet me next time for another CnC.

As always comments to: misc@fullcirclemagazine.org

```
ed@lab1:/etc/nginx/sites-enabled$ cd /var/www/
ed@lab1:/var/www$ sudo mkdir tutorial
ed@lab1:/var/www$ cd tutorial/
ed@lab1:/var/www/tutorial$ sudo nano index.html
```

```
ed@lab1:/etc/nginx/sites-enabled$ sudo nano tutorial
ed@lab1:/etc/nginx/sites-enabled$ ls -la
total 12
drwxr-xr-x 2 root root 4096 Jul 16 17:50 .
drwxr-xr-x 8 root root 4096 Jul 16 16:41 ..
lrwxrwxrwx 1 root root 34 Jul 16 16:41 default -> /etc/nginx/sites-available/default
-rw-r--r-- 1 root root 221 Jul 16 17:48 tutorial
ed@lab1:/etc/nginx/sites-enabled$
```



```
ed@lab1:/var/www/tutorial
GNU nano 7.2 index.html *
<!doctype html>
<html>
<head>
  <meta charset="utf-8">
  <title>Hello, Nginx!</title>
</head>
<body>
  <h1>Hello, Nginx!</h1>
  <p>We have just configured our Nginx web server on Ubuntu Server!</p>
</body>
</html>
```



Greetings fellow beings. It's already the end of summer (well, here where I live), and it can't come soon enough. Days with highs of over 107° F (42° C) air temperature in the shade for over 30 days in a row with no rain at all, plays havoc with simple tasks of everyday life like mowing the grass, going to the grocery, and simply taking a walk – a real task that is dangerous for many people. Luckily, with the beginning of Fall, that should come to an end.

Anyway, about this month's project. A few years ago, my son asked for a way for him to watch television on his computer without having to get a cable drop in his home office, or having to purchase another television. Here in the U.S., we have OTA (Over The Air) television that is free from the local stations. All you need is an antenna and a TV that has a tuner. That's pretty easy to do, since most televisions have tuners built into them, and I have an antenna that's designed for indoor installation. I use that for the television in the living room.

```
[{"GuideNumber": "4.1", "GuideName": "WOAI", "VideoCodec": "MPEG2", "AudioCodec": "AC3", "HD": 1, "Favorite": 1, "URL": "http://homerundevicelocal:5004/auto/v4.1"}, {"GuideNumber": "4.2", "GuideName": "CW", "VideoCodec": "MPEG2", "AudioCodec": "AC3", "HD": 1, "URL": "http://homerundevicelocal:5004/auto/v4.2"}, {"GuideNumber": "4.3", "GuideName": "Antenna", "VideoCodec": "MPEG2", "AudioCodec": "AC3", "URL": "http://homerundevicelocal:5004/auto/v4.3"}, {"GuideNumber": "4.4", "GuideName": "Charge!", "VideoCodec": "MPEG2", "AudioCodec": "AC3", "URL": "http://homerundevicelocal:5004/auto/v4.4"}...{"GuideNumber": "107.1", "GuideName": "FOX-UHD", "VideoCodec": "HEVC", "URL": "http://homerundevicelocal:5004/auto/v107.1"}]
```

After a little research, I found a device called HDHomeRun that holds multiple tuners and when plugged into an ethernet cable and an antenna, will send the OTA signals to any computer that is connected to the home network. Where we are located, we can get over 80 channels of television shows throughout the house, and any computer or smartphone in the house can watch any show while others can watch something else. This is great for my son, since his computer in his office has three monitors and runs Windows. The great news is that there are viewers for Android, IOS, Windows and Mac. The bad news is that Linux is not supported for the viewers.

So one of my current projects is

to create a Linux based viewer (that can also work on Mac and Windows), written of course in Python (and Tkinter for the UI). The device has an API built in that you can query to get various information for things like the channel lineup and the EPG (Electronic Program Guide) – all of which comes in JSON format (as well as other formats) to find out what you want to watch, and then you simply use the VLC or MPV python plugins to view the stream.

When you query the API for the channel list, the JSON data looks something like that shown above.

That's easy enough to deal with in Python, but when you get to over 80 channels, that's a bunch of data and the EPG is even worse. Of course, the number of data fields

for each channel can change depending if the channel is High Definition, HEVC (the new ATSC format the U.S. is moving to), if the channel is marked as a Favorite channel, and so on. But visualizing this data is hard when it is in the flat format that comes in directly from the API. Especially, if you don't have much in the way of documentation so you can write a program to handle all the possible values. It would be so much easier to see the data like this (next page, top right).

Even if there are over 80 sets of the data, you can find what you want to, especially if there is something unexpected that came down in the stream. Yes, you can send the data to a file and hand break it down, but python gives us a tool to do all that.

Enter PPRINT. It's part of the standard library set and many of us have used it, but not necessarily to the full effectiveness of the library.

Let's look at the basic syntax for pprint.

```
class
pprint.PrettyPrinter(indent=1
, width=80, depth=None,
stream=None, *,
compact=False,
sort_dicts=True,
underscore_numbers=False)
```

There are a number of parameters that are helpful, but without any context, you might not know how to leverage them for the best results. I'll try to break down each of them.

Indent - Default = 1 - The number of spaces added for each level.

Width - Default = 80 - The number of characters per line for the output. If the data can't fit in the space allowed, the library will make a best effort.

Depth - Default - None - The number of nested levels for the formatted output. If the number is too low, the next level will be

replaced with "..."

Stream - Default = sys.stdout - This is a file-like object that will be written to by the write function of the class. If stream and sys.stdout are both None, pprint will simply return nothing.

Compact - Boolean - This determines how long structures like tuples, lists, sets, etc, should be formatted. If False, the structure is broken into separate lines. If True, the structure will be output as single lines – up to width constraints.

Sort_dicts - Boolean - If True (default), dictionaries will be sorted by their keys, otherwise they will be displayed in the insertion order.

Underscore_numbers - If True, integers will have the underscore (_) character as a thousands separator. If False (default), underscores won't be printed.

There are also two methods that control the formatted data output.

Pprint.pformat - Returns a formatted object as a string. The

```
{'GuideNumber': '140.1',
'GuideName': 'KXLK-Mv',
'VideoCodec': 'HEVC',
'AudioCodec': 'AC4',
'URL': 'http://homerundevicelocal:5004/auto/v140.1'},
{'GuideNumber': '162.1',
'GuideName': 'KAKW-UA',
'VideoCodec': 'HEVC',
'URL': 'http://homerundevicelocal:5004/auto/v162.1'}
```

syntax is:

```
output=pprint.pformat(dataobject, *args)
```

Pprint.pp - Prints the formatted dataobject followed by a newline character.

```
pprint.pp(dataobject, *args)
```

Pprint.pprint - Prints the formatted dataobject on stream followed by a newline character. If stream is None, sys.stdout is used.

```
pprint.pprint(dataobject,
stream, *args)
```

REAL WORLD EXAMPLES

All of this information is wonderful, but without seeing the parameters in action, it really doesn't help. So here we go (next few pages). I'm going to concentrate on the .pformat method in the following examples.

The width parameter is fairly easy to understand, so I won't bore you with it.

That's it for this time. I didn't bother to set up a repository since the data would be fairly large and useless to anyone but me. I'm sure you can handle things from here.

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.thedesignedgeek.xyz.

COMPACT

```
keydata =
["author", "author_email", "bugtrack_url", "classifiers", "de
scription", "description_content_type", "docs_url", "downloa
d_url", "downloads", "home_page", "keywords", "license", "main
tainer", "maintainer_email", "name", "package_url", "platform
", "project_url", "project_urls", "release_url", "requires_di
st", "requires_python", "summary", "version", "yanked", "yanke
d_reason",]
```

```
print(pprint.pformat(keydata, width=80, compact=True))
```

RETURNS:

```
['author', 'author_email', 'bugtrack_url', 'classifiers',
'description',
'description_content_type', 'docs_url', 'download_url',
'downloads',
'home_page', 'keywords', 'license', 'maintainer',
'maintainer_email', 'name',
'package_url', 'platform', 'project_url',
'project_urls', 'release_url',
'requires_dist', 'requires_python', 'summary',
'version', 'yanked',
'yanked_reason']
```

The same data with compact=False will return

```
['author',
'author_email',
'bugtrack_url',
'classifiers',
'Description',
...
'version',
'yanked',
'yanked_reason']
```

INDENT

```
print(pprint.pformat(channels, indent=4))
```

```
[ {   'AudioCodec': 'AC3',
      'Favorite': 1,
      'GuideName': 'WOAI',
      'GuideNumber': '4.1',
      'HD': 1,
      'URL': 'http://homerundevice.local:5004/auto/
v4.1',
      'VideoCodec': 'MPEG2'},
  {   'AudioCodec': 'AC3',
      'GuideName': 'CW',
```

UNDERSCORE_NUMBERS

```
print(pprint.pformat(data, underscore_numbers=True))
```

```
{'comment_text': '',
  'md5_digest':
'46a92a8a919062028405fdf232b508b0',
  'packagetype': 'sdist',
  'python_version': 'source',
  'requires_python': '>=3.7',
  'size': 5_330,
  'upload_time': '2022-12-01T18:51:01',
  'upload_time_iso_8601': '2022-12-
01T18:51:01.420127Z',
  'url': 'https://files.pythonhosted.org/
packages/67/2a/
9f056e5fa36e43ef1037ff85581a2963cde420457de0ef29c779d4105
8ca/sampleproject-3.0.0.tar.gz',
  'yanked': False,
  'yanked_reason': None}},
```

Notice the highlighted line. There it is. For most Americans, this looks strange and would probably not be used. For the rest of the world, it's a nice option to have.

DEPTH

You need to be careful with this one. Using the wrong value for depth can lead to unexpected and many times useless results. Remember the default for depth is None.

```
# Notice there is no depth stated
print(pprint.pformat(data, width=80))

{'info': {'author': '',
          'author_email': '"A. Random Developer" <author@example.com>',
          'bugtrack_url': None,
          'classifiers': ['Development Status :: 3 - Alpha',
                          'Intended Audience :: Developers',
                          'License :: OSI Approved :: MIT License',
                          'Programming Language :: Python :: 3',
                          'Programming Language :: Python :: 3 :: Only',
                          'Programming Language :: Python :: 3.10',
                          'Programming Language :: Python :: 3.11']
          ...
        }
```

You can see that there are at least three levels shown, even though I did not set the depth parameter and there is a lot more data printed out. However, if I set the depth parameter to 1, check out what happens...

```
print(pprint.pformat(data, width=80, depth=1))

{'info': {...},
 'last_serial': 17870111,
 'releases': {...},
 'urls': [...],
 'vulnerabilities': []}
```

That's all that gets printed. So you can see that it's better to specify a depth much more than you would think you would need under normal circumstances.

SORT_DICTS

Remember this function sorts the keys of any dictionaries presented in alphabetic order if the parameter is True OR not set, since True is the default.

```
print(pprint.pformat(channels, sort_dicts=True))

[{'AudioCodec': 'AC3',
  'Favorite': 1,
  'GuideName': 'WOAI',
  'GuideNumber': '4.1',
  'HD': 1,
  'URL': 'http://homerundevicelocal:5004/auto/v4.1',
  'VideoCodec': 'MPEG2'},
 {'AudioCodec': 'AC3',
  'GuideName': 'CW',
  'GuideNumber': '4.2',
  'HD': 1,
  ...
```

Now, if you don't want this behavior, be sure to set `sort_dicts` to False.

```
print(pprint.pformat(channels, sort_dicts=False))

[{'GuideNumber': '4.1',
  'GuideName': 'WOAI',
  'VideoCodec': 'MPEG2',
  'AudioCodec': 'AC3',
  'HD': 1,
  'Favorite': 1,
  'URL': 'http://homerundevicelocal:5004/auto/v4.1'},
 {'GuideNumber': '4.2',
  'GuideName': 'CW',
  'VideoCodec': 'MPEG2',
  'AudioCodec': 'AC3',
```



HOW-TO

Written by Jon Hoskin

In part six An Introduction to Stable Diffusion, we will look at models and how to install them in Stable Diffusion. For Easy Diffusion, 2.5.41, go to Image Settings and select Model. Then click on the drop-down arrow which brings up the default Model sd-v1-4 (there are no other choices.)

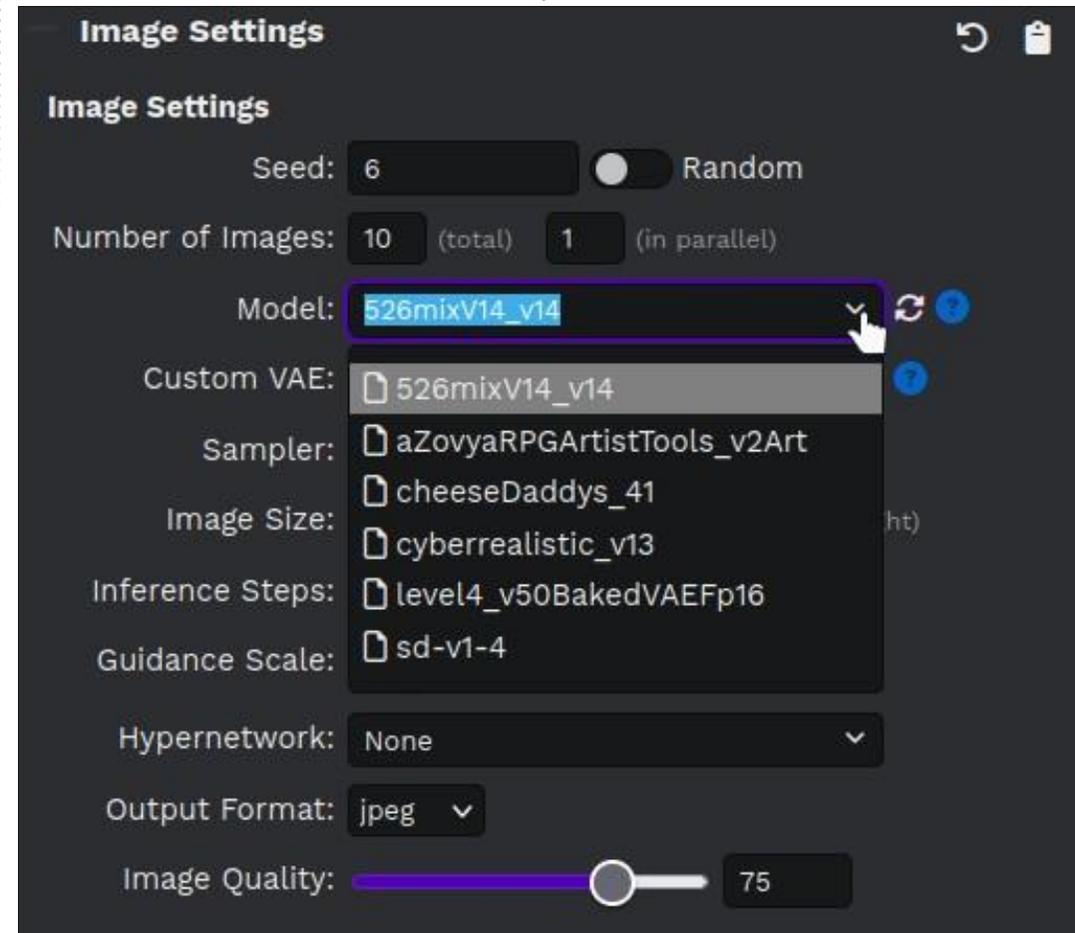
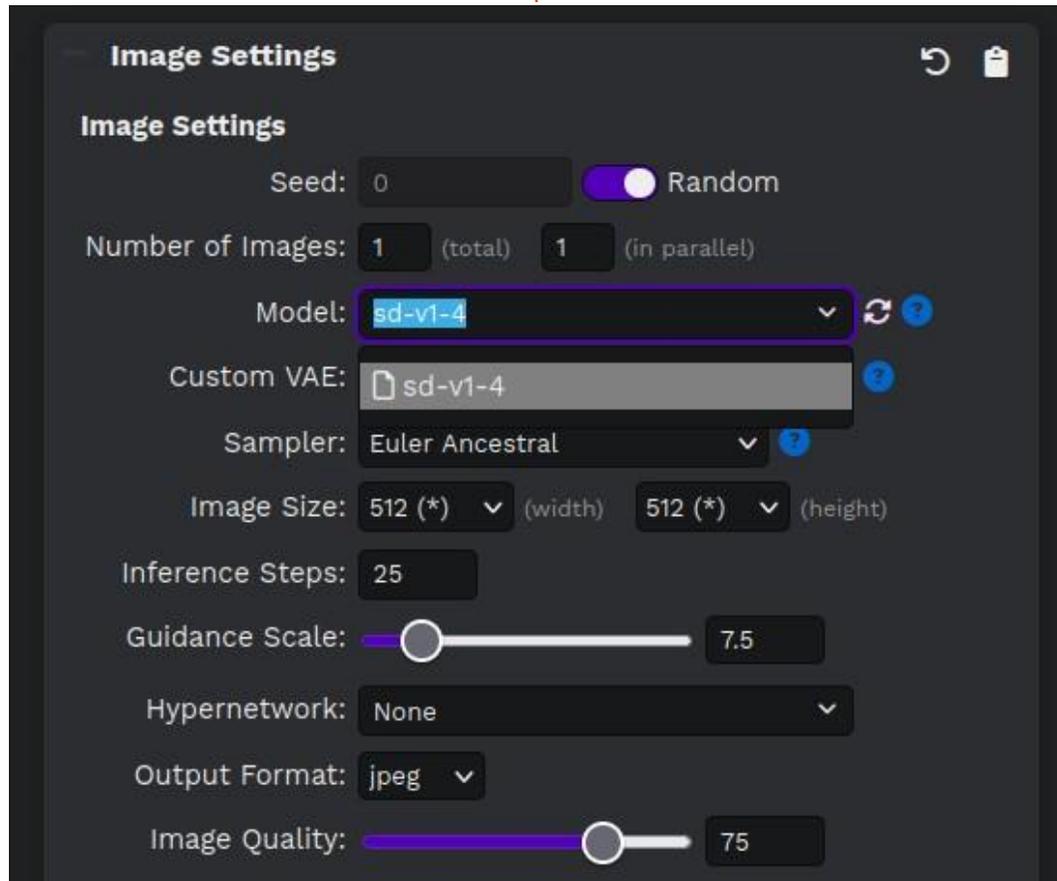
A variety of other Models exist and may be added. Some can be found at the links below:

- <https://github.com/easydiffusion/easydiffusion/wiki/Custom-Models>
- <https://www.reddit.com/r/stablediffusion/wiki/models/>
- <https://civitai.com/?types=Checkpoint>

- <https://cyberes.github.io/stable-diffusion-models/>
- <https://reentry.org/sdmodels>

Looking at Model pages gives you an idea of their purposes, which often have a theme or focus that may or may not be appropriate for your design. Because they may

be large, they might take a while to download, so you might want to be sure the models are appropriate for your needs before beginning that process. It's always good practice to check the Models for viruses via Clam AV or other anti-virus programs. Stable Diffusion uses the CheckPoint (name.ckpt)



HOWTO - STABLE DIFFUSION

and Safetensors (name.safetensors) versions of Models. In Easy Diffusion the file type is not shown in the Model drop-down choice.

Another smaller tweak to Models can be accomplished by changing the Variable AutoEncoder (VAE). These are mostly used for solving smaller issues such as

multiple legs, fingers or poorly drawn faces which may also be addressed using negative prompts. Examples for dealing with problems are: (((ugly))), (((duplicate))), ((morbid)), ((mutilated)), out of frame, extra fingers, mutated hands and similar prompts. It's expected that the upcoming model initially named SDXL 1.0 will resolve these

problems and also include the ability to add desired text. That release may be available before this article is published. Presumably the update will be installed in a fashion similar to other models as described below. After installation, added new models will be listed as below.

Similarly, Automatic1111 has the same options although their type is indicated in the drop-down menu. Given that Models are mostly derivative, pared down or otherwise modified versions of Models first made available and sometimes large, careful selection is appropriate. Hopefully, we may cover the process of modifying Models in a future article.

Once you have selected and downloaded additional Models, you need to move/copy them to the appropriate location. The locations for downloading the Easy Diffusion installation are: easy > easy-diffusion > models > stable-diffusion. Likewise for Automatic111: automatic1111 > stable-diffusion-webui > models > stable-diffusion. Restart Stable Diffusion and the new Models should be available.

Stable Diffusion checkpoint

```
anything-v3-fp16-pruned.safetensors [d1facd9a2b]
childrensStories_v1SemiReal.safetensors
deliberate_v2.safetensors [9aba26abdf]
dvPNW_v1.ckpt
f222.ckpt
mdjrny-v4.ckpt [5d5ad06cc2]
✓ sd-v1-4.ckpt [fe4efff1e1]
sd-v1-5-inpainting.ckpt [c6bbc15e32]
v1-5-pruned-emaonly.safetensors [6ce0161689]
v1-5-pruned.ckpt [e1441589a6]
```



HOW-TO

Written by Robert Boardman

Latex Pt.24

BACK NEXT MONTH



KILOBYTE MAGAZINE

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

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



Inkscape development has certainly picked up in pace over the past few years, which is great for users... but not so good for volunteer writers trying to extensively document all the features of the application in a monthly column. So I have slightly mixed feelings about the recent release of version 1.3. On the one hand it comes with various fixes and improvements, and some really impressive new features. On the other hand, I have barely started documenting the new features in version 1.2, so my backlog of topics has now grown many times longer!

In an effort to catch up with the Inkscape developers, I'm going to use this article to briefly revisit the 1.2.x features I've covered and describe any changes to them in 1.3. Then from next month I'll be describing the changes and additions that have taken place in either 1.2.x or 1.3, but documenting them as they currently look and behave in the latest version.

I strongly recommend all Inkscape users to download the 1.3 release. The best way to do this right now is probably to visit the project's website at <https://inkscape.org> and just click on the 'Download Now!' button. Linux users have the option of downloading an AppImage file, or using a PPA. I'm using the AppImage, simply because I need to have multiple different versions available while writing this column, which is not so straightforward with a PPA.

Now, let's revisit the 1.2 features that I covered in the previous few articles...

ICONS AND THE TOOLBAR

In FCM #188 I introduced some of the changes that had taken place with the main toolbar, and with the icons within the application. I also drew attention to the fact that (on my machine, at least) the symbolic icons still seemed to creep into parts of the UI, even though I had chosen a full color theme.

With 1.3 there have been few changes to the toolbar. It can still be resized, and individual tools can be shown or hidden via the

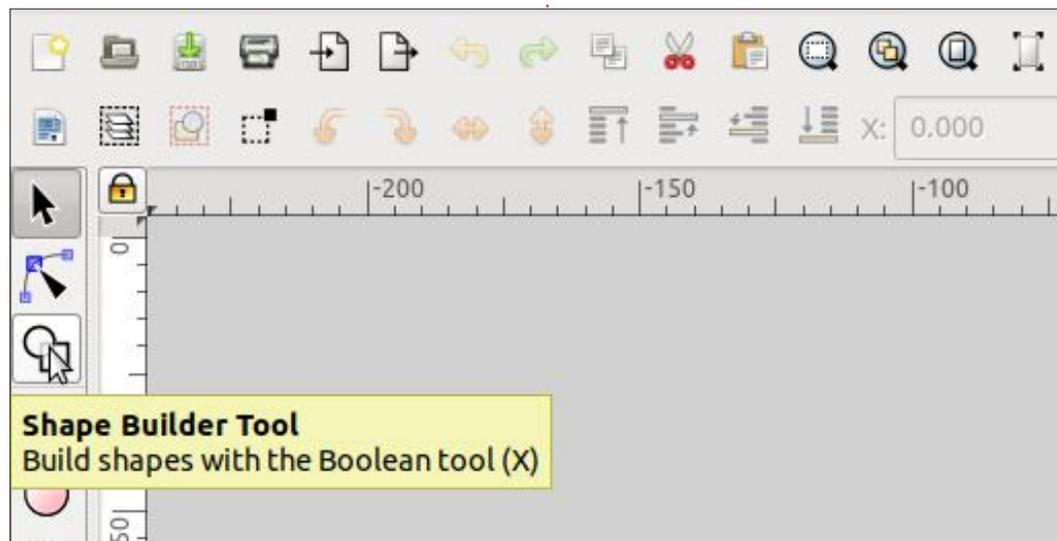
Preferences dialog, as I described previously. In fact, the only significant change to the toolbar is the addition of another new tool – the Shape Builder – which will be the subject of a future article.

I'm also pleased to note that the symbolic icons have disappeared, and the icons in my UI all come from the high color icon set that I prefer (being a dyed-in-the-wool Inkscape user of old). Interestingly my 1.2.x versions also now show the correct icons. Perhaps running 1.3 has updated a common system file, fixing the problem more generally.

SNAP CONTROLS

Issue #188 was also where I introduced the new Snap Controls popup at the top-right of the Inkscape window. I covered both the Simple and Advanced modes that are available in this UI.

Version 1.3 fails to fix my biggest gripe with this popup – namely that switching to Simple mode then back to Advanced



resets all the many checkboxes to their defaults. I still feel that using a more hierarchical tree structure so that individual sections can be collapsed would be preferable to a forced choice between a minimalistic Simple mode that doesn't adequately describe its settings, and a comprehensive Advanced mode that can be overwhelming.

Perhaps not for the same reasons, but it seems that enough other users aren't happy with the new UI that the old Snap toolbar has been brought out of retirement for version 1.3. The option to switch to this mode isn't available from the Snap popup, so isn't as discoverable as it could be. Instead it's hidden away in the Interface > Toolbars section of the Preferences dialog. Here you can select between Simple, Advanced or Permanent, corresponding to the two views of the popup, or the traditional toolbar.

It's worth pointing out, however, that even with Permanent selected things aren't quite the same as older versions of Inkscape. The program used to have a badly named 'Custom' view, which offered absolutely no

customisation. One thing it did do, however, was to move the Snap toolbar from the right of the window to the top. When enabling the Permanent option in 1.3 you get the Snap toolbar on the right, but as the Custom view no longer exists, and the toolbar can't be dragged to another place, that location is where it must remain. So if you're in that small crescent of the Venn diagram of users that both prefer a snap toolbar, and want it at the top of the window, you're still out of luck.

COLOR PALETTE

In FCM #189 the subject of this column was colour selection. Specifically I introduced the new colour picker options in the Fill &

Stroke dialog. Nothing much has changed in the dialog itself for 1.3, but there have been some changes in the Inkscape preferences related to the color pickers.

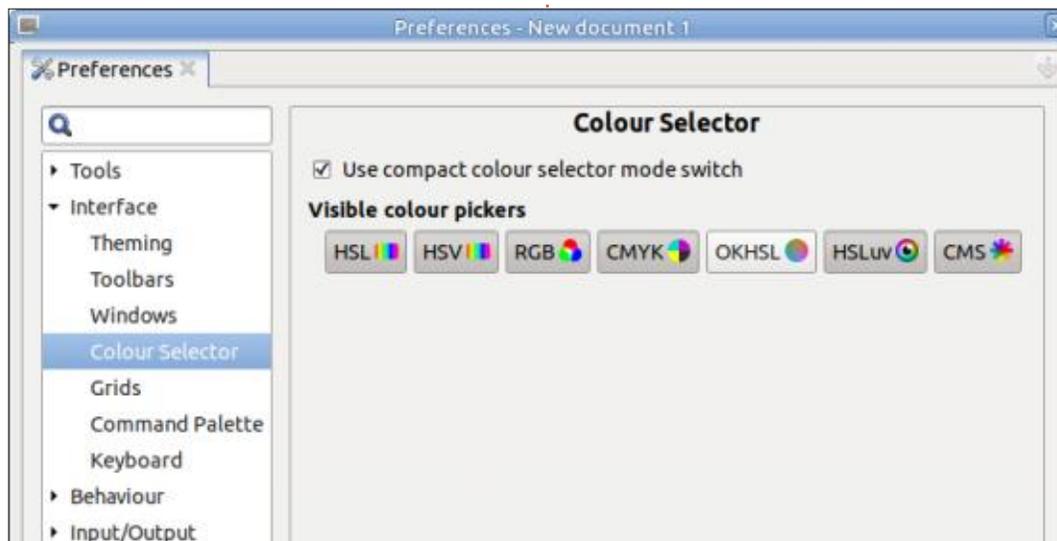
If you open Edit > Preferences then expand the Interface section, you'll find a new pane named 'Color Selector' (this screenshot is from my British English installation, so uses the UK spelling of 'Colour').

The first control here isn't new, but it has moved. I discussed it back in issue #190, when it lived in the 'Interface' pane directly. Basically it lets you switch between the old-but-classic method of changing color selectors using some tab-like buttons, or the new-and-compact approach of a pop-up menu. I

prefer the former, as it's more immediate and requires fewer mouse clicks, but if you rarely switch between selectors then you might prefer something that takes up less space in the UI.

The second control consists of a set of toggle buttons that let you turn the individual color pickers on and off. If you never work with a color management system, for example (that would be most Inkscape users, I suspect) then you may wish to disable the 'CMS' picker. And perhaps you've read enough of these articles over the years to know that, internally, Inkscape only supports RGB colors, so the 'CMYK' picker is really a bit of a lie that may not be terribly useful to you. Whichever combination of pickers you enable will apply whether you use the compact or traditional mode switch.

Version 1.3 adds a new picker to the options in the form of OKHSL. I'll let you look up the details of that color model yourselves, but I think it's worth enabling for most users. OKHSL has been specifically designed to try to maintain the perceptual brightness and saturation of colours when only the



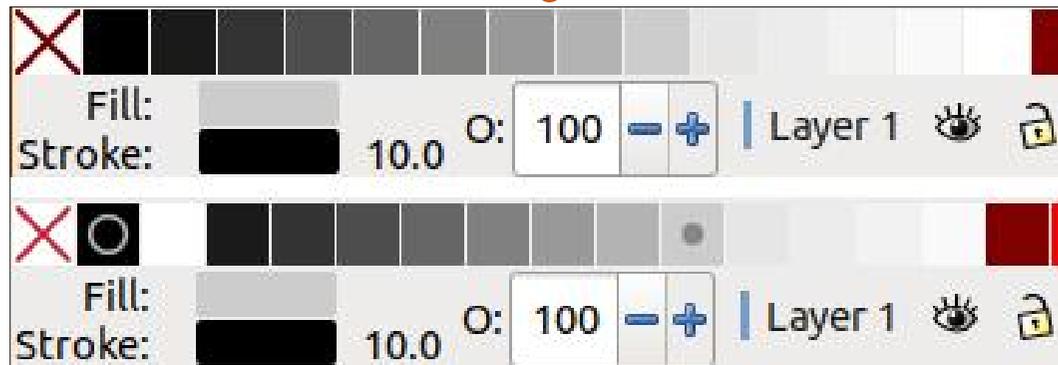
HOWTO - INKSCAPE

hue changes. Using this can make for more consistent gradients, for example, and may make it easier to pick different colors which have similar intensity.

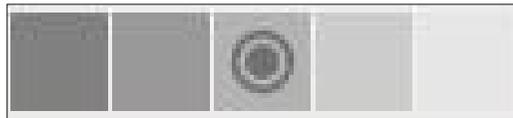
OKHSL has now made it into CSS – and, by extension, is valid in SVG. It is also rapidly being adopted by browsers. Because Inkscape still uses 8-bit RGB values internally, much like the CMYK picker this is a bit of a lie – though this one is perhaps more useful to everyday users. Unfortunately, extending Inkscape’s code to be able to support true OKHSL values (and other color models now supported by CSS) is likely to be a huge undertaking, so I don’t expect that to happen any time soon.

In issue #189 I also talked about the changes to the palette, at the bottom of the main Inkscape window. Little has changed here, but version 1.3 does introduce a small usability enhancement which really does make a big difference. Compare these screenshots – from 1.2.2 and 1.3 – for an object with a black stroke and gray fill.

Notice that 1.3 shows an open circle directly in the palette swatch for the currently selected stroke



color, and a smaller filled circle for the fill. These have been perfectly sized so that they are both clearly visible even when the fill and the stroke have both been set to the same color.



A subtle aspect of this feature is that the color used for each of the circles changes to contrast with the swatch color, ensuring that they never disappear from view entirely. Even more impressively, these indicators just do the right thing if you have multiple objects selected. If all the selected objects share a common fill or stroke color the relevant circle(s) will be visible. But

where the fill or stroke are not common across all the selected objects, the corresponding circle won’t be drawn, avoiding any confusion that might occur if colors are similar but not quite the same.

MULTI-PAGE DOCUMENTS

The multi-page tool was added in version 1.2 and I covered it in issue #192. When first clicking the tool, the UI has changed a little:

The resize button (the one with four arrows) has been removed, which I find to be a rather odd choice. Previously this would either resize the page to fit the contents (if you had nothing selected), or to fit the selected objects. You can

still achieve the same effect using the equivalent button in the Document Properties dialog – but that only works for the first page of the document, not the currently selected page. As far as I can tell, there’s no way to auto-size an arbitrary page to fit its content, which feels like a significant omission – or rather, removal – to me.

If you do wish to use the resize button in the Document Properties dialog, a new addition is that right-clicking away from any objects on the canvas will open a cut-down context menu which now offers a shortcut to open the dialog.

One thing I didn’t like with the Page Tool’s resize button in 1.2.x was that there was no way to include a little bit of padding or spacing around the objects. If you used the button the resultant page would hug your content closely. In most cases I prefer a little breathing space between my content and the very edge of the page, but neither the button in the page tool nor the one in Document



HOWTO - INKSCAPE

Properties offer that facility. So when I saw the new 'Margins' field in 1.3 I thought that, perhaps, that was the answer. Type a value in there, and the page would resize to suit the content (or selection), plus a bit extra for the margin. Alas, that's not what it does at all.

If you type a number in that field and press Enter (tabbing out of the field doesn't cut it) then Inkscape will draw a rectangle, offset by the specified amount within the page. You can think of it as being a little like a guideline, but rectangular – though it doesn't toggle on and off when you show or hide guidelines. It can, however, be used as a snap target, so if you know you need to allow, say, 5mm at the edge of your design for your particular printer's page handling, this can help you to avoid going outside the safe area. But it's only a guideline, and doesn't get factored in when telling Inkscape to resize the page.

Usually typing a single number in this box will suffice, but there may be times when you need different margins for each side of your page. For example, it's common to require a larger margin on the inside edge of the page to

allow for binding if you are producing some artwork that will be made into a booklet. You can enter several space-separated numbers into this field, in a manner that might be familiar to web developers from the similar shortcuts CSS allows.

1 value: This will be used for all sides

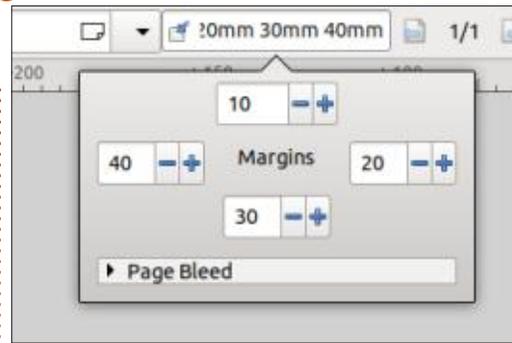
2 values: The first dictates the top and bottom margins, the second sets the left and right margins

3 values: The first defines the top margin, the second is used for the left and right, and the third is used for the bottom

4 values: Top, right, bottom, left

5 or more values: All but the first four are deleted

You may notice that the margin box on the canvas also has some circular handles at the center of each side (only shown when the Page tool is active). You can drag these to dynamically adjust the values. Alternatively, clicking on the icon at the left of the field opens a small 'doorhanger' dialog in which you can set these values:



You'll notice there's also a section for 'Page Bleed' at the bottom of that dialog. Expanding this presents a single field for setting a bleed value that is used for all sides of the document. Again, you have to press Enter (or Return) to apply this value – tabbing won't do – and again this draws a guideline-like box which can be snapped to. In this case the box lives outside the page boundary.

You may not be familiar with the idea of 'bleed' in printing. It doesn't matter whether we're talking about a cheap inkjet in your house, or a huge industrial press that fills a warehouse, all printers are obviously mechanical devices. As such they have tolerances between components, parts can wear, and things can simply be misaligned from their perfect positions. If you want to print a solid background color in your design, therefore,

keeping within the page boundaries could lead to a slightly offset print in which the white paper shows along one or two edges.

To compensate for this it's common to create your design such that it 'bleeds' off the edge of the page – that is, backgrounds and other objects extend a small way beyond the page boundary so that even if the paper is a little misaligned there will still be content to print which will cover-up the problem. For commercial printing a bleed of 5-10mm all round is common.

Conversely, margins are often specified to ensure that your content is safe from being trimmed when the final print is guillotined, for example.

So with these fields, Inkscape makes it a little easier for you to create designs to meet common commercial requirements. Set them to the values provided by the printing firm, and design accordingly: vital parts of the design should all be within the margins, while solid backgrounds or objects that must run right to the edge of the page should be

HOWTO - INKSCAPE

drawn up to the bleed line or beyond.

On the canvas, both the margin and bleed boxes on are extremely faint – so much so that I haven't bothered providing a screenshot, as I doubt they'd be visible in the magazine! Currently there seems to be no way to change their colors, which may cause a problems for some users. When treated purely as snap targets that may not matter as much, but if you wanted to use them as general guides just to get a visual idea of the placement of your objects, they may not be terribly useful for some users, or with some designs.

On the subject of snapping, both these boxes are enabled as snap targets when the 'Bounding Boxes' option is enabled in the Simple snap menu. In the Advanced menu they're handled by a single 'Page margins' option at the bottom – though when I tested this it was a little buggy, and I ended up having to switch back to Simple mode to get them to work again. With the Permanent snap toolbar there doesn't seem to be a way to toggle them at all!

None of the modes let you

enable snapping for margins but not bleed, or vice versa. When designing for print I often treat the margins as a 'hard' edge that I can't exceed, whereas bleed is more of an advisory that it's okay to go beyond. Therefore I'd rather be able to enable these separately, but it's not a huge inconvenience either.

Finally, I can confirm that the JavaScript code I presented last month – for adding named views for multi-page documents so they can be easily viewed in a web browser – works perfectly in version 1.3.



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

WITH WINDOWS -
EVERY DAY IS APRIL
FOOLS...





BACK NEXT MONTH



OHHHHH WIIIIIO ... WIOOOOOO

Greetings again, fellow beings. It's me again, broadcasting from across the known universe!

Awwww, ok. Not from across the known universe. From Central Texas, but it sounded kinda cool, huh?

First, you might be wondering what the heck the title of this month's article is, or if you figured it out already, why am I butchering the Castle Guard chant from the Wizard of Oz? (Ronnie says: extra point if you can name the Metallica song that uses that chant).

It's talking about the Wio Terminal from Seeed Studio (YES with all the "e's" in Seeed).



It's a REALLY neat little device that has a HUGE amount of potential and has recently gotten micropython support.

If you look REALLY close at the top of the image, you will see three little blue bumps on the left side of the device. That's three user defined buttons. At the bottom-right of the device, there's a four-way thumb pad that also can be depressed for a fifth button for a total of 8 buttons.

The screen is a 2.4" 320x240 touchscreen and there is an onboard IMU(LIS3DHTR), microphone, buzzer, microSD card slot, light sensor, infrared emitter(IR 940nm) and more!



In addition to all of that, there is a Raspberry Pi 40-pin Compatible GPIO female header on the back that should allow you to use any RPi that that you might have, if you happen to have Micropython drivers for them. One more thing of note (at the moment), the Wio has 512KB of Program memory, 4MB of External Flash memory, and has 192KB of ram.



There is also WiFi and bluetooth. I must admit that I don't think the touchscreen interface, WiFi and bluetooth are working quite yet. I have also seen some comments that I2C and SPI don't work well at this point, but I haven't had a chance to test those yet.

All of this for about \$45 USD makes this a great little device to

test out. So, let's get started!

LOADING MICROPYTHON

Before we can get started, we need to load Micropython onto the device. Go to https://micropython.org/download/SEED_WIO_TERMINAL/ and download the latest nightly build.

Next, plug the device into your computer using the USB Type-C connector. In a terminal type

```
$ ls /dev/tty*
```

This should show you all the tty ports and you should (by this point) be able to figure out which one the Wio is plugged into.

Now, here is the difficult part. You need to put the Wio into bootloader mode. The power switch on the left side of the device has three positions. Up is off, middle position is on, and down is a momentary position for reset. Push the switch all the way down twice very quickly. It can take a number of seconds to "kick in",

but just like with the RPi Pico, you should see a new File browser window open. Now drag and drop the UF2 file you just downloaded into the File Browser window and wait about 10 seconds. Once the window disappears, you are ready to go.

Now open Thonny and select the Generic Micropython on your USB port. In a moment, you should see the REPL show the Micropython version and prompt.

PROJECT 1 - LED

There is a blue LED inside the Wio just to the left of the USB-C connector. In this simple project, we'll make it flash.

Copy this code (top right) into your Thonny code window and save it to the Wio as "wio_terminal_LED.py".

Now run it. If everything works, in a couple of seconds look at the bottom of the Wio just to the left of the USB connector. You should see the LED flashing. To get it to stop, you can reset the Wio, turn it off for a moment, or press the stop button in Thonny.

PROJECT 2 - BUTTON TEST

I REALLY wanted to call this section "Button, Button, Who pressed the button", but I didn't. Aren't you glad?

This next project will test all 8 of the user buttons, the three on the top, the four way thumb switch and the press of the thumb button.

Get the code (bottom right) and name it "Wio_terminal_Buttons.py". Copy it to the Wio memory.

The first part of the program does the imports and creates a list with the names of the buttons. The WIO apparently has three ways to name the pins. First is a string like "BUTTON_3", the second is a pin definition and the third is a pin definition using a scheme like the GPIO name, but named to the WIO specifications.

The diagram (next page) is available at <https://www.seeedstudio.com/Wio-Terminal-p-4509.html>.

Anyway, the rest of the code

```
# MicroPython / Seeed Wio Terminal / SAMD51
# Wio-Terminal-LED.py - blink the internal blue LED
# scruss, 2022-10
# -*- coding: utf-8 -*-
```

```
from machine import Pin
from time import sleep_ms
```

```
InternalLed=Pin(15)
led = Pin(InternalLed, Pin.OUT) # or Pin(15) or
Pin("PA15")
```

```
try:
    while True:
        led.value(not led.value())
        sleep_ms(1200)
except:
    led.value(0) # turn it off if user quits
    exit()
```

```
# MicroPython / Seeed Wio Terminal / SAMD51
# Wio-Terminal-Buttons.py - test the buttons
# scruss, 2022-10
# -*- coding: utf-8 -*-
```

```
# using Signal because button sense is inverted: 1 = off,
0 = on
from machine import Pin, Signal
from time import sleep_ms
```

```
pin_names = [
    "BUTTON_3", # Pin(92) or Pin(PC28) - top left
    "BUTTON_2", # Pin(91) or Pin(PC27) - top middle
    "BUTTON_1", # Pin(90) or Pin(PC26) - top right
    "SWITCH_B", # Pin(108) or Pin(PD12) - joystick left
    "SWITCH_Y", # Pin(105) or Pin(PD09) - joystick right
    "SWITCH_U", # Pin(116) or Pin(PD20) - joystick up
    "SWITCH_X", # Pin(104) or Pin(PD08) - joystick down
    "SWITCH_Z", # Pin(106) or Pin(PD10) - joystick button
]
```

MICRO THIS MICRO THAT

(bottom left) handles setting up the actual pins, and then looping until a button is pressed. Then it will print a "1" for which of the 8 pins was pressed. The output in the REPL is a simple string of 8 zeros like this "00000000". The far left position is the top left button, the next position is the top middle button, and so on, ending with the thumb pad press button.

So when you run the program, the output in the REPL continually prints

0000000

Until one of the buttons is pressed. Then that position turns to a "1" until the button is released. Since the program polls all the button pins, you could see multiple "1"s in the string of zeros. For example, if you pressed all three of the top buttons at the same time, you would see

11100000

PROJECT 3 - GRAPHICS ON THE SCREEN

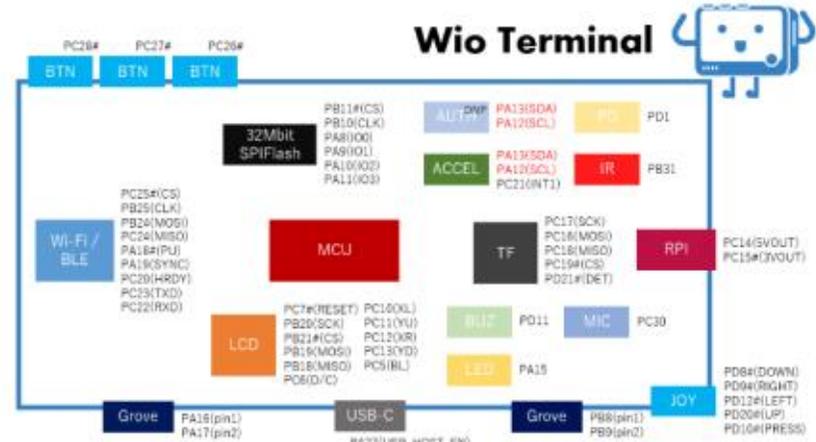
Now for the hard project. It is a series of coloured diamonds animated on the screen. For this, you need to download the screen driver from <https://github.com/rdagger/micropython-ili9341/blob/master/ili9341.py>. You can move up a level and get the entire zip from the same base site. Copy the ili9341.py file onto the Wio. Then you will want to copy the following code (top right) onto the Wio.

This first part is simply the header and the import section.

The next function (bottom right) (wheel565) takes a value and returns a RGB color value.

```
pins = [None] * len(pin_names)
for i, name in enumerate(pin_names):
    pins[i] = Signal(Pin(name, Pin.IN), invert=True)

while True:
    for i in range(len(pin_names)):
        print(pins[i].value(), end="")
    print()
    sleep_ms(100)
```



Wio Terminal Pin Out Overview by @matsujirushi12

```
# MicroPython / Seeed Wio Terminal / SAMD51
# Wio-Terminal-Screen.py - output something on the ILI9341 screen
# scruss, 2022-10
# -*- coding: utf-8 -*-
```

```
from time import sleep
from ili9341 import Display, color565
from machine import Pin, SPI
```

```
def wheel565(pos):
    (r, g, b) = (0, 0, 0)
    if (pos < 0) or (pos > 255):
        (r, g, b) = (0, 0, 0)
    if pos < 85:
        (r, g, b) = (int(pos * 3), int(255 - (pos * 3)), 0)
    elif pos < 170:
        pos -= 85
        (r, g, b) = (int(255 - pos * 3), 0, int(pos * 3))
    else:
        pos -= 170
        (r, g, b) = (0, int(pos * 3), int(255 - pos * 3))
    return (r & 0xF8) << 8 | (g & 0xFC) << 3 | b >> 3
```

MICRO THIS MICRO THAT

Next (top right), the LED that we played with in Project 1 is used to signal things are working. The screen is a bit slow to turn on.

The next bit of code (bottom right) creates the coloured pixels and coloured rectangles, draws them on the screen and then keeps looping.

Finally, if the program is ended, the backlight is turned off, the led is turned off, and the display itself

```
led = Pin("LED_BLUE", Pin.OUT)

backlight = Pin("LED_LCD", Pin.OUT) # backlight is not a PWM pin
spi = SPI(
    7, sck=Pin("LCD_SCK"), mosi=Pin("LCD_MOSI"), miso=Pin("LCD_MISO"), baudrate=4000000
)
display = Display(spi, dc=Pin("LCD_D_C"), cs=Pin("LCD_CS"), rst=Pin("LCD_RESET"))
display.display_on()
display.clear()
led.on() # shotgun debugging, embedded style
backlight.on()
```

is turned off.

This code is from the website

```
# use default portrait settings: x = 0..239, y = 0..319
dx = 3
dy = 4
x = 3
y = 4
i = 0

try:
    while True:
        # display.draw_pixel(x, y, wheel565(i))
        display.fill_hrect(x, y, 3, 4, wheel565(i))
        i = (i + 1) % 256
        x = x + dx
        y = y + dy
        if x <= 4:
            dx = -dx
        if x >= 234:
            dx = -dx
        if y <= 5:
            dy = -dy
        if y >= 313:
            dy = -dy
except:
    backlight.off()
    led.off()
    display.display_off()
```



<https://scruss.com/blog/2022/11/04/micropython-on-the-seeed-studio-wio-terminal-it-works/>. There is a small bug in the

published code there, but the author left a comment near the bottom of the page on how to fix it. I've already put the fix in the

MICRO THIS MICRO THAT

above code and the code in my repository.

Name the program "wio_terminal_screen.py". When you run it, you will see something like this (and in MUCH better definition and animation).

I'm running out of time and space here, so I'm going to leave you hanging on this for now. I haven't really had much chance to test any more of the WIO either I2C support, WiFi support or any further into the Screen library. I'll try to give you an update on my website (<https://thedesignatedgeek.xyz>) and something updated next month.

Until then, if you are interested in learning more about the WIO Terminal, here are some good links to get you started...

<https://wiki.seeedstudio.com/Wio-Terminal-Getting-Started/>

https://wiki.seeedstudio.com/Wio_Terminal_Intro/

The next link is to a site with a number of good projects and is where I got the three projects for you.

<https://scruss.com/blog/2022/11/04/micropython-on-the-seeed-studio-wio-terminal-it-works/>

<https://www.youtube.com/watch?v=Q0sv9TyYHHQ>

As I often try to do, I have put the three project files and the base screen driver in a github repository at https://github.com/gregwa1953/FCM196_MTMT.

By the way, neither Full Circle Magazine nor I get paid or receive free products for any of the devices that I review here.

Until then, 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.



Linux on Your iPad

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





Today we are extremely happy to announce the release of Ubuntu Touch OTA-2 our 2nd stable update to the new 20.04 system! OTA-2 will become available for the following supported Ubuntu Touch devices over the next days:

- Fairphone 3 – NEW!
- Fairphone 4
- F(x)tec Pro1 X – NEW!
- Google Pixel 3a and 3a XL
- Oneplus 5 and 5T
- OnePlus 6 and 6T
- Vollaphone and Vollaphone X
- Vollaphone 22
- Vollaphone X23 – NEW!
- Xiaomi Mi A2
- Xiaomi Poco M3
- Xiaomi Redmi Note 7 and 7 Pro

The Pine64 PinePhone, PinePhone Pro and PineTab are updated independently of the rest of these devices. The stable channel for the PinePhone and PineTab will not receive an update labeled "OTA-2".

WHAT'S NEW?

This release of Ubuntu Touch is based on Ubuntu 20.04. We will stop pointing this out with the next OTA release. We assume y'all know by then :-)

Starting with this OTA the following devices get 20.04 support:

- Fairphone3
- Vollaphone X23
- F(x)tec Pro1 X

NEW FEATURES:

The System Settings app has seen multiple improvements:

The layout of a few pages (e.g. Sound) have been adjusted to be more consistent. There are more like this to come in the future, so stay tuned!

You can now delete your custom background images you've added, in case you don't want to have that background image anymore.

You can now adjust the sensitivity of the edge gestures in

Lomiri. If you install a case or a bumper on your device, you can now increase the width of the edge area so that it's easier for you. Or maybe you find it too sensitive, now you also can reduce it. The new settings can be found in System Settings > Gestures. Currently only visible though on a device that supports double tap to wake.

You can now use the physical camera button to shoot the photo.

When requesting a file from File Manager app over Content Hub, the app opens more smoothly.

BUGS AND ISSUES FIXED

The ability to reset APN settings to the default values (in the database) is fixed.

Reliability of enabling hotspots has been improved. Specifically, it's now possible to reliably enable and disable hotspots on the Volla Phone devices. Also, it's now possible to enable password-protected hotspots on Volla Phone

devices.

Bluetooth should be more reliably available after a reboot.

It's now possible to re-install pre-installed applications after it's been removed.

If a SIM with a PIN is inserted on boot, the SIM unlock screen should appear more reliably without the need to explicitly request it.

A dummy XWayland splash screen should no longer be displayed when an X application is launched.

QtWebEngine has been updated to 5.15.14. Also, the problem when seeking a video has been fixed.

Charger mode on certain devices (particularly Volla Phone devices) no longer bootloops.

Click applications can now play media shipped with itself once again.

The ability to choose a custom

UBPORTS DEVICES

alarm sound is fixed.

Video playback on some Mediatek-based devices has been fixed.

In Morph, certificate errors are now always shown within the session.

The ability to have "combined APN" is restored. This fixes MMS sending on certain carriers with manual APN input. However, the APN database is still not up-to-date, which means MMS still doesn't work out-of-the-box on many carriers.

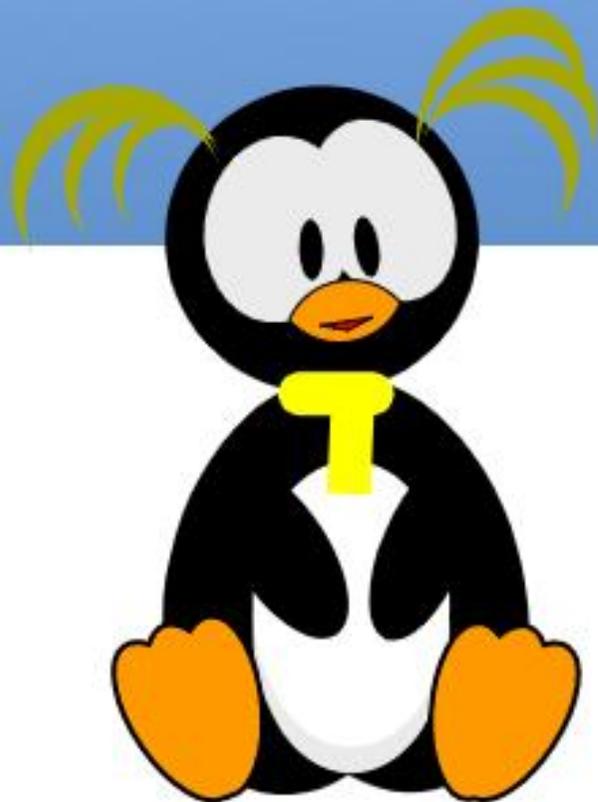
The spurious failure to display the permission prompt when using the camera on some devices has been solved



The Daily Waddle

wey6575e8IM* & 7G6Gh78J(K* & ^T&H&J8kO<Lo<(Z7nHj

**On second thought, type
your own password**





This series of articles was initially developed for the newsletter of a computer users' group in which almost all of the members run Windows exclusively. The approaching end-of-life for Windows 10, and the potential restrictions on upgrading to Windows 11, suggest a strategy to which many FCM readers will no doubt subscribe - switch to Linux! The articles are intended to assist in making this transition as easy and painless as possible.

Those of us whose computers aren't supported by Windows 11, either because of an old CPU or the lack of a TPM chip (or perhaps both!), can still run Windows 10 until October 14, 2025. And, we can do so secure in the knowledge that patches to the OS will be provided on a regular basis until this end-of-life date. So, there is no need to panic; we have more than two years to consider our options.

Nevertheless, ultimately, the basic choices will be to purchase a

new computer that is Windows 11 compatible, continue to run Windows 10 in an insecure manner (definitely not recommended), or switch to an alternative OS. In the latter case, it's Linux that comes instantly to (my) mind.

So, if you are a dyed-in-the-wool Windows user and are considering upgrading to Linux, or if you just have an interest in seeing how Linux functions, let me share with you three ways to try Linux without losing any ability to run your current version of Windows.

The first option is the easiest but the most restrictive. Nevertheless, it will provide an excellent opportunity to try out Linux without making any changes to your Windows system. In addition, if you have a 4 GB (or larger) USB flash drive handy, it won't cost you a cent.

Essentially, we are going to download a Linux distro (distribution) and burn this to a USB flash drive to create a bootable, live-USB. [This assumes

that your computer is capable of booting from a USB drive rather than only from a CD/DVD.] This will enable us to boot a live version of Linux that will run directly from the USB drive.

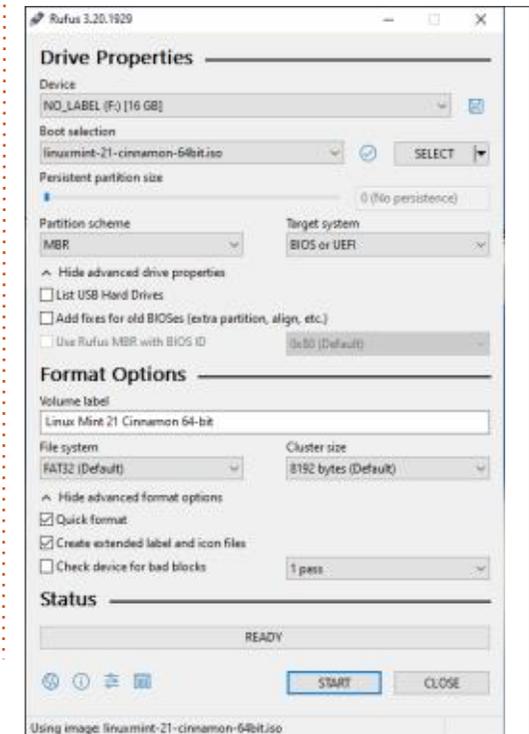
There are lots of Linux distros that we could use but, for me, a tried and tested option is Linux Mint. At the time of writing, the latest release is Version 21 (Vanessa). Most users will want the 64-bit distro which comes in three "flavours" (desktop environments). We will be using the default Cinnamon Edition as this is the desktop that perhaps most closely resembles Windows.

SO, LET'S GET STARTED...

Our first task is to download the chosen distro as an ISO file. Point your browser to: <https://linuxmint.com> and follow the links to download the software. By default, you will be offered the 64-bit Cinnamon Edition. One choice to make is the software mirror from which to download the file. Scroll down the page and select

the Manitoba Unix User Group which will allow you to download the 2.4 GB file `linuxmint-21-cinnamon-64bit.iso`.

Next, we need some software that will burn this ISO file to a flash drive. Our choice for this will be Rufus (<https://rufus.ie/en/>). Download `rufus-3.20.exe` to the hard drive. No installation is necessary. Just run the program which will bring up the window shown in the screenshot below.



In the drop-down menu for Device, select the USB drive that is going to be the target for the Linux distro to become our bootable disk. Next, click on the SELECT button and browse to the Linux distro file (linuxmint-21-cinnamon-64bit.iso).

Click on the START button and select the option to Write in ISO mode. Note that you will have to accept the warning that all data on the target USB drive will be destroyed. The START button is now greyed out and a green progress bar is displayed. Creating the bootable drive will take several minutes. Once the process is complete, the progress bar changes to READY. You can now click on the CLOSE button.

Before shutting down the computer, make sure that you know how to boot the machine using the USB flash drive. You may have to go into the computer's setup utility in order to change the boot order of the available devices. The User's Manual for your computer will indicate how this is done, or just search on-line for a relevant how-to tutorial. On my Dell laptop, I can simply press the

F12 key as the machine is powered on. This brings up a menu of boot options from which I can select the bootable flash drive.

You may see a few lines of text flashing by as the computer boots but these can be ignored. The lm (for Linux Mint) logo will be displayed as the boot process continues. After several seconds the desktop screen will be displayed.

You may also notice a text box briefly displayed in the top-right corner of the screen and indicating that a Wi-Fi connection is available. Don't worry that the message disappears. We will make the Wi-Fi connection next.



Before we explore the Linux system in any great detail, let's establish the connection to our Wi-Fi network, the availability of which was indicated on boot-up. Left-click on the networking icon in the panel. This will bring up a menu with a list of available network connections. Click on your Wi-Fi network and enter your Wi-Fi password in the pop-up dialogue box. Click on the Connect button and a new pop-up box will indicate that the connection has been established. We can now load Firefox, type opcug.ca in the browser's address bar, and check that the club's web site is displayed.

Now, let's turn our attention to

the on-screen icons. Double-clicking on the Computer icon loads the Nemo file manager with a list of icons showing the available disk drives. One of these icons may include Windows 10 in its label. This is your C: drive and if you double-click on the icon you will see some familiar folders such as Program Files, Users, and Windows. However, note that Linux doesn't use drive letters so, rather than seeing Drive C: as a label, you may find your drive displayed as just Windows 10.

Double-clicking on the Home icon once again loads Nemo, this time showing the folders in the Home directory of our Linux drive. This is similar to the personal folder in C:\Users that is associated with your Windows username. Note that some of the folders on the Linux system disk have familiar names and purposes, e.g. Documents, Pictures, and Videos.

I indicated at the outset that using a live-USB was a restrictive method of using Linux. The reason for this is that we have no capability to store files in, for example, the Linux Documents folder for later retrieval since when we shut down the live Linux session

MY OPINION

the entire folder structure will be lost. (However, note that we can “cheat” and save such files to a real folder such as Windows 10\Users\\Documents.)

Linux distros come bundled with lots of useful software and Mint is no exception. All of the available applications can be accessed through the main menu. So, clicking on the menu icon brings up the on-screen menu which is similar to the Start Menu in Windows.

The available programs are arranged in categories. For example, a single click to select Office will change the right side of the menu to list the Calendar, Library (recent documents and favourites), and the modules in LibreOffice (including Writer, Calc, and Impress – similar to Word, Excel, and PowerPoint).

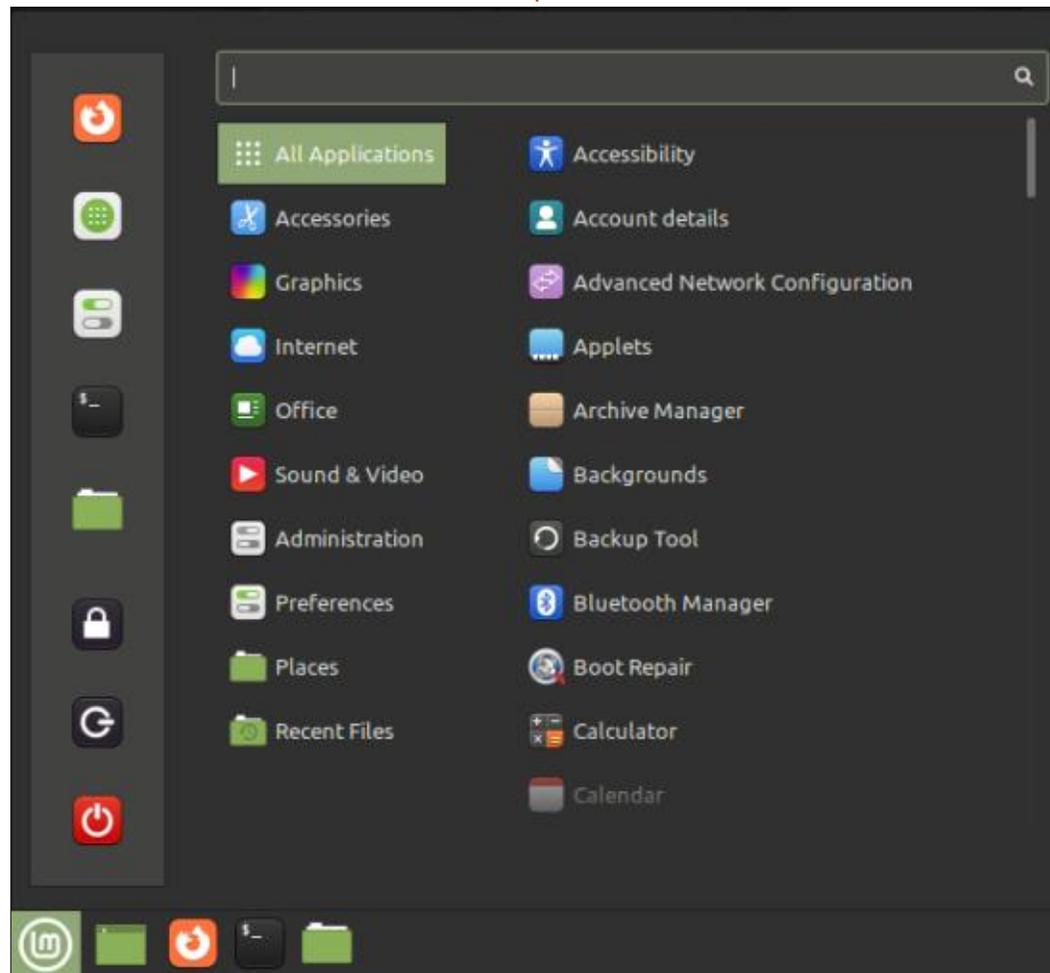
The icons down the left side of the menu include Firefox, Software Manager, System Settings and, at the bottom, Quit (the red “power” icon). Once again, any changes we make, such as installing new software, will not be maintained through a reboot; however, all of

the features of the Mint distro are available to us for testing. So, think about what you would normally do when you boot into Windows and explore how to do the same (or similar) things in Linux!

To shut the live session down, navigate to Menu – Quit and select Shut Down. A message will ask you to remove the bootable USB drive.

Once you have done this, press Enter and the computer will power down.

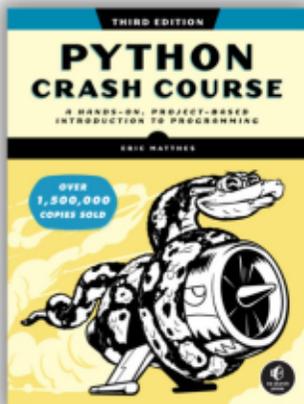
We are now ready for our second expedition into the world of Linux. But that will have to wait until Part 2 of the series.



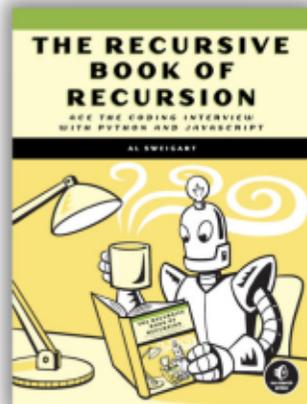
Alan is a computer enthusiast based in the Great White North where he maintains LinuxNorth blog at: <https://linuxnorth.wordpress.com>



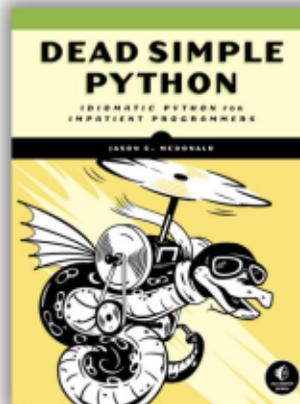
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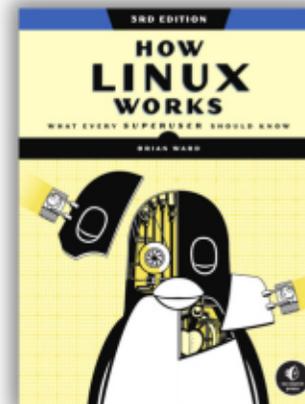
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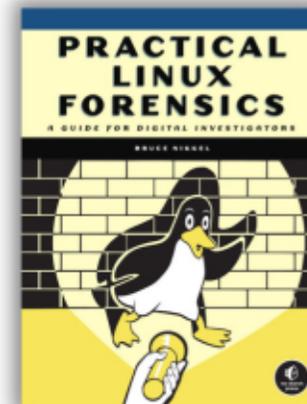
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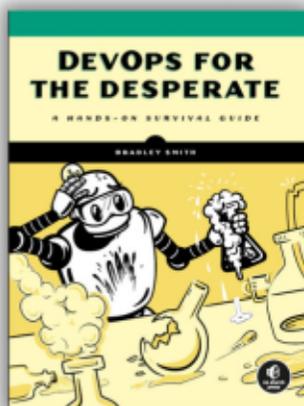
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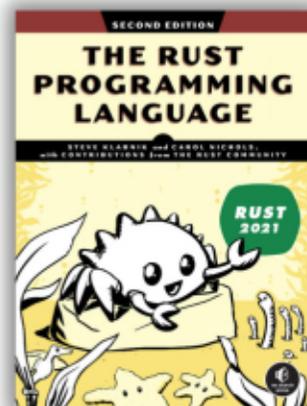
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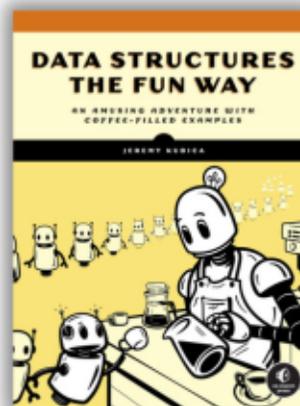
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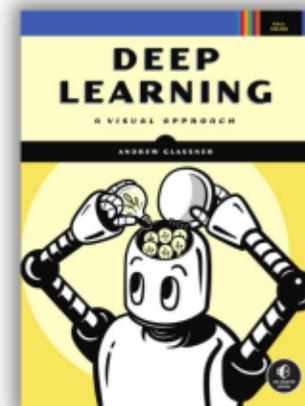
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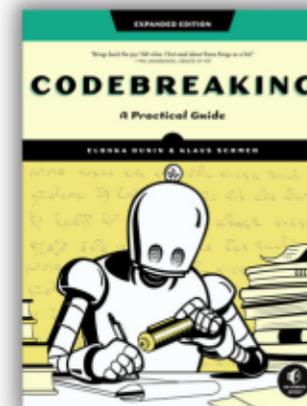
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HOW-TO

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.



REVIEW

Written by Adam Hunt

Xubuntu 23.04

This release of Xubuntu 23.04 finds us right in the middle of the release cycle, this being the middle of three interim releases leading to the next Long Term Support (LTS) version.

This second interim release is much like the first one, in that it incorporates only some small changes. This leads me to believe that the next LTS version, Xubuntu 24.04 LTS, due out in April 2024, will not be greatly different from the last LTS and overall that is a good thing!

Xubuntu 23.04 is the 35th version of Xubuntu and is supported for nine months, until January, 2024.

INSTALLATION

I downloaded the Xubuntu 23.04 ISO from the official source by BitTorrent and carried out an SHA256 sum check on it to confirm the file was uncorrupted.

Xubuntu 23.04 is 3.0 GB in size which is slightly bigger than the

last release which was 2.8 GB. Xubuntu is growing in size over time, but not as quickly as Ubuntu itself has been, which reached 4.9 GB in the 23.04 release.

Dropping Xubuntu 23.04 onto a USB key equipped with Ventoy 1.0.91 allowed me to boot it up for testing. Ventoy does all the hard work of unpacking the ISO and booting to the desktop. It is a real boon for anyone distro-hopping, doing some testing, or just writing reviews!

SYSTEM REQUIREMENTS

The recommended system requirements for Xubuntu 23.04 have not changed since 21.04 and remain:

- 1.5 GHz dual core processor
- 2 GB RAM
- 20 GB of hard-drive space

That 2 GB of RAM will quickly be eaten up by Firefox all by itself with only a few tabs open and so 8 GB of RAM is probably a more realistic minimum for decent performance, here in 2023. More

RAM always makes life better!

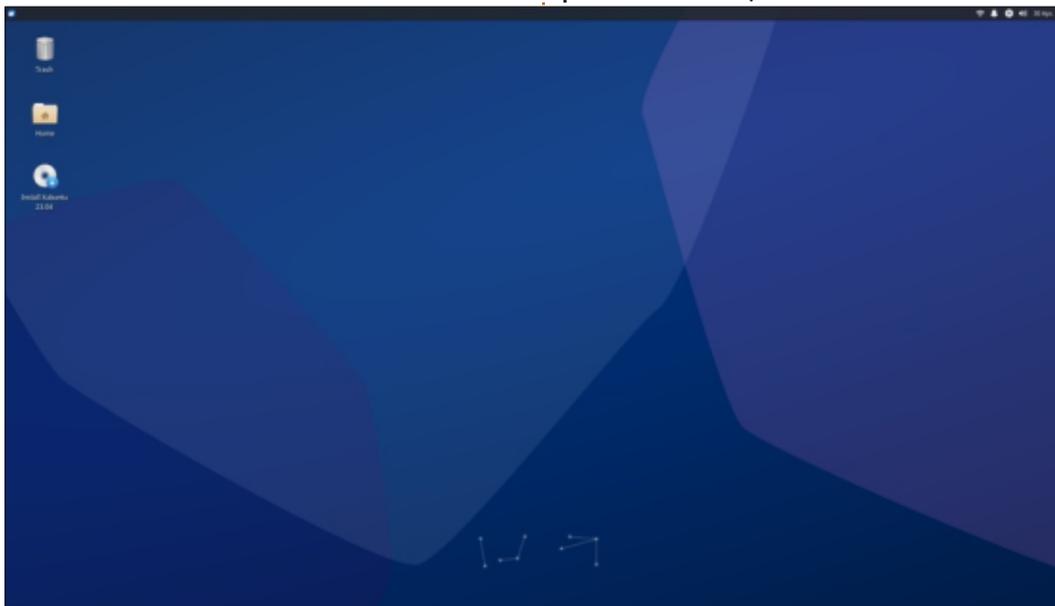
NEW

Xubuntu 23.04 uses the Xfce 4.18 desktop, replacing Xfce 4.16 (plus a few parts from 4.17) in Xubuntu 22.10. Xfce 4.18 brings some improvements to the Thunar file manager including image preview, undo/redo, file highlights and recursive search.

Mainstream Ubuntu switched audio controllers from PulseAudio to PipeWire in Ubuntu 22.10 and Xubuntu now follows that too, with PipeWire, using WirePlumber as its modular session policy manager.

The whole Ubuntu family of distributions, including Xubuntu 23.04, have now dropped default support for FlatPak as a method for installing applications, in favor of debs and snaps. FlatPak is still available, though, and can be installed from the command line, if needed.

This Xubuntu release also



REVIEW

brings status for Xubuntu Minimal as “an officially supported subproject”. It has been around for the past eight years under the unofficial name of Xubuntu Core, as a community-supported project. Xubuntu Minimal provides a very stripped down version of Xubuntu with only the Xfce desktop, a few components and the Xubuntu look and feel files. It comes with a terminal emulator, the Thunar file manager, system settings, the Snap package manager, a screenshot tool and not a lot more. Anything else you want, you will have to add on your own. Overall this is a good concept for experienced users, as it gives them the chance to add only what they need and not have to spend time removing unwanted

applications to declutter their installation and its menus. The official Xubuntu Minimal 23.04 download provided is 1.7 GB, compared to 3.0 GB for the full version.

SETTINGS

This version comes with yet another inoffensive blue wallpaper. There are also 22 other wallpapers provided, many of which are from past Xubuntu releases. Of note, despite this release being codenamed Lunar Lobster, unlike most other Ubuntu flavors, none of the wallpapers have a lobster on them so the Xubuntu developers get credit for avoiding that cliché.

Xubuntu 23.04 retains Greybird as the default window color scheme. There are still six window themes provided: Adwaita, Adwaita-dark, Greybird, Greybird-dark, High Contrast and Numix.

There is also a choice of eight icon themes, the same as in the last release, with Elementary Xfce Darker as the default.

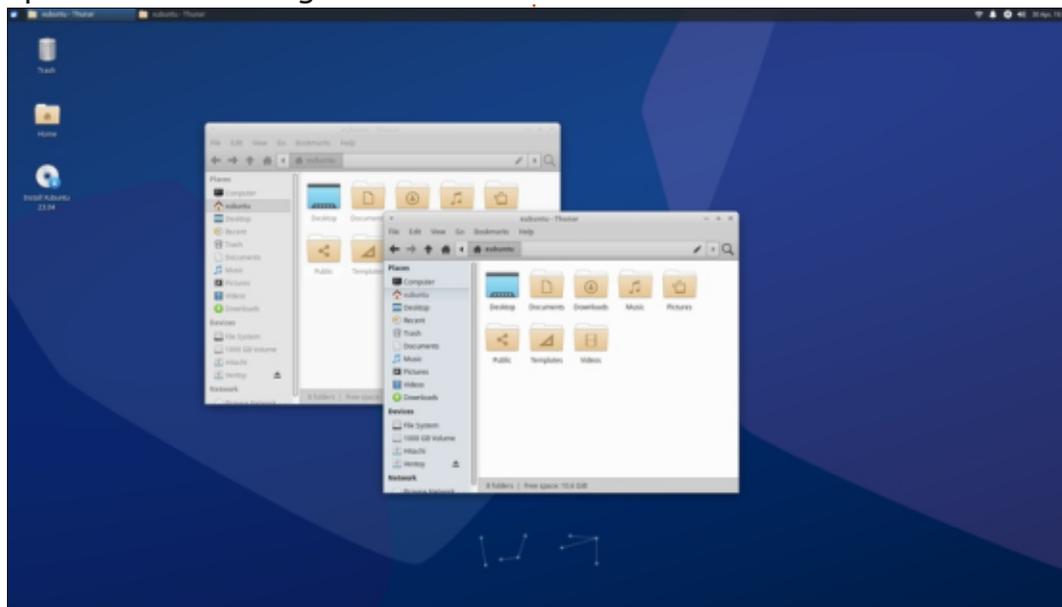
Just like all the Xubuntu releases over the past nine years since 14.04 LTS, this one has the Whisker Menu as its menu system. Whisker is the main feature that makes Xubuntu distinctive from the other Ubuntu flavors and,

uniquely, it can even be resized.

APPLICATIONS

Some of the applications included with Xubuntu 23.04 are:

- Atril 1.26.0 PDF viewer*
- CUPS 2.4.2 printing system*
- Catfish 4.16.4 desktop search*
- Firefox 111.0.1 web browser**
- GIMP 2.10.34 graphics editor
- Gnome Disk Utility 44.0 disk space and health monitor
- Gnome Disk Usage Analyzer 44.0 (baobab) disk display
- Gnome Software 44.0 package management system
- Gparted 1.3.1 partition editor*
- Hexchat 2.16.1 IRC client*



REVIEW

LibreOffice 7.5.2 office suite
Mousepad 0.5.10 text editor*
Parole 4.18.0 media player
Pipewire 0.3.65 audio controller
Ristretto 0.12.4 image viewer
Rhythmbox 3.4.6 music player*
Document Scanner 44.0 (simple-scan) scanning utility
Software Updater 23.04.2 (update-manager) software update manager
Synaptic 0.91.3 package management system
Thunar 4.18.4 file manager
Thunderbird 102.10.0 email client
Transmission 3.00 BitTorrent client*
Wget 1.21.3 command line webpage downloader*
Xfburn 0.6.2 CD/DVD burner*
Xfce4 Panel 4.18.2 desktop panel

Xfce4 Power Manager 4.18.1 system power manager

* indicates same application version as used in Xubuntu 22.10
** supplied as a snap, so version depends on the upstream package manager

There have been no changes to the default list of applications included in this release, just some updated versions, although, as the asterisks show, not that many!

As with all the recent Xubuntu releases, there is no default webcam or video editing application, although there are several in the repositories that can be installed. Xubuntu remains

unique in the Ubuntu family in providing the GIMP image editor as part of the default set of applications.

Xubuntu is also one of the few Ubuntu flavors to still retain a CD/DVD burner application by default, too. It has been many years since new computers came with those installed so that says something about the perceived user base and their hardware!

Xubuntu 23.04 includes LibreOffice 7.5. which is only lacking only LibreOffice Base, the database application, which is probably the least used LibreOffice component. It can easily be installed from the repositories, if required.

tend to point to the next interim release, Xubuntu 23.10, due out on 12 October, 2023, also having only a few tweaks. Likewise the April 2024 LTS release, which will be the culmination of this development cycle, is not expected to be hugely different from the last LTS. Every time I talk to Xubuntu users, they seem to like the way it works and don't see a need for big changes, so only making small adjustments will keep the users happy.

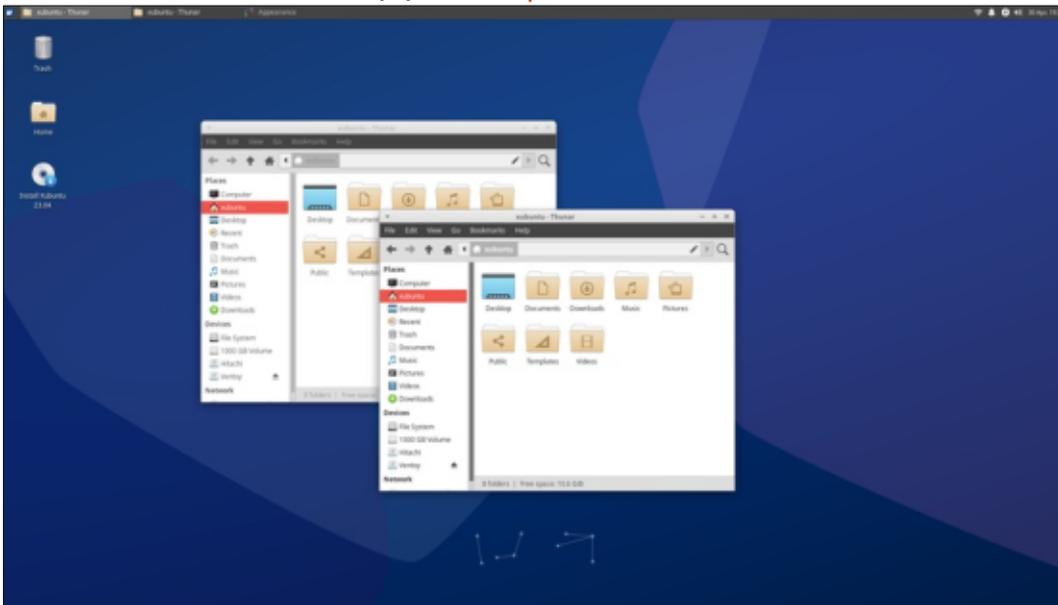
EXTERNAL LINKS

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

CONCLUSIONS

Xubuntu 23.04 is a very solid release that looks good and works well. In fact, there is not much to find fault with here and any faults are probably omitted from the newly official Xubuntu Minimal version anyway.

The small number of updates and changes incorporated in 23.04



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



REVIEW

Written by Rob Cumberland

Notable

My memory is not good. Well, that's not strictly true: I seem to have 'selective memory' in so much as I can remember that one of my friends owes me thirty quid, but when it comes to things like coding or debating an argument, I can only remember stuff that I've either learned very recently or that I use often, so it's a little like computer RAM, I suppose: it needs a constant refresh or the information will fade away.

Information storage and retrieval systems have always been one of the driving forces for my computer usage and I've used many different ones over the years. I love relational databases and the way in which information can be linked in a logical way, but maintaining that kind of a system can become a burden, so I looked for an easier way to organise the information that I found to be either interesting or useful and discovered note-taking apps.

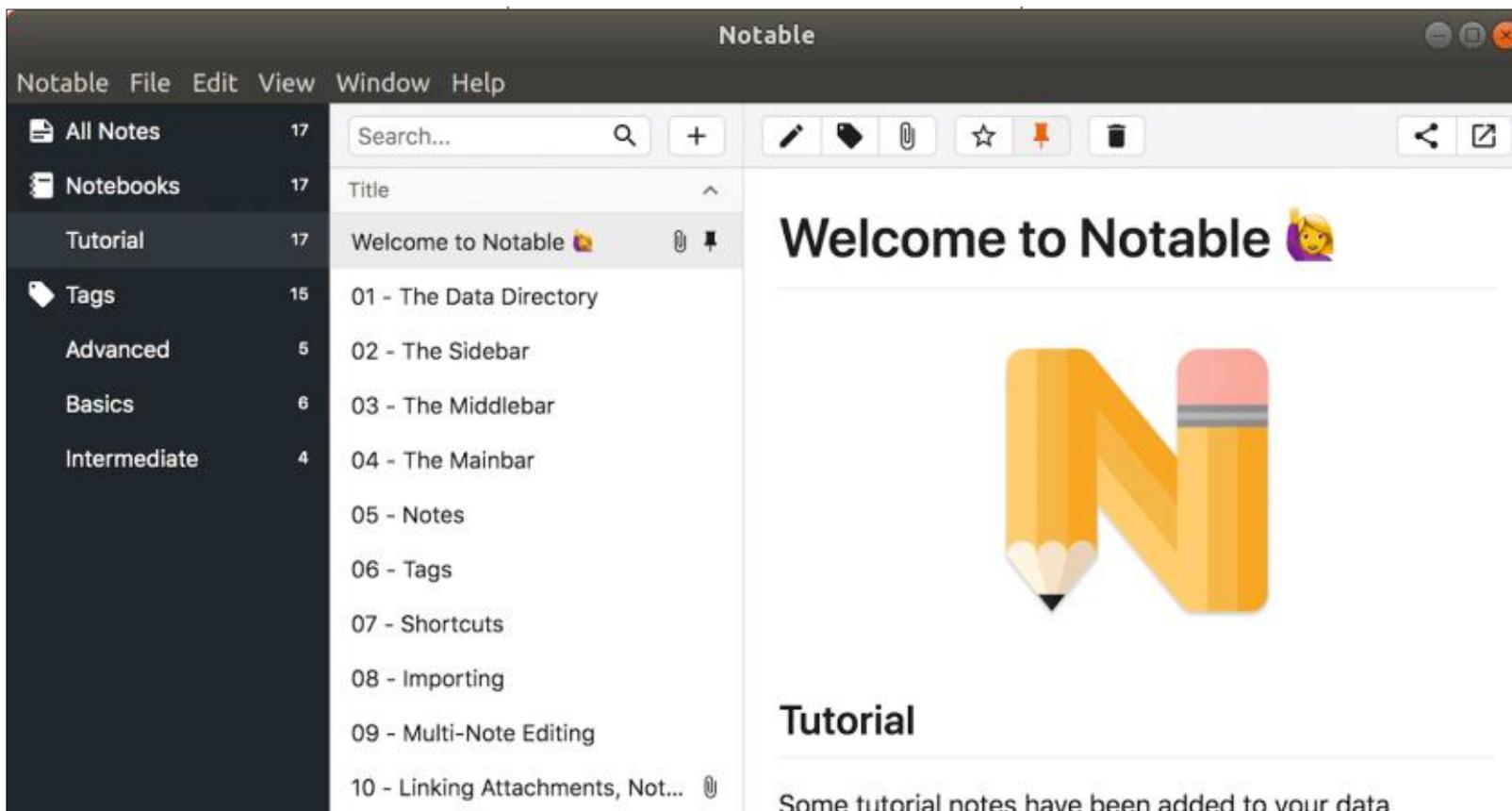
There are many such apps from which to choose and I've used a good deal of them. I know, from my

experience, that any note-taking app that one commits to using, needs to be the right one from the get-go, because over time, one will invest a huge amount of time in creating and maintaining a notes system.

Migrating to an alternative system is not always easy and can,

once again, require a huge amount of work and time, depending on how many 'notes' have been created. Since I started using Notable, I have created about 200 note files and I still have about as many again that I created with Keepnote (the app that I used previously) that I have yet to bring over.

As of the time of writing, Notable is in development and there are two versions. v1.8.4 is the stable release and can be downloaded from <https://notable.app/> While it's perfectly usable, it does lack some of the features, as well as the look, that makes the newer version of the



REVIEW

app so much more appealing. That newer version is v1.9.0-beta.10 and it can be downloaded from <https://github.com/notable/notable-insiders/releases/tag/v1.9.0-beta.10>

I was a little apprehensive about using a beta version, but so far (during the past 5 weeks of use), I've not encountered any major bugs and the new features and layout are just so compelling, but it's your choice.

Notable does not tie you into a system from which it is impossible to escape. Your notes are basically Markdown tagged text files and as such, if you do need to migrate your notes to an alternative system, that process should be a relatively simple task.

A commitment to using Notable is essentially a commitment to using Markdown for your notes system, so if you're new to Markdown, you'll not know how extremely useful that markup language can be. As this feature is about Notable, I'll not go in to any details about Markdown itself, suffice to say: Markdown is a lightweight markup language used for creating formatted text, using a

plain-text editor and the Markdown that Notable uses will render LaTeX expressions, Mermaid diagrams and HTML, all of which you can mix and use in a single .md file. In general, if a text format is supported by Markdown, then you can use it in your Notable .md document file.

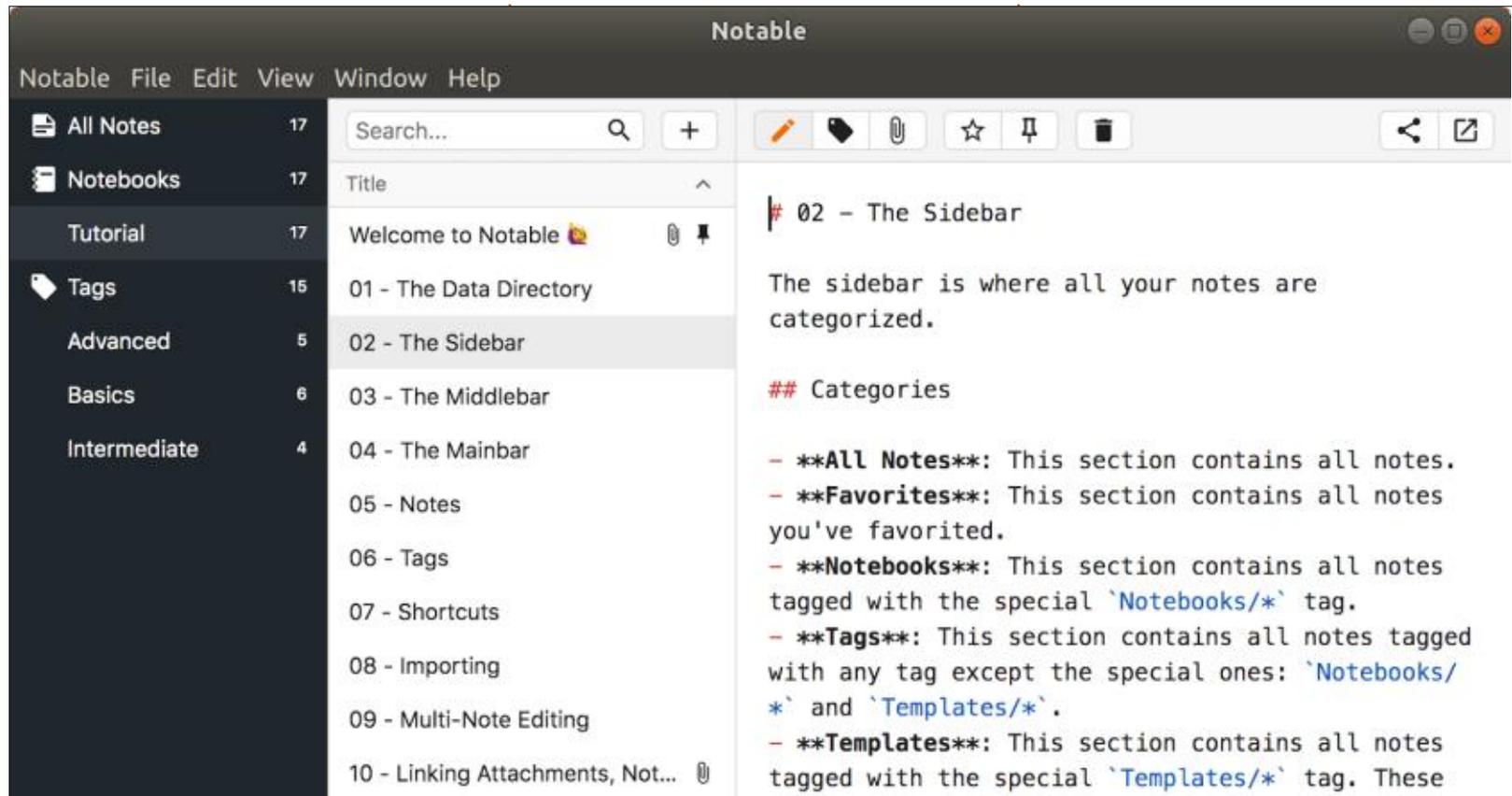
These .md files are created by Notable and creating a new note is as easy as it is with any other app (Ctrl+n). Notable does have a built-

in editor, but if you'd prefer to use a chosen text editor, Notable can open the .md file with whatever your default application is for that file type, so don't set Notable as your default application for that file type; set it to whatever your favourite text editor may be.

You can simply create a .md file with or without Notable running and the next time Notable is run, it will recognise the added file and handle it, by which I mean: Notable

will add a header field to the file, which contains information such as the note's creation and modification date and time.

Note files are organised in / notes/ directories (AKA: Data Directories) and you can have as many or as few of these directories and .md files as you need. Think of each data directory as being a 'notebook' and each .md file being a 'page' within said 'notebook'.



Some links that you may want to check into:

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

<https://towardsdatascience.com/the-ultimate-markdown-cheat-sheet-3d3976b31a0>

<https://ghost.org/changelog/markdown/>

<https://www.fabriziomusacchio.com/blog/2021-08-10-How-to-use-LaTeX-in-Markdown/>

One major difference that I've noticed between the two Notable versions that I've used, is that with v1.8.4 a note's title needs to be added with a line of HTML code (for example: `<title>Dunder Methods</title>`). Without that simple HTML code line the note's title (as displayed by the app title bar) defaults to 'index.md'.

That HTML tag is not required if you use a later version of the app and (so far as I can tell) any notes that were created with that tag remain forward-completable, although the tag is not needed. I have many notes that were created before I began to use the beta

version and I've seen no issues so far. I've not removed the HTML tag from any of my notes, that way, if I do revert back to using the older version of Notable, I will not have to recreate those tags.

There is a very active Notable discord community at <https://discord.com/channels/715934079559663646> from which you can get any help/support you may need. Reading through the posts there is a good way of discovering a little about the developer and where this project is heading, which is certainly something that I like to know about.

From what I understand, behind Notable is Typescript: Notable is basically a web app wrapped in Electron and effectively includes elements from (if not a copy of) the Chromium browser, to render the UI.

If you need access to your notes across different machines, right now, you'll need to get creative with a system of your own, which could be as simple as using a USB thumb drive, or a more complex solution, such as Syncthing (<https://docs.syncthing.net/index.html>).

Moving forward, there could very well be more features added to Notable, such as sharing notes across multiple devices or even multiple users. Fabio says "Pretty much the entire app is written with plugins in mind, I just haven't exposed APIs yet." so there is the potential for an ecosystem of plugins to arise and who knows what added features would result from that. One that I would like to see, would auto-link notes that include some 'keyword'. If you've used Tomboy Notes (or even Keepnote) you'll understand how useful such a feature can be.

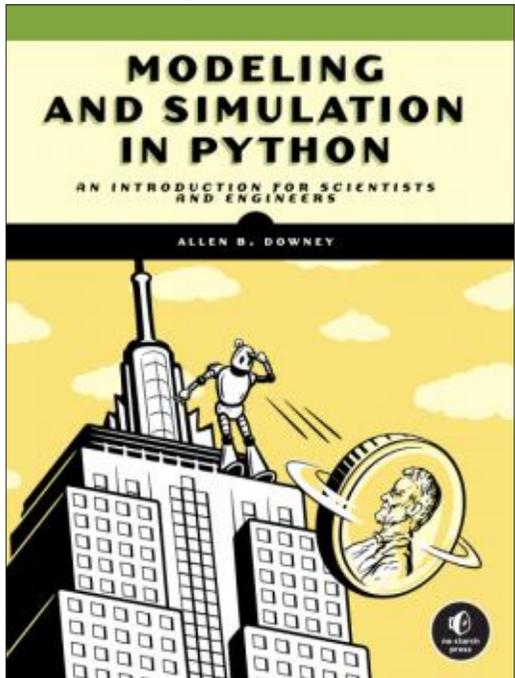
Notable is the best note-taking app that I have used and even if the project goes in a direction that is counter to my own needs and ethos, I know that, least ways, I can still use v1.8.4, as I have been, for the past few years. My feeling (from what I've seen and learned from the discord channel) is that this project is worth following and I hope to be using Notable for many years to come.



BOOK REVIEW

Written by Greg Walters

Modeling and Simulation in Python



Modeling and Simulation in Python
An Introduction for Scientists and Engineers
Allen B. Downey

Publisher: No Starch Press
Release date: March 2023
Pages: 280
ISBN-13: 9781718502161
Price: \$39.99 USD
Level: Intermediate

I've read a number of Allen Downey's books before, the most notable is Think Python. I've always enjoyed his writing. Modeling and Simulation in Python is no different. I thoroughly enjoyed this book!

That having been said, I have to grab a quote from the introduction.

"I assume that you know what derivatives and integrals are, but that's about all. In particular, you don't need to know (or remember) much about finding derivatives or integrals of functions analytically. If you know the derivative of x^2 and you can integrate $2x \, dx$, that will do it. More importantly, you should understand what those concepts mean; but if you don't, this book might help you figure it out."

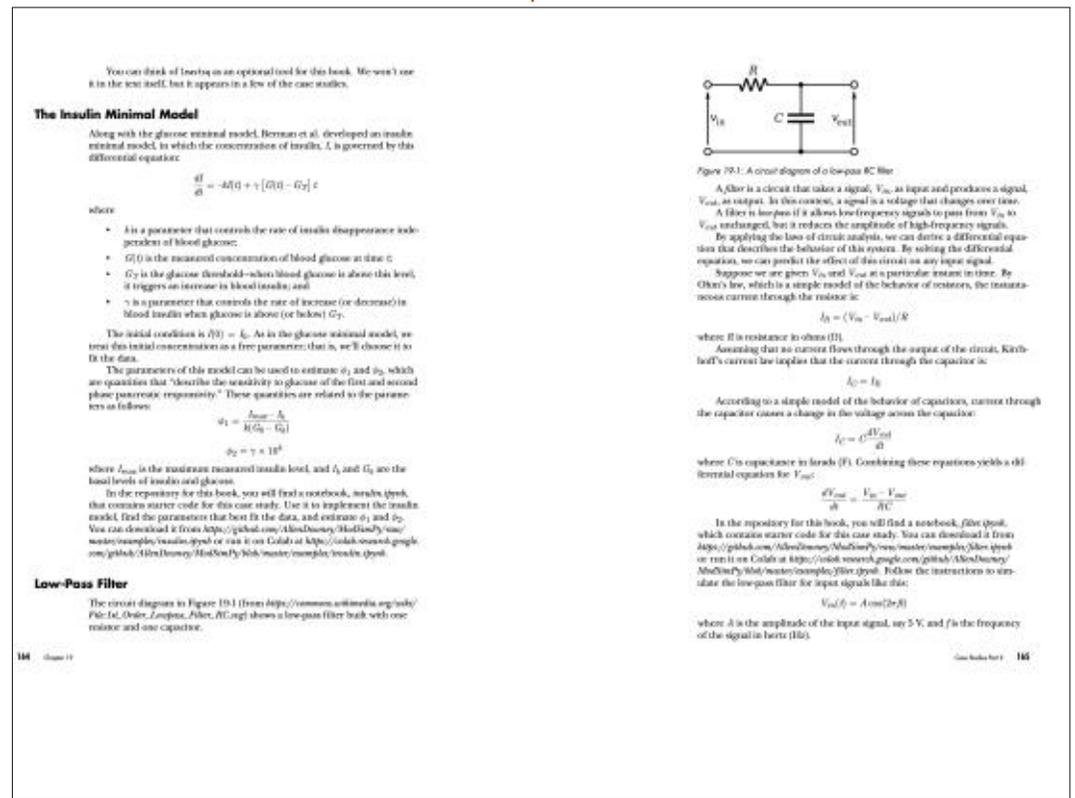
So, don't let the higher math scare you if you want to jump into simulations and modeling. Yes, some of the math is a bit on the "deep" side, but given the

resources on the Internet these days, you should be able to get to a point where the whole thing starts to make sense.

One of the chapters that drew my attention right away, is Chapter 17 - Modeling Blood Sugar. Being a diabetic, this hits close to home for me. I constantly struggle with my blood sugar levels and many times, it doesn't seem to matter what I

do, it seems to always be out of whack. This chapter really was a blessing. I intend to revisit it again and again.

Usually, I dislike when an author uses a Jupyter Notebook for demonstration of their code. I understand the reasons why they do, but it always frustrates me. It kind of seems like cheating. But, the projects in the book all make



BOOK REVIEW

sense to use it in this case.

Bottom line here is that I LOVE this book, as well as all the other books of Professor Downey's that I have read. If you want to get a firm grip on using Python for modeling or simulations, PLEASE get this book and make it part of your library. But don't just put it on the bookshelf. Sit down with it, read the chapter, and follow along with the projects. If you don't understand something, jump on the Internet and learn.

Who knows, this might get you started on a new profession in Python!



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- Above 10 billion, population grows more slowly; this behavior models the effect of resource limitations that decrease birth rates or increase death rates.
- Above 14 billion, resources are so limited that the death rate exceeds the birth rate and net growth becomes negative.

Just below 14 billion, there is a point where net growth is 0, which means that the population does not change. At this point, the birth and death rates are equal, so the population is in *equilibrium*.

Finding Equilibrium

The equilibrium point is the population, p , where net population growth, Δp , is 0. We can compute it by finding the roots, or zeros, of this equation:

$$\Delta p = \alpha p + \beta p^2$$

where α and β are the parameters of the model. If we rewrite the right-hand side like this:

$$\Delta p = p(\alpha + \beta p)$$

we can see that net growth is 0 when $p = 0$ or $p = -\alpha/\beta$. So we can compute the (nonzero) equilibrium point like this:

```
-system.alpha / system.beta
```

```
13.88888888888889
```

With these parameters, net growth is 0 when the population is about 13.9 billion (the result is positive because beta is negative).

In the context of population modeling, the quadratic model is more conventionally written like this:

$$\Delta p = rp(1 - p/K)$$



LETTERS

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Dr. Douglas R Brown

FULL CIRCLE NEEDS YOU!



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

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

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



Q&A

Compiled by EriktheUnready

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

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

Working with foreign help-desks can be a pain in the tuchus. Unfortunately I have to work with Dell India. It is such a pain. I have a broken keyboard and the guy will insist that I hold down the "D" key when booting to initiate diagnostics. Stupid nonsense like that. On the one hand I cannot fault them, having run a call center myself, but on the other hand sometimes you need someone who is not TOTALLY green. So I had a machine where the fans did not come on and it got

hot to the point of shutting down. I called Dell to basically request a replacement board, as everything is on the board, and the firmware was the latest already. After and up-n-down, they agreed to send me a heat sink and two fans. I accepted, knowing I will have to let that machine lie for two weeks then log another ticket. The hardware arrived and I went to install it. After I installed it, and tested it with a stress test, the fans came on. I was surprised and put the old fans back. They also came on. How now brown cow? I put the original heat sink back and the problem returned. This made no sense. I went back and forth a few times and while I was trying different heat sink compounds, I noticed a kink in the heat pipes of the original installation – very slight, but visible at a certain angle. How this affects the heat sensor I have no idea, but it does, somehow. Are we reaching a point where technology is resting on a knife edge? Could the user have damaged it? Certainly, but how does a little kink in semi-round pipes (they are supposed to be

round, but Dell flatten them to make the laptops thinner) cause so many issues? The original complaint was that the machine was slow when parsing git pipelines.

Q: I am trying to dual-boot Ubuntu 22.04 with Windows 10. I made space on my partition and I want to boot from there, not from USB, but it is not working. Can you help me please?

Pressing F12 on my Dell does not reveal the Ubuntu partition.

A: I'm honestly not sure what you are trying to say or do. You need to install Ubuntu from install media, be it USB or SD card, the first time to INSTALL it. Thereafter you should be able to boot off a partition.

Q: Hey guy, my Ubuntu 23.04 is freezing randomly. Usually when I am editing my layout with the extension manager. This is unacceptable, I demand you fix it

right now. This is [censored] that my \$3000 machine is laid low by unpolished software.

A: Sure, hand over the same money you hand over to Microsoft – for Office AND Windows and we'll fix it for you. You do know I don't work for Canonical, right?

Q: I'm following a couple of tutorials to get to know Ubuntu. In all my confusion, I may have installed the incorrect packages for things, but that is because I am learning. All seems OK until I try to log into the html page. I copied the code by copy-and-paste to make sure, but I keep getting a message with gibberish. Username cannot contain ^\$(,A-Z) && and so on. I am confused.

A: It is what is known as a "regular expression", waaaay too complex for a QnA, so I will point you here: <https://www.youtube.com/watch?v=r6l-Ahc0HB4&list=PL4cUxeGkcC9g6m6Sld9Q4jzqdqHd2HiD>

Q: My Dell 5530 laptop connects to my Dell W19S Dock with 2 Dell P2224h screens. My previous laptop had no issues moving my screens around, but with Ubuntu 23.04, the external screens are always mirrored. How can I get it to work?

A: The only thing I pick up is that your laptop has integrated graphics and may not be able to actually handle three screens, or you may have 2 HDMI cables in your dock, try switching one to DP. When last was the dock firmware updated?

Q & A: Guys, I had the first crash on my laptop. When it came back, and LibreOffice writer recovered, all the Q's that I was answering were gone. To the guy who had the ACPI error – update your BIOS. To the guy getting stuck on GRUB – turn secure boot off, maybe even set your computer security to audit mode. I cannot remember all of them. The guy with the USB issue, it is not your USB drive or ISO if it works on an older computer, it is BIOS again. I seriously cannot remember the

other question, I'm sorry. The guy with the code::blocks issue on Ubuntu 23.04 I tested and you are correct, I also only see a red trash can and it will not load, you can run: `sudo apt install codeblocks-contrib` and you will be golden.

This will teach me to run non-LTS versions....

Q: My dad tried installing the official Anydesk client from anydesk.com. It seemed to install, but I can't connect to his machine, it just gives me an error. Problem is, I can only go and look again on the Christmas holiday. Nothing seems to work for him. Any suggestions?

A: Yes, let your father click on the gear icon when logging in and let him choose an X11 session instead of Wayland. Wayland cannot do those types of things yet. Anydesk should work on a X11 session.

Q: I use Thunderbird on Ubuntu and Betterbird on Windows. Can I import my inbox into Ubuntu Thunderbird please?

A: I need a little more info here, are you trying to import from a different account? If so, check on the Betterbird forums, just to be sure. From what I can see, there *should be no problem provided the versions are compatible, as Thunderbird has a tendency not to import newer versions when copied across.

Q: More of an opinion question, but here goes. What version of Ubuntu do you recommend for a Raspberry Pi 3B please? I must not be slow.

A: Ubuntu Core.



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



TABLETOP UBUNTU

Written by Josh Hertel



BACK NEXT MONTH



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

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UBUNTU GAMES

Written by Ronnie Tucker

Steam: https://store.steampowered.com/app/1970460/Garden_Galaxy/

Price: £8

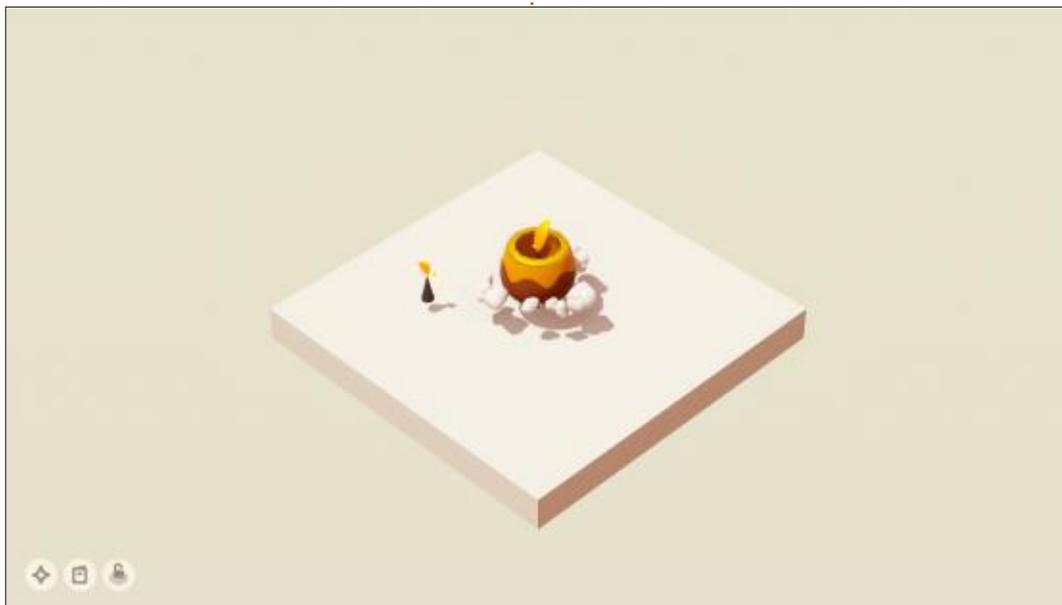
Blurb from Steam: *"In Garden Galaxy, you build and arrange your own personalised garden from randomised item drops, pulled from an enormous selection of different items and decorations.*

No two gardens are the same! When at the mercy of chance, every garden you create will be unique and evolve with every new item

from the pot.

Stack the odds in your favor with special items to increase the chances of getting the items you want or even stop them from appearing!"

DISCLAIMER: usually I never buy Windows-only games. I much prefer to buy a Linux version. I'm making an exception for this as it's nice and relaxing, pretty cheap, and with a demo you can try before buying.



Garden Galaxy

On loading the game, you're presented with a very colorful and cheery screen. Here, you start your 'garden'. It's basically several blank squares with a pot on one square. There's a little black cone guy bouncing around. You click them to get a mystery coin.

Deposit said coin into the aforementioned pot and you're given an item to place in your garden. You can rotate the map and zoom in/out to get a better look at your almighty creation.

You can either place the item

somewhere in your garden or dump it back into the pot. If you're lucky you'll get a 'bank' item where you can save up coins or a cardboard box where you can stash your garden items for later.

You also get squares of land you can place to add to your garden. You can either expand outwards, or stack them to go higher. Some squares are steps or slopes.

There are many different categories of coins and items, so it's kinda like a lucky dip.



UBUNTU GAMES

That's it. That's all there is to the game. Just chill and build your ideal garden.

CONCLUSIONS

I love the cutesy art style and the fact that there's no timer or levels to complete. No bosses, no baddies. Just coins and placing items.

Obviously, I have to deduct a star for having no official Linux version. It only runs in Linux thanks to the wizardry of Steam, and it runs wonderfully on my machine with no 3D graphics card.



Ronnie is the founder of Full Circle and, somehow, still editing this thing. He also paints, draws and does woodcarving in his spare time.



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

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

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

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



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