Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

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Photo: Roger Mommaerts (Flickr.com)

VALENTINA

CREATE YOUR OWN PATTERNS

Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

HowTo

Graphics

EDITORIAL

Welcome to the latest issue of Full Circle

As ever, we have the usual suspects; Python, Inkscape, Krita and (from last month) Rawtherapee. To compliment those we have a most unusual piece on... fashion. Yes, we have a quick look at Valentina which will let you create clothing patterns. It's a riveting story of one man's retirement becoming one woman's treasure.

Elsewhere, we have Richard struggling with PIM. If you can help him out, please do email him a solution. There's no Loopback this month as BSD seems to be driving SJ to a nervous breakdown. I don't think we can help him. Between that and work, I fear he might be too far gone. Just kidding. He'll be back next month.

You might notice a couple of tweaks in the magazine. Don't panic, nothing big. I upgraded my Ubuntu 19.10 to the beta of 20.04. That in turn seems to have upgraded my Scribus to 1.5.5. No big deal. Except that it screwed up a couple of my paragraph styles and has a slightly different layout to what I'm used to. So I hope I've managed to recreate the paragraph styles with a couple of tiny tweaks.

Wherever you are in the world, stay safe in these crazy times!

All the best, and (please!) let us know what you like/dislike.
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NEWS

Submitted by ErikTheUnready

Kubernetes 1.18 Released:

03/30/2020

The release of Kubernetes 1.18 container orchestration platform has been released , which allows managing a cluster of isolated containers as a whole and providing mechanisms for deploying, maintaining and scaling applications running in containers. The project was originally created by Google, but then transferred to an independent platform, curated by the Linux Foundation. The platform is positioned as a universal solution developed by the community, not tied to individual systems and capable of working with any application in any cloud environment. Kubernetes code is written in Go and is distributed under the Apache 2.0 license.

https://kubernetes.io/blog/2020/03/25/kubernetes-1-18-release-announcement/

OpenEuler 20.03 Linux distribution released by Huawei:

03/30/2020

Huawei introduced OpenEuler 20.03, which is a long term support release (LTS). Package updates for openEuler 20.03 will be released until March 31, 2024. Repositories and installation iso-images are available for free download. The source code is available on the Gitee service.

The differences between openEuler and CentOS are quite significant and are not limited to rebranding. For example, openEuler ships a modified Linux kernel 4.19, systemd 243, bash 5.0, and a GNOME 3.30-based desktop. Many ARM64-specific optimizations have been introduced, some of which have already been transferred to the main code bases of the Linux, GCC, OpenJDK, and Docker kernels.

https://www.huawei.com/en/press-events/news/2020/3/openeuler-lts-open-source-operating-system

WireGuard VPN 1.0.0 Available:

03/30/2020

WireGuard 1.0.0 VPN milestone, which is now included in the main Linux kernel, is out. The code included in the Linux kernel underwent an additional security audit, performed by an independent security company. The audit did not reveal any issues.

Since WireGuard is partof the core Linux kernel, a wireguard-linux-compat.git repository has been opened for distributions and users who continue to use the old kernel versions . The repository includes the backported WireGuard code and the compat.h layer to ensure compatibility with older kernels. In its current form, a separate version of WireGuard can be used with kernels from Ubuntu 20.04 and Debian 10 "Buster", and is also available as patches for Linux kernels 5.4 and 5.5. Distributions using the latest kernels such as Arch, Gentoo, and Fedora 32 will be able to use WireGuard along with the 5.6 kernel update.

https://lists.zx2c4.com/pipermail/wireguard/2020-March/005206.html

Eclipse Theia 1.0 Released, a true open source Alternative to Visual Studio Code Editor:

03/31/2020

The Eclipse Foundation has published the first stable release of the Eclipse Theia 1.0 code editor, designed to provide a truly open alternative to the Visual Studio Code project. The code is written in TypeScript and distributed under the free EPLv2

(Eclipse Public License). The project is being developed in conjunction with IBM, Red Hat, Google, ARM, Ericsson, SAP and Arduino.

The key differences from Visual Studio Code are: a more modular architecture that provides more options for modification; initial orientation to launch not only on the local system, but also in the cloud; development on a neutral site. They also develop the VSCodium project, which includes only free components, with removed Microsoft branding, and most importantly, telemetry spyware.

https://www.eclipse.org/org/press-release/20200331-theia.php

Fedora and CentOS launch Git Forge. GitLab Opens 18 Proprietary Features:

03/31/2020

CentOS and Fedora projects announced a decision to create a new joint development service, Git Forge. It will be built using the GitLab platform. GitLab will become the primary platform for interacting with Git repositories and for hosting projects related to CentOS and Fedora distributions. The previously used Pagure service will continue to exist, but will be transferred to the care of a community interested in continuing development. Pagure will be pulled out of Red Hat's Community Platform Engineering (CPE).

In the meantime, GitLab announced the opening of implementations of 18 functionalities previously offered only in proprietary editions of GitLab. Opportunities cover various areas of managing the full cycle of software development, including development planning, project creation, verification, work with packages, generation of releases, configuration and protection.

https://lists.fedoraproject.org/archives/list/devel@lists.fedoraproject.org/thread/QXJBN37CQRTVMKAYSS5PYVZXDPZZFZYN/

Linux kernel vulnerability to escalate privileges via BPF:

03/31/2020

CVE-2020-8835 in the Linux kernel. It was used in the Pwn2Own 2020 competition to hack Ubuntu. The vulnerability allowed an unprivileged user to gain root privileges. A working exploit exists, but has not yet been published. The vulnerability is present in the eBPF subsystem, which allows launching handlers for tracing, analysis of subsystems, and traffic control, performed inside the kernel in a special virtual machine with JIT.

To block the vulnerability, the only workaround is to roll back the patch or prohibit the execution of BPF applications by unprivileged users through setting sysctl kernel.unprivileged_bpf_disabled to 1.

https://www.openwall.com/lists/oss-security/2020/03/30/3

OpenMediaVault 5 NAS is available:

03/31/2020

After almost two years since the formation of the last significant branch, the OpenMediaVault 5 distribution kit was launched, aimed at the rapid deployment of network storage. The OpenMediaVault project was founded in 2009 after a split in the camp of the developers of the FreeNAS distribution, as a result, the developers of the fork aimed to transfer the distribution to the Linux kernel and the Debian package base. OpenMediaVault installation images are available for download .

https://www.openmediavault.org/

Vulnerabilities in NetBeans Auto-Update Engine:

03/31/2020

Disclosure on two vulnerabilities in the automatic update delivery system for the Apache

NetBeans integrated development environment, which allow replacing server-generated updates and nbm packages, was published. Unreleased vulnerabilities were fixed in release 11.3 .

The first vulnerability (CVE-2019-17560) is caused by the lack of verification of SSL certificates and hostname when downloading data via HTTPS, which makes it possible to quietly replace the downloaded data. The second vulnerability (CVE-2019-17561) is associated with a failed verification of a downloaded update by digital signature, which allows an attacker to add additional code to nbm files without violating the integrity of the package.

https://www.openwall.com/lists/oss-security/2020/03/30/2

Linux Mint 20 will discontinue 32bit:

04/01/2020

The developers of the Linux Mint distribution said that the next major release, built on the Ubuntu 20.04 LTS package base, will only support 64-bit systems. Builds for 32-bit x86 systems will be discontinued. The release is expected in July. Supported desktops include Cinnamon, MATE, and Xfce.

The reason for the discontinuation of support for the i386 architecture is the inability to maintain packages at the level of other architectures supported in Ubuntu. For example, Specter mitigation for 32-bit systems. Maintaining a package base for i386 requires large resources for development and quality control, which do not justify themselves due to the small user base (the number of i386 systems is estimated at 1% of the total number of installed systems).

https://blog.linuxmint.com/?p=3887

GhostBSD Release 20.03:

04/01/2020

The release of the desktop-oriented distribution GhostBSD 20.03 , built on the basis of the TrueOS platform and offering the MATE user environment, is available. By default, GhostBSD uses the OpenRC initialization system and the ZFS file system. In the new version, the default settings of the pkg package manager now refer to the GhostBSD package repository, not FreeBSD. Update Station has been changed to only run updates via pkg. In NetworkMgr, the wg network interface has been added to the notnics list so as not to display Wireguard among the network adapters.

http://www.ghostbsd.org/20.03_release_announcement

GNU Taler 0.7 Payment System Developed by GNU Project:

04/01/2020

The GNU project introduced the free electronic payment system GNU Taler 0.7 . A feature of the system is that anonymity is provided to buyers, but sellers are not anonymous to ensure the transparency of tax reporting, i.e. the system does not allow tracking information about where the user spends money, but provides tracking the receipt of funds (the sender remains anonymous), which solves the problems associated with BitCoin with tax audits. The code is written in Python and distributed under the AGPLv3 and LGPLv3 licenses.

GNU Taler does not create its own cryptocurrency, but works with existing currencies, including dollars, euros and bitcoins. Support for new currencies can be ensured through the creation of a bank that acts as a financial guarantor. The GNU Taler business model is based on the execution of exchange operations - money from traditional payment systems such as BitCoin, Mastercard, SEPA, Visa, ACH and SWIFT are converted into anonymous electronic money in the same currency. The user can transfer electronic money to sellers, who can then exchange them back at the exchange point into real money represented by traditional payment systems.

https://www.mail-archive.com/info-gnu@gnu.org/msg02726.html

Nftables 0.9.4 Batch Filter Release:

04/01/2020

The release of the nftables 0.9.4 packet filter has been published. A replacement for iptables, ip6table, arptables and ebtables due to the unification of packet filtering interfaces for IPv4, IPv6, ARP and network bridges. The nftables package includes package filter components that work in user space, while at the kernel level, the nf_tables subsystem provides a part of the Linux kernel since release 3.13. The changes necessary for the nftables 0.9.4 release to work are included in the future Linux 5.6 kernel branch.

https://marc.info/?l=netfilter&m=158575148505527&w=2

End-to-end encryption in Zoom video conferencing turned out to be fiction:

04/01/2020

End-to-end encryption support announced by Zoom's video conferencing service has proven to be a marketing ploy. In fact, the control information was transmitted using conventional TLS encryption between the client and server (as when using HTTPS), and the stream transmitted via UDP with video and sound was encrypted using the symmetric AES 256 cipher, the key was transmitted as part of the TLS session.

End-to-end encryption involves encryption and decryption on the client side, so that the server already receives encrypted data that only the client can decrypt. In the case of Zoom, encryption was used for the communication channel, and on the server the data were processed in the clear, and Zoom employees could gain access to the transmitted data with ease. Zoom representatives explained that end-to-end encryption meant encryption of traffic transmitted between their servers...

https://theintercept.com/2020/03/31/zoom-meeting-encryption/

Free training by Slurm on Kubernetes:

04/02/2020

From April 7 to July 21, the Slurm Training Center will conduct a free theoretical course on the free Kubernetes container orchestration platform . Lessons will provide administrators with an understanding of the basics sufficient to integrate into multi-functional DevOps teams. The course will help developers gain knowledge about the capabilities and limitations of Kubernetes that affect the application architecture, as well as provide an opportunity to learn how to deploy applications, configure monitoring and create environments.

https://slurm.io/evening/

Red Hat Enterprise Linux 7.8 Released:

04/02/2020

Red Hat has released Enterprise Linux 7.8. RHEL 7.8 installation images are available for download only to registered Red Hat Customer Portal users. Package sources can be downloaded from the CentOS project 's Git repository .

The RHEL 7.x branch is accompanied in parallel with the RHEL 8.x branch and will be supported until June 2024. The first stage of support for the RHEL 7.x branch, which includes functional improvements, is completed. The release of RHEL 7.8 marked the transition to the maintenance phase, where priorities shifted towards bug fixes and security, with minor improvements related to supporting important hardware systems.

https://www.redhat.com/archives/rhelv6-list/2020-March/msg00000.html

NetBSD 8.2 Released:

04/02/2020

NetBSD 8.2 is out. In accordance with the new release preparation process , NetBSD 8.2 is

categorized as bug fix and includes mainly fixes for issues identified since NetBSD 8.1 was published. For those who value new functionality, NetBSD 9.0 has recently been released. Downloads are available for 58 systems architectures and 16 different CPU families.

http://blog.netbsd.org/tnf/entry/netbsd_8_2_is_available

PinePhone smart phone supplied with UBports is available for order:

04/02/2020

The Pine64 community has announced the launch of pre-orders for the PinePhone smart phone, equipped with firmware with the UBports mobile platform, which continues the development of the Ubuntu Touch project after Canonical abandoned it. Shipping is scheduled for mid-May 2020. The cost of the smart phone is $ 149.99. It's not great, but it is a start.

https://www.pine64.org/2020/04/02/pinephone-ubports-community-edition-pre-orders-now-open/

XCP-NG 8.1 Released, Citrix Hypervisor Freeware:

04/03/2020

XCP-NG 8.1 was announced, developing a free replacement for the proprietary Citrix Hypervisor platform (formerly called XenServer) for deploying and managing cloud infrastructure. XCP-NG recreates the functionality that Citrix has excluded from the free Citrix Hypervisor / Xen Server since version 7.3 . It supports upgrading Citrix Hypervisor to XCP-ng, provides full Xen Orchestra compatibility, and the ability to move virtual machines from Citrix Hypervisor to XCP-ng and vice versa.

XCP-NG enables you to quickly deploy a server and workstation virtualization system by offering the means to centrally manage an unlimited number of servers and virtual machines. Among the system features: the ability to combine multiple servers into a pool (cluster), High Availability tools, support for snapshots, sharing shared resources using XenMotion technology. It supports live migration of virtual machines between cluster hosts and between different clusters / individual hosts (which do not have a common storage), as well as live migration of VM disks between storage media. The platform can work with a large number of storage systems and is characterized by the presence of a simple and intuitive interface for installation and administration.

https://xcp-ng.org/blog/2020/03/31/xcp-ng-8-1/

Oracle Releases Unbreakable Enterprise Kernel 6 Core:

04/03/2020

Oracle has unveiled the first stable release of Unbreakable Enterprise Kernel 6 (UEK R6), an advanced Linux kernel build, positioned for use in the Oracle Linux distribution as an alternative to the regular Red Hat Enterprise Linux kernel package. The kernel is available only for x86_64 and ARM64 architectures. Kernel sources, including breakdowns into individual patches, are published in the public Oracle Git repository.

https://blogs.oracle.com/linux/announcing-the-unbreakable-enterprise-kernel-release-6-for-oracle-linux

Ubuntu Beta 20.04:

04/04/2020

The beta release of Ubuntu 20.04 "Focal Fossa" is available for download. This marked the complete freezing of the package base and proceeded to final testing and fixing bugs. The release, which is classified as long-term support release (LTS), supported over the nest five years, is scheduled for April 23. Ready-made test images are available for Ubuntu, Ubuntu Server, Lubuntu, Kubuntu, Ubuntu Mate, Ubuntu Budgie, Ubuntu Studio, Xubuntu and UbuntuKylin (Chinese edition).

https://lists.ubuntu.com/archives/ubuntu-announce/2020-April/000255.html

OpenTTD 1.10 simulator:

04/04/2020

OpenTTD 1.10, a free strategy game that simulates a transport company in real time, is available. Initially, OpenTTD was developed as a clone of the commercial game Transport Tycoon Deluxe, but later turned into a self-sufficient project, significantly surpassing the standard version of the game in terms of capabilities. There is now an alternative set of game data, a new sound and graphic design. The capabilities of the game engine were significantly expanded, map sizes were increased, the network game mode was implemented and many new game elements and models were added.

https://www.openttd.org/news/2020/04/01/openttd-1-10-0.html

Apache 2.4.43 http server release:

04/04/2020

Apache 2.4.43 HTTP server release published (release 2.4.42 was skipped), which has 34 changes and 3 vulnerabilities fixed.

https://downloads.apache.org/httpd/Announcement2.4.html

LXC and LXD 4.0 Container Management Toolkit Released:

04/05/2020

Canonical has published tools for organizing the operation of isolated containers LXC 4.0, container manager LXD 4.0 and the virtual FS LXCFS 4.0 for simulation in containers / proc, / sys and virtualized cgroupfs for distributions without support for cgroup namespaces. The 4.0 branch is releases with long-term support. Five Years.

https://ubuntu.com/blog/lxd-4-0-lts-stable-release-is-now-available

Full Circle Weekly News

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

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

Pkgsrc 2020Q1 package repository release:

04/06/2020

The developers of the NetBSD project released pkgsrc-2020Q1, which became the 66th edition of the project. The pkgsrc system was created 22 years ago based on FreeBSD ports and is currently used by default to manage a collection of additional applications on NetBSD and Minix, and Solaris / Illumos and macOS. Users can also use pkgsrc as an additional means of distributing packages. In general, Pkgsrc supports 23 platforms, including AIX, FreeBSD, OpenBSD, DragonFlyBSD, HP-UX, Haiku, IRIX, Linux, QNX and UnixWare.

http://mail-index.netbsd.org/pkgsrc-users/2020/04/06/msg030838.html

FlowPrint, a toolkit for identifying applications based on encrypted traffic, is available:

04/06/2020

"FlowPrint introduces a semi-supervised approach for fingerprinting mobile apps from (encrypted) network traffic. We automatically find temporal correlations among destination-related features of network traffic and use these correlations to generate app fingerprints. These fingerprints can later be reused to recognize known apps or to detect previously unseen apps. The main contribution of this work is to create network fingerprints without prior knowledge of the apps running in the network." The code is written in Python and distributed under the MIT license.

https://github.com/Thijsvanede/FlowPrint

UbuntuDDE Beta Deepin Distribution Beta:

04/07/2020

A test version of the UbuntuDDE distribution is available, based on the upcoming Ubuntu 20.04 LTS release. The distribution comes with the DDE (Deepin Desktop Environment), which is the main shell of the Deepin distribution. Unlike Deepin Linux, UbuntuDDE comes with the Ubuntu Software Center (Snap Store based on the Gnome Software Center) instead of the Deepin app store catalog. The project is still an unofficial edition of Ubuntu, but the developers of the distribution are negotiating with Canonical to include UbuntuDDE in the official distributions of Ubuntu. The size of the iso image is 2.6 GB.

https://ubuntudde.com/

Microsoft proposed Linux kernel module to verify system integrity:

04/07/2020

Developers from Microsoft introduced the IPE (Integrity Policy Enforcement) mechanism, implemented as a Linux Security Module for the Linux kernel. The module allows you to define a general integrity policy for the entire system, indicating which operations are valid and in what way the authenticity of the components should be verified. Using IPE, you can specify which executable files are allowed to run and ensure that these files are identical to the version provided by a trusted source. Just hope they don't add fingerprinting and telemetry to that as well... The code is open under the MIT license.

https://lkml.org/lkml/2020/4/6/941

Tails 4.5 distribution release supporting UEFI Secure Boot:

04/08/2020

The specialized Tails 4.5 distribution (The Amnesic Incognito Live System), based on the Debian and designed to provide anonymous access to the internet, is out. Anonymous exit is provided by the Tor system. All connections except traffic through the Tor network are blocked by default with a packet filter. Encryption is used to store user data in the "save user data mode" between starts. An iso-image (1.1 GB) is available for download .

https://tails.boum.org/news/version_4.5/index.en.html

Simply Linux 9 distribution release:

04/08/2020

Basalt SPO announced the release of Simply Linux 9, built on the ninth ALT platform. The product is distributed under a license agreement that does not transfer the right to distribute the distribution, but allows individuals and legal entities to use the system without restrictions. The distribution kit is supplied in builds for: x86_64, i586, aarch64, mipsel, e2kv4, e2k, riscv64 and can run on systems with 512 MB of RAM.

https://getalt.org/ru/simply/

Qt Company is considering moving to publishing free Qt releases a year after paid releases:

04/08/2020

The developers of the KDE project are concerned about the shift in the development of the Qt framework towards a limited commercial product developed without interaction with the community. In addition to the earlier decision to deliver the LTS version of Qt only under a commercial license, Qt Company is considering the possibility of switching to the Qt distribution model, in which all releases during the first 12 months will be distributed only to users of commercial licenses. Qt Company has notified KDE. There will definitely be more to this story before the week is over.

https://mail.kde.org/pipermail/kde-community/2020q2/006098.html

LibreSSL 3.1.0 cryptographic library :

04/09/2020

The developers of the OpenBSD project presented a portable edition of the LibreSSL 3.1.0 package, within the framework of the OpenSSL fork. It is aimed at providing a higher level of security. The LibreSSL project is focused on high-quality support for SSL / TLS protocols with the removal of redundant functionality, the addition of additional security features and the significant cleaning and processing of the code base. The release of LibreSSL 3.1.0 is considered experimental at this stage.

https://www.mail-archive.com/announce@openbsd.org/msg00300.html

Telegram 2.0 desktop client released:

04/09/2020

Telegram Desktop 2.0 for Linux, Windows and macOS is available. Telegram client software code is written using the Qt library and is distributed under the GPLv3 license. The new version has the ability to group chats into folders for easier navigation in the presence of a large number of chats. You can now create your own folders with flexible settings and assign an arbitrary number of chats to each folder. Switching between folders is done using the new sidebar.

https://github.com/telegramdesktop/tdesktop/releases/tag/v2.0.0

New Delta Chat 1.2 desktop version is out:

04/09/2020

A major new release of Delta Chat Desktop has been announced - a messenger that uses email as a transport instead of its own servers (chat-over-email). The application code is built in Electron and distributed under the GPLv3 license. The core library is available under the MPL 2.0 (Mozilla Public License).

The core of the messenger is developed [as] a library and can be used to write new clients and bots. The current version of the base library is written in Rust (the old version was written in C). There are binders for Python, Node.js, and Java. Informal bindings for Go are under development. There is DeltaChat for libpurple, which can use both the new Rust core and the old C core.

https://delta.chat/en/2020-04-06-desktop-client-release

PowerDNS Authoritative Server 4.3 Released:

04/09/2020

The release of the authoritative DNS server PowerDNS Authoritative Server 4.3 , designed to organize the return of DNS zones, was announced. According to the project developers, PowerDNS Authoritative Server serves approximately 30% of the total number of domains in Europe (if we consider only domains with DNSSEC signatures, then 90%!). The project code is distributed under the GPLv2 license.

PowerDNS Authoritative Server provides the ability to store domain information in various databases, including MySQL, PostgreSQL, SQLite3, Oracle, and Microsoft SQL Server, as well as in LDAP and plain text files in BIND format. The response can be additionally filtered (for example, to filter out spam) or redirected by connecting its own handlers in Lua, Java, Perl, Python, Ruby, C and C++. Funds are also allocated for remote statistics collection, including via SNMP or via the Web API (http-server is built-in for statistics and management), instant restart and built-in engine for connecting handlers in Lua. Load balancing is based on the client's geographical location.

https://blog.powerdns.com/2020/04/07/powerdns-authoritative-4-3-0/

Initiative to bring openSUSE Leap and SUSE Linux Enterprise closer together:

04/09/2020

Gerald Pfeifer, SUSE technical director and chairman of the openSUSE oversight committee, suggested that the community consider an initiative to bring together the development and assembly processes of the openSUSE Leap and SUSE Linux Enterprise distributions. Currently, openSUSE Leap releases are based on the core set of packages for the SUSE Linux Enterprise distribution, but openSUSE packages are compiled separately from source packages. The essence of the proposal is to unify the work of building both distributions and using ready-made binary packages from SUSE Linux Enterprise in openSUSE Leap.

https://lists.opensuse.org/opensuse-announce/2020-04/msg00000.html

FreeRDP 2.0, a free implementation of the RDP protocol:

04/10/2020

After seven years of development, FreeRDP 2.0 was announced, offering a free implementation of the Remote Desktop Protocol, developed by Microsoft. The project provides a library for integrating RDP support into third-party applications and a client that can be used to remotely connect to the Windows desktop. Project code is distributed under the Apache 2.0 license.

The last stable release of the project was back in January 2013, and testing of 2.0 branch began in 2007. In order not to delay development further, the next release will be a rolling release. Major releases will be supported for two years - one year bug fixes and another year only vulnerability fixes.

http://www.freerdp.com/

TeX Live 2020 Released:

04/10/2020

The TeX Live 2020 distribution, created in 1996 on the basis of the teTeX project, is out. TeX Live is the easiest way to deploy infrastructure for scientific documentation, regardless of the operating system used. The download, a DVD(3.5 GB) of TeX Live 2020 is available, with a complete set of installation files for various operating systems, a copy of the CTAN repository (Comprehensive TeX Archive Network), and a selection of documentation in different languages.

http://tug.org/texlive/

AV Linux 2020.4.10 available:

04/10/2020

AV Linux 2020.4.10 was announced, containing a compilation of applications for creating / processing of multimedia content. The distribution is based on Debian 10 "Buster" and the KXStudio repository with additional packages of its own (Polyphone, Shuriken, Simple Screen Recorder, etc.). The desktop environment is based on Xfce. The distribution kit can function in live mode too. The download size of the iso image is 3.1 GB, though.

https://www.bandshed.net/2020/04/09/av-linux-2020-4-10-released/

Sandboxie has been open sourced andreleased to the community:

04/10/2020

Sophos has announced open sourcing Sandboxie, designed to enable sandboxed Windows applications. Sandboxie allows you to run an application that is not trustworthy in a sandbox environment isolated from the rest of the system. It is limited to a virtual disk that does not allow access to data from other applications.

The project was handed over to the community, who will coordinate the further development of Sandboxie and the maintenance of it's infrastructure. The code is open under the GPLv3 license.

https://news.sophos.com/en-us/2020/04/09/sandboxie-is-now-an-open-source-tool/

https://doc.rust-lang.org/book/

Okay then, we head back to Rust development – as Daredevil14 and Ellin complained about where Lucas' blog went. Rust seems to be getting more popular as time goes by.

Truth be told, I do not like a language where a simple 'hello world' is 2Mb(!!), just because "space doesn't matter". Okay, my rant over. Regardless, we are going to look at it as the feedback suggests that this is what our readers want.

For everyone who wants to learn more, I will go through installing Rust first, so you can follow along if you like. This article explains how to install Rust in Ubuntu 18.04 (but 19.x should be the same), using the 'rustup' tool. Rustup is a terminal tool that is used to manage the installation of rust versions and optional components. Rust currently has a six-week release cycle, so 'rustup' is a good idea. Head on over to: https://rustup.rs/ - and run that curl command to get it installed. Choose option one (1) if prompted. Restart once done. (Easiest, as this will add what you need to your environment variables).

If the download is interrupted, you can simply go back and run the command again, and you will have the option to continue with the installation.

Once it is done, run:

```
rustc --version
```
(dash dash, no spaces)

```
cargo --version
```
(dash dash, no spaces)

If you get a reply, all went well.

** At the time of writing, rust is version 1.41.0. If yours differs, that is OK. Just make sure it is a higher number, not a lower one.

Look up: "men at work - cargo" in your browser (an ancient Australian band). You will see an image of a plane and a crate. I will be using binary crates, as it is easy for n00bs like you and me. Think of cargo in this way. Delivering crates, containing what you need. Maybe even listen to "Dr Heckyll and Mr Jive", now that you have looked it up?

Type:

```
cargo new --bin rustfun
```

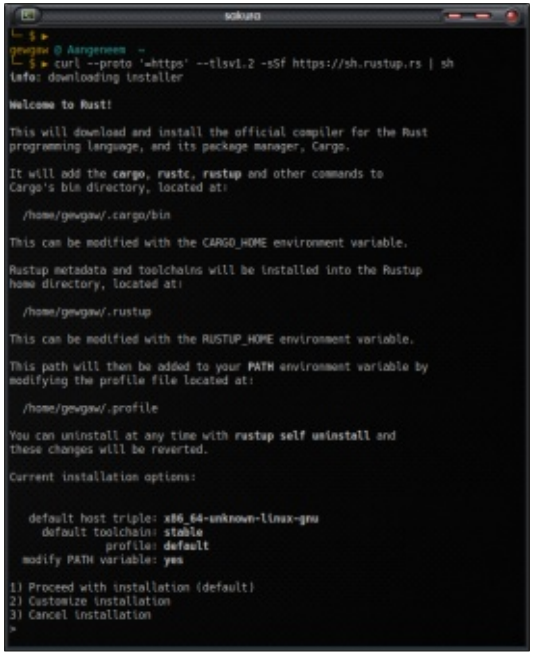
(The other option I know of is: "--lib" for library files).

A new binary crate named rustfun will be created (a folder and skeleton files).

When you open main.rs in the src folder, you should see a simple 'hello world' already in there for you. Before you entered the src folder, you should have seen a cargo.toml -file. You can open this in a text editor or in Geany if you plan on using it as your IDE, or even just cat it out. We can look at all these folders and files a bit later on; for now, I just want to highlight a few things.

The reason I am using Geany as my IDE is it comes with Ubuntu and we don't need to add things to it to make it work with Rust, and it will gladly work with toml-files without complaint. It even sports its own terminal! All nicely in one place.

Here is what the installation looks like on my machine:



Great, now that you have it installed, let's look at the basics and how rust treats each one.

Variables

Like other programming languages, a variable is just a container for a value, regardless of type. In rust, all variables have types (more later). When we program, we simply refer to the variable by name.

Variable assignments in Rust are prefixed by the word "let". For example: let my_box = 1; Also, when you assign a value to a variable (when you declare it), you cannot change its value (it is immutable). The following WILL give you an error, because of the above reason (shown below).

We will cover more later, but for now, just know about this in Rust. The command 'cargo run', will simply tell you that it is immutable. Rust is supposed to be error resistant, so it assumes that if you don't explicitly tell it that a variable can change, it can't. Okay... How do we do that? With the 'mut' keyword, example: let mut my_num = 1;

Just by simply adding that "mut", the error is gone and our program compiles (shown bottom right).

Remember I said all variables in Rust have a type? Well, Rust figures out the type in the background for you. This does not mean Rust type-casts your variable sweaty_shopowner as 'sleazy', rather as a string. Should Rust get it wrong, or you are a masochist, simply add a colon after the variable name and the type thereafter.

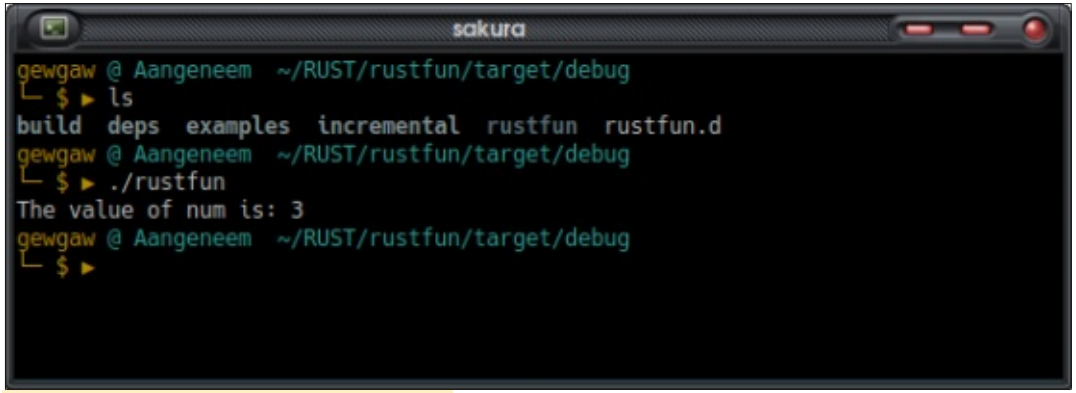
Example:

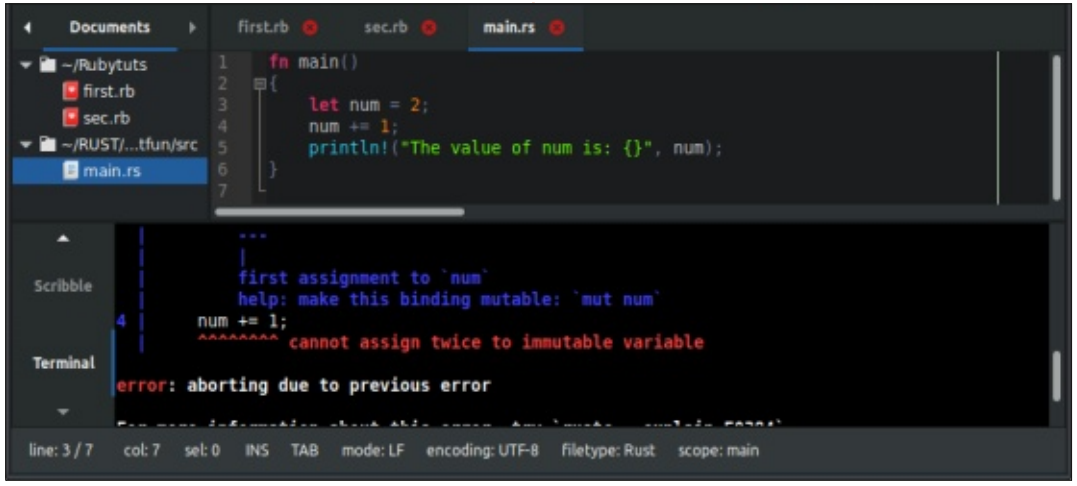
```
let my_shoesize: i32 = 13;
```

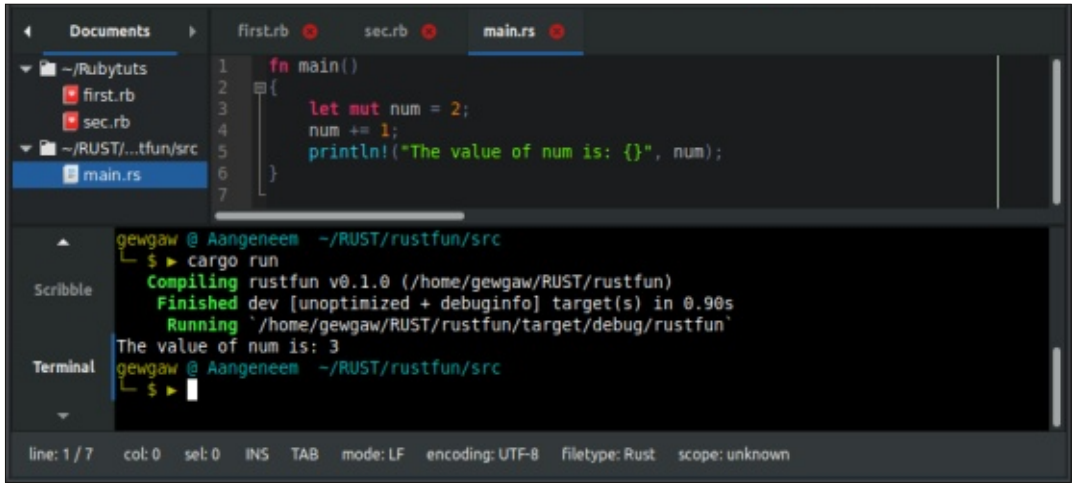
Next issue: we can move on to another part of Rust and discuss how Rust treats that, say loops / conditionals? (Find me on Telegram if you want something else).

Now a quick word on the files and folders.

Once you build or run your file, you will see a new file named "cargo.lock". This file is automatically generated from your cargo.toml file. Be sure your details are correct in the cargo.toml file, before building. There will also be a "target" folder created. Inside will be a debug folder with lots of sub-folders. Feel free to peruse these at your leisure. There should also be an executable file with the same name as your project. Run it now to see if your rust program works. Mine does (shown top right).







The code used in this demonstration is shown right.

Let's step through it.

Every Rust program needs a main function, that is: fn main() {}

Inside our curly braces we have our variable assignment, that we talked about.

We incremented the variable with 1, the same as num = num +1

Then println!(“”); will print anything we put between the “” (quotation marks).

What you may not know is that {} inside of the print function; it's a place holder to plug in a value. The value we plug in is outside of the “” and after a comma. In our case, the variable, num (more on format specifiers later).

If you have any questions or comments, e-mail us: misc@fullcirclemagazine.org

```
fn main()
{
        let num = 2;
        num += 1;
        println!("The value of num is: {}", num);
}
```

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

Python In The REAL World Pt.104

As I sit in self-imposed isolation, I have once again struggled with what to present to you this month. I'm fairly certain that I won't be repeating anything that I have presented before. This month, we will explore Blender and its Python scripting possibilities.

If you aren't aware of Blender, I'll give you a quick introduction as to what it is, what it does, and how to do something simple, before we get into the programming aspects. I will say from the start, I am just learning how to do things with Blender from Python (and I'm not really that good with Blender by itself), so bear with me.

From their website (blender.org), "Blender is the free and open source 3D creation suite. It supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, video editing, and 2D animation pipeline."

I'm sure that you have heard of "Big Buck Bunny", but have you heard of Agent 327?

https://www.youtube.com/watch?v=mN0zPOpADL4

Blender runs on almost any platform. The latest version is 2.8.2a, and you can download it at https://www.blender.org/download/

One other thing, before we get started. Blender has always gone through many changes, and the tutorials out there don't often catch up. In fact, many of the tutorials (and many books) are written and published based on a preview or pre-release version that many times is changed multiple times before the actual version release. A good example is when a tutorial (for Blender 2.8.x) refers to changing things in preferences by accessing the File | User Preferences menu. That no longer exists. It's actually located under Edit | Preferences. I, at this point, don't have a good place to point you to in order to find all the changes like this. Many API calls were changed as well, so you should keep the API documentation close at hand when attempting to learn from a tutorial or book on the subject. The Blender 2.8.2a API reference is located at https://docs.blender.org/api/. Luckily, the API documentation has a change log from the last release version (2.7.9) at https://docs.blender.org/api/current/change_log.html

Now, on with the fun!

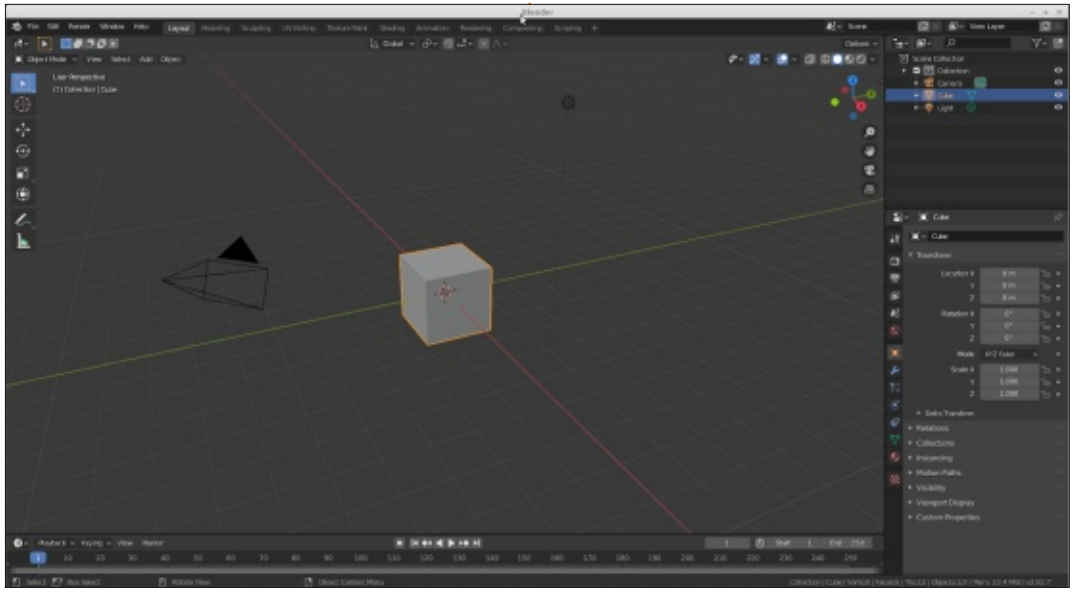
Download Blender and un-pack it in a convenient folder and run it from the terminal command:

```
$ ./blender
```

The first screen you should see is something like that shown below.

This is the default 'new project', and contains three objects: a cube, a camera and a light.

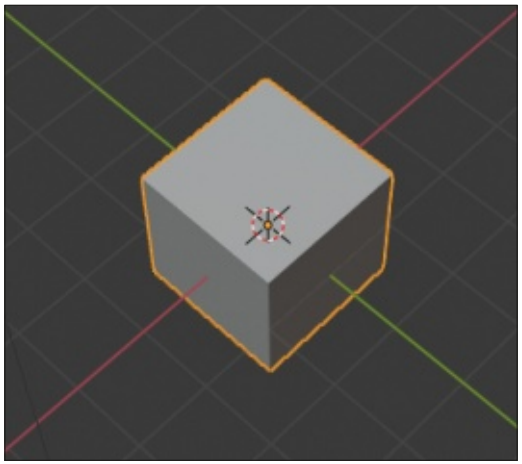
I should tell you, right now, that Blender is NOT something you can learn in a single day or week. However, if you really want to learn it, within a week, with the right tutorials (and this is NOT one of those), you can become very



conversant and effective. You will ALWAYS need to have the keyboard and mouse very close, since Blender uses both for most any action. We'll get into the programming aspect in a couple of minutes. For now, let's do something with our Blender scene (bottom left).

I took a screenshot of Blender, opened it into Inkscape, and labeled the camera and light for you (I think the cube is fairly obvious), and showed the three axes for you in order to help you understand the ways things will move.

If we take a VERY close look at the cube, which is our default object when we start Blender, you will see something interesting…



See that little circle with an "X" and a dot in the cube? That's the 3D cursor. This is the origin of all the objects that we put into our blender scene. Even though it doesn't look like it, it is at the intersection of the Green and Red layout lines, and the origin is in the center of the cube. That means that only the "top" half of the cube is above the imaginary plane which is the grid that is shown on the layout screen.

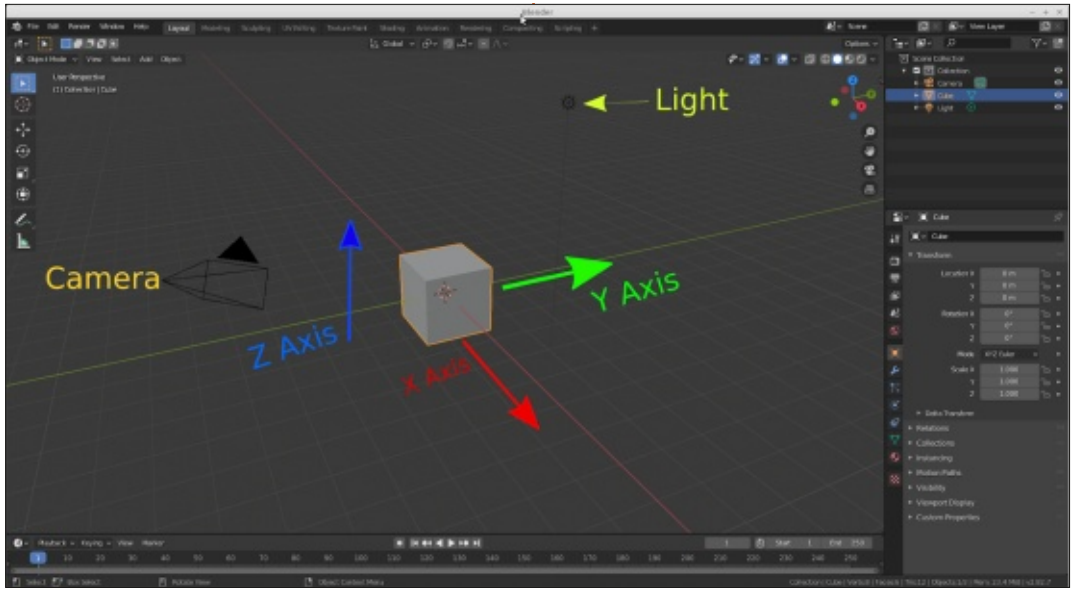
Let's do some coding...

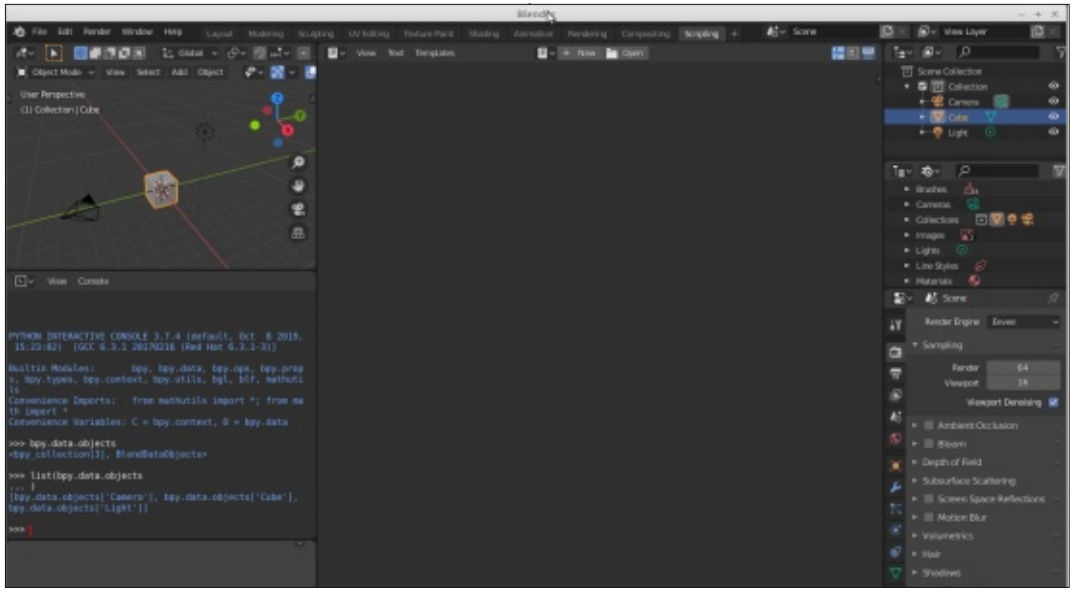
Change your screen to the Scripting window tab, which should be close to the center of the screen at the top. You should see something like the image bottom right.

The editor (shown top right) is located near the center of the screen. The Blender menu for the editor is laid out a bit differently than what you would normally expect.

Normally, we would expect File | New, File | Open, and File | Save options, but these are located under 'Text'.

LARGE DISCLAIMER: While I've been a user off and on of Blender for many years and a Python programmer for almost 15 years, until I started working on this month's article, I've never tried to do anything that mixed the two. You are learning what I am learning almost in real time, but without the





pain.

We'll start our first program. I found a few small programs for Blender at: https://medium.com/@behreajj/creative-coding-in-blender-a-primer-53e79ff71e.

However, due to changes in the API from when it was written and when I tried to run it, it refused to run, so I broke it down into a simpler version.

Use Text | New to make the editor allow you to type in our code. Here's the program itself...

```
import bpy
```

Of course, we need to import the Blender API library. Next, we'll create a function (below) that will delete everything in the default scene, so we can put what we want where we want it.

We need to code it this way, since we have to delete each of the existing objects one at a time. There is no "delete all objects" command that I could find. The bpy.data.objects command will provide a "list" of all the objects, and we can step through that, one at a time, to remove or delete each of the objects.

Next, we'll define two variables, the first for the size of the object and one for the size of the "world" that we will be creating.

```
sz = 2

extents = 8.0
```

Next, we'll create a single cube (yes, I know we just deleted one, but this shows how to create a new object) and set its location. Notice that we set the cube at Z axis of 1, so it's above the "floor", which in this case, is imaginary, but you can create one later on if you want (see above).

```
# This function will remove all objects from the scene
before the script runs, just to # be safe

def clear_scene():
    objs = bpy.data.objects
    for o in objs:
        objs.remove(o, do_unlink=True)

clear_scene()
```

```
# Create a single cube and locate it at x=0, y=0 and z=1
bpy.ops.mesh.primitive_cube_add(location=(0,0,1))
```

This creates a cube at location 0, 0 and 1 unit above the imaginary "ground" plane.

Now we'll create a lamp and a camera for the scene…

```
# Add a sun lamp directly above the cube on the grid.

bpy.ops.object.light_add(type='SUN', radius=1.0,
location=(0.0, 0.0, extents * 0.667))

# Add an isometric camera above the grid.
# Rotate 45 degrees on the x-axis, 180 - 45 (135) degrees
on the z-axis.

bpy.ops.object.camera_add(location=(extents * 1.414,
extents * 1.414, extents * 2.121), rotation=(0.785398, 0.0,
2.35619))

bpy.context.object.data.type = 'ORTHO'

bpy.context.object.data.ortho_scale = extents * 7.0
```

That's our code. Now save the code as "test1.py" and click on the 'Run Script' button. The script will run and you will see the result in the upper left layout window. If you press the {F-12} keyboard button, you will see the scene rendered.

It's pretty boring, so I won't even show it here, but it was important to show how to create an object from code.

Now we'll start a new script to something a bit more interesting…

We'll call this Test2.py.

We'll go ahead and import the library and use the clear_scene function we created in test1.py (see next page, top left).

Now we need to define a number of variables for our program. This will include the

```
import bpy

def clear_scene():
    objs = bpy.data.objects
    for o in objs:
        objs.remove(o, do_unlink=True)

clear_scene()
```

extents (size of our "world"), the count of cubes that we will create (on each layer), the spacing between each cube, and the size of each cube. The comments within the original code should be enough to help you understand what is happening.

```
# Size of grid
extents = 8.0
# Number of cubes
count = 10
# Spacing between cubes
padding = 0.005
# Size of each cube
sz = (extents / count) -
padding

# To convert abstract grid
position within loop to real-
world coordinates.
iprc = 0.0
jprc = 0.0
kprc = 0.0
countf = 1.0 / (count - 1)
diff = extents * 2

# Position of each cube.
z = 0.0
y = 0.0
x = 0.0

# Center of grid.
centerz = 0.0
centery = 0.0
centerx = 0.0
```

Now we'll create our cube of cubes (shown below).

The rest of our program will be just like the end of test1.py, in that we create a lamp and camera into the scene (next page).

Now, when we run the program, it will take some time. On my machine, it took over a minute and a half. Nothing happens on the

```
# Loop through grid z axis.
for i in range(0, count, 1):
    # Convert from index to percent in range 0 .. 1,
    # then convert from prc to real world coordinate.
    # Equivalent to map(val, lb0, ub0, lb1, ub1).
    print('count = {0}'.format(i))
    iprc = i * countf
    z = -extents + iprc * diff

    # Loop through grid y axis.
    for j in range(0, count, 1):
        jprc = j * countf
        y = -extents + jprc * diff

        # Loop through grid x axis.
        for k in range(0, count):
            kprc = k * countf
            x = -extents + kprc * diff

     # Add grid world position to cube local position.
            bpy.ops.mesh.primitive_cube_add(size = sz,location=(centerx + x, centery + y,
centerz + z))
            # Cache the current object being worked on.
            current = bpy.context.object

     # Equivalent to Java's String.format. Placeholders
# between curly braces will be replaced by value of k,j,i.
            current.name = 'Cube ({0}, {1}, {2})'.format(k, j, i)
            current.data.name = 'Mesh ({0}, {1}, {2})'.format(k, j, i)

            # Create a material.
            mat = bpy.data.materials.new(name='Material ({0}, {1}, {2})'.format(k, j, i))

            # Assign a diffuse color to the material. (R, G, B, Alpha)
            mat.diffuse_color = (kprc, jprc, iprc, 1.0)
            current.data.materials.append(mat)
```

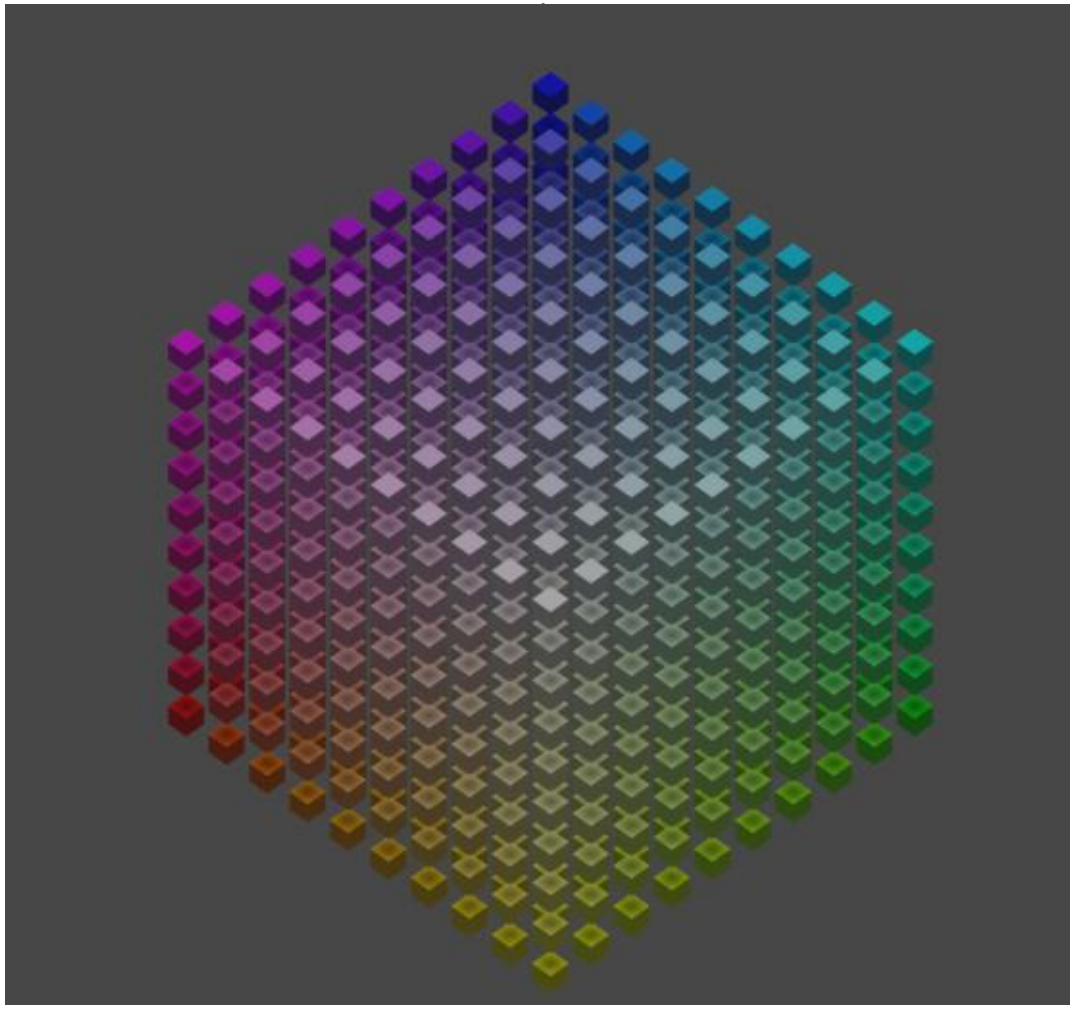
```
##########################################
# same as in test1.py
# ======================================
# Add a sun lamp directly above the cube on the grid.
bpy.ops.object.light_add(type='SUN', radius=1.0, location=(0.0, 0.0, extents * 0.667))

# Add an isometric camera above the grid.
# Rotate 45 degrees on the x-axis, 180 - 45 (135) degrees on the z-axis.

bpy.ops.object.camera_add(location=(extents * 1.414, extents * 1.414, extents * 2.121), rotation=(0.785398, 0.0, 2.35619))
bpy.context.object.data.type = 'ORTHO'
bpy.context.object.data.ortho_scale = extents * 7.0
```

blender screen, but if you look at the terminal window, you will see the output of the print statements that shows something is actually happening. Remember, we are creating 1000 cubes (10 x 10 x 10) along with the light and camera.

Shown right is what the result of test2.py looks like when rendered.



As always, I have uploaded these two programs onto pastebin…

Test1.py
https://pastebin.com/enNDN0mh
Test2.py
https://pastebin.com/CaVXwhDQ

Until next month; stay safe, healthy, positive and creative!

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

Fashion With Valentina

Written by Alain J. Baudrez

Fashion is big business. Plenty of monthly magazines are available for the sewing enthusiasts, filled with pictures of models wearing skirts, blouses, dresses, etc.

Along with the magazines come the patterns, so that once you know what you want to sew, you simply copy the correct pattern for your size, choose the fabric, follow the guidelines, and sew your new garment.

There is just one problem. Those models are young, slim, top-fit, and do not represent the majority of women, and the dress or blouse you just sew does not fit a 50+ woman. That's one of the reasons that dress pattern design courses are on the rise. If you draw your own bespoke pattern, taking into account your typical physical attributes, like a larger than normal waist, the end product will fit you like a glove.

Drawing a pattern is a technique that requires some drawing dexterity, along with a grasp of the specific techniques you learned. You need time, a large table where you place a piece of paper, and using pencils, shears, tape, eraser, you complete the pattern. But what if you want to use the same pattern for someone else, who has different characteristics? Simple, you have to start anew, but, this time, with different sizes. Not very efficient.

That was the situation I found myself in. Being retired, I was looking for a new hobby, and my wife suggested that I sew some nice stuff for her. It was worth a try, and now I like sewing very much. After 2 years of evening school to learn the ins and outs of dress pattern design, I now draw my bespoke patterns.

I knew someone, somewhere, must have an open source program that would aid me with the design.

Valentina

Valentina (https://valentinaproject.bitbucket.io/) is an open source computer aided pattern design software. Just like all CAD programs, it does not draw the pattern for you, but hands you the digital tools to do it. The project was started in 2013 by Roman Telezhinsky (Ukraine), aka Dismine, and Susan Spencer (USA). In 2017 Susan forked the program and her version is called Seamly2D (https://seamly.net/).

Valentina is multi-platform (Windows, MacOS, Linux), and is written in C++ and QT5. For Ubuntu, there is a PPA for the stable version (https://launchpad.net/~dismine/+archive/ubuntu/valentina), and for the Beta version (https://code.launchpad.net/~dismine/+archive/ubuntu/valentina-dev). Note that only one can be installed at the time.

The file format for all the data is XML.

I've been running the Beta version and it runs very well. Keep in mind though that the Beta can read the Stable file formats, but not the other way round.

Tape

The big advantage of Valentina is that it comes with an accompanying package called Tape which is used to store the measurements of the model. You create a different measurements file for each model/shape.

One pattern, multiple sizes

When you start a new pattern, the first thing you do is link the correct measurements file to it. During the pattern drawing you use the measurements from the linked Tape-file.

If you change to another Tape-file, the pattern automatically adapts to reflect the new measurements. So, drawing a pattern for your 4 year-old granddaughter, and next the same pattern for her 6 year-old sister, takes just a few clicks. That's a time saver.

Pseudo layers

A pattern consists of more than

one piece. For a blouse, you need a bodice, sleeves, collar, … Each of those pieces lies in its own 'layer' which prevents you from accidentally changing something in the wrong pattern piece.

Detailing

Once the pattern is drawn, you can draw seam allowance, labels, passmarks and grainline for each pattern piece.

Exporting your pattern

Although you can print the design directly on A4/Letter format domestic printer, resulting in a jigsaw of 25 or more pages that must be taped together, Valentina does not yet allow you to add free standing labels, nor has it a library of special icons and symbols like the Ω sign to indicate a fold. To solve that, it is possible to export the pattern as a SVG-file. That file can then be imported in a Vector Drawing program like Inkscape, where you apply the finishing touches to your pattern. Once saved as a PDF on A0-plotter size, you can take it to any plan-printing shop and have it printed on a roll-plotter.

Pro's

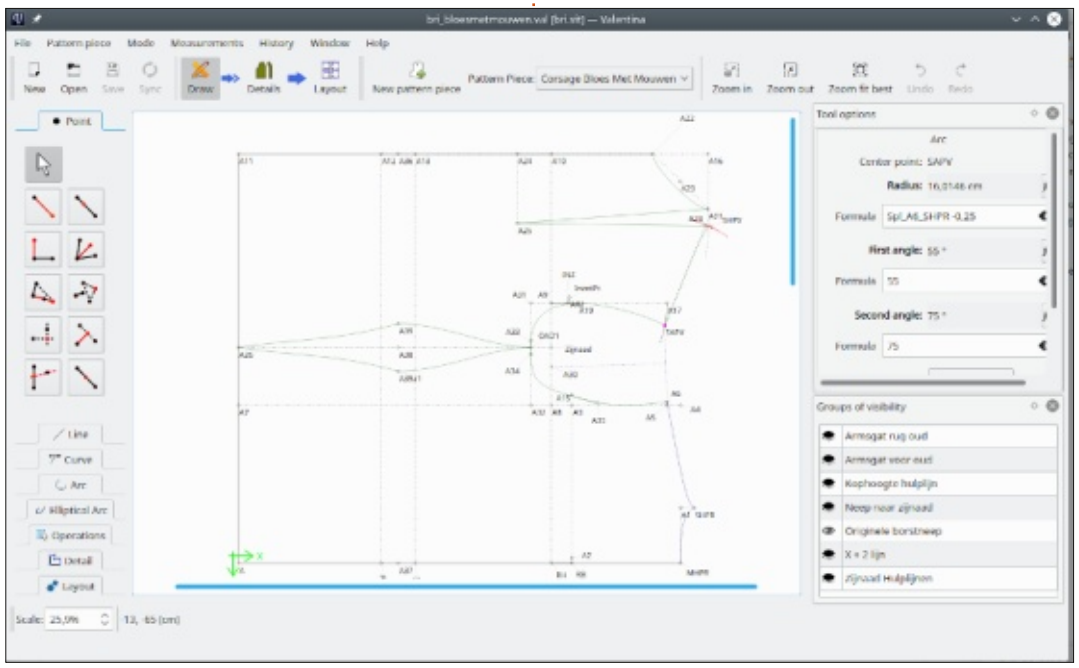
• Compared to what the industry charges for a closed source Win/Mac only pattern design software, Valentina is a very good alternative for the home user.
• Its ingenious system of linking measurements files with the same pattern, allows rapid drawing of multi-size patterns.
• It is multilingual.
• Uses metric as well as imperial system.
• Allows exporting to DXF (AutoCad), PNG, and SVG-files.
• You get rid of drawers and drawers of taped, cut, or otherwise mangled patterns.
• • Plenty of videos on YouTube. Search for 'valentina pattern tutorial'.

Con's

• There is no measurement tool in the program.
• The lack of free-form text forces you to use a secondary program to finish the pattern.
• Little on-line help. The wiki is not complete, and in English only.
• The head developers website is in Russian. Google translate is needed.

Verdict

When you sew and draw your own patterns, Valentina is certainly a great asset. Even if you don't sew, but your partner does, it is worthwhile to let him/her have a go with it. It is ideal for a typical (semi-professional) sewer, who needs to draw bespoke patterns for different sizes. It is a very well designed program, currently better than its forked cousin (Seamly2D). The lack of help is compensated by the recent release of the English manual (https://valentina-project.blogspot.com/2019/10/user-manual-en.html).



```
<?xml version="1.0" encoding="UTF-8"?>
<pattern labelPrefix="en">
    <!--Pattern created with Valentina v0.7.0.0a (https://valentinaproject.bitbucket.io/).-->
    <version>0.8.5</version>
    <unit>cm</unit>
    <description/>
    <notes/>
    <patternName>Bloes Met Mouwen</patternName>
    <patternNumber>2019/11</patternNumber>
    <company>Alain</company>
    <patternLabel dateFormat="dd/MM/yy" timeFormat="hh:mm:ss"/>
    <patternMaterials>
        <material name="Katoen" number="1"/>
    </patternMaterials>
    <measurements>../measurements/individual/bri.vit</measurements>
    <increments>
        <increment description="Toegifte BB voor corsage met mouw" formula="1"
```

NEW

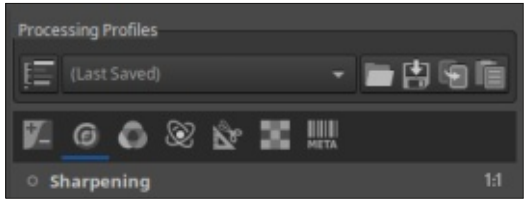
Rawtherapee - Pt2

Website: https://rawtherapee.com/
Version 5.6
Price: Free!

Before I continue this short series on Rawtherapee, know that editing large RAW photos requires a lot of memory. I recommend 8GB or more. This simple picture we have been playing with, is taking up 1.6GB of memory on my computer inside Rawtherapee.

I hope you kept the last picture we were working on as we will be continuing where we left off.

March 2020 it seems wesaturate.com has broke: the file is now hosted on the FCM servers here: https://bit.ly/2WNVfPf



Last time, I had you playing with tone mapping and sort of sent you off to try out the vignette filter.

Now let us load the picture and move to the detail section, short-cut key alt+d.

The very last option on the right side panel should be “Haze removal”. What this does is sharpen the picture slightly by adding saturation. Feel free to play with the sliders, until it pleases your eyes. I believe in the “less is more” approach, but if you want to have one of those dramatic HDR oversampled pictures, this is where you do it. You can dramatically decrease the white parts, and fill them with color. Some people like this sort of thing. Boost your depth to 30, and the strength to 70, and see. Do not forget to turn the effect on and off via the ‘power’ button. What this does work well with: sunsets, and sunrise, with lots of dirty clouds. With lots of colors, you get a surreal landscape that can either make your brain hurt or fire your imagination! You can press ctrl+s to save and export maybe as a JPG (this is up to you).

In our case, we only want 20/20. We do NOT want to save it as JPG as we want to continue editing and make a wallpaper for a smartphone or something. They say hindsight is 20/20 vision, so let us see if this improves our picture?

Our 70/30 over dramatised picture XD

Okay, back to editing. Press alt+c (or choose the next icon) for the color profile. We want to bring out the yellow a bit more like the over dramatized picture, but we do not want it to look as garish. This is where ‘vibrance’ comes in. Turn on vibrance, and drag the slider to more-or-less where you like it. This algorithm takes a lot of processing power and may take a second to complete. Now that you are ‘almost there’, you can use the plus and minus buttons to tweak your picture. There may be a system sound beep when processing has finished. I will bring mine up to 30 or 40, because, why not. We are learning HOW TO and we need to see what things do.

Tip: Often press the ‘z’ key to zoom in 100% once you have applied some tool. Things may look great in the overview, but become a dog’s basket when zoomed in.

So we can look at our light source close up. It seems we have fallen in the 'nice from afar and far from nice' trap. Light sources are a good indication of the overall health of your photo. Oh no, our poor photo has more speckles than a dalmatian!

Your homework, this issue, is to try what we are doing here on one of your own photos!

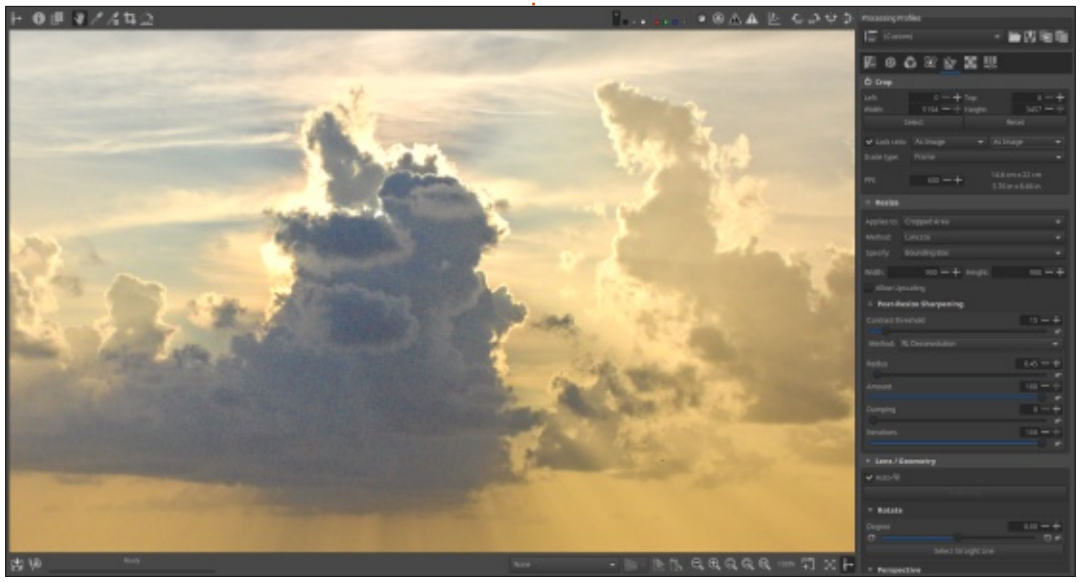
To fix this, we need to go back to the detail tab. Use the short-cut keys for extra credit.

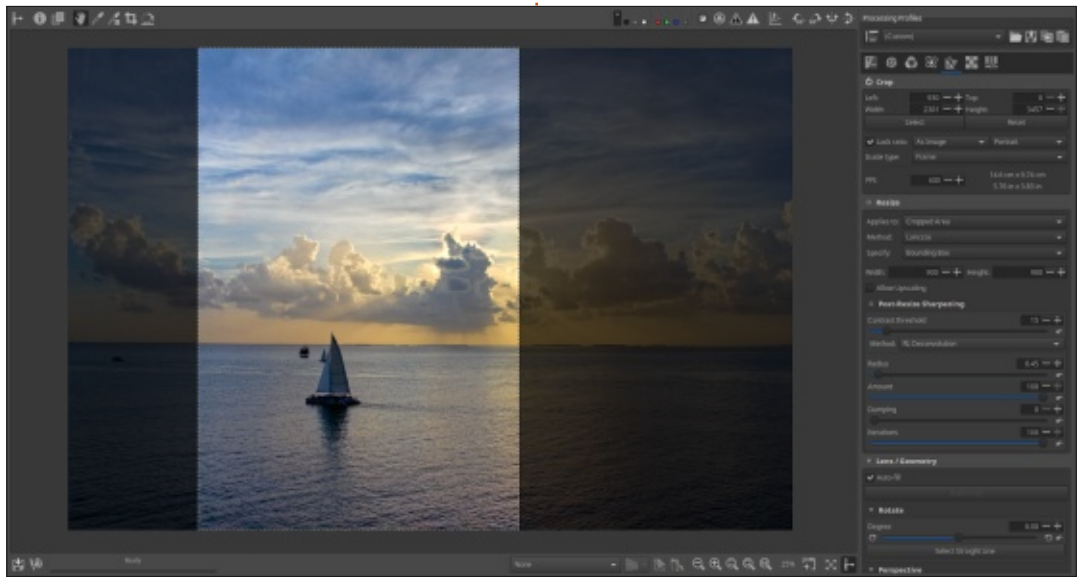
The obvious choice is noise reduction. As with the previous tool. Noise reduction is processing intensive, so if you turn it on and do not see anything happening, look at the bottom left and you will see a progress bar with the words "processing". Let it finish. You will see three sliders, 'Gamma', 'Luminance' and 'Detail recovery'. The last one you do not really want to use, so pay attention to your details as we move the Luminance slider. We have a conundrum, what is good for the clouds is not good for the water. As you smooth the clouds, you lose detail in the water, so be careful with this slider. Stick with the less-is-more-philosophy and your pictures will look more natural. I went with 1.25 Gamma and 4.0 Luminance to smooth out my picture. Sometimes you want a bit of grain, just keep that in mind. A good detail edit changes things at 100% zoom, but no visible difference zoomed out.

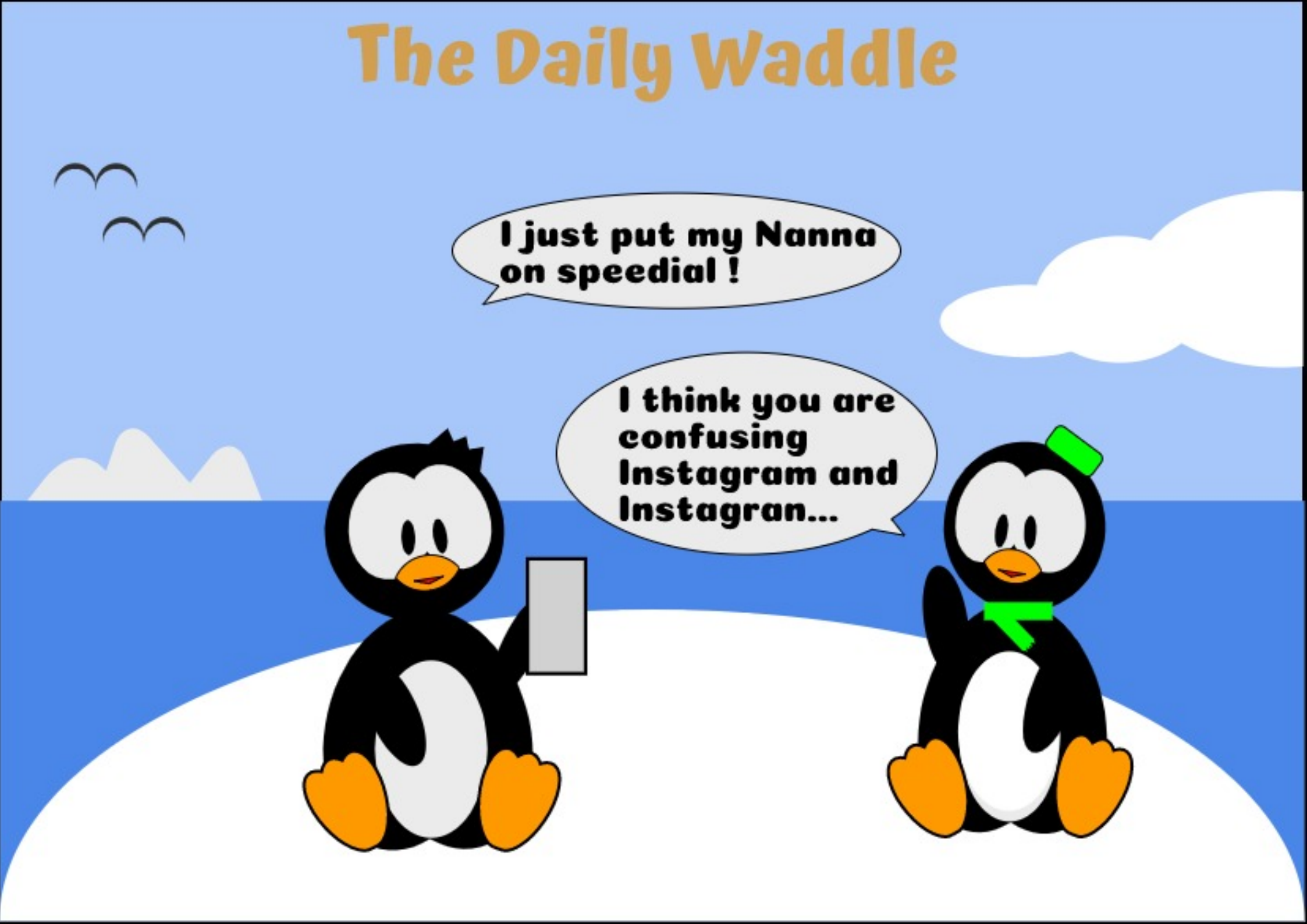
Tip: sample at least three (3) places around your photo when doing detail / color editing.

Okay, I am happy with my picture for now. It may require more editing for a different mood modification again later, and this is the great thing about editing RAW pictures. I can now even save my "steps" (if you will) and apply that to another picture. This is very handy for batch editing. As I mentioned before, I would like this picture on my smartphone. I do not want all the open spaces as it is a small screen. Press alt+t to go to the crop tab. As soon as you turn on crop, you will notice a dotted line around your picture. This picture is in a landscape format, and I need it in a portrait format for my phone. The line with "Lock ratio" has two drop-down boxes. Change the second one to portrait. You should see a portrait rectangle on your screen. To move it, use the shift key in conjunction with your mouse. When you are done, you can save it as a JPG to send to your phone.

That's it for this issue, join us again for more post-processing fun in the next issue of FCM.






The Daily Waddle
I just put my Nanna on speedial !
I think you are confusing Instagram and Instagran...

Inkscape - Part 96

In this instalment I'm going to cover a common requirement that I overlooked when introducing the use of SVG files in a web browser: turning an object in an Inkscape file into a clickable link that loads a different URL.

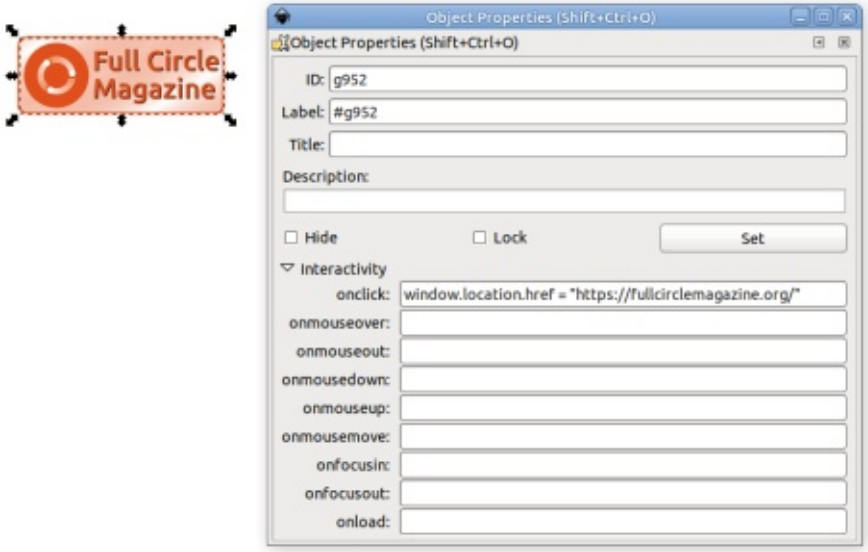
There are a couple of ways of dealing with this: the first is to use JavaScript to respond to the 'click' event that fires when an object is clicked on. I covered various ways to add JavaScript to an Inkscape file across several articles. See FCM #142, #143 and #146 for the specifics. What I didn't describe was how you could use JS to change the URL loaded in the browser.

In the most basic form, where you just want to move to a fixed URL when an object is clicked, you can use the one-line "onclick" field in the Interactivity section of the Object Properties dialog (FCM #142). For example, to make a button that goes to the Full Circle Magazine website, you would do the following:

- Draw your button. Use multiple objects and text as you wish.
- Put all of the button's content into a single group. This is where we'll attach the click handler.
- Right-click on the group, and select "Object Properties".
- Expand the "Interactivity" section, if necessary.
- Add the following JS code to the "onclick" field:

```
window.location.href =
"https://
fullcirclemagazine.org/";
```

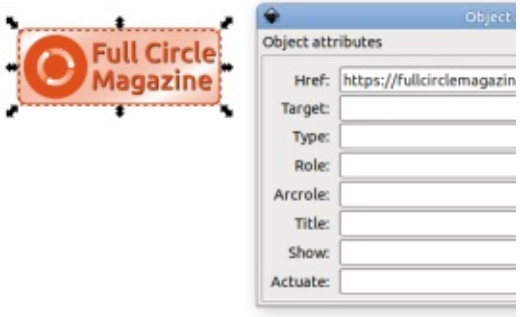
Your button and dialog should look something like that below.



Save the SVG file then load it into a web browser and you should find that clicking the button takes you to the FCM website (or whatever URL you used).

You'll probably have noticed what you don't get for free with this approach: there's no change of style of the button as you hover over it, and the mouse pointer remains as an arrow rather than changing to the "pointing finger" which is usually used to denote a clickable target. Both these shortcomings can be addressed with a little CSS, but that's yet another chunk of code to manually add to your SVG file (FCM #145 will help with this).

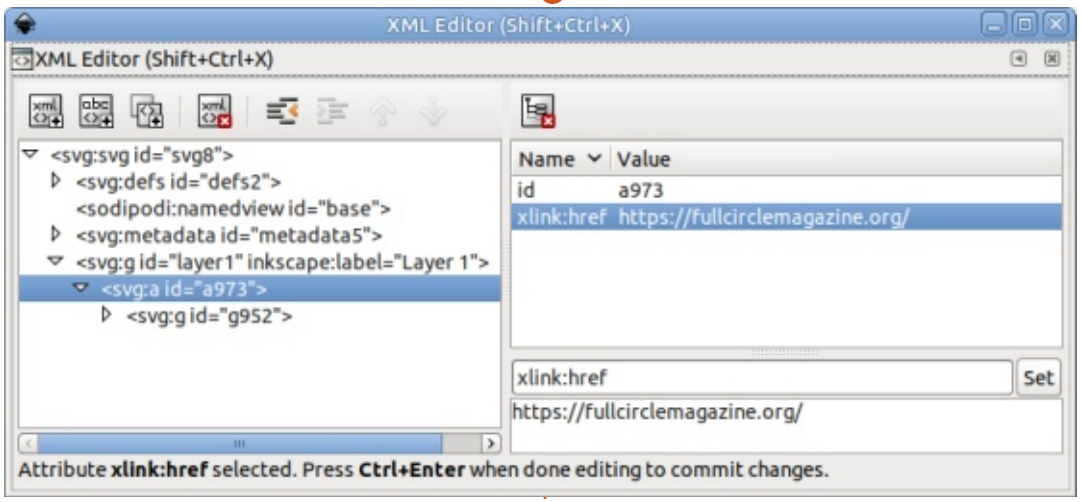
If all you want is a link to another URL, however, there's no need to mess with JavaScript at all (though you may still need some CSS). Inkscape provides a simpler way to turn an object into a clickable link – and it's this part of the UI that I overlooked in my previous articles. All you need to do is to right-click on the object and select "Create Link" to open the generically named "Object attributes" dialog:



That's a lot of fields for a simple link. The reason for this is that Inkscape creates an SVG 1.1 version link, which is actually implemented

via an XML standard called XLink. It dates from the time when the W3C was trying to create a wide ranging collection of XML-based standards, with the idea being that a single file might use elements from across multiple specifications, allowing each spec to focus on doing one thing well. XLink, therefore, is a standard that deals with nothing but links between documents – but in trying to include numerous use-cases for links it has a whole load of optional attributes that most people will never need. Hence all the fields.

The only essential field is the first one, "Href" (an abbreviation of "hyperlink reference"). A better title would have been "URL", "Address" or "Location", but this dialog just uses a capitalized version of the attribute name from the XLink standard. So the "href" attribute used in the XML becomes the awkwardly capitalized "Href". With a URL in this field, save the file and load it into your web browser. You should find that clicking the button takes you to the destination page. Furthermore, you'll get the right sort of pointer as you move your mouse over the button, so that's one less bit of CSS to add to your page.



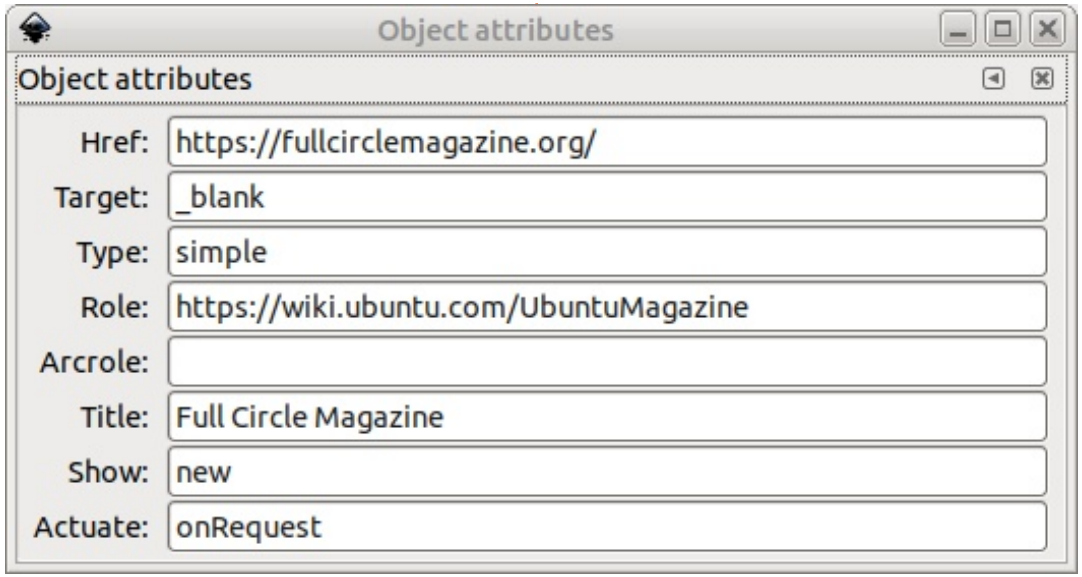
Let's take a look at the XML editor to see what this small change has actually done to your SVG file (shown above).

The first thing to note is that the new attribute hasn't just been added to the existing <g> element. Instead, Inkscape has wrapped the group in an <a> element, and the attribute has been applied to that. Anyone who has written some HTML will be familiar with <a> as the "anchor" element which is used for links in that language. Here we have essentially the same element, but in the "svg" namespace (hence it appears as <svg:a ...> in the XML editor). The URL is added as an attribute in the XLink namespace. If you were to look at the XML file in a text editor, the relevant bits of code would look like this:

```
<a id="a973"
xlink:href="https://
fullcirclemagazine.org/">
  <g id="g952">
    ...
  </g>
</a>
```

Let's fill out most of the remaining fields in the Object Attributes dialog, to try to make our link more fully featured. Having already created the link, you will find that a right-click on the object within the Inkscape window now shows the "Create Link" option as disabled. Instead, a little further up on the context menu, you'll find that the usual "Fill and Stroke…" menu item has been replaced with "Link Properties…" which will open the same dialog (below).

The first thing I'll note here is that you will almost certainly never need to fill out this many fields. "Href" is required, and "Title" is a good idea for accessibility purposes, and also because



desktop browsers will use it to create a tooltip when you mouse over the object. You might need to use the "Target" field, depending on how you want the link to behave, but I'll come on to that shortly.

Let's skip to the "Type" field. This describes the nature of the link, from a specific list of options in the XLink specification. For a normal link to another page (or within the same page), "simple" is all you need. This also happens to be the default behaviour if it's omitted, so you should just leave it blank. The other possible types are all used for more complex linking between and within XML files. If you need to use them then you probably already know about them – and I doubt very much that you'd be using this dialog to edit them anyway.

One of those more advanced types is "arc", which indicates that the link is being used to connect two other resources, identified by the "to" and "from" attributes. A "resource" in these terms is anything that can be identified with a URL, such as a website, a specific page or file, or a named element on that page. As you may have noticed, the "to" and "from" attributes aren't present in the dialog, so you can't actually create a valid arc link through this UI even if you knew why you might want to! For this reason the related "Arcrole" field is also completely useless (if you could create an arc link, this would hold the URL of a resource that describes it).

Based on that description of "Arcrole", you may not be surprised to find that "Role" field is also intended to hold a URL that points to a descriptive resource. In this case it should hold the address of a resource that describes the nature or purpose of the link. Since your web browser doesn't natively do anything with this attribute, however, you may as well omit it.

The "Actuate" field is intended to indicate when the link should be followed. This attribute can only take very specific values but, once again, it's completely ignored by the web browser regardless of what you enter. The easiest option is therefore to leave this blank. The "onRequest" option I've used in my example just means "follow this link when the object is clicked", but that is, once again, the default behaviour anyway.

All that remains are the "Target" and "Show" fields. These attributes actually perform the same purpose, but "target" is part of the SVG spec for the <a> element, whereas "show" is an XLink offering. They affect where in the UI the browser loads the linked resource – whether it replaces the SVG file in the same frame or tab, or opens in a completely new tab or window. The main values to be aware of are as follows (note the underscores before the values for "target" (see table below).

As you might guess from the missing values in the "show" column, there's rarely much need for "_parent" or "_top". The best policy is usually to leave the "target" and "show" attributes empty, so that the behaviour of the browser is purely defined by the user's settings. If you're really sure that you want to open a new tab or

Target	Show	Description
_self	replace	Replace the current SVG file in-place with the resource pointed to by the link. If the file is in an <iframe> or <object> the new content will also be put into the <iframe> or <object>.
_parent		The immediate parent of the SVG file is replaced by the linked content. In the example of an SVG inside an <object> inside an <iframe>, only the content of the <iframe> would be replaced – the <object> would remain.
_top		Replace the current tab or page, regardless of whether the SVG is in a hierarchy of <iframes> or similar. In other words, redirect the whole page.
_blank	new	Open the resource in a new tab or window.

window when the element is clicked, then use "_blank" in the "Target" field. But that's pretty much the only legitimate use of this field for most people.

As you can see, it's possible to enter conflicting values for "Target" and "Show". Experiment indicates that, for Firefox at least, "Target" takes priority. All the more reason to leave the "Show" field blank.

So there you have it: a dialog with eight fields, of which you only really need one (Href), might use two if you want to have a tooltip (Href, Title), or stretch to three if you also want to force links to open in a new tab (Href, Title, Target). The remaining fields should always be left empty, unless you really know what you're doing and are something of an XML/XLink expert. But in that case you're undoubtedly either editing the XML content by hand, or via some other XML-based workflow. In neither case is this dialog likely to be of much use to you.

There's one large elephant in the room, however: the use of XLink at all. As I mentioned earlier, this dialog creates an SVG v1.1 link. But since version 2.0 of the SVG spec there's been no need for XLink. The "href" attribute has been promoted to the SVG standard, together with the "target" attribute. Oddly, however, the "title" attribute has not been promoted, though the "xlink:title" version has been deprecated. The recommendation now is to use a <title> child element instead, which seems a little overkill for a simple tooltip.

With this in mind, an SVG2 link might look something like this:

```
<a id="a973"
  href="https://
fullcirclemagazine.org/"
  target="_blank">

  <title>Full Circle
Magazine</title>

  <g id="g952">
    ...
  </g>
</a>
```

For now – and for the foreseeable future – browsers continue to support the SVG 1.1 approach, so there's no urgency for Inkscape to change what it outputs. Modern browsers will also accept the SVG2 version, though, so perhaps some future release of Inkscape will replace this generic dialog with something more tailored to the task, and will replace the output with an SVG2 version at the same time.

The last thing to note on this topic is that the URL you link to doesn't have to be a separate file. You can also link to a named anchor within the current file. This is particularly useful with the techniques I described for creating named views in parts 79 and 80 (FCM #139, #140). For example, given a named view of "starView", simply creating a link with an href of "#starView" would mean that the image would switch to that view when the object is clicked. A similar effect can be achieved with the full viewBox syntax, using an href of "#svgView(viewBox(0, -250, 250, 500))" for example.

This can be an easy way to introduce interactivity to an SVG file. Consider a slideshow in which each slide is a separate part of the SVG image, and a viewBox is used to show just the first slide by default. By adding "Previous" and "Next" buttons which have viewBox links attached you can make a simple linear slideshow – or you could add more links to let you jump directly to any other part of the file.

Of course you're also free to mix XLink-based links with those created via JavaScript, picking the best tool for the job. One thing you can do with JS which isn't possible with the simpler form, is to provide additional logic to determine the target location. You might change to different URLs based on the time of day, or prompt the user for some additional information that is then encoded into the URL. Consider a web-based storybook, for example, in which XLink is used to move between the pages, but JS provides extra interactivity when elements are clicked on, or hovered over.

Mark uses Inkscape to create three webcomics, 'The Greys', 'Monsters, Inked' and 'Elvie', which can all be found at http://www.peppertop.com/

Krita To Rework Old Photos Pt.6

Written by Alan Ward

This series is aimed at learning to make something of the old photos in my possession, and others in the public domain due to their age. You, the reader, are welcome to tag along, and, I hope, glean some small insight and perhaps an idea or two from time to time. No promises are made as to quality of the content, or potential errors and omissions. I am a computer scientist, not a true artist or a professional of image restoration. So please take all this as a best effort, but with no firm guarantees — much as is the case of most open-source software.

In the previous part of this series, we colorized a studio portrait of Paul Trapper, dating from about 1915. In this part, we will be working on another portrait -- but this one will not be a photographer's work from the early 20th century ,but, rather, a very typical effort from the late 1970s when technology had changed and color photography had become more commonplace.

This photo was taken by a member of my family, in 1979 or thereabouts, and using a typical 35 mm reflex camera. As was often the case at the time, color photographic film had a slightly better response to red light than to green or blue, and this shows up in the final print. In addition, some chemical alterations may have taken place during the intervening years even though care has been taken to store and preserve the print. This will be the case for most family pictures from the time; some years later on, better quality photographic film was available and color dominance was not so much of an issue in the late 1990s or early 2000s -- which is when chemical photography gradually died out, at least as a popular pastime.

This image has been digitized by simply photographing the original using a modern mobile phone. This technique allows us to keep the original on its backing material, without the risk of damaging it if it were to be removed and unglued. Modern digital cameras have more than enough resolution to produce a nice reproduction; they compare well, in any case, to the flatbed scanners that used to be available some years back. On the other hand, photographing an original does require some careful thought about lighting the photo: the camera needs to be placed just about vertically in respect to the original, which means that lighting needs to be placed on the sides so not to create sharp reflections. No using the phone's onboard flash for this purpose, so! Taking the picture on a flat table placed in front of a diffuse source of natural light -- such as an open window on a slightly overcast day-- may be a good technical solution.

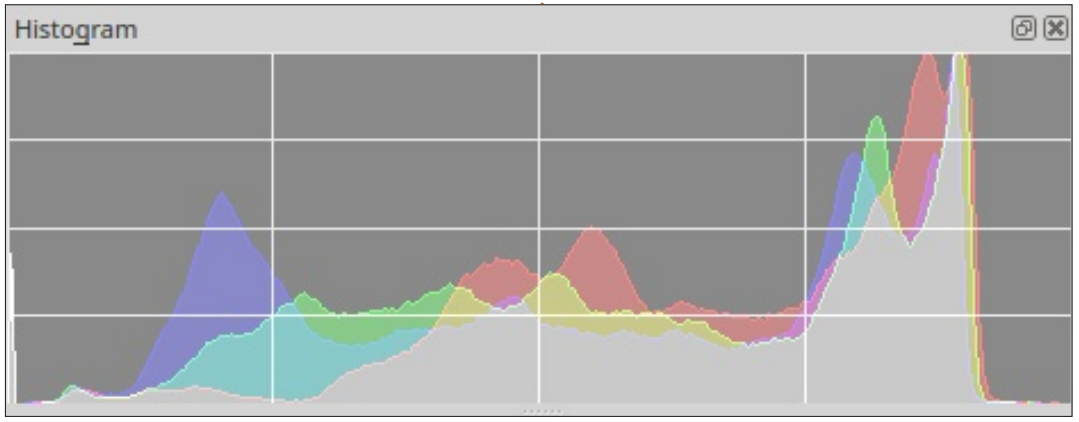
The first alteration I would like to do to this original is remove the black border, from the backing paper on which it was mounted. But I would like to retain the rounded corners, reminiscent of paper copies of that time and era. So, once the photo has been opened in Krita, I will not use the cropping tool. Instead, I will make

the black border transparent. To do so, I selected the magic wand tool  to select the border, and then hit the Suppress key on the keyboard. This tool will select contiguous regions of the same color. It does have a certain sensibility, which means that a narrow border around the image itself --which is gray in color, rather than proper black-- will be conserved, as will some marks and splotches.

These latter came from reflections off the black mounting paper. They can then be rubbed out individually, or selected using a selection tool and then erased. I like to start by selecting and erasing large areas using the rectangular selection tool, then going in with the circular eraser for the finer areas near the border. As usual, proceed with small, careful touches.

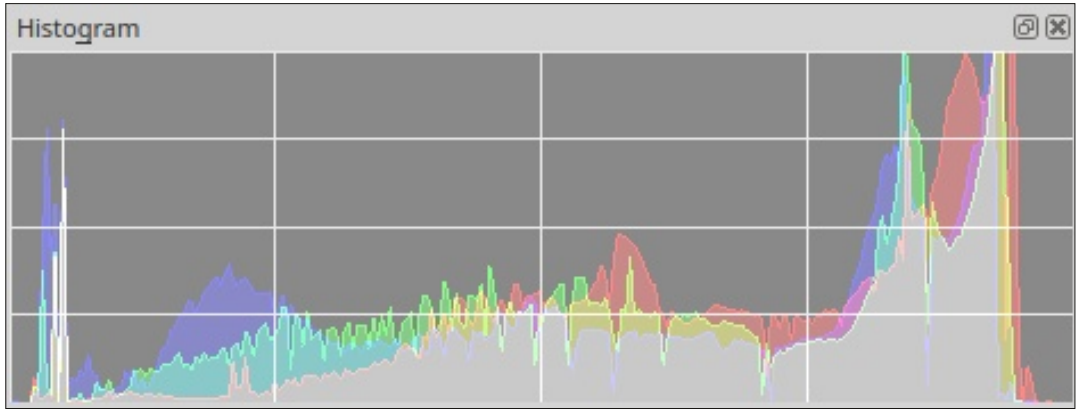
Now, let us analyze the colors, and lighting, in this image. As usual, a histogram will give us some information. As in the previous episode, newer versions of Krita have the histogram dock activation in menu "Tools", "Dockers", and then checkbox "Histogram".

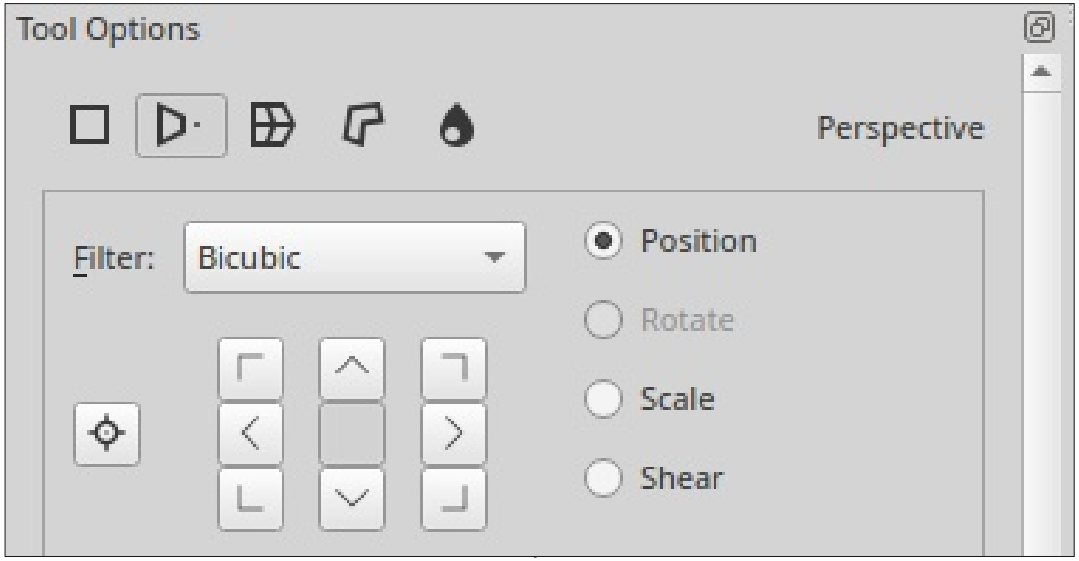
In this image, we can see that there are no really dark pixels (far left of the histogram), nor any really light ones (far right). Our first task will be to balance lighting, using one of the tools Krita offers. The one "Filter", "Adjust", "Autocontrast", will increase contrast at the expense of getting very sharp shadows across the subject's face. This may be required to increase the contrast of a technical document, but is not desirable for a portrait or typical landscape. It is preferable, in this case, to use the tool at "Filter", "Adjust", "Levels". From here, we can select the "Autolevels" button to have Krita calculate an optimized adjustment, which we can then go in and play with to get the exact effect we prefer. With a bit of practice, we can make contrast slightly higher than in the original image, but not excessive. This makes the subject stand out a bit from the background.



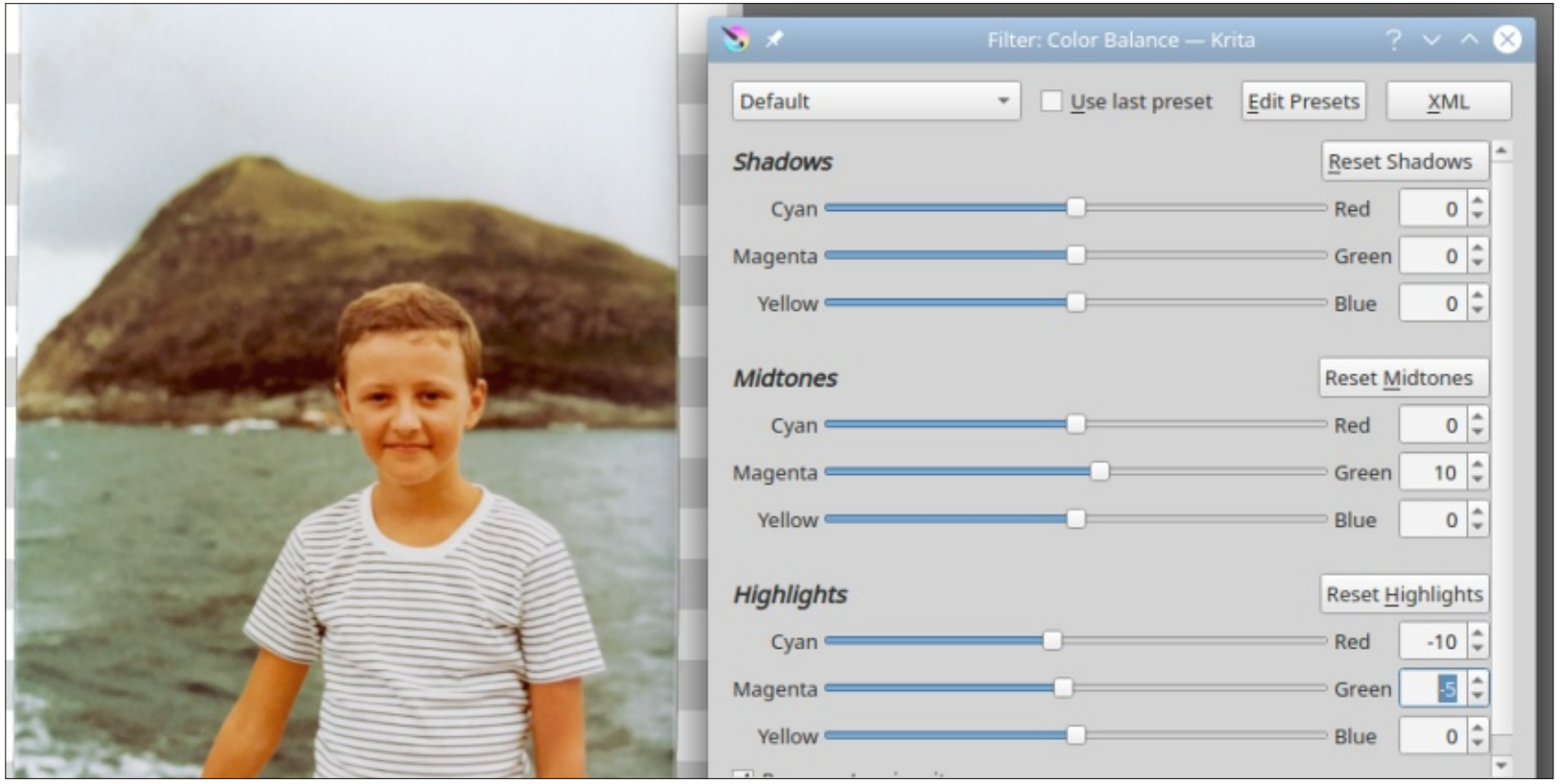
However, we still have an imbalance towards the red (shown next page, top middle), this slight tinge that comes from the film's chemicals and which is still quite noticeable. Our histogram shows that we have made global color balance better across the range from dark to light, but there is still some excess red in the lighter part, to the right.

Another of Krita's tools is the color balance group, from the main menu "Filter", "Adjust", then "Color Balance". This complete tool-set allows us to adjust color balance between red, green and blue individually for the lower (darker) tones, middle and higher (lighter) tone ranges.



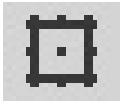


By reducing the red in the lighter tones, the annoying reddish tinge goes away from the subject's skin; the white part of the shirt now actually looks white, instead of pink. However, the sea and island lacked a tad of green to my eyes, so I put back some green into the midtones. This, however, gave the whole photo a greenish tinge to it, so I subtracted back some green out of the highlights.



As a final adjustment to this picture, we need to correct some deformation that took place when it was digitized with a mobile phone; since the camera was not dead center on the image, it has suffered some small trapezoid deformation, specifically in the lower left corner. This is quite clear in the screenshots above where the transparent background is represented by a gray checkerboard: see how the lower edge of the image leans down from left to right.

To cure this, we can use the



Transform tool in Krita. However, default options do not include trapezoid deformation, so we need to make the tool options docker visible through menu option “Settings”, “Dockers”, and check “Tool options”. We can then change from “Free Transform” to “Perspective” inside the tool options dock, and rectify the bottom edge of the image without touching the top.

The final result is a photo that has more vibrant colors than its original, with a subject that is clearly distinct from the background, and is nicely squared around the edges.

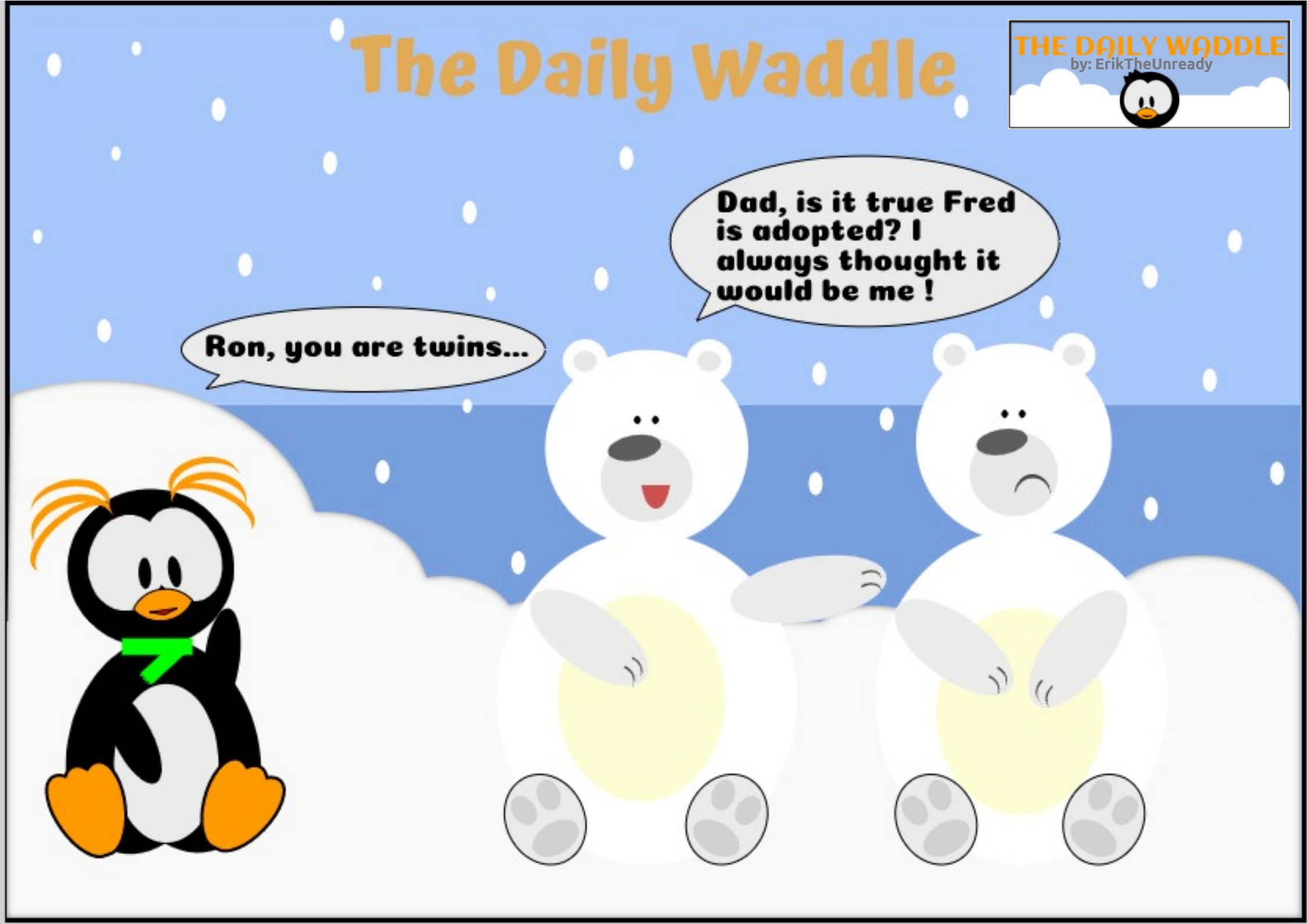
If saving an image with rounded corners from Krita to a format that is accepted by most applications, do remember that the JPEG format cannot handle transparency. In these cases, the Portable Network Graphics (PNG) format is probably a good bet.

The original photo in this month’s part of this series was transformed to a digital format by simply photographing it using a modern mobile phone. In some cases, however, we do not have a paper copy of the original. For instance, in the latter days of chemical photography, many photo developing shops were delivering CD copies of your photos, already digitized. These also can have some drawbacks, which we will review in the next part. Until then, take care!

Alan holds a PhD. He teaches comp sci and eng at Escola Andorrana de Batxillerat. He has given GNU/Linux courses at the Uni of Andorra and taught GNU/Linux systems admin at the OU of Catalunya.

The Daily Waddle

THE DAILY WADDLE
by: ErikTheUnready



BACK NEXT MONTH

ASSUMING BSD HASN'T DRIVEN HIM INSANE

SJ Webb is a researcher coordinator. When he is not working, he enjoys time with his wife and kids. He thanks Mike Ferarri for his mentorship.

Personal Info Management Pt4

Last month, we installed the Lightning extension for Thunderbird to add calendaring capability. This is to uphold the common New Year's resolution to become more organized in the upcoming year. This month, we'll try to add Google calendar support to Thunderbird's PIM (Personal Information Manager) capability, so that we can use our calendar across Linux PC and Android devices like tablets and smartphones.

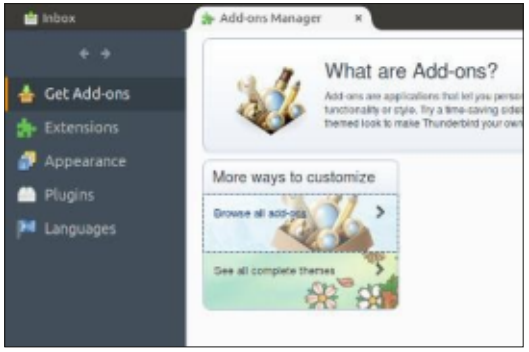
Google Calendar Management: Provider for Google Calendar Extension for Thunderbird

Unlike Microsoft's Outlook on Windows, Thunderbird does not have calendaring built in. Last month, we added the Lightning extension to address this, and this month, we'll try to connect to our online Google calendars so our family and friends can keep up with us (and vice versa).

Installing Provider for Google Calendar

To install the Provider for Google Calendar extension to Thunderbird, we'll need to launch Thunderbird first. Go to the Dash (first icon on the Launcher, the strip that runs down the left side of the screen), and type in Thunder. That should be more than enough for the Dash's search capability to bring up Thunderbird. Click to launch it and you'll get your Thunderbird email client.

Go to the Tools menu up top, then click Add-Ons:

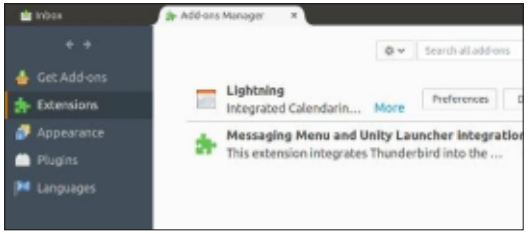


If you are on a current version of Thunderbird, click Browse all add-ons. A web browser window will open:

Search for Provider for Google Calendar in the search box at upper right:

You can click Download Now to start the installation. Now, I have an older version of Thunderbird as stated last month, and did not find it convenient to upgrade right now, so I had to take an extra step. I went to View older versions on the Thunderbird Add-on web page for Provider for Google Calendar, just as I had to do last month for Lightning, and found the version of the Provider that matched Thunderbird 52.2.1. I then downloaded the XPI format file and saved it to my Download folder.

Then, I had to go to Thunderbird's Add-Ons under Tools again and select Extensions:



Click the Gear icon at the top and select 'Install add-on from file'. Navigate to where the XPI file was saved and double-click it. The Add-On Manager will now install the Provider for Google Calendar add-on. This is good to know for other

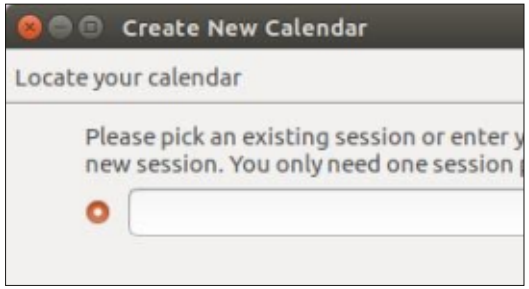
installations, as XPI format files are commonly used for Add-Ons found outside the official Thunderbird support pages. You will want to click Install Now on the dialogue box that comes up.

Adding a Google Calendar

After the installation of the add-on completes, Thunderbird will prompt you to restart the application. Once you've done so, you'll need to go to the File menu at the top of screen and select New, then Calendar:

Select 'On the Network' and click Next at the bottom:

Select Google Calendar and click Next again. Enter your Gmail address and hit Next to start your Google sign-in process:



You'll need to enter your Gmail address again to get signed in to your Google Calendar, then enter your password and select your calendar.

Full disclosure: I could not get this to work on my machine, but I'm fairly certain it's because the versions of Lightning and Google Provider that I am using, along with my version of Thunderbird, are too far out-of-date. I'd be interested in feedback from our Full Circle readers if this procedure worked on newer versions of Thunderbird and Lightning,. I was able to get through the whole process successfully until the last screen of the Google sign-in, which showed no calendars to select. If anyone has suggestions that might lead to this being functional on Thunderbird 52, I'd be most interested in feedback on that, as well.

Next month: Feedback from readers, or we'll try to find a work-around for our calendaring needs.

Richard 'Flash' Adams spent about 20 years in corporate IT. He lives in rural northwest Georgia, USA, with his adopted 'son', a cockatiel named Baby.

UBPORTS DEVICES

Written by UBports Team

COMING SOON? MAYBE??

The Daily Waddle

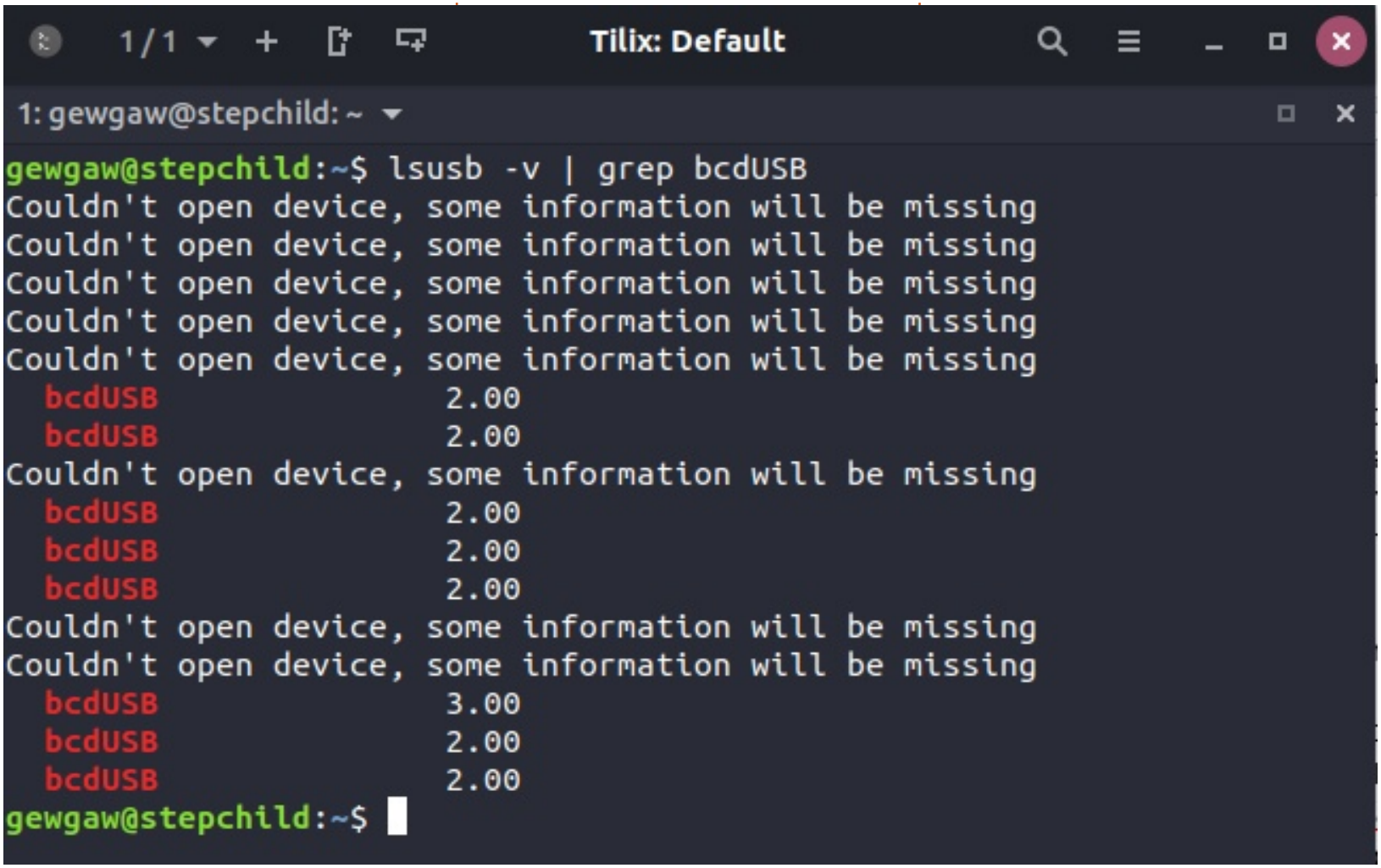
I went and bought a bunch of USB thumb drives / memory sticks from a supplier on sale a while ago (actually a few years). Copying to and from these – I noticed some had horrible speeds. Now since they are all the same brand, I wondered if there was a way to test them. I used Parted to format them in different file systems and configurations, and the speed seemed to fluctuate a bit, but it could be my imagination. The question is: how does one measure the performance of your thumb drive / memory stick in Ubuntu?

The solution

The first thing that came to mind was dd. When dd is done, you get an output that lists the average speed. So, writing the Ubuntu image to the different drives (8, 16, 32) GB drives yielded different results. Then writing them to the same size drives (I bought two of each) again yielded different results. To get some sort of metric, I opened another terminal and ran iotop, This is not shipped with Ubuntu and you can install it with: sudo apt install iotop - The nice thing with this is you get read and write metrics. So not all USB thumb drives are created equally. The very first result in my search engine yielded:

https://askubuntu.com/questions/539184/how-do-i-check-the-integrity-of-a-storage-medium-hard-disk-or-flash-drive (which was not quite what I was after, yet...).

A light went on and I considered hdparm, which I have not used in about ten years or more. I was introduced to hdparm by my friend Lloyd in the wild west days of



Ubuntu 04.04, to speed up my laptop. I did not consider it as I did not know if it would work for USB thumb drives and SSDs. You do not need to install hdparm – like dd, it ships with Ubuntu. Just typing hdparm will bring up a list of options. If you go down the list to 't' - you will see lowercase and capital 't' – both perform read timings. So I had to try: sudo hdparm -Tt /dev/sdX - (where X is your USB thumb drive). Frown... >:o(.... The results here were much faster than dd. Okay, let's turn write caching off and back on again (the W flag), and re-test. Although there is a performance impact, it still does not match my measurements from dd.

This was a mystery that needed solving. One of the 8GB memory sticks was quite a bit slower than the rest. Let us see what is happening. Running dmesg you should see the memory stick added at the end. Now run lsusb -v | grep bcdUSB to see what it was detected as:

Aaaand there it is. One of the USB 3.0 memory sticks only detects as USB 2.0. If you are not sure which is which, run lsusb -t, then you can see which bus and port it is on.

Before any of you say: "hey, why didn't you just use gnome disks benchmarking?" I want to say that I did. However, it was not installed on the system I was testing on, and does not give the type of insight we have been looking at here. If you do not have it, you can add it with: sudo apt install gnome-disk-utility, and you will see a menu entry named 'disks'. To benchmark a disk in 'disks' - select the thumb drive, then the hamburger menu to the top right, then 'benchmark disk'.

Make sure your data is backed up before running the benchmark!

The Conclusion

I got different results on different drives of the same size, as well as different results between the same make but different sizes. Some drives, even though being labelled as USB 3.0, were detected as USB 2.0, so check your drives after buying them! (I could not return mine as they have been lying in a box for over a year).

Benchmarking is faster than real-world usage, as seen with dd, so rather work with that if you want to know the 'true' speed of your USB thumb drive. So - if the 'true' speed of your device does not match your expectation, do some digging!

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.

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.

Stacer

Website:
https://sourceforge.net/projects/stacer/
or
https://oguzhaninan.github.io/Stacer-Web/

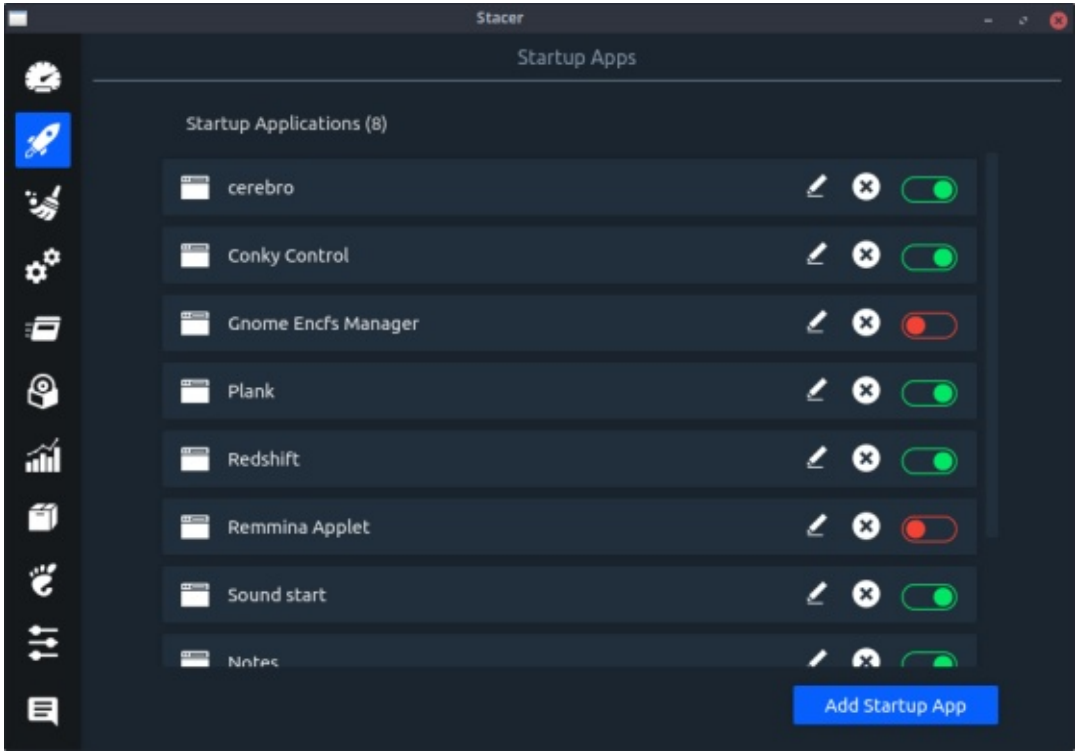
Blurb: "*Stacer is an open source system optimizer and application monitor that helps users to manage an entire system with different aspects; it's an all-in-one system utility.*"

When it comes to cleaning up your Ubuntu desktop, we usually turn to the command-line. There have been tools in the past, but they did not seem to last. Stacer is one of those tools, designed for Ubuntu, but can be used on other distributions as well. Though it is built on the electron framework, it is not slow at all. You can get Stacer in a variety of options like direct .deb-file download, adding a PPA, or just grabbing an AppImage. Just remember to make the AppImage executable or it will open with your archive mounter. When you launch Stacer for the first time, you will see a very modern looking application. Menus are down the left hand side, and the name displays at the top.

Stacer opens with a handy dashboard.

The window is immutable, you cannot resize it, so it is rather small on your 1440p monitor and rather large on your 1366x768 laptop display. It minimizes neatly to the tray though, and you can actually use it from there. It also integrates nicely with docks like plank.

The rocket is the startup applications control. From here it is as easy as flipping a toggle to turn



startup applications on and off. The next icon down is the broom. This is probably the most used tab. By default, nothing is selected and, to start cleaning, you need to select one or more of the categories. Generally, selecting “all” and running a clean is considered safe. The gears are the services tab; you can use this to turn off services like say, bluetooth, that you do not use. There are two toggles here, the first being the starting status and the next, the running status. The processes tab is a nice “top”-type overview, that allows you to only end a process. Clicking on the cyan text will sort the columns – just like top or htop. The ‘CD in a box’ tab is the installed packages; very handy to find something you do not need any more, but use it with caution! In previous versions, Stacer did not list base packages, so noobs do not brick their systems, but that has changed and it is possible to uninstall something like ACPI.

The bars and graphs are informative only. The nice thing about this tab is it provides you not only with current usage of system resources, but history too. If you are running Xubuntu, this is a nice way to get gnome-system-monitor without the install. H close box is your repositories, and again it makes it as easy as flipping a toggle to turn these on or off. The little Gnome foot is Gnome settings, and can be ignored if you do not run Gnome. The settings tab has a few settings, but not anything really important. All these are available from the drop-down menu if you minimize Stacer to the taskbar.

Stacer does nothing that cannot be done on the command-line, but brings it all together in one neat package.

If you have a small SSD, it is wise to consider adding the PPA or downloading the .deb-file as the AppImage is rather large.

Final thought, though Stacer is already a great tool, it would be nice if it did a bit more, like finding large files, duplicates, or files not used in say, a year. This would really help one clean out the system.

LETTERS

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

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Full Circle Needs You!

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

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

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

Q&A

Compiled by EriktheUnready

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

Welcome back to another edition of Questions and Answers! In this section, we will endeavour to answer your Ubuntu questions. Be sure to add details of the version of your operating system and your hardware. I will try to remove any personally identifiable strings from questions, but it is best not to include things like serial numbers, UUID's 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'.

It sometimes irks me that I.T. in the service industry is looked down upon. I suppose it is because there are so many sharks out there. It is not a new thing either. Years ago, when I was an FSE, there was a start-up OEM that had a vision to make it in the market. They would market their equipment with only the best internals. That meant no cheap fong kong parts. All parts would be certified and carry the maximum warranty they allowed. It was marketed as such. As a supplier OEM, they supplied distributors and stores with these computers. The PC's were meticulously sealed with warranty void stickers. They also sold all their parts loose. The distributor agreement meant you could only supply the box with Y parts. The company I worked for was tasked with the warranty repairs. We went for rigorous training at this OEM. The problem we started running into was that the contents of the box did not match the warranty specifications. We started seeing Connor drives instead of Seagate (example), and so forth. Now customers were allowed to upgrade their PC's; however, these did not carry the PC warranty.

Needless to say, there were endless fights about money as our company billed them a call out regardless if the part was theirs or not, as the box serial number was used for warranty. The biggest issue was RAM. More often than not, the cheapest RAM (which was faulty) was found in the PC and the owner swears on a stack of bibles, he never changed it. (The second problem was flimsy power supplies, the kind that wobble in a stiff breeze). Sitting down one afternoon and consolidating my calls, I realised the problem was originating from ONE reseller. This guy was buying cases and selling warranties for brand X with the cheapest and nastiest components inside. We had to refuse warranty repair and void said warranty, which made the customers mad. This led to really nasty letters to the press and ultimately the demise of the OEM start-up. These days that market is filled 80/20 with sharks and I fear it will never come right. Do we have a way to solve this problem?

———————————————

Q: Hello there, I'm a new Code::Blocks user. I am using Sololearn to learn to code. I followed the instructions given in https://www.sololearn.com/Discuss/1390539/how-to-change-the-editor-theme-in-the-code-blocks-ide to change the Code::Blocks theme, but that works only for the editor window. Is it possible to set a theme for the whole environment; what I mean by that is the window surrounding the code editor. I am still on Ubuntu 16.04, btw.

A: Yes, This seems to be a common question, but it is understandable as Linux users like to customise. Now, you did not tell me which desktop you are using, but you need to change GTK 2/3 to dark also. You can also try to set the environment before launching the application, by adding: env GTK_THEME=Adwaita:dark before your command (or whichever theme you choose).

Q: So I am running on Ubuntu 14.04 as I need it for certain applications. When I try to install software from the terminal, I get an error saying it couldn't be found: "E: Couldn't find package". The software centre just gives the same error.

A: The repositories for older releases that are not supported get moved to an archive server. You need to now change your repositories to point to that archive server.

Q: I have bought a notebook from a friend with Windows 10 on it. I have replaced it with Ubuntu, but I am having trouble loading the Nvidia driver. When I do a lshw, the nvidia display shows "UNCLAIMED". Why is that?

A: Usually it is because the BIOS is set to secure boot. (This does not allow the Nvidia module to load).

Q: I am bedridden after an accident and work with my laptop on my chest. I have installed TLP and tried a lot of other software found trawling the internet. My problem is that the laptop gets extremely hot on my chest and I need to cool it down. I recently switched from Ubuntu 16.04 to 18.04, in the hope it would be better, and now to 19.10. I just can't seem to get any satisfaction.

A: There are multiple vectors here. One, when you use a laptop on material, even a cotton sheet, it will suck in fibres. This restricts the pathway for airflow through the laptop. The clearer that pathway, the more heat is expelled. Another idea is that you are blocking the air intakes, as perhaps the laptop feet do not lift it above your chest. Purchase a laptop stand, preferably – with a fan or two – and don't unfold it; leave it flat, and put your laptop on that. It may add an inch under your laptop, but your laptop (and your chest) will thank you for it.

Q: When I open up Pitivi, I get a message: a new version 0.999 is available, but when I check updates, there isn't any?

A: Not all versions of some software are available for every OS release. To put it in Windows terms, the newer software is for Windows 10 only and may not run on Windows 7. Also, not all versions may have been checked out by the Ubuntu team yet, and may get added only later. If you want the latest version, you can, of course, build it yourself or use an appimage/snap/flatpak.

Q: I like tools like neofetch and all, but is there a GUI tool for Xubuntu without, like, loading all the KDE dependencies?

A: Have you tried the inxi-gui?

Q: The XFCE dictionary program has a speed reader built in. I am having trouble sometimes opening a txt file, and I can't really get to grips with using it; it feels unnatural. What are my options and what can I do?

A: This seems to be two questions. One, if a text file cannot open in the dictionary, it may be that it contains symbols that it cannot read. Open the .txt file in mousepad first to see if it reads it. If it does not, you need to replace those pesky non-ascii symbols. Secondly, I cannot tell you what you need, but I can give you other options. See: https://www.linuxlinks.com/best-free-linux-speed-reading-tools/

Q: I have read that chromium is still connected to Google. Is this true? I have been using chromium since forever, and it is riding me now that I am still feeding the Google beast.

A: Hahaha, Google beast. Okay, from what I have gathered, is that you want a de-googled Chromium. Look here: https://github.com/Eloston/ungoogled-chromium

Ungoogled Chromium says that the tweaks require manual activation or enabling, so be aware of that.

Q: Can one have a global equalizer for Ubuntu? I am not talking about the one in your music player, but for everything. I have a Samsung laptop with really shoddy speakers and I would like to make the best of a bad situation.

A: I am not sure if this is what you want, but you can try pulse effects.

Q: I am using Mint Cinnamon, which is quite a change from Gnome. How do I go about getting better themes? In particular, I want my Desktop to resemble Windows 7, which I loved. I asked on the Gnu/Linux telegram channel, but only got an OK boomer.

A: Full Circle Magazine also has a Telegram channel. Cinnamon is a new-ish desktop, so there may

not be as many themes available as you would like. I will point you here:
http://www.ubuntubuzz.com/2020/01/linux-mint-with-windows-7-theme.html

Q: Why do some command line tutorials show sudo -i and some use sudo -s?

A: Sudo gives you su privileges. However, you are still you. When you run a command as another user, that user may be set up differently, say use a different shell, etc. At a basic level, if you do not specify anything, both will run an interactive shell, so you can use both.

Q: How do I find out what filesystem is on a drive?

A: You can use the 'disks' application or just type sudo blkid from the terminal.

Q: My hard drive is 10 years old, and when I check smart, I get "old age" and "pre fail" in the list:

```
  1 Raw_Read_Error_Rate
0x002f   200   200   051
Pre-fail  Always   -   0
  3 Spin_Up_Time
0x0027   172   170   021
Pre-fail  Always   -   6400
  4 Start_Stop_Count
0x0032   100   100   000
Old_age   Always   -   628
  5 Reallocated_Sector_Ct
0x0033   200   200   140
Pre-fail  Always   -   0
```

<THE REST REMOVED FOR MAGAZINE>

Is this very bad?

A: Unless you see lots of uncorrected and reallocated sectors, I would not worry.

Q: How can I switch desktop environments? Can I get an icon in the taskbar to make it easier?

A: This is a very broad question, but I suspect I get your gist. There is already a button in the taskbar, the logoff button. Click that, then choose your DE when you log in. You cannot switch on the fly.

Q: I am looking for decent cross-stitch software for Ubuntu 16.04, but something I can use to design my own as well as make something from a picture. I had something running in Wine, but it is not quite what I was looking for. Can you suggest something usable?

A: I have no experience with any of that, but may I suggest looking at Kxstitch, Cstitch and Crosti, maybe even embroidermodder or ink/stitch? Maybe one of our users can write to us with something that works well?

Ronnie says: maybe this month's article using Valentina will help?

Q: My issue is with Ubuntu 18.04 and Firefox, where some Youtube movies are loud and some are soft. Is there a way to set the highs and lows to even out?

A: I am not 100% sure what you are asking, as video volumes are dependent on recorded volumes, but, I did find this: https://www.youtube.com/watch?v=typM_AQUzi4

Q: Crap! https://www.cnet.com/news/antivirus-firm-avast-is-reportedly-selling-users-web-browsing-data/ I have been using Avast on Windows and on Linux. Does this mean that all my browsing history is being pawed over by other people? Also how do I uninstall it?

A: Yes, I see you visited unixporn on 26 July 2019.... Just kidding. But yes, lots of them do it, that's why they always want to install browser plug-ins. If you installed it via the deb-file, use gdebi, otherwise go to 'installed' on your software centre and uninstall from there. Remember to remove any browser plug-ins.

Q: Howzit my china, I picked up a laptop from Cash Crusaders and I want to install Ubuntu on it. Problem is there is a BIOS password. How do I do it now?

A: You can guess, most idiots use a fool's passkey (like 1234) or birth date – try say 1950 – 2020 (may take a while), or go back to Cash Crusaders and tell them you want the guys details as there is a password. The days of removing the battery, or using the CMOS clear jumper, to remove the password, are gone. See: https://www.cgsecurity.org/wiki/CmosPwd

Exapunks

Website: https://zachtronics.itch.io/exapunks

Price: $19.90 USD

Blurb: "*The year is 1997. You used to be a hacker, but now you have the phage. You made a deal: one hack, one dose. There's nothing left to lose… except your life.*"

With me reviewing Steam and GOG games for Linux, I thought it may be time to give Itch.io a chance. Thanks to @Alfredo for the copy. (Your handle is hidden in Telegram, BTW).

I love that the electronic version of your manual, has staples!

Before you start

Exapunks is not a pick up and play game. There are things you should know, and you get a nifty manual for that. I must admit, I was at a loss for what to do when the game started. However, I did realise that we were in William Gibson's Neuromancer. You have a screen with "options" on the right of the screen, and your deck in the centre. You can click on "play cutcsene" inside your personal organizer to get started with the story. A peek in the game's folder revealed lots of .exe and .dll-files.

Story

You are a burned out ex-hacker. You have the Phage. It costs $700 a day for your medicine. You can transcribe receipts for 10 cents each, or you can go on a mission and hack something for your fix. One hack, one dose. You seem to be part of the cyberpunk counter culture, more than Japanese signs, neon lighting, dark alleys, and lots of rain. The trash world magazine you are given by Ghast is actually the manual to the game and you have to read it. The Phage is a weird one though, actually turning your neurons into circuitry. All hail our robot overlords...

Gameplay

This is a puzzle game at heart with a hacking theme. When I first laid eyes on the game board, my thought went to "Sokoban", or "SokoBAArn" from the year before last. You program your little "exa" (I may be wrong here, but I think it is a wordplay on ".exe") to move or pick up things and the like. Your "exa" moves on a board with grid tiles. You can have more than one "exa", and they each do their thing independently from the others. Basically, they execute your commands. Each isometric board

represents a host. The name of which is written on the side. The twist from your standard sokoban game is how you get where you want to be, and you also get to do stuff on the way. You use psuedo-programming to get your exa's to follow the list of commands that you need them to do. It is quite challenging, but very thoroughly enjoyable. Somehow the game also reminds me a bit of Uplink... Though it is about hacking, there are some missions where you need to achieve another outcome, like playing your movies longer than your opponent. Be prepared for around fifty missions.

Graphics

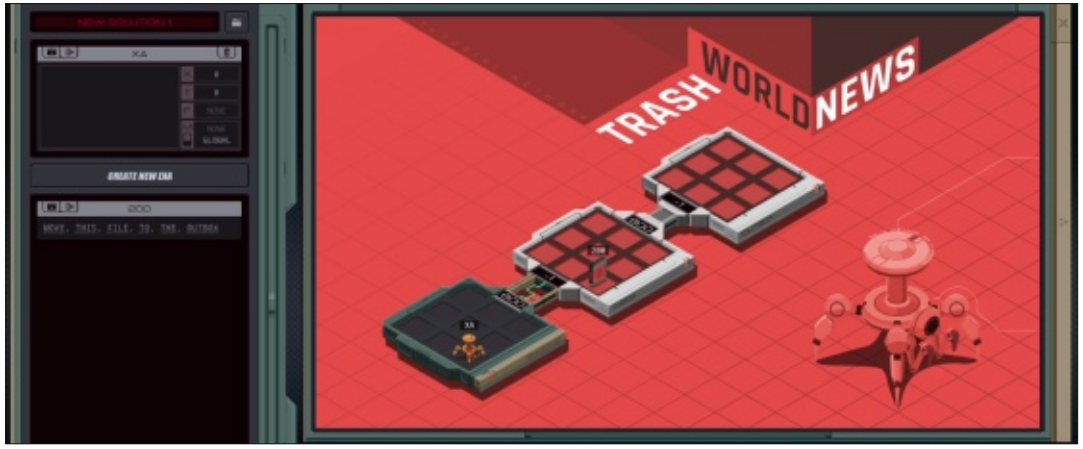
You play from your deck, the 'Sawayama 27 turbolance'. The interface reminds me of GeOS or BeOS (oops, I am showing my age here). The actual game boards, or computers in the hacking phase, are all in isometric view and very well done. So well, in fact, that you are immersed almost immediately. (Or, it may just be me, with a soft spot for isometric games). The aesthetic is pleasing and the retro-futurism suits the game perfectly. That first register should have been an 'R' though. RTFM... The spidery exa icon on my desktop just looks cool, but I had to put my own short-cut there.

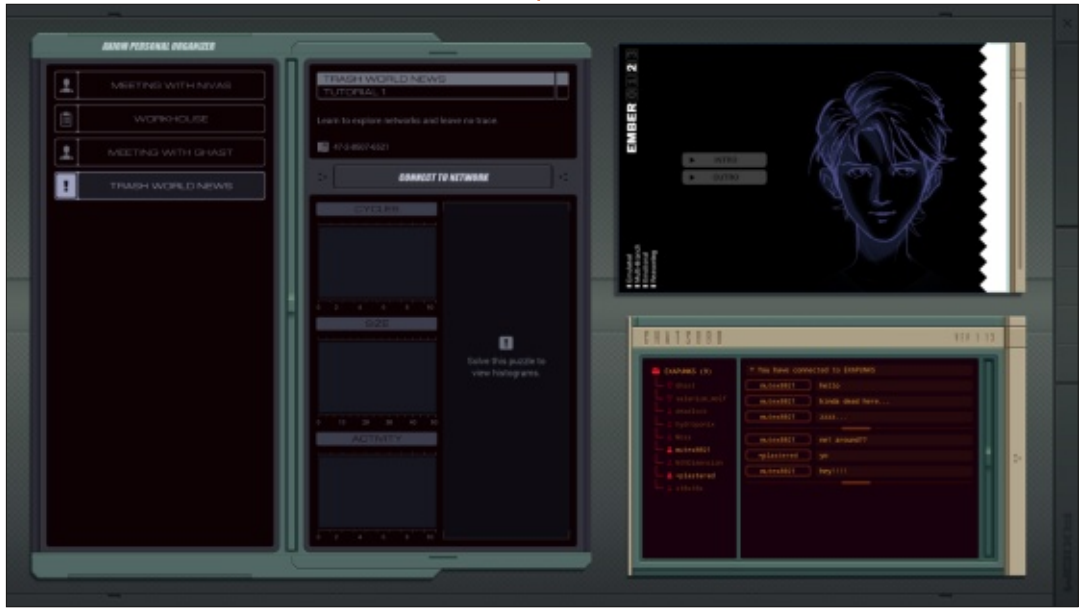
Sound

The soundtrack is great! I actually was sure I heard some of the Mr Robot soundtrack sounds in there. The little beeps n boops sound like they came straight from an 80's arcade cabinet. The solving a level sound is wakka-wakka straight from 70's pron. Made me laugh. The voice acting is okay, but it would have been better if it were 100% voice acted. That said, there are only a few characters in the game, Nivas, Ghast, Ember, and Isadora, who actually talk to you. If you would like a taste of the awesome soundtrack, go here: https://www.youtube.com/watch?v=sxaM3F1TcJA or https://zachtronics.bandcamp.com/album/exapunks-ost

Conclusion

Even though the game is repetitive, it does not feel that way, due to the story and difficulty level. I am new to the Zachtronics craze, but I do understand the appeal. Is it worth your time? Yes. Is it worth the money? Well, the jury is still out on that one.





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

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

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

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

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

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