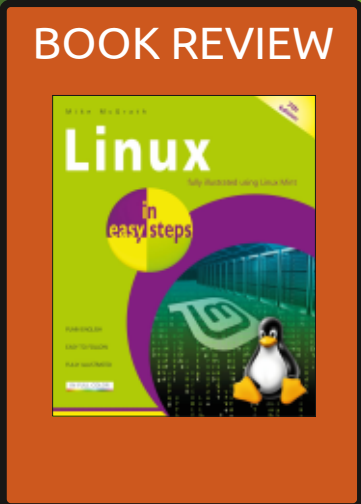
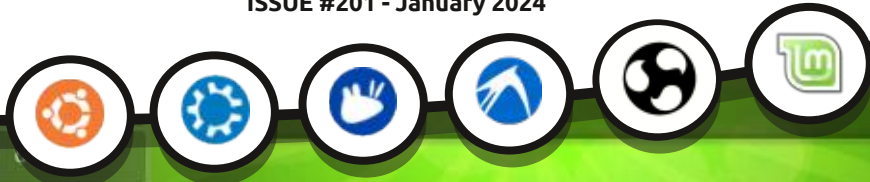




Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #201 - January 2024



THE OTHER *BUNTU'S UBUNTU DISTROS YOU MAY NOT KNOW

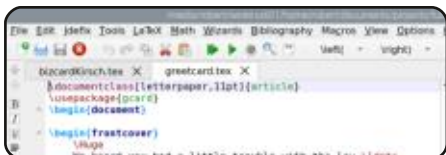
HowTo



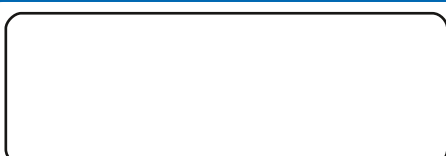
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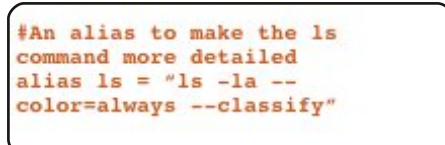
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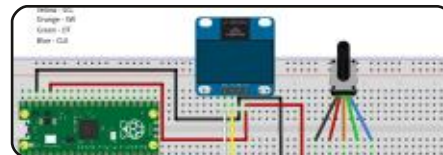
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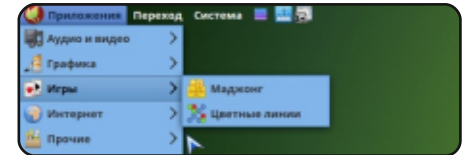
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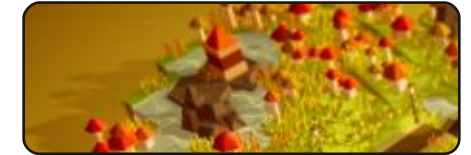
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WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

Once again we bring you some Python and Micro stuff, some Latex, and some Inkscape. No Stable Diffusion this month I'm afraid, but it'll be back next month. In its place we have an article about doing backups with Duplicati. You do make backups right? Right? Don't leave it until it's too late. Even if you don't use Duplicati, use something!

Adam's usual 'buntu 23.10 review is here with Ubuntu. His other review is one with a twist. I won't spoil the surprise. Speaking of reviews, we have our first book review from the 'In Easy Steps' series. Big thanks to them for sending us a review copy.

That's it for this month. I shant waffle on any longer.

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 2024!

Ronnie

ronnie@fullcirclemagazine.org



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RELEASE OF LIBREELEC

11.0.4:

26/12/2023

A new release of the LibreELEC 11.0.4 project has been published, a fork of OpenELEC for home theaters. The user interface is based on the Kodi media center. Images have been prepared for loading from a USB drive or SD card (32- and 64-bit x86, Raspberry Pi 2/3/4/5, various devices on Rockchip, Allwinner, NXP and Amlogic chips). Build size for x86_64 architecture is 227 MB.

With LibreELEC, you can turn any computer into a media center, which is no more difficult to operate than a DVD player or set-top box. The basic principle of the distribution is "everything just works"; to get a completely ready-to-use environment, you just need to load LibreELEC from a Flash drive. The user does not need to worry about keeping the system up to date - the distribution uses a system for automatically downloading and installing

updates, activated when connected to the internet. You can expand the functionality of the distribution through a system of add-ons that are installed from a separate repository from the project developers.

The distribution is not based off other distributions. In addition to the standard Kodi capabilities, the distribution provides a number of additional functions aimed at easy operation. For example, a special configuration add-on is being developed that allows you to configure network connection parameters, manage LCD screen settings, and allow or disable automatic installation of updates. Built-in features include using a remote control (control is possible both via infrared and via Bluetooth), file sharing (Samba server is built-in), built-in BitTorrent client, automatic search and connection of local and external drives.

<https://libreelec.tv/2023/12/23/libreelec-nexus-11-0-4/>

RELEASE OF NOBARA 39:

27/12/2023

Nobara 39 has been released, building on Fedora Linux 39 and including additional fixes to address known issues with gaming, streaming, and content creation tasks. Six installation images are prepared for download: the official one with KDE (3.6 GB), additional ones with GNOME (3.5 GB), as well as variants of these images with proprietary NVIDIA drivers. The official image includes its own theme, while additional images offer the original GNOME and KDE skins.

The distribution comes with proprietary components commonly used on workstations, such as multimedia codecs and drivers, as well as packages not included in the stock Fedora repository, such as OBS Studio, Steam, Lutris, and additional Wine dependencies. The goal of the project is to provide an out-of-the-box user experience that requires no post-installation steps

and solves the main problems faced by Fedora users.

Among the extended fixes offered by the distribution are the delivery of patches to the Linux kernel to reduce latency in games (Zenify), solving problems with OpenRGB, use the amdgpu driver for older GPUs, support for steam deck and Microsoft surface devices, improve compatibility with ASUS laptops, and eliminate simpledrm incompatibility with NVIDIA drivers, support for Lenovo Legion laptops, enabling ashmem and binder for Waydroid, troubleshooting problems when using Wayland with the nouveau driver. SELinux has been replaced by AppArmor.

The new version includes the most recent releases of Mesa and Wine, straight from project repositories. They added patches to Glibc, Flatpak, SDL2, Mutter and xwayland. The Blender package includes support for FFmpeg and the HIP ray tracing library . There are additional dependencies for Davinci Resolve. A large selection of patches for OBS Studio is included,

including patches for solving screen capture breakdowns in games using OpenGL and Vulkan, as well as patches for H.264 and H.265/HEVC hardware encoding on AMD, NVIDIA and Intel systems. By default, the RPMFusion repository is enabled. OnlyOffice is supplied as an office suite.

<https://nobaraproject.org/2023/12/26/december-26-2023>

EXIM 4.97.1 UPDATE: 29/12/2023

A maintenance release of the Exim mail server 4.97.1 is available, which includes changes to protect against the SMTP Smuggling attack. The attack allows one message to be split into several different messages through the use of a non-standard sequence for separating letters. The problem was initially thought to only affect postfix and sendmail, but was later discovered to also affect Exim (CVE-2023-51766).

Exim can process the sequences "\n.\n", "\r\n.\n" and "\n.\r\n" as message separators if the server has the "PIPELINING" and

"extensions enabled for incoming connections." and "CHUNKING". The fix adds the strict_crlf setting, which allows you to return the ability to process non-standard sequences. As a security workaround, you can disable the "PIPELINING" or "CHUNKING" extension using the pipelining_advertise_hosts, pipelining_connect_advertise_hosts, and chunking_advertise_hosts settings.

<https://github.com/Exim/exim/releases/tag/exim-4.97.1>

GENTOO HAS ANNOUNCED THE AVAILABILITY OF BINARY PACKAGES: 29/12/2023

The developers of the Gentoo Linux distribution, which was initially focused on creating an environment using the building of programs from source code, announced the introduction of a repository of ready-made binary packages. The Portage package manager has supported the installation of binary packages for many years, but until now binary packages have only been provided

selectively - the distribution is supposed to primarily distribute build metadata, but the user can build binary packages on one of their systems and use them on other computers.

From now forward, the project begins to provide binary builds, officially for downloading from its servers. At the user's discretion, binary builds can be used in combination with packages built from source code, combining different types of packages on your system. Direct downloading of binary packages will speed up the deployment of the distribution on low-power computers and optimize the installation process, allowing you to focus on building from source code only the most important components for customization.

<https://www.gentoo.org/news/2023/12/29/Gentoo-binary.html>

RELEASE OF GNU INETUTILS 2.5: 30/12/2023

After 14 months of development, the GNU

inetutils 2.5 suite was released with a collection of networking programs, most of which were transferred from BSD systems. In particular, it includes inetd and syslogd, servers and clients for ftp, telnet, rsh, rlogin, tftp and talk, as well as typical utilities such as ping, ping6, traceroute, whois, hostname, dnsdomainname, ifconfig, logger, etc.

The new version eliminates a vulnerability (CVE-2023-40303) in the suid programs ftpd, rcp, rlogin, rsh, rshd and uucpd, caused by a lack of verification of values returned by the setuid(), setgid(), seteuid() and setgid() functions . The vulnerability can be used to create conditions where calling set*id() will not reset privileges and the application will continue to work with elevated privileges and perform operations under them that were originally designed to work with the rights of an unprivileged user. For example, ftpd, uucpd, and rshd processes running as root will continue to run as root after the user sessions start if set*id() fails

<https://www.mail-archive.com/info-gnu@gnu.org/msg03239.html>

NETSURF BROWSER 3.11:

30/12/2023

After three and a half years of development, the minimalistic multi-platform web browser NetSurf 3.11 was released, capable of running on systems with several tens of megabytes of RAM. The release is prepared for Linux, Windows, Haiku, AmigaOS, RISC OS and various Unix-like systems. The browser code is written in C and is distributed under the GPLv2 license.

The browser supports tabs, bookmarks, displaying page thumbnails, URL autocompletion in the address bar, page scaling, HTTPS, SVG, an interface for managing Cookies, a mode for saving pages with images, HTML 4.01, CSS 2.1 and partially HTML5

standards. Limited support for JavaScript is provided and is disabled by default. Pages are displayed using the browser's own engine, which is based on Hubbub, LibCSS and LibDOM libraries. The Duktape engine is used to process JavaScript.

The new version has improved CSS support and ensures correct rendering of pages that use the flex CSS property. There is improved table layout, list processing and support for dark themes. Performance optimization has been carried out. Improved support for the RISC OS platform. Added support for JpegXL image format. They added a rsvg image decoder. By default, TLS 1.0 and TLS 1.1 are disabled and configured to use TLS 1.3. There is also added support for OpenSSL 3, with support for automatic replacement of http to https and an improved interface

based on the GTK library.

<https://www.netsurf-browser.org/>

MX LINUX FOR RASPBERRY Pi:

30/12/2023

A new version of the lightweight MX Linux distribution has been introduced, designed for Raspberry Pi boards. The build has been tested on Raspberry Pi 4, 400 and 5 boards. Installation requires 16 GB of free space on a memory card or boot from a USB drive. The size of the compressed system image is 2.2 GB.

The distribution combines components of the Raspberry Pi OS and MX Linux distributions, includes the MX Tools and provides access to the MX Linux repositories. The user

environment is based on Xfce. The MX Linux distribution uses the sysVinit initialization system and its own tools for configuring and deploying the system. Unlike the MX Linux build for x86 systems, the Raspberry Pi edition offers the Chromium browser by default instead of Firefox, there is no live mode, and after the first boot an interface for setting up the system is launched.

<https://mxlinux.org/blog/mx-23-1-raspberry-pi-os-respin/>

RELEASE OF WATTOS 13:

30/12/2023

After a year of development, wattOS 13 was published, built on Debian and supplied with the LXDE graphical environment, the Openbox window manager and the PCManFM file manager. The distribution tries to be simple, fast, minimalistic and suitable for running on outdated hardware. The project was founded in 2008 and initially developed as a minimalist edition of Ubuntu. The size of the installation iso image is 1.4 GB; it supports both Live mode and installation on a hard drive.



DistroWatch.com

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

The new version switches to Debian 12 (the previous release was based on Debian 11, and the year before on Ubuntu 16.04) and the Linux 6.1 kernel. Calamares is used as the installer. There is support for packages in Flatpak format and the ability to install deb packages using the gdebi utility.

<https://www.planetwatt.com/R13-details/>

RELEASE OF SCUMMVM 2.8.0:

31/12/2023

The free cross-platform interpreter of classic quest games, ScummVM 2.8.0, that replaces executable files for games and allows you to run many classic games on platforms for which they were not originally intended, has a new release. The project code is distributed under the GPLv3+ license.

In total, you can launch more than 320 quest games, including games from LucasArts, Humongous Entertainment, Revolution Software, Cyan and Sierra, such as

Maniac Mansion, Monkey Island, Broken Sword, Myst, Blade Runner, King's Quest 1-7, Space Quest 1-6, Discworld, Simon the Sorcerer, Beneath A Steel Sky, Lure of the Temptress and The Legend of Kyrandia. It supports running games on Linux, Windows, macOS, iOS, Android, PS Vita, Switch, Dreamcast, AmigaOS, Atari/FreeMiNT, RISC OS, Haiku, PSP, PS3, Maemo, GCW Zero, etc. platforms.

<https://www.scummvm.org/news/20231230/>

UPDATE TO NODEVERSE:

01/01/2024

Version 0.4.0 of Nodeverse, a space exploration game built on the Minetest engine, has been released. The main functions of the game boil down to exploring planets, building and flying spaceships. The Nodeverse project was inspired by the game No Man's Sky, but uses voxel graphics. The game code is written in Lua and distributed under the GPLv3 license.

This release breaks compatibility with previous versions. Changes

include the addition of cacti, vines, water lilies, trees, mushrooms and underground lakes. New mods 'nv_flora', 'nv_gui', 'nv_encyclopedia' have been introduced. Improved performance and fixed various bugs.

<https://content.minetest.net/packages/aerkiaga/nodeverse/>

RELEASE OF GNU PLOT 6.0:

01/01/2024

Gnuplot 6.0, a free tool for creating two-dimensional and three-dimensional scientific plots, supporting a wide range of output formats and the ability to use scripts to generate input data, is out. This is the first major release since the 5.0 branch was published in 2015.

https://gnuplot.sourceforge.net/ReleaseNotes_6_0_0.html

RELEASE OF SCRIBUS 1.6.0:

01/01/2024

After 12 years of development, a new stable branch of the free document layout package Scribus

1.6.0 was announced, which incorporates the changes developed within the experimental 1.5.x branch. The package provides tools for professional layout of printed materials, includes flexible tools for generating PDFs and supports working with separate color profiles, CMYK, spot colors and ICC. The system is written using the Qt toolkit and is licensed under the GPLv2+ license. Ready-made binary assemblies are prepared for Linux (AppImage), macOS and Windows.

Key improvements in the new branch include a new user interface based on Qt5, a changed file format, full support for tables, advanced text processing tools and an expansion of supported import and export formats. After the release of Scribus 1.6.0, the developers began developing the experimental branch 1.7, which will include a transition to Qt 6, a transition to the SVG format for icons, a new palette implementation and a new system of dockable panels.

<https://www.scribus.net/scribus-1-6-0-released/>

RELEASE OF SNOOP 1.4.0:

01/02/2024

The Snoop 1.4.0 project has been published, developing a forensic OSINT tool that searches for user accounts in public data (open source intelligence). The program analyzes various sites, forums and social networks for the presence of the required username, i.e. allows you to determine on which sites there is a user with the specified nickname. The project was developed based on research materials in the field of scraping public data. Builds are prepared for Linux and Windows.

The code is written in Python and is distributed under a license restricting its use to personal use only. Moreover, the project is a fork from the code base of the Sherlock project, supplied under the MIT license (the fork was created due to the inability to expand the base of sites).

<https://github.com/snooppr/snoop>

RELEASE OF VIM 9.1:

03/01/2024

After a year and a half of development, the text editor Vim 9.1 was released. The Vim code is distributed under its own copyleft license, compatible with the GPL and allowing unlimited use, distribution and reworking of the code. The main feature of the Vim license is related to the reversion of changes - improvements implemented in third-party products must be transferred to the original project if the Vim maintainer considers these improvements worthy of attention and submits a corresponding request. By distribution type, Vim is classified as Charityware, i.e. Instead of selling the program or collecting donations for the needs of the project, the authors of Vim ask to donate any amount to charity if the user likes the program.

Vim 9.1 was the first release to be produced under the direction of a collective council, created after the death of the project's author, who took over the decision-making work. This issue is dedicated to the memory of Bram Moolenaar, the author and key developer of Vim,

who has been maintaining the project for more than 30 years. Brahm developed the vast majority of changes to Vim - he made 16.5 thousand commits and added 3.5 million lines of code, which is 50 times more than the contribution of all other developers combined.

<https://www.vim.org/news/news.php>

RELEASE OF IPFIRE 2.27 CORE 182:

04/01/2024

IPFire 2.27 Core 182 has been published. IPFire is distinguished by a simple installation process and configuration through an intuitive web interface, replete with visual graphics. The size of the installation iso image is 423 MB (x86_64, AArch64).

The system is modular, in addition to the basic functions of packet filtering and traffic management for IPFire, modules are available with the implementation of a system for preventing attacks based on Suricata, for creating a file server (Samba, FTP, NFS), a mail server

(Cyrus-IMAPd, Postfix, Spamassassin, ClamAV and Openmailadmin) and a print server (CUPS), organizing a VoIP gateway based on Asterisk and Teamspeak, creating a wireless access point, organizing a streaming audio and video server (MPFire, Videolan, Icecast, Gnum3d, VDR). To install add-ons in IPFire, a special package manager, Pakfire, is used.

<https://blog.ipfire.org/post/ipfire-2-27-core-update-182-released>

MAESTRO CORE, WRITTEN IN RUST AND PARTIALLY COMPATIBLE WITH LINUX:

04/01/2024

A project with a lightweight Unix-like kernel in the Rust language, implementing a subset of system calls of the Linux kernel sufficient to create standard working environments, was spotted in the wild. The project was created in 2018 and initially used the C language, but in 2020 it was completely restarted from scratch, taking into account the accumulated experience and switched to Rust to reduce the likelihood of errors arising when

working with memory. The kernel code is distributed under the MIT license. In addition to the kernel, this Rust project is also developing an X11 server, a package manager, a loader, an installer, sets of utilities and other components necessary for building an operating system.

The kernel has a monolithic architecture and currently only supports x86 systems in 32-bit mode. The kernel code base has 48.8 thousand lines of code (for comparison, the Linux kernel has 33 million lines of code). Can be run in QEMU, VirtualBox or on top of hardware. At the current stage of development, Maestro implements 31% (135 out of 437) of Linux system calls, which is enough to load a console environment based on bash and the standard C library Musl. The Maestro-based environment can also run some of the utilities from the GNU coreutils suite, such as ls, cat, mkdir, rm, rmdir, uname and whoami.

<https://blog.lenot.re/a/introduction>

LINUX KERNEL 6.7 RELEASE: 08/01/2024

After two months of development, Linus Torvalds presented the latest release of the Linux 6.7 kernel. Among the most notable changes were: integration of the Bcachefs file system, discontinuation of support for the Itanium architecture, the ability of Nouveau to work with GSP-R firmware, support for TLS encryption in NVMe-TCP, the ability to use exceptions in BPF, support for futex in io_uring, optimization of fq (Fair Queuing) scheduler performance), support for the TCP-AO extension (TCP Authentication Option) and the ability to restrict network connections in the Landlock security mechanism, added access control to user namespace and io_uring via AppArmor.

The new version includes 18,405 fixes from 2,066 developers, the patch size is 72 MB (the changes affected 13,467 files, 906,147 lines of code were added, 341,048 lines were deleted). The last release had 15291 fixes from 2058 developers, the patch size was 39 MB. About 45% of all changes introduced in 6.7

are related to device drivers, approximately 14% of changes are related to updating code specific to hardware architectures, 13% are related to the network stack, 5% are related to file systems, and 3% are related to internal kernel subsystems.

<https://lore.kernel.org/lkml/CAHk-widprp4XoHUcsDe7e16YZjLYJWradK0hE1MnfPMf6C3Q@mail.gmail.com/>

KDE PLASMA DESKTOP IN OPENBSD: 09/01/2024

Rafael Sadowski announced the availability of the KDE Plasma 5.27 user environment for installation on OpenBSD-current, ready-to-install packages, kde-plasma and kde-plasma-extra, and the intention to provide support for KDE Plasma in the spring release of OpenBSD 7.5. After the end of support for KDE4, OpenBSD never ported the KDE Plasma 5 desktop. Packages with KDE Gears 5 applications and KDE Frameworks 5 libraries have been available in OpenBSD ports for quite some time, but the shell itself has

remained inoperable until now.

<https://rsadowski.de/posts/2024-01-09-openbsd-kde/>

RELEASE OF SOLUS 4.5: 09/01/2024

A new release of Solus 4.5 has been published, which is not based on packages of other distributions and develops its own installer, package manager and configurator. Previously, the Budgie desktop was developed as part of the distribution, but now it is separated into an independent project. The dev's decided to develop the next branch of Solus 5 using the technologies of the SerpentOS distribution. The project's development code is distributed under the GPLv2 license; C and Vala languages are used for development. Builds with Budgie, GNOME, KDE Plasma and Xfce desktops are provided. The size of iso images is 2.7 GB (x86_64).

The distribution follows a hybrid development model in which it periodically releases major releases that offer new technologies and

significant improvements, and in between major releases the distribution develops using a rolling model of package updates.

<https://getsol.us/2024/01/08/solus-4-5-released/>

CHROME OS 120 RELEASED: 09/01/2024

A new release of Chrome OS 120 is available, based on the Linux kernel, the upstart system manager, the ebuild/portage assembly tools, open components and the Chrome 120 web browser. The user environment of Chrome OS is limited to a web browser, and instead of standard programs, web applications are used, however, Chrome OS includes a full multi-window interface, desktop and taskbar. The source code is distributed under the free Apache 2.0 license. Chrome OS 120 build is available for most current Chromebook models. Chrome OS Flex edition is offered for use on regular computers.

<https://chromereleases.googleblog.com/2024/01/stable-channel-update-for-chromeos.html>

ARCH LINUX SWITCHED TO USING DBUS-BROKER: 09/01/2024

Arch Linux developers have announced the use of the dbus-broker project as the default implementation of the D-Bus bus. (say that 3 x fast!) It is claimed that using dbus-broker instead of the classic dbus-daemon background process will improve reliability, increase performance and improve integration with systemd. The ability to use the old dbus-daemon background process as an option is retained - the Pacman package manager will provide a choice in installing dbus-broker-units or dbus-daemon-units, offering the first option by default.

By comparison, the Fedora project switched to dbus-broker by default in 2019. D-Bus Broker is implemented in user space, but actively uses Linux kernel subsystems for acceleration, remains compatible with the D-Bus

reference implementation, and can be used to transparently replace dbus-daemon. At the same time, dbus-broker was initially designed to support functionality that is in demand in practice, takes into account resources associated with users and pays special attention to optimizing performance and increasing reliability (for example, a message cannot be lost without error handling).

<https://archlinux.org/news/making-dbus-broker-our-default-d-bus-daemon/>

ARTI 1.1.12, AN IMPLEMENTATION OF TOR IN RUST: 10/01/2024

The Arti 1.1.12 project, which develops a Tor client written in the Rust language, has a new release. The 1.x branch is marked as suitable for use by general users and provides the same level of privacy, usability, and stability as the main C implementation. The code is distributed under the Apache 2.0 and MIT licenses.

Version Arti 1.1.12 is notable for

bringing the implementation of onion services to the point of being ready for testing and experimentation. Using Arti, you can now not only connect to existing onion services, but also create your own onion services. At the same time, some features for ensuring privacy and protection of onion services are not yet ready, such as client authorization, protection against DoS attacks and the mechanism for preventing the detection of Vanguard Guard nodes, so the implementation is not yet recommended for production implementations.

<https://blog.torproject.org/arti-1-1-12-released/>

THE GODOTOS PROJECT TOY: 11/01/2024

The first release of the GodotOS project has been published. It is a prototype graphical interface created using the Godot game engine. GodotOS is being touted as an experiment in using a game engine to design a minimalistic, user-friendly, and aesthetically pleasing desktop interface. The

project code is written in GDScript and is distributed under the AGPLv3 license. Builds are available for Linux and Windows. A demo has also been prepared, downloadable via the Web and running in a browser.

GodotOS supports working with files, editing text documents, viewing images, and even running simple games. Creating an interface for launching games and built-in applications is mentioned as one of the possible future applications.

<https://github.com/popcar2/GodotOS/releases/tag/1.0.0>

END OF SUPPORT FOR LTS LINUX KERNEL 4.14:

11/01/2024

Greg Kroah-Hartman, responsible for maintaining the stable branch of the Linux kernel, announced the publication of the final release of the Linux kernel 4.14.336, which will be the last in this series. Branch 4.14 was published in November 2017 and has been maintained for 6 years. It is recommended that products shipped with the 4.14 kernel be

upgraded to more current LTS releases.

<https://lkml.org/lkml/2024/1/10/201>

FIRST RELEASE CANDIDATE FOR KDE 6:

11/01/2024

Testing has begun on release candidates for the KDE Plasma 6 user environment, the KDE Frameworks 6 libraries and the KDE Gear 6 collection of applications. The release candidate marks the transition to the final testing stage ahead of release scheduled for February 28th. To evaluate KDE 6, you can use builds from the KDE Neon project.

The key change in the KDE 6 branch is the transition to Qt 6, changing some basic settings, cleaning up obsolete features and delivering an updated base set of libraries and runtime components of KDE Frameworks 6, which forms the KDE software stack. By default, KDE Plasma 6 offers a session that uses the Wayland protocol, a new task switching interface, and a floating panel display mode, which

has visible padding between the panel and the screen borders. Behavioral changes include switching to double-clicking to open files and directories and disabling the ability to switch virtual desktops by scrolling on the desktop.

Among the functional changes, we can note the transfer of the shell, libraries and applications from Kirigami.AbstractListItem widgets to Kirigami.BasicListItem, the implementation of separate colour management for each screen, the return of the effect for navigating across desktops in the form of a rotating cube, a change in the design of the Discover application manager, modernization of the configurator and panel configuration interface, the ability to unlock the screen using a smart card or fingerprint, HDR support in games.

<https://kde.org/announcements/megarelease/6/rc1/>

THE OPENSASH PROJECT PLAN TO DEPRECATE DSA

SUPPORT:

12/01/2024

The developers of the OpenSSH project have presented a plan to end support for keys based on the DSA algorithm. By modern standards, DSA keys do not provide the proper level of protection, since they are limited by the size of the private key of only 160 bits and the SHA1 hash, which, according to the estimated security level, corresponds to approximately an 80-bit symmetric key.

By default, the use of DSA keys was discontinued in 2015, but DSA support is left as an option, since this algorithm is the only one required for implementation in the SSHv2 protocol. This requirement was added because at the time of the creation and approval of the SSHv2 protocol, all alternative algorithms were subject to patents. Since then, the situation has changed, the patents associated with RSA have expired, the ECDSA algorithm has been added, which is significantly superior to DSA in performance and security, as well as EdDSA, which is safer and faster

than ECDSA. The only factor in continuing DSA support was maintaining compatibility with legacy devices.

<https://lists.mindrot.org/pipermail/openssh-unix-announce/2024-January/000156.html>

RELEASE OF LINUX MINT 21.3:

12/01/2024

The release of the Linux Mint 21.3 distribution has been announced, continuing the development of a branch based on Ubuntu 22.04 LTS. The distribution is fully compatible with Ubuntu, but differs significantly in the approach to organizing the user interface and the selection of default applications. Linux Mint developers provide a desktop environment that follows the classic canons of desktop layout, which is more familiar to users who do not accept the new methods of building the GNOME 3 interface. Builds based on the MATE 1.26 (2.9 GB) and Cinnamon 6.0 (2.9 GB) are available for download as well as Xfce 4.18 (2.8 GB). Linux Mint 21 is classified as a long-term support

(LTS) release, for which updates will be generated until 2027.

<https://blog.linuxmint.com/?p=4624>

RELEASE OF FIREBIRD 5.0 DBMS:

13/01/2024

After two and a half years of development, the release of the relational DBMS Firebird 5.0 was presented . Firebird continues the development of the InterBase 6.0 DBMS code, opened in 2000 by Borland. Firebird is licensed under the free MPL and supports ANSI SQL standards, including features such as triggers, stored procedures, and replication. Binary builds are prepared for Linux, Windows, macOS and Android.

<https://firebirdsql.org/en/news/firebird-5-0-0-is-released/>

PULSEAUDIO 17.0 SOUND

SERVER AVAILABLE:

13/01/2024

PulseAudio 17.0 , which acts as an intermediary between applications and various low-level audio subsystems, abstracting work with hardware, is out. PulseAudio allows you to control the volume and mixing of sound at the level of individual applications, organize the input, mixing and output of sound in the presence of several input and output channels or sound cards, allows you to change the format of the audio stream on the fly and use plug-ins and makes it possible to transparently redirect the audio stream to another machine . PulseAudio code is licensed under LGPL 2.1+. Supports Linux, Solaris, FreeBSD, OpenBSD, DragonFlyBSD, NetBSD, macOS and Windows.

It is noted that there are relatively few improvements in the new PulseAudio 17.0 branch and the development of the project has recently slowed down, as the community's main attention is now focused on the development of the Pipewire multimedia server, the WirePlumber audio session manager and related projects.

<https://lists.freedesktop.org/archives/pulseaudio-discuss/2024-January/032426.html>

THE LINUX 6.8 KERNEL TO SPEED UP TCP:

14/01/2024

The code on which the Linux 6.8 kernel is based has been updated with a set of changes that significantly improve the performance of the TCP stack. In cases where multiple parallel TCP connections are processed, the speedup can reach 40%.

The improvement was possible because variables in the network stack structures (socks, netdev, netns, mibs) were positioned as they were added, which was determined by historical reasons. Revision of the placement of variables in structures in order to improve the efficiency of working with the processor cache (minimizing the use of cache lines at the data transfer stage) and optimizing access to variables led to a noticeable increase in TCP speed, especially in the case of a large number of simultaneous TCP

connections.

<https://git.kernel.org/torvalds/c/3e7aeb78ab01c2c2f0e1f784e5dde/c88fcd3d106>

RELEASE OF LUTRIS 0.5.15: 15/01/2024

The Lutris gaming platform, version 0.5.15 has been released, providing tools to make it easier to install, configure, and manage games on Linux. The project code is written in Python and is distributed under the GPLv3 license.

The project maintains a database for quickly searching and installing games, allowing you to launch games on Linux through a single interface with one click, without worrying about installing dependencies and settings. Runtime components for running games are supplied by the project and are not tied to the distribution used. A runtime is a distribution-independent set of libraries that includes components from SteamOS and Ubuntu, as well as various additional libraries.

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

<https://github.com/lutris/lutris/releases/tag/v0.5.15>

OPENSUSE LEAP 16 WILL BE BUILT ON THE ALP PLATFORM USING CONTAINERS: 16/01/2024

The openSUSE project developers have announced their start of work on the next major release of the openSUSE Leap 16, which will be based on the new ALP (Adaptable Linux Platform) technology platform, which the commercial SUSE distribution is also moving to. openSUSE Leap 16.0 is planned for release in 2025.

This year, on June 11, openSUSE Leap 15.6 will be released, which will most likely become the last classic release of the project. If for some reason the development of openSUSE Leap 16 is delayed, they will extend the life cycle of openSUSE Leap 15.6 or release an additional release of openSUSE Leap 15.7. The development of openSUSE Leap 16 plans to continue using the openSUSE Factory repository development model and achieve an optimal balance between new ALP technologies, the traditional Linux operating system and community package integration initiatives.

The ALP platform is positioned as a continuation of the development of the SUSE Linux Enterprise distribution and is distinguished by dividing the basic distribution into parts. The main distribution will be a stripped-down "host OS" environment, which includes only the components minimally necessary to work on top of your equipment. All applications and user space components will not run in a mixed environment, but in separate containers or virtual machines running on top of the "host OS" and isolated from each

other.

<https://news.opensuse.org/2024/01/15/clear-course-is-set-for-os-leap/>

COSMIC CUSTOM SHELL: 16/01/2024

System76, the developer of the Linux distribution Pop!_OS, announced progress in developing their custom shell called COSMIC, rewritten in the Rust language (not to be confused with the old COSMIC, which was based on the GNOME Shell). The shell has been in development for over two years and is close to the first alpha release, which will mark the readiness of a basic set of features that allow the shell to be considered a working product. They expect that the alpha version will be published at the end of March and will help gather more feedback to finalize the functionality and improve the usability. Highlights include COSMIC Terminal emulator, written using the alacritty_terminal framework and supporting features such as GPU rendering, skins, and rich input methods. Among the tasks under development, the

addition of support for mouse emulation and the ability to open hyperlinks in the terminal, are noted.

<https://blog.system76.com/post/cosmic-the-road-to-alpha>

VIRTUALBOX 7.0.14

RELEASED:

17/01/2024

Oracle has published a corrective release of the virtualization system VirtualBox 7.0.14, which contains 14 fixes. At the same time, an update of the previous branch of VirtualBox 6.1.50 was created with 7 changes, including support for packages with the kernel from the RHEL 9.4 and 8.9 distributions, as well as the implementation of the ability to import and export images of virtual machines with NVMe drive controllers and media inserted into the virtual CD drive/ DVD.

<https://www.mail-archive.com/vbox-announce@virtualbox.org/msg00229.html>

MYSQL 8.3.0 DBMS:

17/01/2024

Oracle has formed a new branch of the MySQL 8.3 DBMS and published a corrective update for MySQL 8.0.36. MySQL Community Server 8.3.0 builds are prepared for all major Linux, FreeBSD, macOS and Windows distributions.

MySQL 8.3.0 is the third release built under the new release model, which provides for the presence of two types of MySQL branches - "Innovation" and "LTS". The Innovation branches, which include MySQL 8.1, 8.2 and 8.3, are recommended for those who want to get access to new functionality earlier. These branches are published every 3 months and are supported only until the next major release is published. LTS branches are recommended for implementations that require predictability and long-term unchanged behavior. LTS branches will be released every two years and will be supported normally for 5 years, in addition, you can get another 3 years of extended support. An LTS release of MySQL 8.4 is expected in the spring of 2024, after which a new Innovation

branch, 9.0 will be formed.

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

X.ORG SERVER 21.1.11:

18/01/2024

Corrective releases of X.Org Server 21.1.11 and DDX component (Device-Dependent X) xwayland 23.2.4 have been published, which ensures the launch of X.Org Server for running/executing X11 applications in Wayland-based environments. The new versions fix 6 vulnerabilities, some of which can be exploited for privilege escalation on systems where the X server is running as root, as well as for remote code execution in configurations that use X11 session redirection via SSH for access.

<https://lists.x.org/archives/xorg/2024-January/061526.html>

RELEASE OF TESSERACT

5.3.4:

18/01/2024

The release of the optical text recognition system, Tesseract 5.3.4 was announced. It supports recognition of UTF-8 characters and texts in more than 100 languages. The result can be saved in plain text or in HTML (hOCR), ALTO (XML), PDF and TSV formats. The system was originally created between 1985-1995 in the Hewlett Packard laboratory; in 2005, the code was opened under the Apache license and was further developed with the participation of Google employees. The source code of the project is distributed under the Apache 2.0 license.

Tesseract includes a console utility and the libtesseract library for embedding OCR functionality into other applications. Third-party GUI interfaces that support Tesseract include gImageReader, VietOCR and YAGF. Two recognition engines are offered: a classic one that recognizes text at the level of individual character patterns, and a new one based on the use of a machine learning system based on an LSTM recurrent neural network,

optimized for recognizing entire strings and allowing for a significant increase in accuracy. Ready-made trained models have been published for 123 languages. To optimize performance, modules using OpenMP and SIMD instructions AVX2, AVX, AVX512F, NEON or SSE4.1 are offered.

<https://github.com/tesseract-ocr/tesseract/releases/tag/5.3.4>

RELEASE OF GNU EMACS 29.2:

18/01/2024

The GNU Project has published a new release of the GNU Emacs 29.2 text editor. Until the release of GNU Emacs 24.5, the project developed under the personal leadership of Richard Stallman, who handed over the post of project leader to John Wiegley in the fall of 2015. The project code is written in C and Lisp and is distributed under the GPLv3 license.

In the new release on the GNU/Linux platform, Emacs is set to handle the 'org-protocol' URI scheme by default. The "org" mode allows you to quickly save

bookmarks, notes and links using the 'emacsclient' command, for example to save a URL link with a title you can run 'emacsclient "org-protocol://store-link?url=URL&title=TITLE". In addition, the new version offers a new option 'tramp-show-ad-hoc-proxies', with which you can enable the display of external file names instead of shortcuts to them.

<https://www.mail-archive.com/info-gnu@gnu.org/msg03249.html>

FOXCONN JOINS INITIATIVE TO PROTECT LINUX FROM PATENT CLAIMS:

18/01/2024

Foxconn has joined the Open Invention Network (OIN), an organization dedicated to protecting the Linux ecosystem from patent claims. By joining OIN, Foxconn has demonstrated its commitment to co-innovation and non-aggressive patent management. Foxconn ranks 20th among the largest corporations by revenue (Fortune Global 500) and is the world's largest contract electronics manufacturer (about 40% of all consumer electronic

devices are manufactured at Foxconn).

OIN members agree not to assert patent claims and will freely permit the use of patented technologies in projects related to the Linux ecosystem. OIN members include more than 3,800 companies, communities, and organizations that have signed a patent-sharing license agreement. Among the main participants of OIN, ensuring the creation of a patent pool protecting Linux, are companies such as Google, Amazon, IBM, NEC, Toyota, Renault, SUSE, Philips, Red Hat, Alibaba, HP, AT&T, Juniper, Facebook, Cisco, Casio, Huawei, Fujitsu, Sony and Microsoft.

Companies that sign the agreement gain access to patents held by OIN in exchange for an obligation not to pursue legal claims for the use of technologies used in the Linux ecosystem. Including as part of joining OIN, Microsoft transferred to OIN participants the right to use more than 60 thousand of its patents, pledging not to use them against Linux and open source software.

<https://openinventionnetwork.com/hon-hai-technology-group-foxconn-joins-open-invention-network-community/>

RELEASE OF WAYLAND-PROTOCOLS 1.33:

19/01/2024

After six months of development, a new release of the wayland-protocols 1.33 package has been published, containing a set of protocols and extensions that complement the capabilities of the base Wayland protocol and provide the capabilities necessary for building composite servers and user environments.

In the new version, the "linux-dmabuf" protocol has been transferred to the stable category, which ensures the sharing of several video cards using DMA-BUF technology (allows you to create wl_buffer based on DMA-BUF). A new protocol "ext-transient-seat" has been added and placed in the "staging" category. The new protocol can be used to create temporary independent sessions (seats) designed for use with virtual input devices implemented using

the "virtual_keyboard_unstable_v1" and "wlr_virtual_pointer_unstable_v1" protocols. For example, when implementing the ability to connect to a remote desktop, the protocol allows you to create a separate session for each user with a virtual keyboard and mouse.

<https://lists.freedesktop.org/archives/wayland-devel/2024-January/043400.html>

KDE HAS IMPROVED SCALING SUPPORT AND ADDED AUTOSAVING IN DOLPHIN:

20/01/2024

Nate Graham, a QA developer on the KDE project, has published a report on preparations for the KDE 6 release scheduled for February 28th. The KDE Plasma 6.0 and KDE Gears 6.0 codebase has been forked into a separate repository, and the master branch has begun accumulating changes for KDE Plasma 6.1 and KDE Gears 24.05.

<https://pointieststick.com/2024/01/19/this-week-in-kde-auto-save-in-dolphin-and-better-fractional-scaling/>

RELEASE OF GNU OCRAD OCR 0.29:

21/01/2024

After two years of development, the Ocrad 0.29 (Optical Character Recognition) text recognition system, developed under the GNU project, has been released. Ocrad can be used both in the form of a library for integrating OCR functions into other applications, and in the form of a separate utility that, based on the image passed to the input, produces text in UTF-8 or 8-bit encodings.

For optical recognition, Ocrad uses a feature extraction method. It includes a page layout analyzer that allows you to correctly separate columns and blocks of text in printed documents. Recognition is supported only for characters from the "ascii", "iso-8859-9" and "iso-8859-15" encodings (there is no support for the Cyrillic alphabet).

<https://www.mail-archive.com/info-gnu@gnu.org/msg03251.html>

HANS REISER COMMENTED ON DEPRECATING REISERFS:

19/01/2024

The mailing list of Linux kernel developers has published letters received by one of the developers during correspondence with Hans Reiser. In 2008 Reiser was sentenced to life imprisonment for the murder of his wife as a result of a quarrel with a subsequent attempt to cover up the crime (in 2027 Hans will be able to file application for parole). In the published letters, Hans regrets his mistakes in interacting with the developer community, discusses the deprecation of ReiserFS v3 in the Linux kernel 6.6, analyzes the history of the development of ReiserFS, mentions hopes associated with the promotion of ReiserFS v4, and explains the technical solutions implemented in ReiserFS v4.

Commenting on the decision to remove ReiserFS from the kernel, Hans mentioned that the question of whether this FS remains useful

and whether it should continue to be supplied in the kernel should be decided by users and maintainers, taking into account current realities. He understands that having ReiserFS code in the kernel creates additional burden on maintainers due to the need to test and ensure compatibility with new features emerging in the kernel, and if the FS is no longer relevant, there is no point in continuing to ship it as part of the kernel. During the development of ReiserFS 4, many of the shortcomings of ReiserFS 3 were addressed and maintenance was simplified, but this version was never accepted into the kernel.

According to Hans, his only request is to add a README file accompanying the ReiserFS code, before the ReiserFS code is removed from the kernel, mentioning Mikhail Gilulu, Konstantin Shvachko and Anatoly Pinchuk, whose contributions to the development remained undeservedly missed. They were hired by Hans and developed ReiserFS, but due to Hans' unrestrained character and excessive demands (Hans could work around the clock and expected similar enthusiasm from

others) they left the project, which at that time was perceived by Hans as a betrayal, but over time he realized that their decision was justified under the circumstances.

<https://lore.kernel.org/lkml/b98b29cf-27d9-49e0-b10b-1848399badfd@kittens.ph/T/>

FUCHSIA WORKSTATION OS DEVELOPMENT PROGRAM

CANCELED:

16/01/2024

The components required to build the Chrome browser for the Fuchsia operating system have been removed from the Chromium project repository. It is noted that support for Fuchsia in Chrome was an experiment that has now been discontinued. They separately stated that the reason for the termination of support is the winding down of the Fuchsia development program for workstations. Support for the WebEngine and WebRunner browser components for Fuchsia will continue, but a separate full-fledged Chrome browser will not be provided. Fuchsia's future development will likely focus only

on consumer devices, such as home automation systems, smart photo frames and speakers.

Fuchsia is based on the Zircon microkernel, which is based on the LK project, extended for use on various classes of devices, including smartphones and personal computers. Zircon extends LK with support for processes and shared libraries, a user level, an object handling system and a capability-based security model. Drivers are implemented as dynamic libraries running in user space, loaded by the devhost process and managed by the device manager (devmg, Device Manager).

Fuchsia has its own graphical interface written in Dart using the Flutter framework. The project also develops the Peridot user interface framework, the Fargo package manager, the libc standard library, the Escher rendering system, the Magma Vulkan driver, the Scenic composite manager, the MinFS, MemFS, ThinFS (FAT in Go language) and Blobfs file systems, as well as FVM partitions. For application development, support for C/C++ and Dart languages are provided, Rust is allowed in system components, Go is used in the

network stack, and Python is used in the build system.

<https://bugs.chromium.org/p/chromium/issues/detail?id%3D1509109>

THE VIRTUALBOX NETWORKING PRIMER

Connecting and Configuring
Virtual Machines



Robin Catling

The VirtualBox Networking Primer

Connecting and Configuring Virtual Machines

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

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

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=1600253699&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>



COMMAND & CONQUER

Written by Erik

Dev Setup

I was talking to a friend who is stuck in a dead end sales job, about learning the basics of code, so he can learn QA. (His background is actually QC) After a bit of uhm-ing and ah-ing, we got onto the topic of getting up and running with Python. He had tried before and ended up creating a python VM and followed along for the first lesson, but went to sleep thereafter. When he got to the second lesson, he was stuck, not knowing how to get back into that Python VM, so he gave up. I know these kinds of frustrations, so we grabbed his old laptop and whacked Ubuntu 22.04 on it and it was done in minutes as the laptop was previously upgraded with a 128Gb SSD. We used a template to create a yaml file and installed Multipass, Pycharm and Postman, and then fired up a web server and all was complete in less than 30 minutes. He was so impressed, stating it had taken him half a day to get set up on Windows and nothing worked right. He was blissfully unaware that Ubuntu had come so far. (I shared Ubuntu 6.06 CD's with him, back in the day.)



I decided to put it onto paper how we did it, that way you guys 'n gals can share it around. An Ubuntu install is straight forward, so we will skip that part. Once installed, do all the updates. Obviously one can install all the Snaps with one line from the terminal; `snap install postman pycharm-community multipass` -but, grabbing them one-by-one from the software centre is neither here nor there. Let's do that.

And just like that, your "client-side" is set up. Pycharm creates Python VM's for you and is an IDE. Postman allows you to test your API's and Multipass will let us spin up the server side for development. (For the curious)

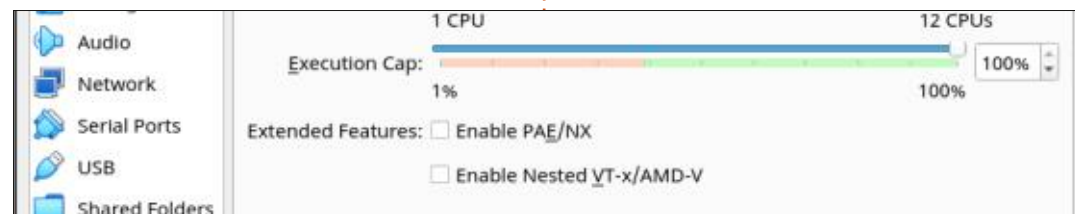
Want to know the best part? I just did it all again in a VM! I just created an Ubuntu desktop Virtual



Machine on top of Linux Lite 6.6, that in turn runs an Ubuntu server VM. If you are a n00b to all of this, you may ask, "what am I smoking?"

Let's rewind. I don't have a spare PC, to set it all up again, so I thought I'd do it in a VM, so I can vet myself and take screen-shots for you ugly lot. The thing with Ubuntu LTS is, that Virtualbox is version 6.1 in the official repositories and you will need version 7.0+ to follow along. (You will see why in a minute.) I just download the .deb-file from the website and installed it

Once complete, there is a setting under the CPU tab of Virtualbox that you need to set.



System -> Processor -> Enable Nested VT-x

Just remember to allocate enough CPU's for this. The server inside the VM will also need one, minimum. Install Ubuntu desktop as per usual and then install the programs mentioned above. I strongly suggest installing: `sudo apt install virtualbox-guest-utils`

That installs the one half, but you will need a server to faff around on. We can quickly do so with Multipass. All we are going to need is a yaml file describing our server. I searched the web for multipass cloud-init-examples and stole that yaml file and edited it to my liking:

COMMAND & CONQUER

(shown top right)

Save as cloud-config.yaml

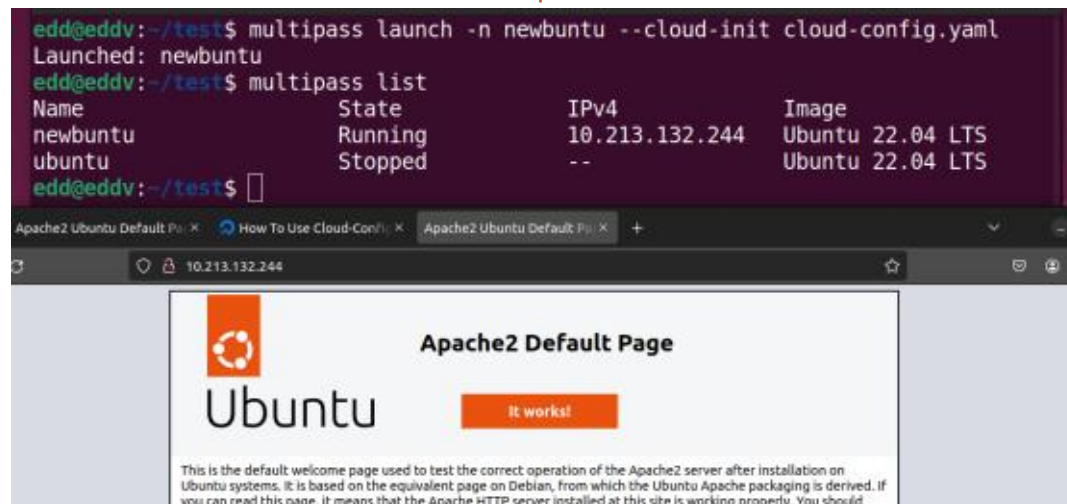
Reference: <https://www.digitalocean.com/community/tutorials/how-to-use-cloud-config-for-your-initial-server-setup>

Anyway, to launch, simply type the following where the cloud-config.yaml file is located:

```
multipass launch -n newbuntu --cloud-init cloud-config.yaml
```

This will spin up your instance we named newbuntu and you should see it running looking at the orange icon in the taskbar, or simply check in your terminal:

multipass list



Take note of that IP address, as you would need it to ssh into. If you type it into your browser, you should see your Apache landing page. I will add a screen-shot (below) so you can see what I mean.

How difficult was that?

Ssh into the machine with username ubuntu and password poopypants as per our configuration file and accept the fingerprint. (Yes, I'm twelve OK?)

So what is there not to like about this? If you and your friends / colleagues need to have identical set ups, here you go, no funny dependencies etc. Oh yes, and Multipass is Snap only, for those of you wondering about alternative

```
#cloud-config
```

```
packages:
```

```
-htop
```

```
runcmd:
```

```
- sudo sed -i -e '/^PasswordAuthentication/s/^.*$/PasswordAuthentication yes/' /etc/ssh/sshd_config
```

```
- sed -i -e '/^PermitRootLogin/s/^.*$/PermitRootLogin no/' /etc/ssh/sshd_config
```

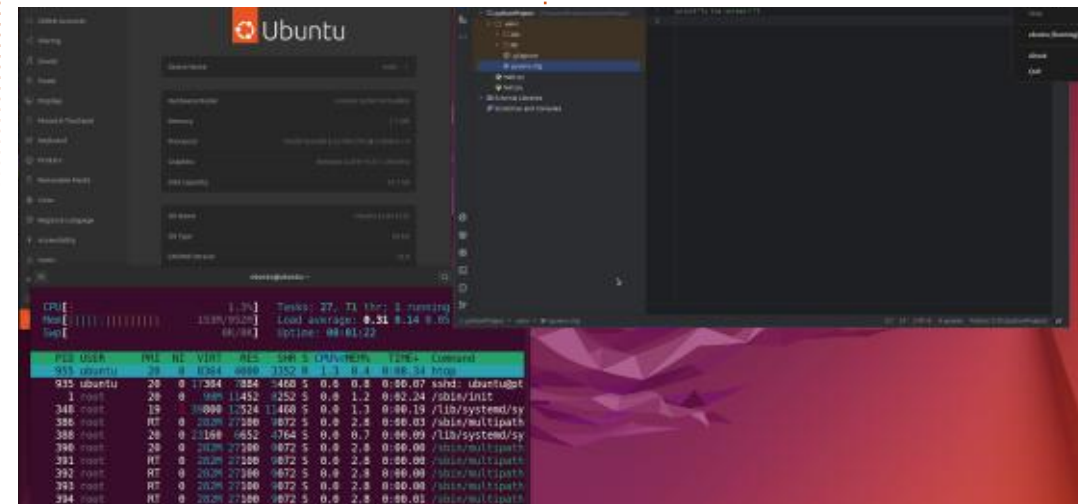
```
- sudo systemctl restart sshd.service
```

```
- sudo apt -y install apache2
```

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

```
- sudo systemctl start apache2
```

```
- sudo echo -e "poopypants\nnpoopypants" | passwd ubuntu
```



installations. So if you find this useful, or our quick 'n dirty tutorial was too "high level overview", let us know, the only way we get better is if you tell us. If something did not work for you, we have a Telegram group full of knowledgeable people who can help.

Feel like we could have done better? Then email:

misc@fullcirclemagazine.org

Above you can see my VM running a VM (Ubuntu server) with htop open and I can write Python code in Pycharm.



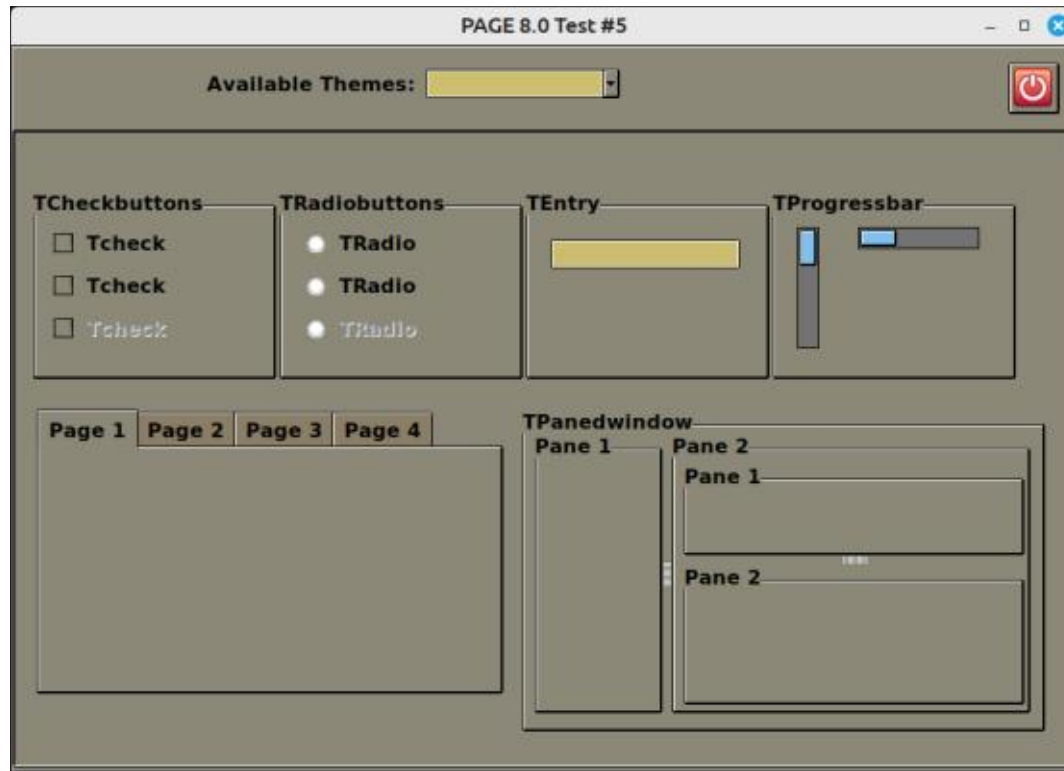
PAGE 8.0 RELEASED

Well, it's now 2024 and with the new year, we have a new PAGE GUI designer available. On January 1st, PAGE 8.0 was uploaded to the Sourceforge repository.

I'll try to highlight some of the important changes that have been implemented in the new version.

If you've ever run PAGE before, you will probably notice the first change immediately on the Main menu window (shown below).

PAGE 8.0 now supports Tcl themes in the designer. You've always been able to use the ttk Widgets easily, but they always were shown from the "default" theme for your OS. If you were running Linux, that theme would be named "default", if you were running Windows (heaven forbid!!!!)



then it should be "vista" and under mac OS x, it should be "aqua".

The problem would show up when you changed to a different theme. Since you couldn't change the theme in the Designer, any differences in widget size or

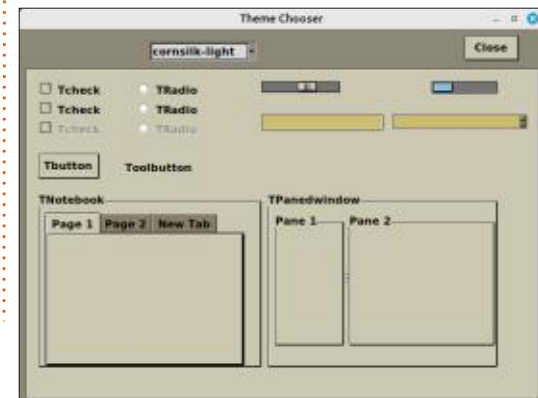
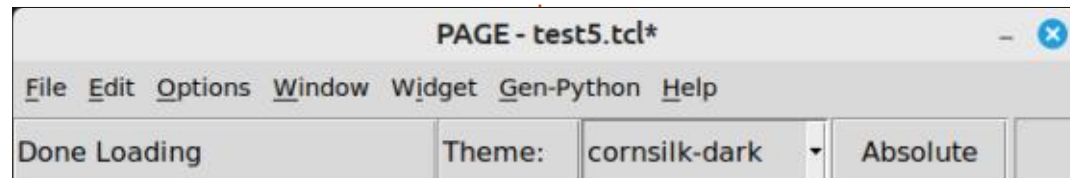
anything else that was theme based, meant that you would most likely need to rework the GUI from memory or a screenshot to make the new theme work. A major problem to say the least.

Now with PAGE 8, you can select any of the themes that PAGE supports (the OS theme set plus the 12 included themes) simply by clicking on the dropdown combo box pick a theme and (pardon the

expression) BAM! You now can see what everything will look like when using the theme (shown left).

As you can see, in the PAGE 8.0 Test #5 image, you see exactly what the theme does to the ttk widgets. Most third party themes (like the cornsilk-dark theme) use images to modify some of the look and feel of various ttk widgets. Remember, Themes only modify the ttk widgets, not the Tk widgets.

PAGE 8.0 also provides a theme chooser, a quick demo of most of the ttk widgets with a combo box to switch between all the different themes that PAGE knows about, including the various OS based themes as well. As you change themes in the theme chooser, the



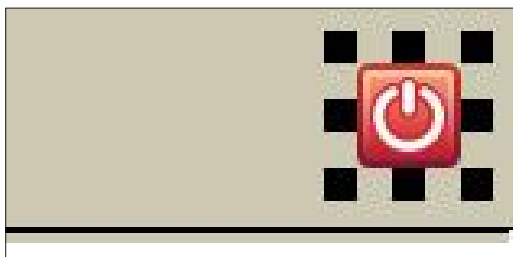
theme switches for the main design form as well.

One of the nice things about PAGE using the actual theme in the design process is the ability to see how different built in styles for different widgets affect the widgets on the Toplevel form.

For example, all `ttk::button` widgets (this includes the `TButton`, `TCheckbutton` and the `TRadiobutton`) have a built in style called "Toolbutton". This gives the widget a "flat" appearance which really looks nice in a Button bar type menu.

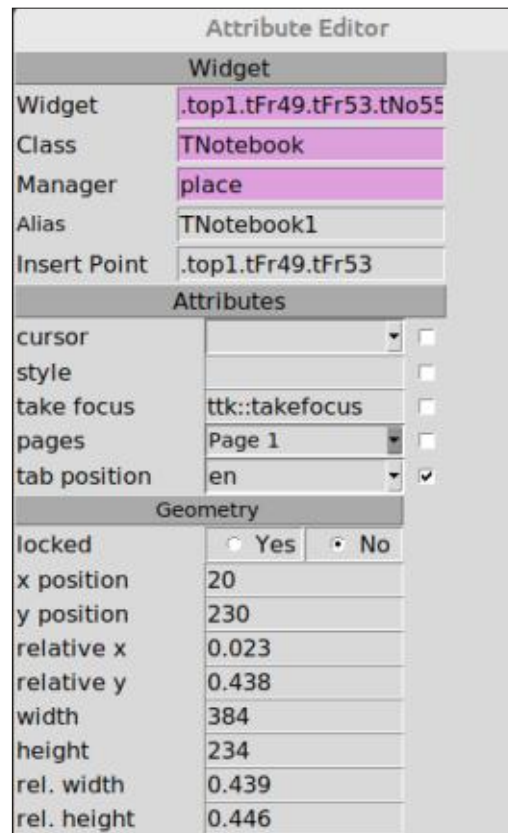


This shows the `TButton` in "normal" style.



This, however, is how the same button looks when the "Toolbutton" style is applied. Notice there is no border around the button widget.

Not all `ttk` widgets have special styles and some themes have styles for some widgets that other themes don't have. Take for example the `TNotebook` widget. Most of the themes that I designed for PAGE 8.0 (notsodark, page-notsodark, page-dark, page-light, page-wheat, cornsilk-dark and

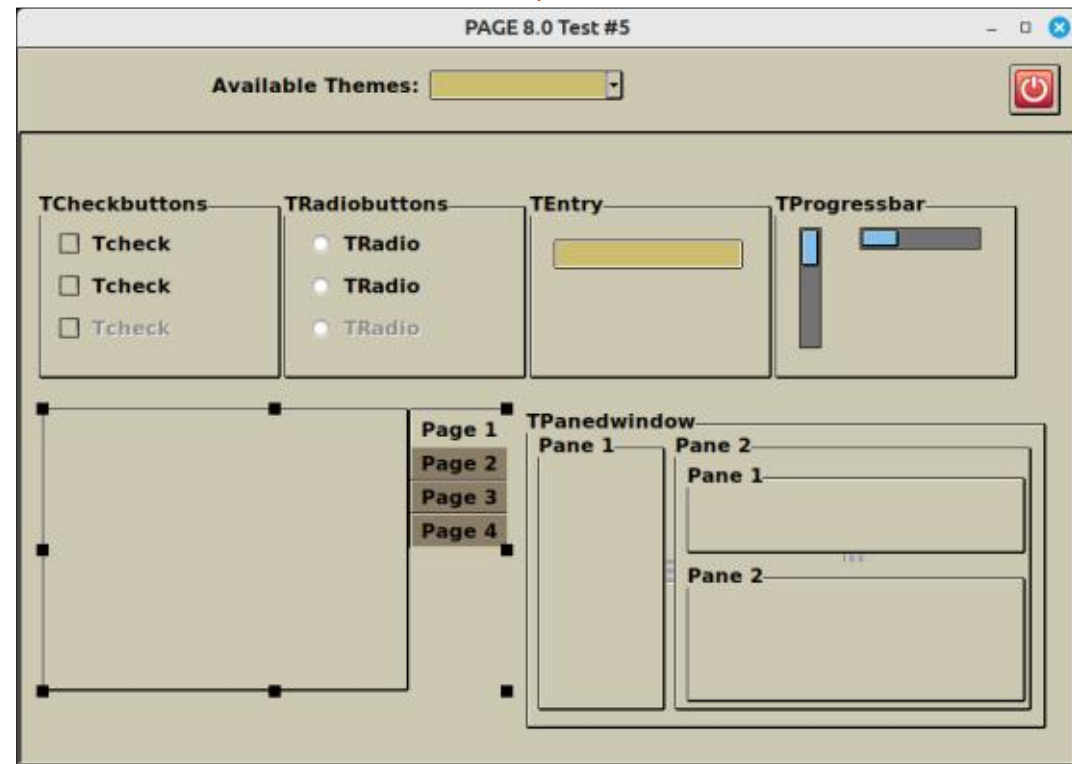


cornsilk-light) have a special set of styles that allow the Tabs to be positioned around the border of the `TNotebook`. Only the themes above have this. But PAGE will take advantage of this in the Attribute Editor.

Unfortunately, PAGE doesn't take into consideration that the current theme might not support the positioning. So if you use, let's say, the "alt" theme (which doesn't have the style settings for the `TNotebook` tab positioning), you won't see any changes, but it won't

cause an error.

Another big change in PAGE 8.0 is that you can now borrow existing menus from an existing project and paste them into your current project. This has been a problem for a long time and it really makes a big improvement. Once you have a "good" menubar and/or popup menu set that works for you, you can reuse them in a new project by borrowing from the project that has the nice working menu set into your current project.



One more thing I will mention about new features for PAGE is what I like to call the “Norwegian Lift”. This was a request from my friend Halvard who lives in Norway. While it is somewhat difficult to show here, I’ll try to explain the process.

Halvard was trying to create a project that has multiple frames that are stacked on top of each other, all exactly the same size and at the same x/y position. He was using, programmatically, the Tkinter widget.lift() method, which causes a widget to move on top of another widget. So in Halvard’s case, he had multiple populated frames that he could bring to the top depending on which option that the user picked from the menu (which was also a frame that was hidden by another frame).

It is a neat way to do things that need configuration or things that you want to show without having to have a separate Toplevel form and deal with all the code to hide and show things.

I’ll try to put up a blog post and provide a demo on my homepage before this article makes it into Full Circle for January

(<https://thedesignatedgeek.xyz>).

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



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My main backup process involves making full disk images, usually on a monthly basis, as the operating system and the installed applications don't change much over any shorter term. My preferred software for disk imaging is Rescuezilla (see: Rescuezilla For Backups; Full Circle Magazine; No. 190; pp. 21-22); however, this package has one distinct downside. The developers have yet to produce a functional method for mounting an image and browsing the included files and folders in order to retrieve specific items. This facility is available for uncompressed images but not for images produced using gzip, which I use in order to be able to store multiple backups in a reasonable amount of disk space.

The issue is really only limited to my personal data files which are stored in a dedicated data partition on the main hard drive. If I wish to restore an old version of a file, it just isn't convenient to have to restore an entire disk image onto an external USB drive and then extract the required file from the

resultant copies. In addition, monthly backups are too infrequent for data files that are created or modified on a daily or weekly basis.

What I need is software to make frequent backups of the files and folders on my data drive with the option to retrieve any past version of a specific file or folder. There are a number of ways to achieve this, but many solutions involve scripting and command-line operations. My

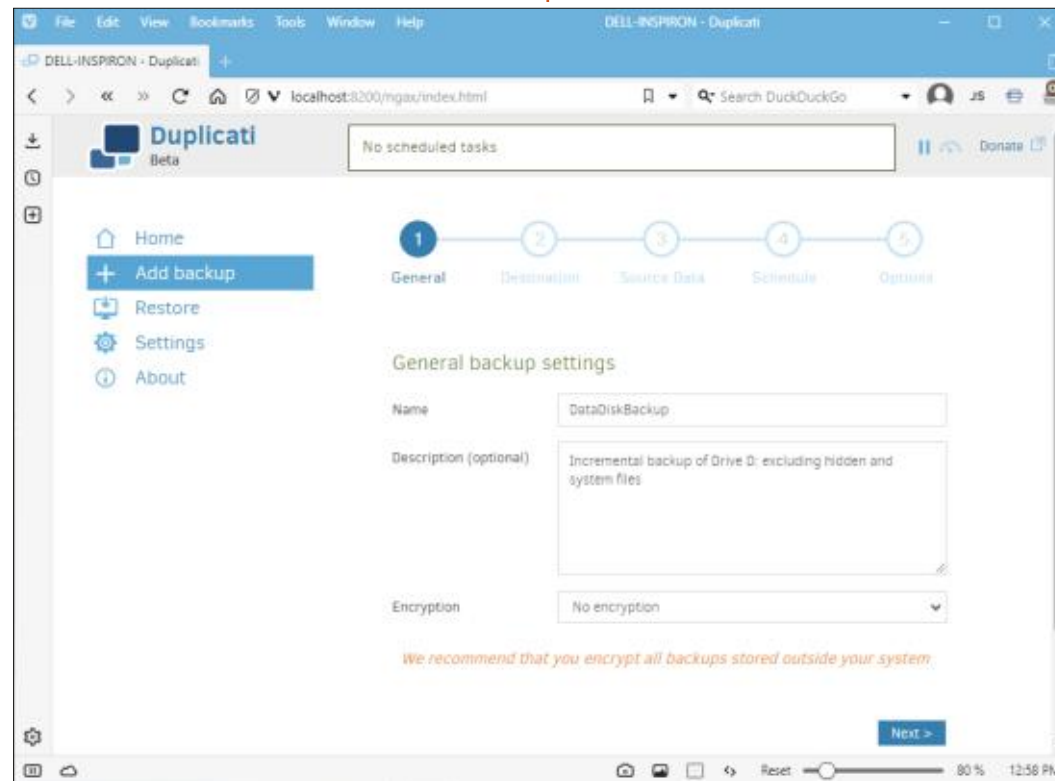
preference is to have software with an easy-to-use graphical interface, and the package that fits the bill is named Duplicati.

Duplicati is an open-source, cross-platform (Linux, Windows, Mac/OSX), backup program developed by Kenneth Skovhede, a computer science professor at the Niels Bohr Institute, University of Copenhagen. While it was originally developed to store

encrypted data in the cloud, it functions equally well as a general-purpose backup solution using local disk drives.

In particular, the program can be used to create incremental backups of a specified data source to a pre-defined target drive. Backups can be run according to a defined schedule or can be run manually on demand. The program has a web-style user interface, running in the default browser through a localhost server. It is very easy to use as it features wizards to build the backup configuration and the restore function.

The wizard to add a backup requires a name to be entered for the backup and, optionally, a description of the nature of the backed-up files. By default, the backup process employs 256-bit AES encryption; however, this can be turned off if encryption is not required. On the subsequent screen, a wide variety of backup destinations is available, including cloud storage servers such as Dropbox, Google Drive, and



Microsoft OneDrive, in addition to local folders or drives. As indicated for my purposes I opted to use a folder on an external USB drive as the backup target.

The location for the source data is similarly configurable, allowing selection of multiple drives, files and folders, with options to exclude hidden, system, or temporary files, or files larger than a specific size. There is also the ability to filter out specific files and folders based on a range of parameters, such as “names contain” or specified regular expressions. Backups can be scheduled for any time of day, with timed repeats (e.g. every hour), on any days of the week. If any backup is missed, the job will run as soon as possible thereafter. The automatic backup process can also be disabled, leaving it to the user to run a backup process manually.

An interesting feature of Duplicati’s backup system is that it stores blocks of data in multiple zip files that it refers to as volumes. There are three types of files produced with the extensions: .dblock.zip, for the actual blocks of data, and .dlist.zip and .dindex.zip, which track the

block contents for subsequent restoration. Building the backup configuration allows the size of the stored volumes to be specified. The default value is 50 MB, chosen to avoid timeouts when uploading to a remote file server. Since this is not a consideration for local disk storage, I opted to increase the volume size to 1 GB which resulted in a total of 15 files for approximately 6 GB of data. Interestingly, the data compression factor is not very high as the 15 files occupied almost 5 GB of disk space.

The final configuration option is the selection of the retention period for the backup files. By default, this is set to keep all backups. Other options include deleting backups that are older than a specified time period, retaining a specific number of backups, or “smart backup retention”. The latter option retains one backup for each of the last seven days, each of the last four weeks, and each of the last twelve months, with there always being at least one remaining backup.

I didn’t set a backup schedule as my preference is to run the backup

manually. Having completed the configuration and now back on the home screen, Duplicati tells me that the Last successful backup for my newly-created job was Never. So, to start the backup, I click on the Run now link.

The first time the program runs it creates a full backup of the source files and folders. Subsequent runs produce incremental backups and so the process runs much faster, and the additional storage space required is considerably reduced.

As noted earlier, a second wizard is provided when restoring data from a backup. Firstly, a backup is identified using either the name of the backup or its storage location, and the specific date of interest (in the case of multiple incremental backups). Next, we browse through the directory tree to tag the files and folders to be restored. Options for the restored files are to place them back in the original location or to select a new location. Existing files can be overwritten, or new files can be created with time stamps in the file names. Duplicati handles the process of identifying, locating, retrieving, and storing the files

recovered from the backup zip files without any further user interaction.

I came across a strange (to me) occurrence when testing the restore process. I was getting a warning that Restore completed without errors but no files were restored. Checking on Duplicati’s user forum I found that no action is taken to restore a file if the backup version is identical to that in the location where the file is to be restored. So, rather than giving this specific explanation, the program issues the rather generic warning message.

Duplicati is simple to use, flexible, and highly effective. In particular, the incremental backup process is very efficient in terms of both time and disk space required. And, additional features, such as strong encryption of the backup files, are available should these be required. Best of all, Duplicati is free (donations welcome), multi-platform, and open source. So, if you are in need of a backup solution, this software package is definitely worth a look.

<https://www.duplicati.com>



HOW-TO

Written by Robert Boardman

Latex Style Sheets

This time we will work with what we already know and take an adventure into a new area: style sheets. Assume you run a publishing company that specializes in cookbooks. You want all your cookbooks to have the same look. To make this easier for us we will use the “look” developed for “Favourite Chinese Recipes”, the last project in this series of articles.

Of course no one likes typing the same information over and over. This is a great way to induce boredom and boredom leads to mistakes. How can we make sure every cookbook starts with the same set of formatting instructions? Simply place all of the desired formatting instructions into a file, save the file, then include that file in the preamble for every cookbook. To make identifying this style file easier in the jumble of files Latex uses the convention is to name a style file with an “sty” file type (file extension). I am going to call it “cookbook.sty”.

Theoretically we should then be able to use this customized style

```
\usepackage{inputenc, cooking, cooking-units, makeidx, graphicx, pdfcomment, hyperref}
\usepackage[sfdefault]{noto}
\usepackage[skins]{tcolorbox}
\tcbset{colframe=black!25!white, colback=green!10!white, halign=center, valign=center,
width=15cm, height=15cm, arc=5mm}
\hypersetup{pdfborder=0 0 0, colorlinks=true}
\makeindex
```

file in any document simply by telling Latex `usepackage{cookbook.sty}`. Of course it is not quite that simple. There are two more steps. First, any custom style files need to be stored in the same folder / directory as the default style files. Second, Latex-Tex needs to know there is an additional style file available. Where are the default style files stored? That will depend on your distribution, most likely somewhere in the `texlive` or `texmf` part of the directory tree. On my system it is `/usr/share/texlive/texmf-dist/tex/latex` and then a separate directory for each style file. So `cookbook.sty` needs to be put into the `/usr/share/texlive/texmf-dist/tex/latex/cookbook` directory. Once that is done then run the command `texhash`. This command records the locations of many of the parts of the Tex engine. Now it includes a

pointer to the customized `cookbook.sty` file.

Instead of typing all the instructions we used last time we only need to tell Latex to `usepackage{cookbook}` and all those instructions will automatically be used when the new cookbook PDF is generated. Just in case you are new to this series or forget what we had to type last time here is the listing (above).

We have not taken advantage of this `usepackage` feature of Latex. So far we have only used to “turn on” certain desired features in our cookbook. I like the Noto font family and so used that package. Your book may use the default font family or a different font family. I wanted the cover to have a particular look (image within a frame and a shaded background to

the image). I wanted the clickable links to use the default colours. Your choices could be different. I urge you to experiment with the various options available with these packages. I also urge you to find and use other packages with Latex. Now we know where to look let’s see if we can discover some useful and / or style files.

My installation has over two thousand directories with style files. Some directories contain more than one style file. That is a lot of possible additions to the basic Latex package. CTAN has more than 6500 packages in its database. We will start our exploration of packages with `gcard`. In order to understand how some packages should be used we have to read the documentation. Here are some excerpts from the documentation for `gcard`.

HOWTO - LATEX

Load the package with `\usepackage{gcard}`

Before `\begin{document}` if you want to use margins different from the defaults (0.2in for all), set four lengths to values of your choice: [content deleted]

Then, after `\begin{document}` specify the contents of each panel with the `frontcover`, `backcover`, `insideleft`, and `insideright` environments. Each environment sets its contents in a minipage of width `\panelwidth` and height `\panelheight`. Those two lengths may be referenced, but not changed, anywhere after `\begin{document}`. The material is

vertically centered in the panel by default; to move it, use vertical spacing commands such as `\vspace{}` and `\vfill`.

For example, you could specify the material for the front cover of the card with

```
\begin{frontcover}
\Large
We heard you had a little
trouble with the law \ldots
\end{frontcover}
```

The text will appear vertically centered on the front cover, with normal justification. You do not need to supply all four environments; panels corresponding to missing environments will be left blank.

[End of documentation

excerpt]

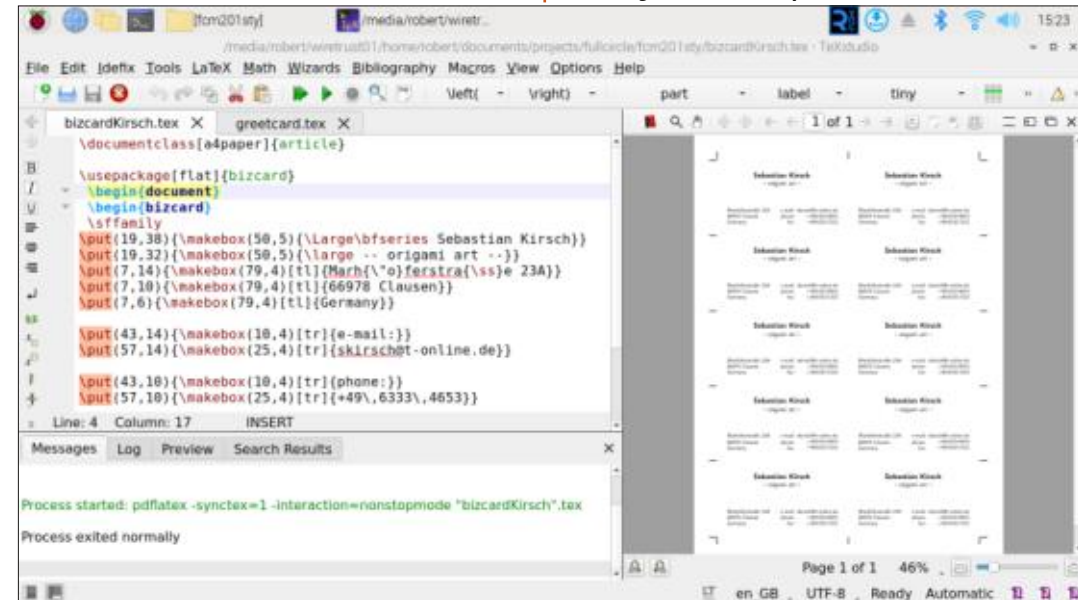
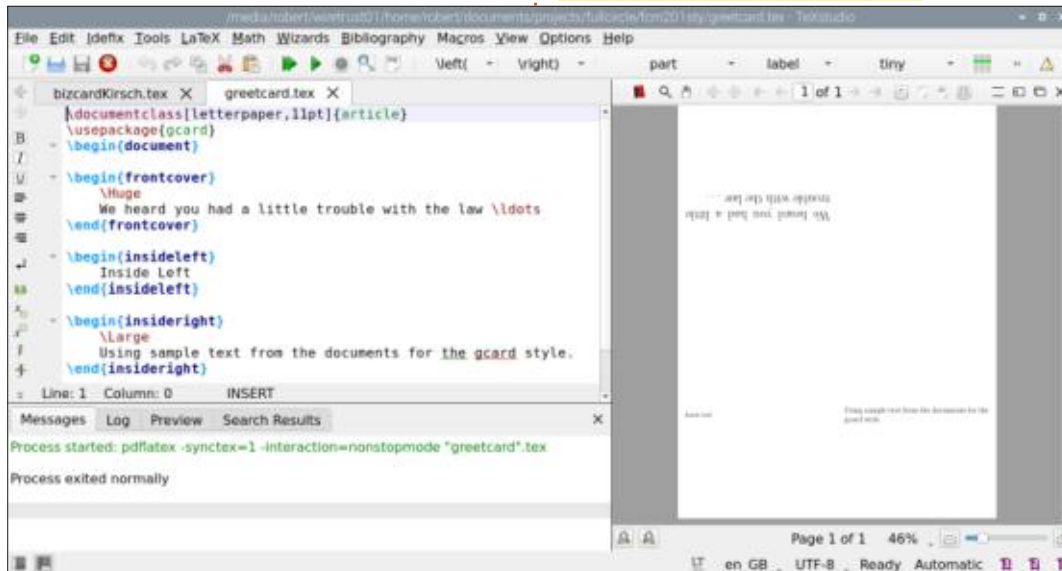
A little experimentation will show which panels you need to use for whatever design for a greeting card you want to use.

This example uses only text but it is easy enough to add an image or two or three following the steps in the Latex article in Full Circle #184.

Another example is the `bizcard` style file developed by Sebastian Kirsch for Latex 2e, which is the previous version of Latex. Even though it is more than twenty years old it works well with the current version. In order to know how to use `bizcard` properly go to CTAN, then download and read the

documentation supplied by the author. Since `bizcard` is part of a default installation there is no need to download the package. The documentation is only five pages and the information that will be important to most users is on pages 2 and 3. I copied the code from the documentation into an image for this article. It shows the code needed to generate business cards for the developer of the package.

There is no line-by-line explanation of the code in the documentation. However the code should be reasonably understandable to most computer users. If you decide to make some business cards using this style file then you can experiment with the



various measurements and options to get what is best for your situation. Remember to save various iterations of your experiments for reference later. (Of course if you do not need the special German characters then you can delete the unneeded code for them.)

Another of the more than two thousand built-in styles is exercise. The documentation says: "This package offers a simple environment to typeset exercises, and their questions, sub-questions, indications, answers and so on. The layout of the exercises is fully customisable. Moreover, the answers of the exercise could be typeset immediately or later in the document." A search on CTAN brings up a link to a 36-page instruction document. This is obviously designed for teachers. It includes ways to keep answers hidden from tests as in a graded or reveal answers as in a self-test.

There are over twenty styles starting with "beamer". These are related to Latex styles that will build PDF files that are slides and can be used in presentations. The main beamer documentation is 225 pages long. It contains an example,

instructions on how to make a first beamer presentation and a lot of details about the many parts of a beamer presentation. A search in CTAN using beamer gives 83 results. Some of those are variations on beamer for different languages or for the requirements for different institutions or base fonts.

There is a little style package called datetime which comes with a thirteen-page document. It has quite a number of variations covering languages from Basque to Welsh. Along with the babel package (many languages) datetime allows for localisation of the display of dates and / or times.

An important set of packages start with bibtex. Tex / Latex was originally designed by Donald Knuth for use by academics (particularly in mathematics and natural sciences). Bibliographies are very important when the results of research and experimentation are published. Because of its age bibtex and its derivatives do not support Unicode fonts. If your work requires Unicode compatibility then you should use the bibLatex and biber packages.

I included the cooking-units package when I developed the little cookbook example in the last few issues. I did not explain much about it then. It comes with forty-eight pages of documentation. The abstract says "this package enables user to globally format units, to switch between them and change your recipes to a given number of persons." It supports text in English, French and German and can show amounts in fractions if needed. Decimal numbers are automatically rounded to two digits, temperatures (four possible scales) are rounded to whole numbers. Conversions from one unit to another can be done in the recipe using the cooking-units package. For example oven temperatures can be shown as 350°F (175°C). Standard metric units (kg, metre, litre) and Imperial (lb, foot, quart) units of mass and volume are used by default, however new units can be defined. Ingredient amounts can be adjusted when the PDF is compiled using specific instructions explained in the documentation. For example a recipe can be coded for 4 servings but increased to 8 or 10 servings by using an appropriate instruction.

That is the end of fun with Latex for this month. We will take a look at some more of the installed packages over the next several issues.

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/>



First this time a little update on Inkscape versions. I mentioned a couple of months ago that a release of Inkscape 1.3.1 was expected, which adds the Text > Text to Glyphs feature. This was released on schedule, and also adds the welcome addition of a new entry in the Snap popup which allows you to turn off snapping to grid lines while still allowing snapping to grid intersections. On top of that there were a lot of bugfixes – way too many to document here, so take a look at the release notes if you’re interested: https://wiki.inkscape.org/wiki/Release_notes/1.3.1

But before you rush off to download 1.3.1 you should be aware that it also introduced some bugs that can lead to data loss or corrupted files. As a result, version 1.3.2 was quickly released to address these issues, and this version is a strongly recommended update for anyone using 1.3. If you’ve already downloaded 1.3.1 then the new release should be considered an essential upgrade. As

usual, the application can be downloaded directly from <https://inkscape.org>

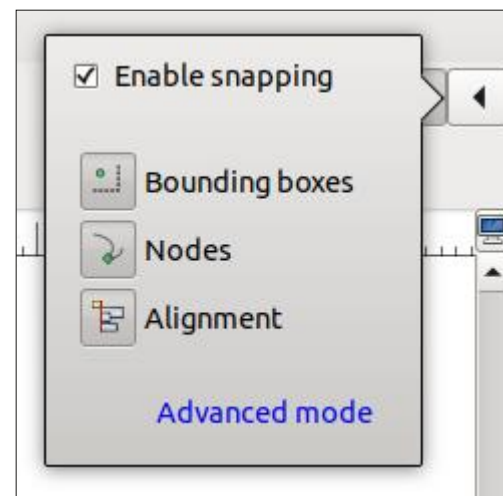
I’m still working my way through the bigger updates and changes that came with versions 1.2.x and 1.3.x. According to my notes, most of the things I still have to cover were added with 1.3, but there are a few stragglers on the 1.2 list. To keep my own housekeeping simpler I’m going to rattle through the outstanding 1.2 features this month, clearing the boards to concentrate on 1.3 going forwards. This will result in a bit of a hodgepodge of topics that don’t necessarily relate to one another in any manner other than the release version, and even though they were added in 1.2, I will be describing them as they currently appear in version 1.3.2.

ALIGNMENT & DISTRIBUTION SNAPPING

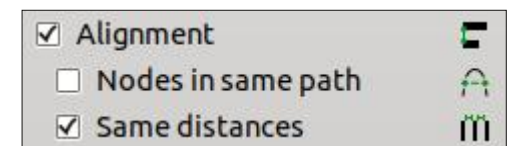
This is a feature that has been common in other vector graphics programs for some time –

particularly those used for user interface mock-ups. This mode adds dynamic snap points that are derived from the positions of other elements in the page – a fancy way of saying that it makes it easier to ensure that items are neatly aligned or spaced as you drag them around.

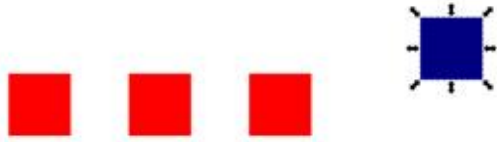
There are two aspects to this feature: aligning to existing objects, and spacing evenly from nearby objects. By default these are both disabled, and need to be turned on from the Snap popup. If you use this in its simple mode, then you just need to switch on the ‘Alignment’ option at the bottom:



If you use the advanced mode of the Snap popup then you’ll need to enable both ‘Alignment’ and ‘Same distances’ to enable both types of snapping. Note that the UI here is misleading, as it suggests that turning off ‘Alignment’ will also turn off ‘Same distances’ but that’s not really the case. Doing so will certainly disable the control in the popup, but its current state will still apply, meaning that it is possible to have ‘Same distances’ enabled while ‘Alignment’ is disabled, should you need to, with a bit of checkbox juggling.



With both those options enabled, what effect does it have? Unfortunately this is a feature that is much more easily demonstrated with a video than a screenshot, but I’ll do my best. Consider a simple arrangement of three squares to which I wish to add a fourth one:



With this feature enabled, as I drag the blue square towards the others, various extender lines will be projected as the box becomes aligned with the center or edges of the existing elements, while other lines will appear between the items when the position of the blue box matches the spacing between the red ones. Here's how it looks as I drag the blue box into place:



Note the line running from the center of the last red box to the center of the blue one, indicating that this snap position has the centers vertically aligned; and the three spacing lines between each of the boxes indicating that this snap position will put the blue box equidistant from its peers. Achieving such alignments was already possible, but nowhere near as intuitive as with this system. It's not quite as smooth and seamless as the same feature in some other applications, but it's a welcome

addition even in its current state.

As I mentioned at the outset, this is a particularly common feature in UI mock-up tools, where it's used to quickly line-up buttons, labels and other controls in a way that makes the result look more professional. This addition undoubtedly improves Inkscape's capabilities in that regard. Consider this mock-up of a 'card' element for a web page, with a few arbitrary UI controls in it: previously just sorting out the alignment of the various elements would have taken as much time as producing the rest of the layout. Now, it's trivial:



When using the Node tool to manually adjust node positions, it's also possible to enable similar snapping to existing nodes within

the same path. This can only be done via the advanced mode of the snap popup, by checking the 'Nodes in same path' option. Note that this adds extension lines and snapping to the horizontal and vertical positions of other nodes, but doesn't provide the same guides for equidistant spacing as you see when moving whole objects.

NODE TOOL IMPROVEMENTS

While we're on the subject of the Node tool, this saw some small but useful additions with 1.2. You're surely already aware that this tool allows you to select multiple nodes within a path by drawing a 'rubber-band' box that encompasses them. Sometimes this results in too many nodes being selected, and in the past you had to then deselect any unwanted nodes one-by-one, by clicking on them while holding Shift. Now, however, you can also draw a rubber-band box to deselect nodes en masse, by holding Shift and Control while you drag out the rectangle.

It's also now possible to use the rubber-band mode to perform an 'inverted' node selection – the selected nodes will be all those that

were outside the selection rectangle. Just hold Ctrl as you drag out the rectangle to achieve this. You could achieve the same previously by simply using Edit > Invert Selection after selecting the nodes, but just holding Ctrl while dragging is a slightly easier solution. There is one difference in behaviour, when dealing with complex paths: whereas Edit > Invert Selection could be used to invert the selection state of nodes in a single subpath, leaving other subpaths unaffected, the inverted rubber-band selection results in all the nodes outside the rectangle being selected, across all the subpaths.

SET ORIGIN OF SELECTOR TOOL TRANSFORMATIONS

Switching to the Selector tool (F1), this gains a new ability that makes it easier to precisely position and scale items using the numeric fields in the tool control bar. This has always been possible, of course – who hasn't adjusted the 'W' and 'H' fields to draw a rectangle of a specific size? But previously any such adjustment used the top-left of the bounding box as the reference point for any changes.

HOWTO - INKSCAPE

(Note: In pre-1.0 releases the reference point was actually the bottom-left, but that version introduced a flip in the default orientation of the y-axis. If you switch back to the older orientation via the preferences then the reference point also switches back to the bottom-left).

Whether it was top-left or bottom-left doesn't really matter: the fact is that a single reference point was used. Type in some X and Y coordinates and that's where the reference point would be placed. Adjust the width and height, and the reference corner would stay put, while the changes propagated out from there.

1.2 added the ability to set one of 8 different reference points for such transformations. With the Selection tool enabled, just click once on any of the 8 resize handles (the arrows that surround a selected object) to set that point as the reference. The arrow will go a very non-obvious shade of dark blue (at least on my theme), and barely perceptible lines will be projected across the canvas to indicate which corner or mid-edge is the current reference point. Click on the handle again to return to the

default reference point.

This is another welcome addition, but with one caveat: it's a shame there's not a way to select the center-center point right in the middle of the bounding box. If you wish to position an element so that its center is at a specific set of coordinates, you will need to first select the mid-point handle for the top or bottom side, then set the x coordinate, then select the mid-point handle for the left or right side, then set the y-coordinates. In fact you might find it faster to draw a temporary rectangle, set the coordinates so that the top-left corner is in the desired position, then snap your real object to it using the alignment snapping mode described above.

TILING LPE

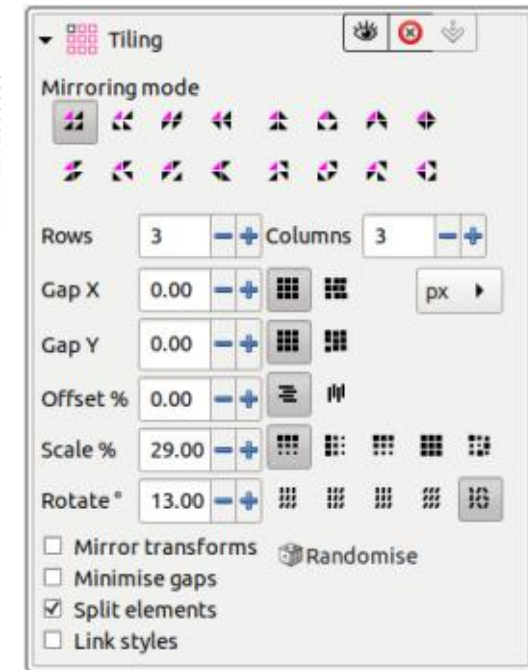
A new LPE called 'Tiling' has been added, which provides similar functionality to the existing Edit > Clone > Create Tiled Clones... dialog. The biggest difference is that the output in this case is a complex path, rather than a collection of clones. It can also be a number of separate paths, if the 'Split elements' checkbox is

enabled... but they're still not clones in the traditional Inkscape sense (<use> elements in SVG terms).

The new LPE is certainly more interactive than the older dialog and arguably a little more intuitive (though not by much, to be honest). Note, however, that some of the more advanced aspects of the Tiled Clones dialog are not available in the LPE. If you just want to create a grid of elements, perhaps with a bit of variation or randomisation of positions and sizes, then this LPE might be just the thing for you. For my needs, I'll be sticking with the Tiles Clones for now, but definitely keeping an eye on this extension to see if it is developed further in future releases.

I don't intent to describe this LPE any further, given that I've previously described the Tiled Clones dialog in a lot of detail (FCM #93 to #96). Many of the general principals are the same, and a lot can be inferred from trial and error. But if you do want me to go over this one in depth, drop a line to the magazine to indicate your interest.

EXTENSIONS



Version 1.2 added a couple of new extensions (though one of them doesn't actually live in the Extensions menu), and included a large number of rewrites and bug fixes to existing extensions. If you're a frequent user of extensions, it might be worth checking the release notes to see if there have been changes to any that you rely on: https://wiki.inkscape.org/wiki/index.php/Release_notes/1.2#Extensions

The first of the new extensions will only be of interest to users who

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import SVG files that were exported from Adobe Illustrator. Extensions > Document > Process Illustrator SVG... should be run immediately after importing such a file, in order to sort out issues with layer names and document scaling. If you are the one doing the exporting, it's also worth taking a look at this extension before you export the file from Illustrator; launching the extension displays this dialog, which offers tips on how best to export in the first place.



The Clipart Importer extension is a replacement for the old 'File > Import Clip Art...' tool that was removed from Inkscape a few versions ago. Because of this, it doesn't appear in the Extensions

menu, but rather as File > Import Web Image. It allows you to search several different sources of clip art images for files that you can then import directly into your document. Note that you have to hit Enter in the search field to trigger the search, and if you switch sources you'll have to focus the search field and press Enter again.

Compared with the old tool, this one has a big advantage in terms of displaying licensing information where it's available, helping to ensure that your own creations stay on the right side of copyright law.



In my experience the dialog doesn't like being un-focused – which is a problem if, like me, you use a focus-follows-mouse

configuration on your machine. It can lead to the appearance of Inkscape being unresponsive, and even clicking on the window didn't re-focus it for me. Using Alt-Tab to bring the dialog back to the top of the stack did the job, so it's probably worth trying that before reaching for the kill command. You should probably save your work as a precautionary measure before opening this dialog, just in case.

And that's it for the 1.2 series. There are still some smaller features and changes that I haven't discussed, but I think I've covered all the really big and important things. Inkscape keeps pressing on with new releases, so my focus is now on more recent releases. See you next month for more new features that landed with 1.3.x.



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

I PUT MY FOREHEAD ON MY
PHONE AT WORK, THAT WAY WHEN
I FALL ASLEP, I CAN SAY I
DOWNLOADED A NAP





ROTARY ENCODERS

What looks like a potentiometer, but isn't a potentiometer? It's a Rotary Encoder.

Think of a rotary switch with an unlimited number of switch positions. It really isn't, but it sort of acts like that.



While there are many different models of rotary encoders, the particular encoder we will be using in this project is a KY-040. You can get them from many places on the Internet starting for about \$3.00 USD. Some come in packs of 5 for \$10.00. I borrowed this image

from <https://opencircuit.shop/product/rotary-encoder-module-ky-40>.

There is a pretty good PDF on how the KY-040 works at <https://www.epitran.it/ebayDrive/datasheet/25.pdf>.

The actual encoder has three pins, but the breakout board has 5. One extra feature of the KY-040 is that the shaft can be pressed to provide a momentary Normally Open switch.



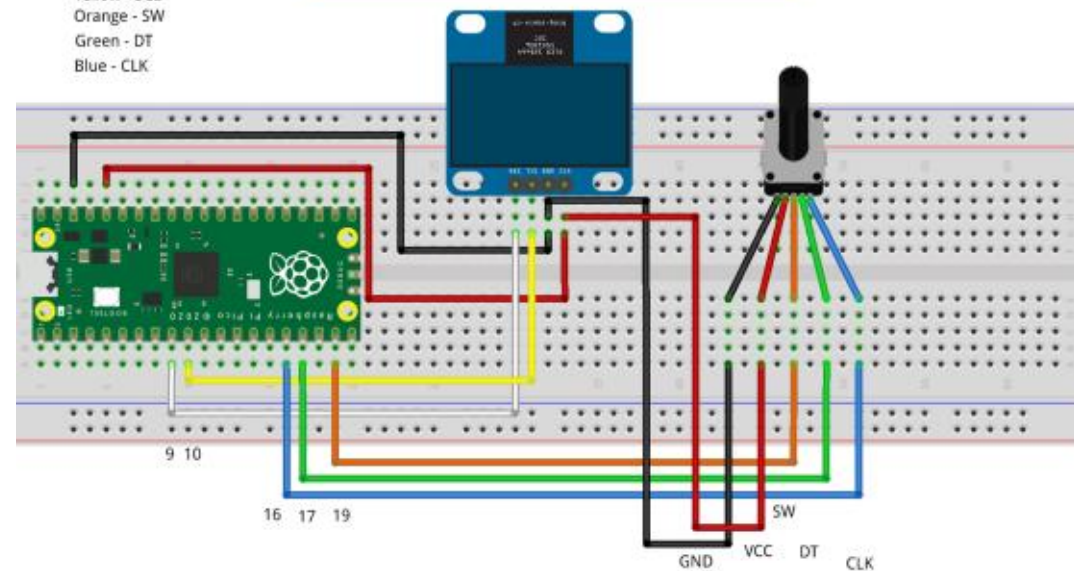
The drivers that we'll need for this project can be found at <https://github.com/MikeTeachman/micropython-rotary>. Go ahead and download the driver, because we'll need some of the files in a few minutes.

For now, let's start wiring the breadboard.

RPi Pico Pin	GPIO	Common	SSD1306	KY-040
9	6		SDA	
10	7		SCL	
16	12			CLK
17	13			DT
19	14			Switch
36		VCC	VCC	VCC
38		Ground	Ground	Ground

- Red - VCC
- Black - GND
- White - SDA
- Yellow - SCL
- Orange - SW
- Green - DT
- Blue - CLK

RPI Pico - SSD1306 LED - KY-040 Rotary Encoder



fritzing

Now for the code. You need to copy from the rotary encoder driver zip the rotary.py and rotary_irq_rp2.py files to your RPi Pico. Then you need to copy the example_simple.py file from the Examples folder and save it as example_simple_rotary.py onto your Pico as well. This is the file we need to modify (top right).

Now we need to add the driver for the SSD1306 (below).

Now we need to define all the pins for the rotary encoder. Note that these are the GPIO pins, not the physical pins. I've included the

GPIO pin numbers to the Physical pin numbers in the table above.

The first line sets the switch for the shaft push momentary switch. The next lines handle the IRQ set ups. We use max_val to define the max number of positions. By setting reverse=True means that turning the shaft clockwise the counter increments and anti-clockwise decrements the counter. Finally range_mode=RANGE_WRAP causes the counter to go from max_val to min_val (bottom right).

We keep two values to determine the current value of the encoder. val_old is set to make

```
import time
# For SSD1306 OLED Display
from ssd1306 import SSD1306_I2C
import framebuffer
```

Now the code to set up the OLED display.

```
# =====
# Base setup for the SSD1306
# =====
## Set the Width of the OLED Display
WIDTH = 128
# Set the Height of the OLED Display
HEIGHT = 32
oled_i2c = I2C(1)
oled = SSD1306_I2C(WIDTH, HEIGHT, oled_i2c)
oled.fill(0)
oled.text("Starting up!", 5, 8)
oled.show()
# =====
```

```
from machine import I2C
import sys
if sys.platform == 'esp8266' or sys.platform == 'esp32':
    from rotary_irq_esp import RotaryIRQ
elif sys.platform == 'pyboard':
    from rotary_irq_pyb import RotaryIRQ
elif sys.platform == 'rp2':
    from rotary_irq_rp2 import RotaryIRQ
else:
    print('Warning: The Rotary module has not been tested
on this platform')
```

sure that we don't report the same value each time the loop is run. We've used the SSD1306 fill, text and show methods before, so I won't go into depth on those (next page, top right).

If you want to use the shaft switch to exit the loop, change the while loop from

```
while True:
```

To

```
button =
machine.Pin(14, machine.Pin.IN, machine.Pin.PULL_UP)

r = RotaryIRQ(pin_num_clk=12,
              pin_num_dt=13,
              min_val=0,
              max_val=15,
              reverse=True,
              range_mode=RotaryIRQ.RANGE_WRAP)

val_old = r.value()
print('result =', val_old)
```

```
doloop = True
```

```
while doloop:
```

And then in the if button.value check, add the line

```
doloop = False
```

When you run the program each time you turn the shaft of the encoder the value printout on the OLED should change (and the REPL should show the value).

I've set up a repository for the project at https://github.com/gregwa1953/MTMT_201.

That's it for this month.

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

```
while True:
    val_new = r.value()

    if val_old != val_new:
        val_old = val_new
        print('result =', val_new)
        oled.fill(0)
        oled.text(str(val_new), 5,8)
        oled.show()
    if button.value() == 0:
        print("Switch Pressed")
        oled.fill(0)
        oled.text("Switch Pressed", 5,8)
        oled.show()

    time.sleep_ms(50)
```



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



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UBPORTS DEVICES

Written by UBports Team



THE DAILY WADDLE

DUDE, I'M TELLING CAPE TOWN
IS WHERE ITS AT, SAME WATER
TEMPERATURE AS THE ARCTIC,
BUT WITH WINE

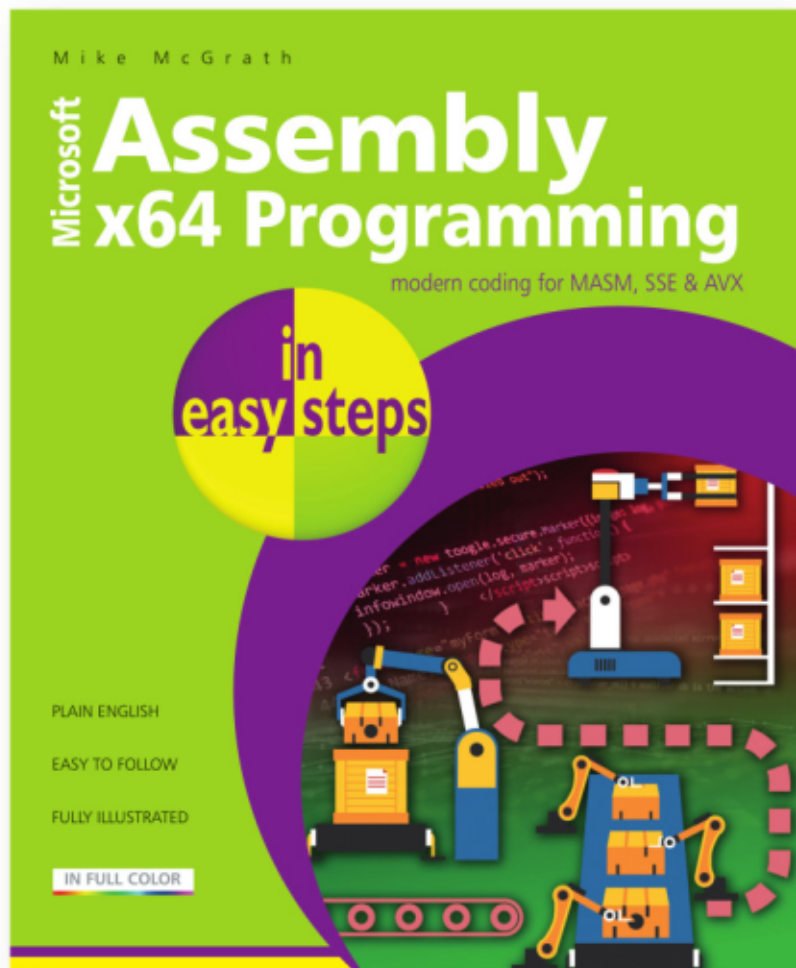




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MY OPINION

Written by ...

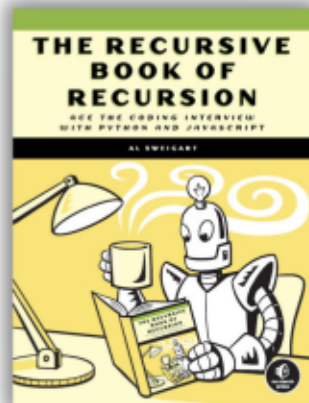
BACK NEXT MONTH?



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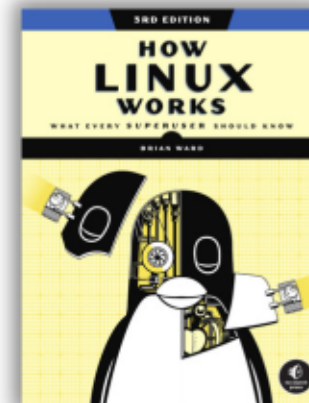
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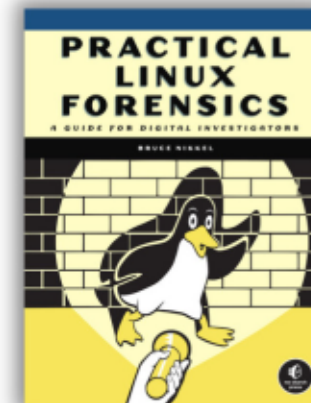
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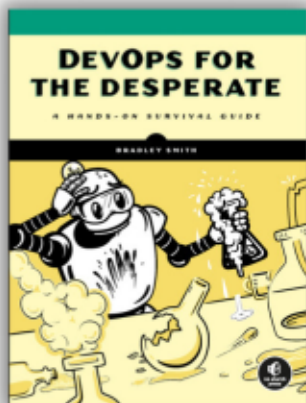
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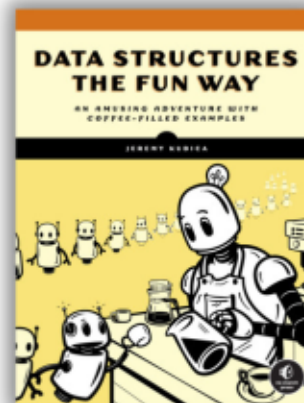
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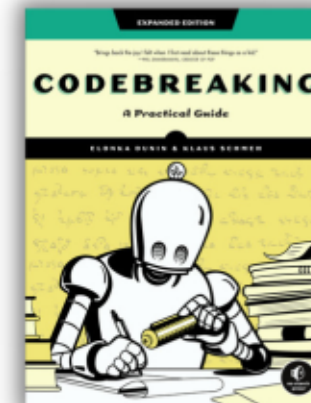
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HOW-TO

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

The third and final interim release of this Lubuntu development cycle is 23.10, released on 12 October, 2023. This marks the last version before the next long term support version (LTS) expected in April, 2024 and also provides some good clues about what to expect in that LTS.

This time around the three interim releases have introduced very minimal changes and that points toward the next LTS being very similar to the last one, Lubuntu 22.04 LTS, with just a few updates, tweaks and fixes. Rather than a disappointment, I think this is actually a good thing, indicating that the developers have Lubuntu pretty much where they think it should be. The users, too, seem to agree, as I am not hearing any clamoring for big changes from that quarter either. As the 11th LXQt release and the 28th overall Lubuntu release, 23.10 represents a Linux distribution that is fulfilling its intended mission as a relatively lightweight, but full-featured, Qt-based operating system, with a classical menu-driven desktop.

Being an interim release, Lubuntu 23.10 comes with a short leash, just nine months of support, until July, 2024.

INSTALLATION

I downloaded Lubuntu 23.10 from the official source using BitTorrent. Once I had the ISO file, I completed a command line SHA256 sum check on it to make sure the download was good. I then dropped it onto a USB stick equipped with Ventoy 1.0.96 and it

booted up from there without issue.

The Lubuntu 23.10 ISO download file was 3.0 GB, while 23.04 was 2.9 GB in size, Lubuntu 22.10 was 2.7 GB and Lubuntu 22.04 LTS was 2.5 GB, so they are getting slowly bigger which each new version. In comparison, the latest mainstream Ubuntu 23.10 release is 5.2 GB to download, almost double the size of Lubuntu.

SYSTEM REQUIREMENTS

Lubuntu does not publish

Lubuntu 23.10

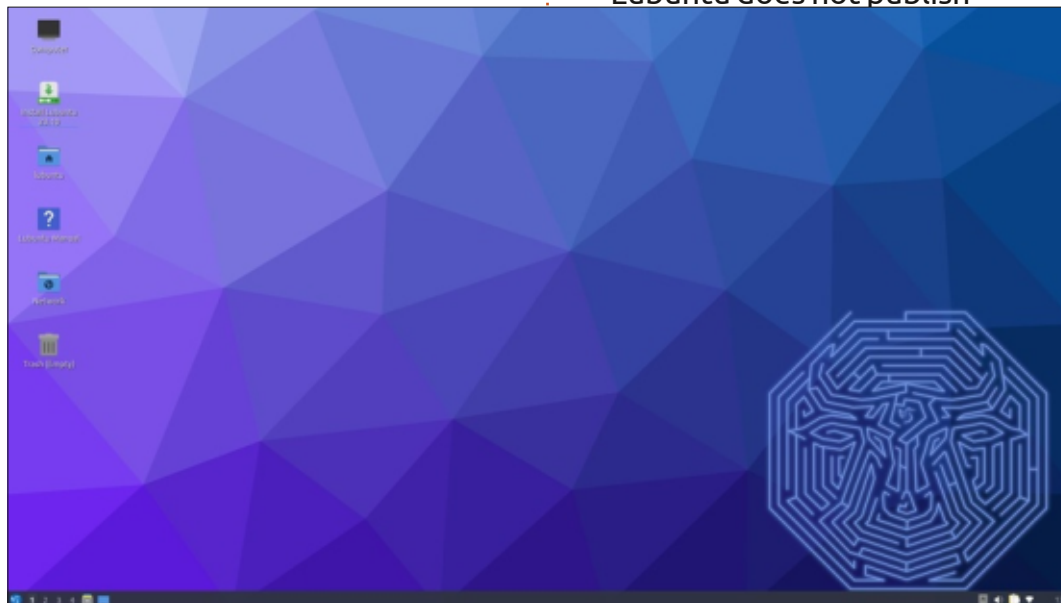
recommended minimum system requirements, but it should run on any modern 64-bit hardware with at least 4 GB of RAM, although 8 GB would be better.

NEW

Lubuntu 23.10 introduces very little that is new, something in common with the previous two interim versions.

The Lubuntu LXQt desktop has moved to version 1.3.0, which is based on the Qt 5.15 toolkit. Work has started on moving to Qt 6, but the lack of a stable version of KF6 has delayed this, probably until the next development cycle. With the LXQt 1.3.0 desktop, Lubuntu 23.10 looks the same as the other recent LXQt releases with the changes incorporated mostly hidden away as behind-the-scenes upgrades.

The new file manager version, PCManFM-Qt 1.3.0, has some bug fixes included, as does the terminal emulator, QTerminal 1.3.0, which brings improved Wayland



REVIEW

compatibility.

SETTINGS

Lubuntu continues to use the Lubuntu Arc window color theme as its default, with blue ePapyrus icons. For user customization, there are 19 window color themes, 13 icon themes, 12 LXQt themes, two cursor themes and eight GTK3 and GTK2 themes. So, as always, Lubuntu provides a wide range of user choices.

The Linux kernel used is version 6.5, with Systemd 253.5 as the initialization system, providing a fast and smooth boot.

Since the release codename is "Mantic Minotaur", the default wallpaper features a Minotaur, the half-bull half-human creature of Greek mythology, with a labyrinth design incorporated. The Lubuntu Minotaur wallpaper was designed by Lubuntu contributor Walter Lapchynski, with some help from Erich Eickmeyer of Ubuntu Studio. There are also 10 other wallpapers included, many from recent Lubuntu releases.

APPLICATIONS

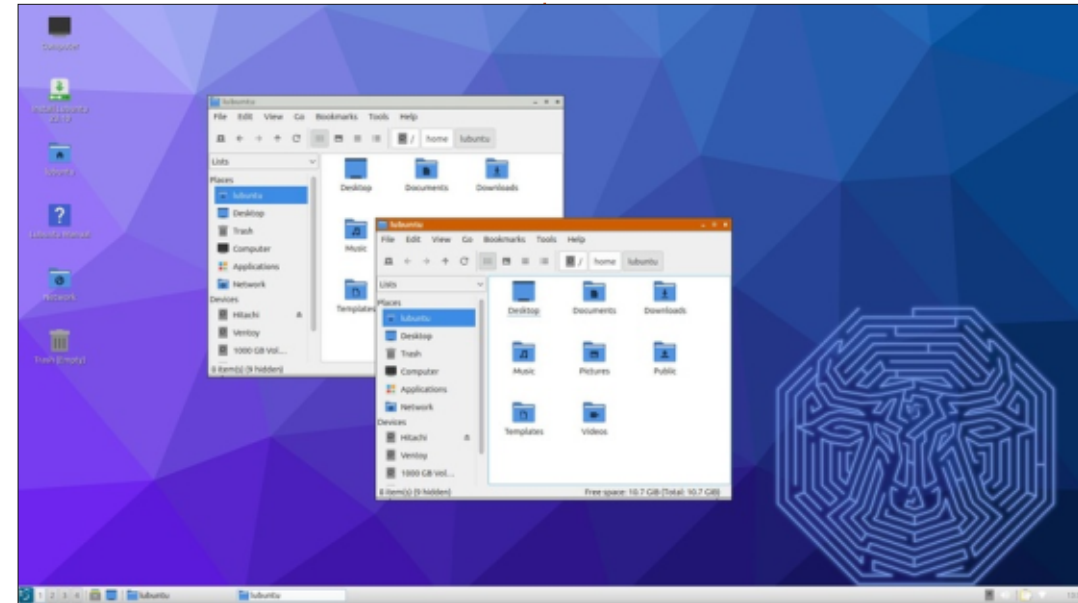
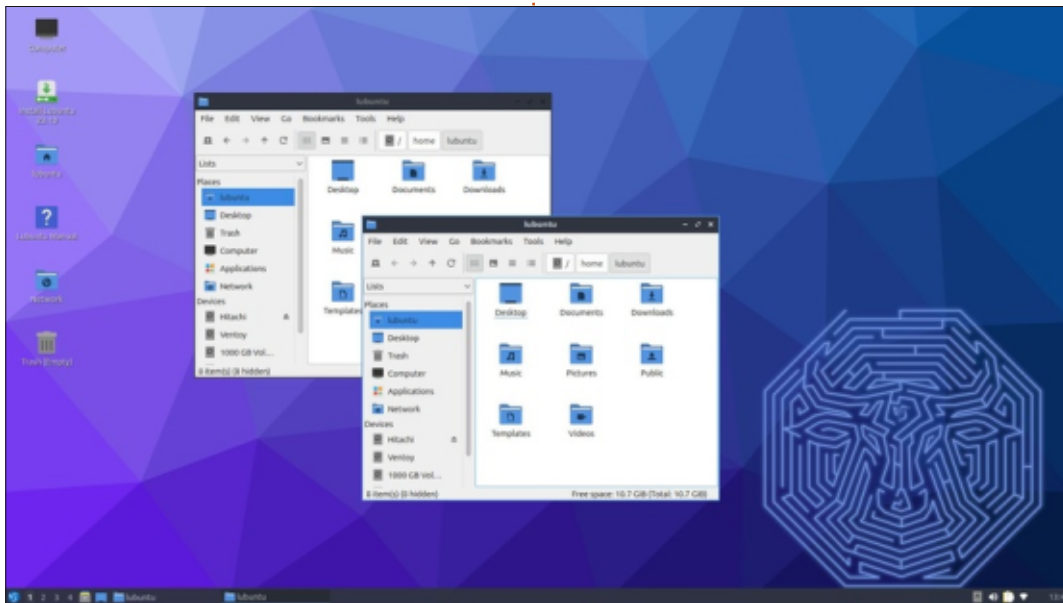
Some of the applications included with Lubuntu 23.10 are:

2048-qt 0.1.6 simple lightweight

game*
Bluedevil 5.27.8 bluetooth connector
Discover Software Center 5.27.8 package management system
FeatherPad 1.3.5 text editor*
Firefox 118.0.1 web browser**
ImageMagick 6.9.11.60 image editor*
Kcalc 23.08.1 calculator
KDE partition manager 23.08.1 partition manager
LibreOffice 7.6.2 office suite, Qt interface version
Lubuntu Update Notifier 0.5.4 software update notifier*
LXImage-Qt 1.3.0 image viewer and screenshot tool
LXQt Archiver 0.8.0 archive manager
Muon 5.8.0 package manager*

Noblenote 1.2.0 note taker*
PCManFM-Qt 1.3.0 file manager
PipeWire 0.3.79 audio controller
Qlipper 5.1.2 clipboard manager*
qPDFview 0.5.0 PDF viewer*
QTerminal 1.3.0 terminal emulator
Qtransmission 4.0.2 BitTorrent client, Qt interface version*
Quassel 0.14.0 IRC client*
ScreenGrab 2.6.0 screenshot tool
Skanlite 23.08.1 scanning utility
Startup Disk Creator 0.3.17 (usb-creator-kde) USB boot disk maker
VLC 3.0.18 media player*
Wget 1.21.3 command line webpage downloader*
XScreenSaver 6.02 screensaver and screen locker*

* Indicates the same version as used in Lubuntu 23.04



REVIEW

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

Other than just updated versions and not too many of those as can be seen by the asterisks, there have been no changes to the suite of applications provided in Lubuntu 23.10.

As in the previous Lubuntu LXQt releases, version 23.10 does not come with a webcam application, email client, CD/DVD burner, photo editor or video editor, although these can be easily added from the repositories using the Discover Software Center or command line, if desired.

The Lubuntu installer in use remains Calamares 3.3 Alpha 2, which has been used in every version since Lubuntu 22.10. The developers report it works well, so there is not much motivation to change it, always a good philosophy.

CONCLUSIONS

Lubuntu 23.10 is a good solid release, but with very few changes over 23.04 that users will notice. Overall, the lack of any major changes in this development cycle should keep Lubuntu fans happy as, in general, it works well and provides a very simple and appealing Linux desktop

experience.

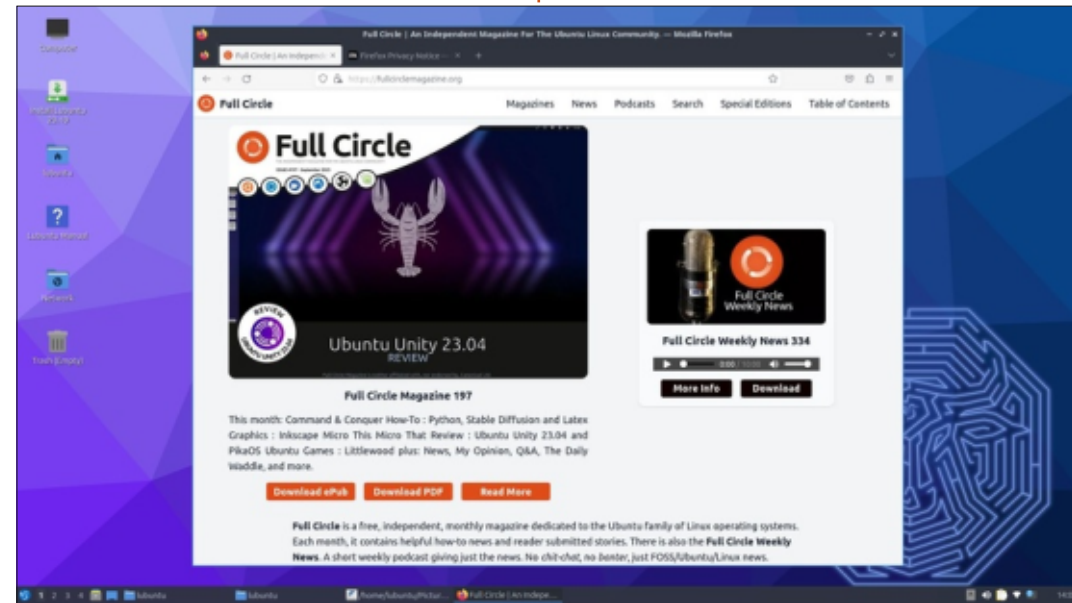
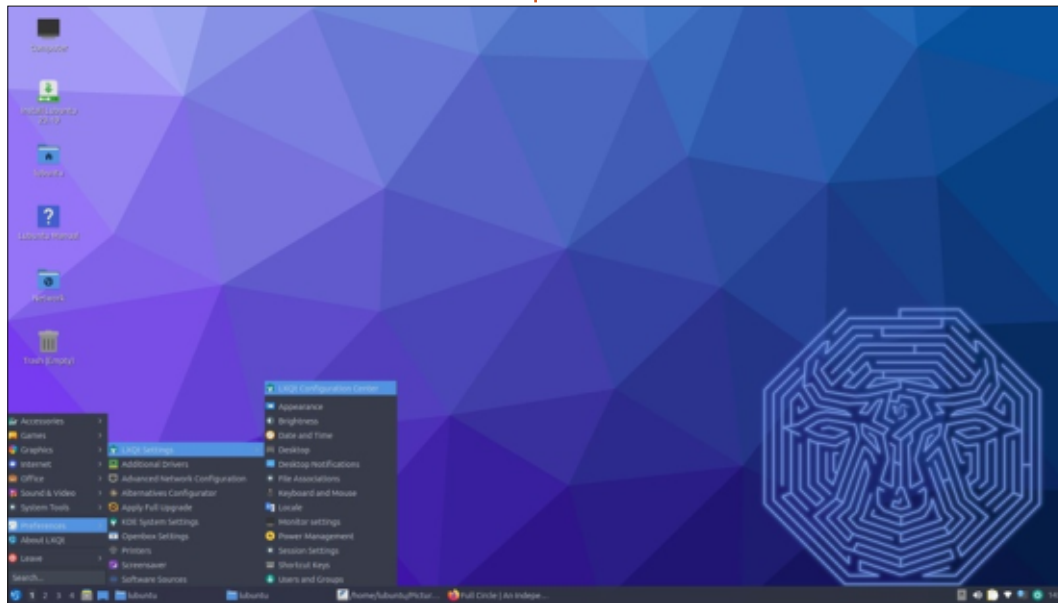
It may be worth installing this release if you have new hardware that is better supported with the newest Linux kernel, otherwise I am sure most users will wait for the next LTS version, Lubuntu 24.04 LTS, due out in April, 2024, as it will come with three years of support.

EXTERNAL LINKS

Official website:
<https://lubuntu.me/>



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





REVIEW

Written by Adam Hunt

Other *buntu's

I think most Full Circle readers will know the names of the current list of the Ubuntu official flavors. These are Ubuntu variants with different desktops, which have been accepted, provided hosting support by Ubuntu's sponsoring company, Canonical Limited, and developed as community-based projects. Over time new official flavors have been added, while some have disappeared.

What you may not know is that one of the features (not a bug) in the world of free software is that anyone can produce a new variant of any existing Linux distribution. With its solid back end and predictable development schedule, Ubuntu has often been used as the basis for non-official projects as well. These can be assembled by hand on top of the Ubuntu base, but there are also easy graphical tools that make it simple for almost anyone to create their own Ubuntu-based distribution. Some of these projects later became official flavors, some have continued as non-official projects and some have sputtered and died. That is the way

it is in the Linux jungle.

In upcoming issues of Full Circle I am going to do reviews of some of these non-official Ubuntu derivatives that carry the Ubuntu name or at least echoes of it, the other 'buntus out there. First I thought I would start with this introduction, a brief look at the world of Ubuntu, sort of a catalog of the family tree and try to cover the distributions that still carry at least parts of the name Ubuntu.

It is worth noting that there are



also many Ubuntu-based distributions that carry non-Ubuntu names, like Pop!_OS, Trisquel and VanillaOS, but those are for another day.

THE BEGINNING

You would think that the story of Ubuntu would start with Ubuntu, but it actually starts with Ubuntu's parent, Debian. It was one of the first Linux distributions, founded in 1993. Ubuntu was developed from Debian, started in 2004 by Debian developer Mark Shuttleworth. He

identified deficiencies in the Debian process and was determined to make improvements, such as a disciplined release schedule.

Ubuntu's first release was in October 2004 and numbered 4.10, starting off the "year-month" release numbering system that remains pretty much universal in the Ubuntu world.

Ubuntu is now on its third desktop, having started with GNOME 2, moved to Unity and now to a modified version of GNOME 3. It continues as one of the world's most popular Linux desktop distributions for government, business and personal use. There is also an official dedicated server version, Ubuntu Server, and a Chinese language edition, Ubuntu Kylin, which was first introduced in April 2013.

CURRENT OFFICIAL FLAVORS

The first official flavor of Ubuntu was Kubuntu, which uses the KDE desktop. Its first release

REVIEW

was in April, 2005, just one release behind Ubuntu.

Edubuntu was up next in October 2005 as version 5.10. It is a version of Ubuntu with a school focus and the GNOME desktop. Edubuntu disappeared after 14.04 LTS but was resurrected in 2023 as 23.04 and continues today.

Next was Xubuntu, with its Xfce desktop, out just 8 months after Edubuntu, with 6.06 as its first release.

Ubuntu Studio, with its GNOME desktop and a focus on multimedia production first arrived in May 2007.

Lubuntu had a slow start, initially as just LXDE desktop packages for Ubuntu, starting with 8.10. It became a stand-alone distribution with 10.10 and an official flavor starting with 11.10. It is now on its second desktop, LXQt.

Ubuntu Touch was an official project of Canonical, started in 2011, but discontinued and then

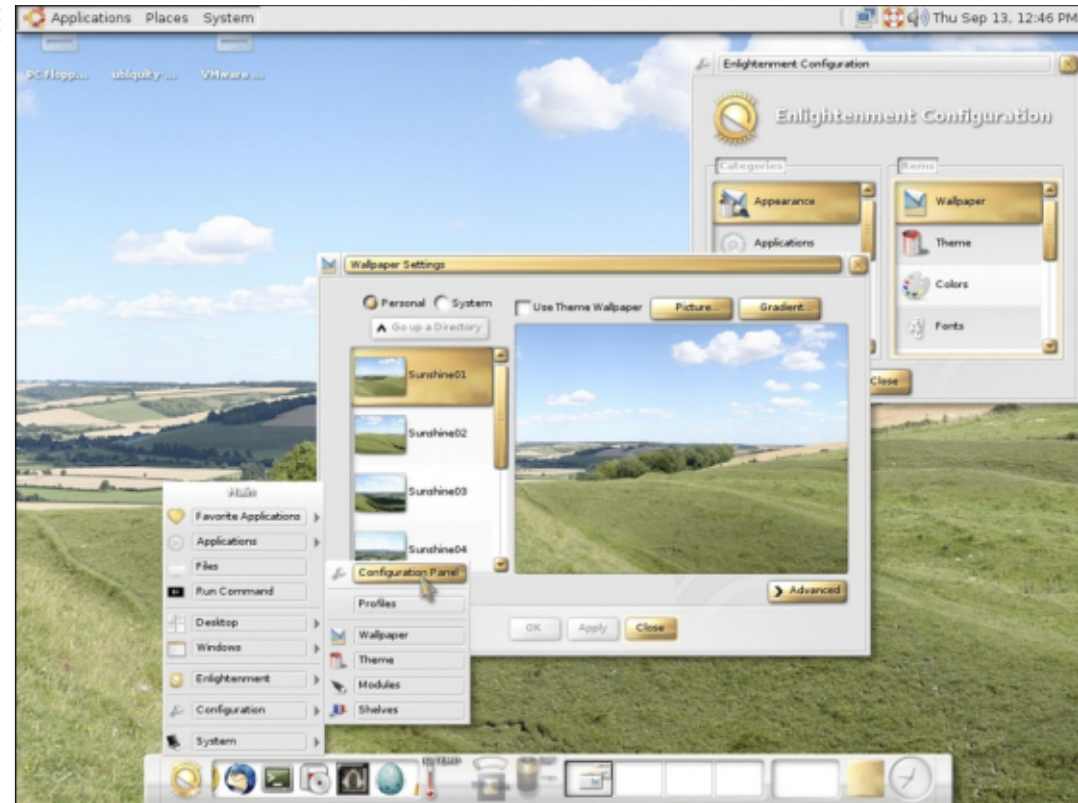
picked up by the UBPorts community, with a first new release in 2018. It was initially intended as an operating system for smart phones and tablets, with the goal of eventually running on all devices as a “convergence” desktop, but today remains primarily a phone operating system.

Ubuntu MATE, with its “classic” desktop based on GNOME 2, first came out in October 2014 and gained official flavor status the following spring with 15.04.

Ubuntu Budgie, with the Budgie desktop, first arrived as an unofficial derivative in April 2016. In November of that same year, it became an official flavor.

Ubuntu Unity was introduced unofficially in May 2020, bringing back the Unity 7 desktop. It reached official status two and half years later with its 22.10 release.

The first release of Ubuntu Cinnamon was in December 2019, using the Cinnamon desktop from Linux Mint. It reached official status



REVIEW

in March, 2023 and is the most recently added official flavor.

PAST OFFICIAL FLAVORS

For a number of different reasons some official flavors have been discontinued.

Gobungtu was a very short-lived official Canonical version of Ubuntu, using only free software. It had only two releases, 7.10 and 8.04, before being rolled into the mainline Ubuntu as an installation menu option.

Ubuntu JeOS (Just Enough Operating System) was another official Canonical version aimed at

virtual machine appliance use. It also did not last long, as only 7.10 and 8.04 came out before it was merged into the mainstream Ubuntu Server in October 2008.

In that same period Mythbuntu was introduced, with its first release also 7.10. It was an official flavor that included MythTV and could be used as a media controller. Its last release was 16.04.

Ubuntu Netbook Edition was, naturally, an official Canonical version of Ubuntu aimed at the then new netbook small-sized laptops. The first version was 8.04 and by 10.10 it had switched from its unique netbook interface to Unity. By 11.04 it was gone, merged

into mainline Ubuntu. Today the netbooks themselves are gone too, replaced by modern notebook laptops, which are not much bigger.

Ubuntu GNOME was started in 2012 to bring the pure GNOME 3 desktop to Ubuntu following the switch of mainstream Ubuntu to Unity. It became an official flavor with 13.04 but, when mainline Ubuntu moved to GNOME with the 17.10 release, Ubuntu GNOME became redundant and its last release was 17.04.

THE UNOFFICIAL 'BUNTUS

Here is where things get interesting and complex. It is

impossible to make a complete list of Linux distributions that have carried the Ubuntu name or parts of it, but here are some of them, at least, in chronological order, by appearance.

Nubuntu, also known as Network Ubuntu, was a version of Ubuntu optimized for security testing, using the Fluxbox window manager. The project started in 2005, first out in 2006 and last released in 2008. By 2010, the official website had been taken down.

Fluxbuntu was a very short-lived distribution that first arrived in 2006 and was gone the following year. It only had two releases,

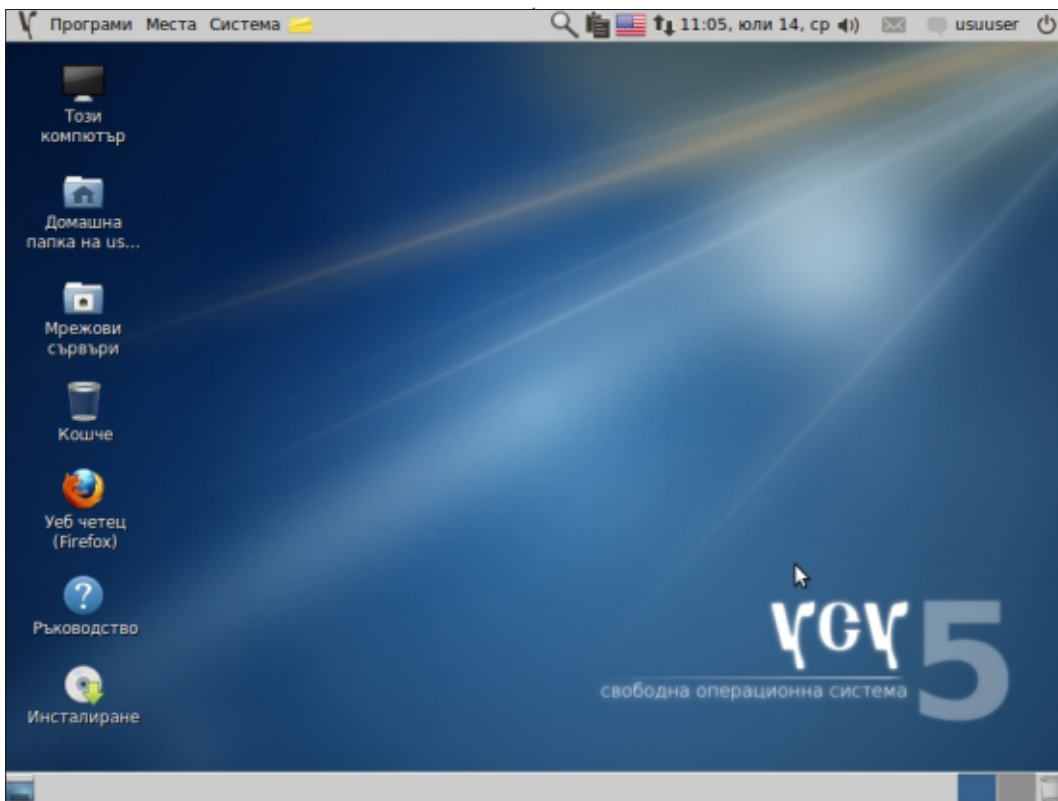


REVIEW

neither one classified as “stable”. It used the lightweight Fluxbox window manager and was aimed at older and low-powered computers.

Geubuntu was another Ubuntu variant, using GNOME and the Enlightenment window manager. It was around from 2007 to 2010. In 2008 it was renamed OpenGEU to acknowledge that it did not meet Ubuntu’s software repository requirements and thus would not qualify as an official flavor.

Bubuntu was a French language



Ubuntu derivative that used the same GNOME 2 desktop that Ubuntu used but with no top panel, no default sounds and with some extra applications added. Started in 2007, the last release was in 2009.

Also from 2007 was Scibuntu from Sweden, an Ubuntu version designed as a science workstation with the option to install software for many different science disciplines. It never got past a beta release.

Elbuntu also dates from 2007

and used the Enlightenment window manager. Based on Ubuntu 7.04, it used an early version of the PCMan file manager that later became the core of Lubuntu.

2007 was the year the religious Ubuntu versions appeared. Ubuntu Muslim Edition, also known as UbuntuME and later called Sabily (Arabic for “My Way”), was developed from 2007 to 2011 and included Islamic study tools. Ubuntu Christian Edition, also called UbuntuCE, is another religious study variant that was developed from 2007 to 2012 but was resurrected in 2022 and still exists today. Buddhabuntu, also called Ubuntu-Buddha and Ubuntu

Buddhist Remix, was a version of Ubuntu that included Buddhism study tools and existed for a short time in 2009-2010. And, not to be left out, there was an Ubuntu Satanic Edition, with all of its releases in the 666 series. It was around from 2010 to 2012 and featured a focus on Ubuntu plus heavy metal music.

Eeeubuntu appeared in December 2007 as a series of scripts to adapt Ubuntu to the Asus EEE PC netbook, becoming an actual distribution in December 2008. The name was changed to Aurora OS with the last release in 2009. Netbooks themselves had disappeared by 2013 replaced by



smartphones, tablets and notebook laptops.

In 2008, another unofficial Ubuntu variant for the Asus EEE PC and other similar netbooks appeared, called Ubuntu EEE. It too started as just some Ubuntu modification scripts in 2007. There were trademark objections to the name that were brought up by Canonical in 2008 and the next year it was renamed EasyPeasy. The last release was in 2012.

Also from 2008 was Ubuntu Privacy Remix (UPR), a live CD version only with extra encryption tools included. The first version was 8.04r1 but it was gone by 2014, with version 12.04r1 being the last

release.

GendBuntu is about as official as it gets for an unofficial Ubuntu derivative. It is the official operating system for France's National Gendarmerie police force. Started in 2008, it is still in use today.

Fredubuntu was a French educational version of Ubuntu for school use, based on Ubuntu 8.10. It seems to have just had a single release.

“Learn Free with Ubuntu” is the English translation of the Bulgarian Учи Свободен с Убунту. It is an Ubuntu derivative using the KDE desktop and aimed at educational

use. It has been around since at least 2008 with the most recent release in 2016. Similar in concept to Edubuntu, it comes with specific applications for school use.

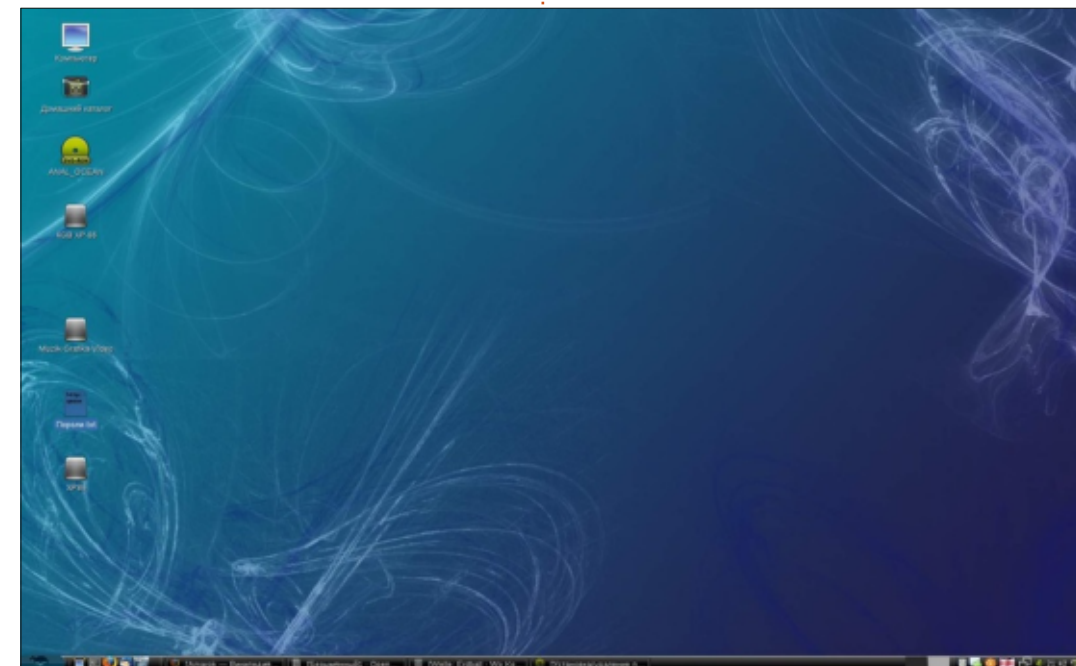
Estobuntu was an Estonian-language derivative of Ubuntu, that was active 2008-2014.

Runtu is a Russian language version based on the Ubuntu LTS versions with both Xfce and LXDE desktop versions. It was started in 2008 and is still active today.

Goobuntu was a Google-built distribution for Google's own internal use that added some new

packages and removed others. It first appeared around 2009, was never publicly released, but was shown at LinuxCon 2012. It was replaced at the company in 2018 by gLinux which is based on Debian Testing.

Moebuntu is not an actual Linux distribution but a series of scripts and instructions that first appeared around 2009 to take your vanilla Ubuntu installation and turn it into a pink-themed “moe-moe”, the Japanese term for a strong affection for anime and manga characters. If you love Sailor Moon then Moebuntu is for you!



Ubuntu Lite was a lightweight version of Ubuntu aimed at older and lower-powered computers, with an emphasis on low resource use, using the Openbox window manager. Its last release was in May 2009.

ABCbuntu was a short-lived, privacy-focused, live CD distribution from Italy with the last release version 10.10. It is still on SourceForge today for download, however.

Fuduntu was an attempt to produce an operating system with Gnome 2 that combined Fedora with Ubuntu and was initially a fork of Fedora. It was around from 2010 to 2013.

Miniubuntu, also called Ubuntu Mini Remix, was active from 2010 to 2017. It allowed users to build their own custom Ubuntu-based distribution based on its own minimal operating system.

Cobuntu was a briefly offered version of Ubuntu aimed at Korean language users and around in 2010-2011.

BlackBuntu was a security penetration testing and training

derivative that was around from as early as 2011 and lasted until early 2023. It seems to have been recently discontinued.

The Turkey-based Macbuntu also dates from 2011 and was a project to create a version of Ubuntu that looked like Apple Mac OS-X. The last work on this was in 2015. The release of Ubuntu 11.04 with the very Mac-like Unity interface probably made this project redundant.

Not long after the Cinnamon desktop was started as part of Linux Mint, there was interest in creating an Ubuntu derivative. One early effort was called Cubuntu, which was started in 2012 and had its last release in 2017. Its successor is Ubuntu Cinnamon, now an official flavor. The last release is still available on SourceForge.

Emmabuntüs was originally based on Ubuntu 10.04 LTS when introduced in 2012. There was also an LXDE version based on Lubuntu. In 2014, it became based on Xubuntu and since 2016 it has been Debian-based. It is named for Emmaüs, a secular global solidarity movement named for a biblical story, plus Ubuntu. It is aimed at

reclaimed, used computers for humanitarian work.

Also from 2012 was the Ubuntu Rescue Remix from Canada, a version of Ubuntu that included a collection of system rescue and recovery tools. The last version was 12.04.

Ubuntu Booloki Remix 3.2 was a minimal CD-based operating system, with no graphical interface, just command line and based on Ubuntu 12.04 LTS. That sole release was made in 2012.

Mubuntu was a single release made in 2013, using the MATE desktop in place of Unity on top of Ubuntu 12.04 LTS. The developer working on Mubuntu was invited in 2014 to join the team that was working on the Ubuntu MATE official flavor.

2013 was also the year that SecUntu was introduced. This was a minimal live CD version with tools for online safety. It included Firefox, but also Google Chrome. Based on Ubuntu 12.04 LTS, there have been no further releases.

XPubuntu was a one-shot 2014 attempt to create an Ubuntu

derivative that looked and worked just like the discontinued Microsoft Windows XP. It was based on Lubuntu 14.04 LTS and even used Microsoft's well known "Bliss" wallpaper and a menu button marked "start".

Matuntu is a Russian language distribution based on Ubuntu and using the MATE desktop. It was started in 2014 and is still active.

Wubuntu, also called Windows Ubuntu, is a version of Ubuntu that is intended to have an interface that is very similar to Microsoft Windows 11. It includes the Wine compatibility layer to run Windows applications and uses your choice of the KDE Plasma 5 or Cinnamon desktop. It is a "freemium" operating system, with the base version free and then a one-time \$35 fee for all the "power toys" features. Around since at least 2014, it is still active.

Kodibuntu was a distribution based on Ubuntu, using the Kodi media and entertainment hub software for running TVs and such. The last version came out in 2016.

2017 saw the release of Slybuntu, based on Lubuntu

16.04.2, with the aim of being a fast and safe distribution for home users. This British effort included the Whisker menu and the Xfce panel from Xubuntu. It is still on SourceForge for download, but has not been developed since 2017.

Retrobuntu also came out in 2017. Based on Xubuntu 16.04 LTS and aimed at retro-gaming, it included RetroPie and Kodi, but no actual games. The last release was in 2017.

Bluebuntu was an Ubuntu version from the United States that had an interface very similar to Microsoft Windows but development ended in 2019.

Ubuntu Web is a project to create a browser-based distribution to compete with Google's ChromeOS. It was introduced in 2020 and based upon Ubuntu 20.04 LTS. I did a review of it in Full Circle 166 and, at the time, questioned whether there would be another release or not. There were a couple of updated 20.04 minor point releases, the last one being 20.04.4, but nothing more since March 2022.

Also from 2020 was UbuntuEd

from India designed to fill in for Edubuntu after development of that official flavor stopped in 2014. But Edubuntu returned in 2023 and UbuntuEd was discontinued.

UwUntu has had two releases, 21.05 and 22.10. It is a class project by two students from Spain to create a "weeaboo" version of Ubuntu, meaning one infused with Japanese culture. The first release was in May 2021 and the last in October 2022. It is not clear if it is still active or not.

iBuntu is yet another attempt to take Ubuntu with the KDE desktop and make it look and work just like MacOS, including using Mac-like icon sets. It was still under active development in 2023.

I think from reading through this list, it is pretty clear that Ubuntu acts as a catalyst, providing a solid starting base and spurring others on to further development. Some of these projects have grown into lasting official flavors, while the majority have spluttered out, but all are a testament to the benefits of open, collaborative software.



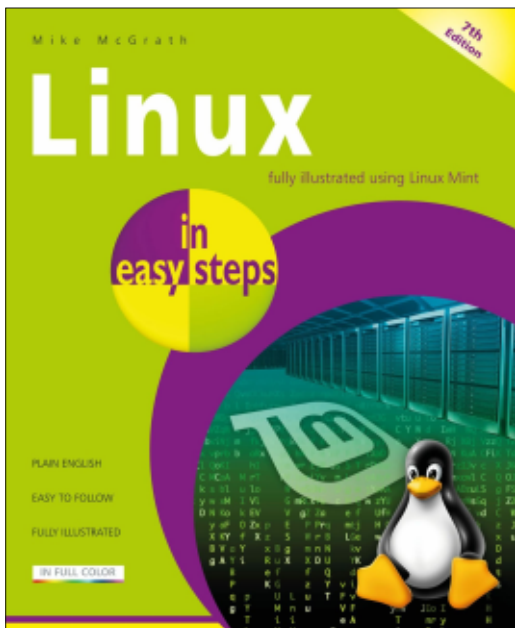
Adam Hunt started using Ubuntu in 2007 and has used Lubuntu since 2010. He lives in Ottawa, Ontario, Canada, in a house with no Windows.



BOOK REVIEW

Written by Jim Dyer

Linux in Easy Steps



Linux in Easy Steps, 7th Edition by Mike McGrath

This book was both easy to read and informative.

It is aimed at new users to Linux and leads through the steps of introducing Linux, choosing a Distro (Version), getting started and using Linux. There are many versions of Linux available and the book briefly discusses several of the more popular versions.

It then focuses on Linux Mint as that is a version that will be most user friendly to users switching from the Microsoft Windows operating system. The book contains 10 chapters and an Index.

Successive chapters cover getting started, setting up the system, choosing applications, and ends with using the Internet, Office, Media and more. Linux Mint uses the familiar graphical interface.

Thinking back to my personal introduction to Linux years ago, it was learn as you go and had bumps in the road as I learned. This book would have been really useful at that time.

If you are an experienced Linux user you don't need this book, but if you are just jumping into Linux this book will be extremely helpful to you. That said, even an experienced user may get some learning from the book.

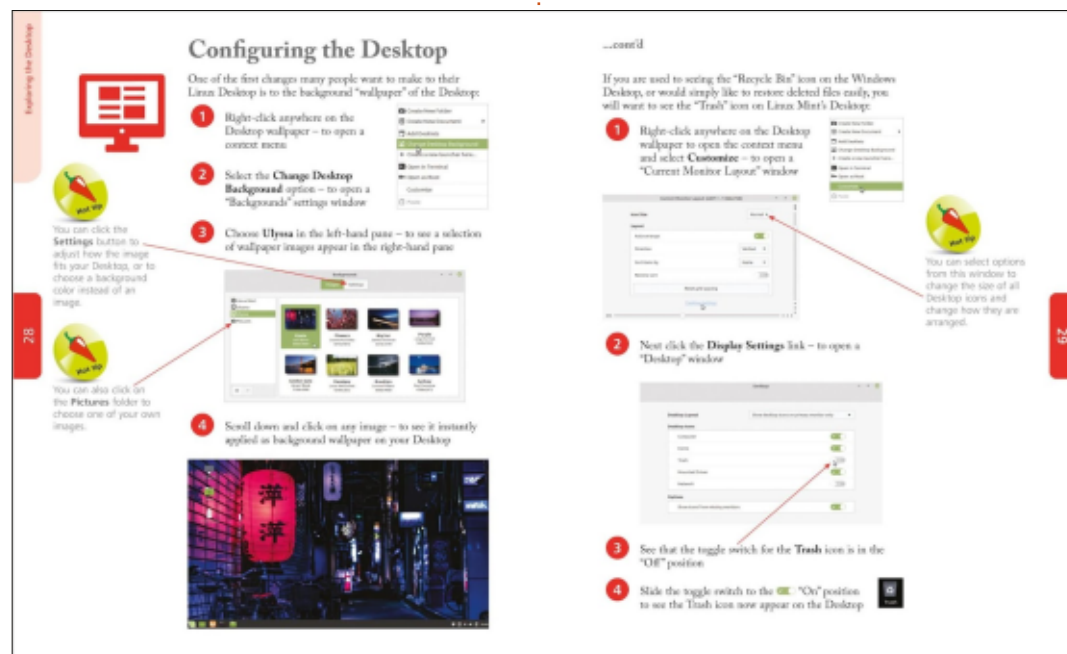
The book flows well and is easy

to follow as it leads you through the many parts of becoming a Happy Linux user.



Table of Contents:

- Getting started
- Exploring the Desktop
- Setting Preferences
- Touring the File System
- Engaging the Internet
- Producing with Office
- Enjoying Media
- Using Accessories
- Commanding the Terminal
- Performing Operations





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

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

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



Q&A

Compiled by EriktheUnready

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

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

I love how government departments have all these so-called "anonymous" reporting and whistle blowers posters up. The websites and intranets are peppered with these, but it never gets used, as everyone knows it is neither anonymous nor is there any real whistle blower protection, unless you are connected. Working with these people you realise they know that on an instinctive level too. They have security training and seminars, but the only reason the staff go is to get a day off and for

the food and gifts. It was whilst I was waiting for my contact the one day and someone came to report some security concern. The response was wide eyes, an angry expression and the reporter was told to "keep to their own lane" and not interfere with other department's domains. IT security is everyone's domain, but if you are in a government job, you know you get paid too much to be there, and can get away with doing the bare minimum, as you cannot really be dismissed. (Here anyway) Why risk it to report something and actually stand a chance to lose your job? It was not the first place or time I had heard that expression, when reporting something, but the scorn the person received will stay with me until the end! We as home users don't have to worry about that sort of thing, but be safe in 2024 nonetheless. Lock your safety gates (recently, someone had their laptop stolen off a table 6ft away from the gate!) and lock your computer when you go away from it. I know of someone who got quite the shock when the kid authorized a whole bunch of Fortnite game

purchases because the parents laptop was unlocked. Security, like charity, starts at home.

Q: Having issues here. I tried using youtube videos for installing mysql server on Ubuntu 22.04, but there is a difference and I'm not sure how to handle it. Also there are 2 packages, mysql-server and mysql-server-8.0, so what is what?

A: You need to tell me what that difference is, I cannot guess? If you are unsure about packages, do this: apt-cache search mysql-server -all the entries will have descriptions. Metapackages are usually packages that refer to other packages, in your case mysql-server refers to mysql-server-8.0.

Q: I'm running Ubuntu 23.04 in Virtualbox inside Ubuntu 22.04. I keep getting strange things happening when I change display resolution in the VM, the base OS browser will suddenly be too big for the screen, for instance or the VM display just goes black and I

have to push ESC. I have never come across this before, do you have any insights?

A: There could be a few things. My first check would be Vulkan, boot into an X11 session and see if it still happens. Also check that somehow you did not give too little or too much memory to the VM display, in the settings. My last checkpoint would be fractional scaling, that is still somewhat broken in 2023. Then finally, I'd check the fans and vents of your display card or CPU or laptop, they could be clogged with dust and heat and IC's are not friends.

Q: I read an article, which in turn led me down a rabbit hole. <https://www.sikich.com/insight/ahhh-my-mouse-and-keyboard-were-hacked/> I have a Logitech controller and mouse, and I have looked on StackExchange, <https://security.stackexchange.com/questions/266231/how-can-i-find-out-if-a-wireless-keyboard-is-encrypted-secure> I can't find any info on how to check this in Linux though. This has me worried and

Q&A

also curious. Is there a bash or Zsh command I can use to check?

A: As far as I know, there is no way to check via the command line. Luckily you have Logitech components, so I can tell you about solaar. (<https://launchpad.net/~solaar-unifying/+archive/ubuntu/stable>) There used to be a small i for info button on the application, one could click and it would tell you if your comms was encrypted or not. More I cannot tell you.

Q: I have some old SD cards from my camera, mostly 8Gb. I have decided to re-purpose them into boot disks for different *buntu distros, starting with Kubuntu. I have been testing them on the family's old laptops. They are not THAT old, the oldest being an i3 with 2Gb of memory my daughter used at college. The results are hit and miss as most will not even boot to Kubuntu. Can you tell me what I should change here?

A: Firstly, not all laptops can boot off SD cards, you may need to update the BIOS for this to happen, and also set it as a boot

device in the BIOS. Secondly, some old laptops cannot boot off a UEFI image. Thirdly, have you verified your download and also verified the written SD card?

Q: Can I install Ubuntu on a Synology NAS and use it as a media PC?

A: I would guess you probably can, but how you would go about it, I cannot say. Best bet is to ask on the Synology forums.

Q: I am very new to Ubuntu WSL. I'm currently studying a course via Pakt and I'm running into issues. The error I can't get rid of is; "Permission denied Cannot stat file". I'm using sudo as the course suggested, but it does not seem to be enough. How can I get full root?

A: OK, WSL is not Ubuntu proper, but let's run with it. Windows and Linux work differently. In Linux I can have my cake and eat it too, by this I mean I can be editing a text file and I can delete it from the file system while editing. Windows does not work this way, it locks files

you are using. It sounds like you have Windows locking a file. Close EVERYTHING using that file and try your file operation again. If not, reboot and before doing anything, perform your file operation.

Q: Here's the rub, the instructions are for Windows, but I use Ubuntu. They say to use Pycharm community edition and in the Pycharm terminal at the bottom, I should type pip install cryptography. This just does not work in Ubuntu and I am too shallow to know why, can you help me out?

A: The terminal used in IDE's is usually very basic, (I have no experience with PyCharm) you can try in your default terminal and you can also try "pip3 install" instead of pip install. That said, as far as I know, the cryptography module is installed in Ubuntu. (I just tested on mine, and it is there.)

Q: I have vanilla ubuntu 23.10 installed on my system. In the settings I have selected dark theme in the appearance menu but some applications are still appearing in the light theme, like the store. I

have rebooted, reinstalled, even tried it in virtualbox, but it is always the same.

A: Snaps do not adhere to system themes, they are self contained packages, with their own window and icon and mouse themes.

Q: I'm trying to code with C using VS Code on Ubuntu, but it always takes so long to load. My system is a bit older, but it serves me fine, I just want to speed up the coding environment. Everything else works as I expect and I don't really have other issues.

A: VS Code is large and then an electron app on top of that if memory serves. You could try preload. It may take a while to get you sorted as it needs to learn your patterns. On the other hand, why not try something lighter, like code::blocks?

Q: I'm trying to use the extract here function, on a compressed file, filled with other compressed files. It is a ZIP file with RAR files inside. I have downloaded it

Q&A

multiple times, but when I extract, it only extracts the first file. I am using XFCE on Victoria, but the official version, I did not add a DE.

A : Victoria sounds like Linux Mint codenames, are you sure it is Ubuntu? I can recall seeing something similar before, but it had to do with the correct compression utilities not being installed. I suggest installing rar and unrar and p7zip (not unrar-free) and any other compression utility you may be using. Reboot and try again. If all else fails, try a different utility, like engrampa and see if it works in that.

Q : I'm semi-new to Ubuntu, and I have the following question. I'm sort of tired of "ubuntu focal Release' does not have a Release file" Is there a command to check this BEFORE you install a PPA? Coz then I have to go in and remove it again, and I have to reload the apt update again. It's just I feel like this could be handled better.

A : The simplest way I can help you here is to tell you to Google the name of your desired

PPA, then in Launchpad, there is a list at the bottom, listing all the supported versions, by codename. For instance, I Google "boot-repair launchpad" and at the bottom I see "package in lunar" and "package in Jammy" for instance. On that note, don't just install PPA's by copy/paste before looking at Launchpad!!



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



Website: <https://arielek.com/#please-fix-the-road>

Price: \$5-10 USD

Blurb: *"Please Fix The Road is a colorful, minimalistic, laid-back and casual puzzle game in which it's probably not hard to guess... you're fixing roads! In each level you have a specific limited set of tools that will help you get all the cars, boats, trains or animals from point A to point B. The mentioned animals include, of course, kittens, dogs and... pink llamas!"*

Off the bat, I read the requirements wrong. They are:

Processor: 2.5Ghz Dual Core
Memory: 3 GB RAM
Graphics: Dedicated GPU
Storage: 1 GB available space

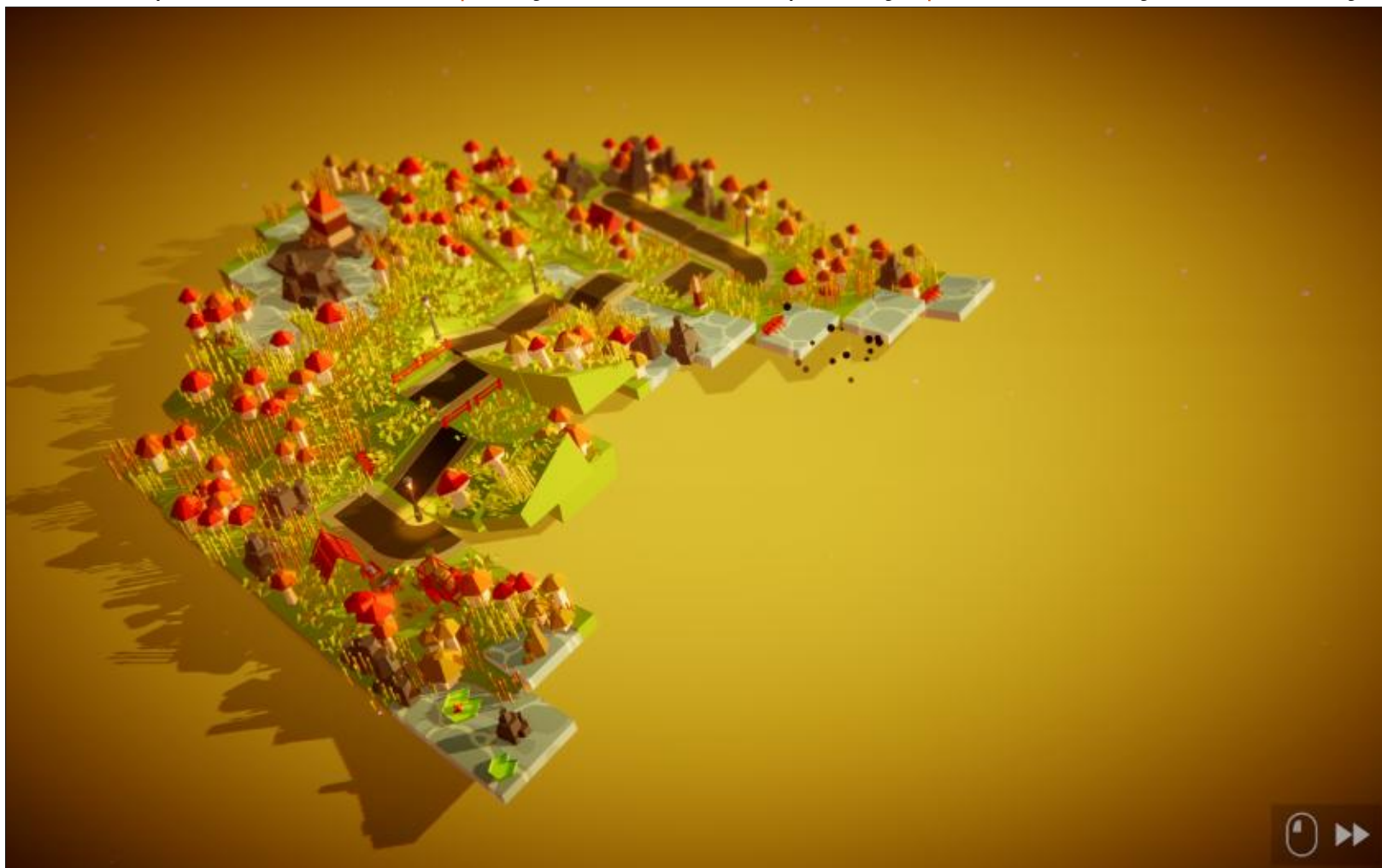
So I tried it on one of my potato laptops, (HP 450 G2) to see if low end gamers can play this. Long story short, you cannot. The part I missed was the "Dedicated GPU"

Without a dedicated GPU, all you will see is paging.

Essentially, what the game is, is a fancy version of a Godot tutorial I once watched, where you lay down tiles, to complete a road so the car

can drive from A to B. The game uses assets and I know a lot of people don't like that. (I think the reason may be that they associate a game by it's assets, but for me, it is gameplay) The assets are from kenny.nl and I think it fits perfectly.

The whole title has that low-poly feel to it and is actually easy on the eye. So I guess we are discussing the graphics first. Everything is colourful, bright and on point. There are no overlapping models, so the road and your car are always



UBUNTU GAMES

visible. (I never once used the zoom out function.) The animations are nothing short of amazing. When your vehicle (or animal) hits point B or the end of the road, it is flipped into the air, some random direction and distance, just to explode into a ball of smoke or fire or shrapnel. This puts a bit of humour into the game from the start. You can destroy blocks that break up into satisfying little triangles, that also have a nice crunchy sound effect to them. The cherry on the cake is the transitions from one screen to the next. There are folds and rolls and slides, you name it!

This is also not one of those games that use the same four backgrounds over and over and just change the layout. Every screen (so far... I have not finished the game, played for half an hour yesterday and half an hour today.) has been a visual delight.

The other part the game heavily relies on, is the music. It is definitely not my taste, but it is fitting none-the-less. It is a slow snare drum stroke with a trumpet playing, interspersed with a piano every so often. A little later on into the game, it becomes a picked electric guitar. There were one or

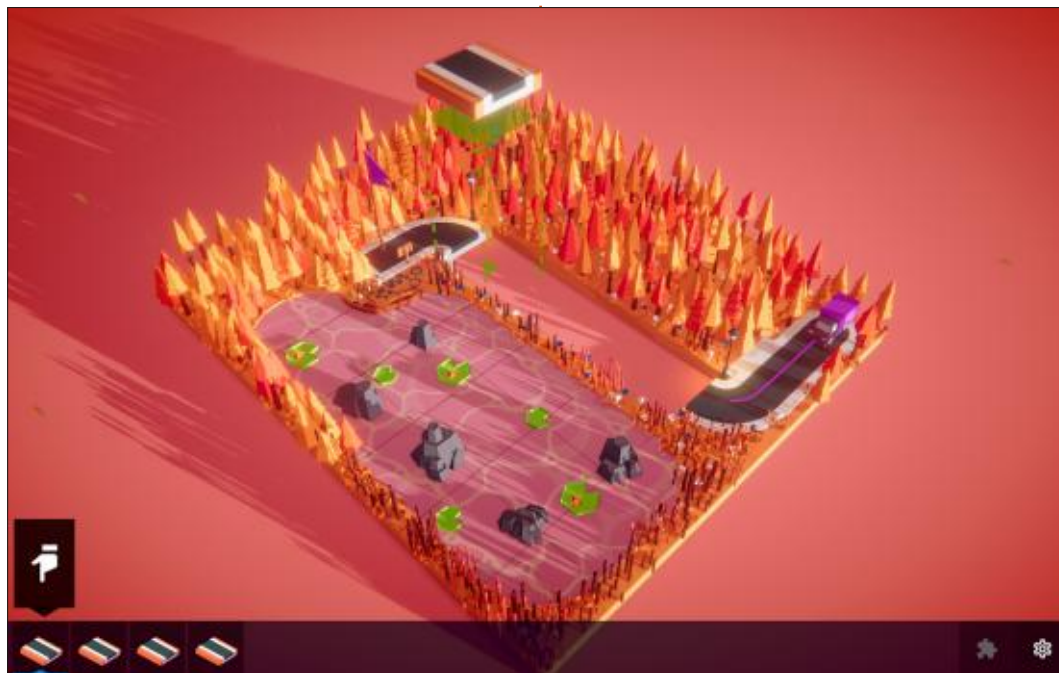
two lively tunes buried somewhere in the game also. This is my only critique on the game. I need an outrun-style radio to fiddle with the knobs and change my station. I don't mind slow and relaxing music, but give me a choice to get some other slow and relaxing music, or maybe my own music. Because I did not like the music, it grated on me to the point where I turned it off, it is not that it was bad, just not my taste.

The last thing we need to look at is the game mechanics. If the game was simply A to B with your little car, it would get boring really quickly. The developers have used

different vehicle models and even multiple vehicles. Some levels have animals that are also humorlessly flipped into the air at the end and explode on contact with the ground. This could also have been something different each time, but it is not a deal breaker. At the end of the day, it is a relaxing casual game, so there is no pressure from time limits or anything chasing you. Some levels require demolishing some terrain before you can build and the blocks do get a little more interesting, a la Tetris, but nothing you need to break your brain on. If you were to apply yourself, you could finish this game in about an hour, but this is for relaxation, not

speedrunning, so it looks like about two hours worth of content. If you have the steam version, there are quite a few achievements to unlock. The game is well tutorial-ized and you are taught all the mechanics you need to play the game, in the first few rounds. There is no excessive hand holding, which is good. The game is playable with your mouse or keyboard (WASD) and at the start you are given the option of playing with a controller too.

For the price point the game is worth it for the entertainment value alone. You can play this while you wait for your code to compile and de-stress a bit. The levels are nice and short, (ranging from thirty seconds to two minutes) making it a perfect "in between" game.



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



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The current site was created thanks to **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.

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