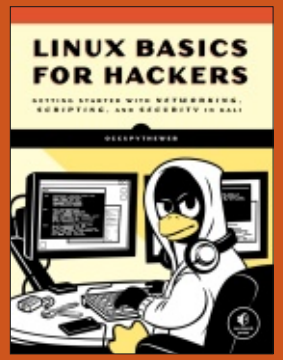
Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

ISSUE #149 - September 2019

BOOK REVIEW



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HowTo

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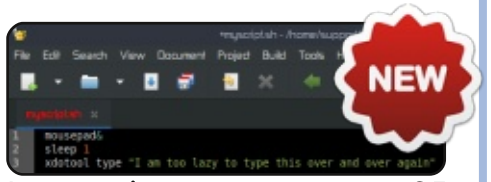

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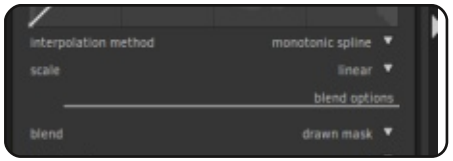

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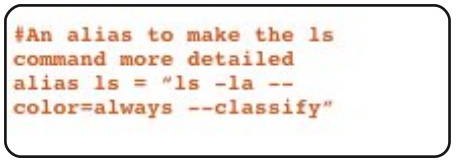

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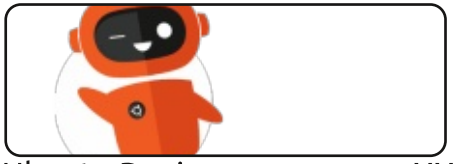
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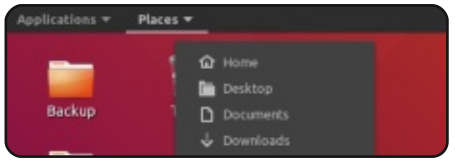

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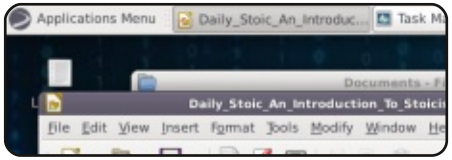

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EDITORIAL

Welcome to another issue of Full Circle!

The one thing I feared for (regarding FCM) is gradually starting to come true. Several regular (monthly) writers are ending their series' and moving on to pastures new. Elmer has finished Freeplane as of last month (but is considering starting a new series on something else). Closing soon are both Command & Conquer and Inkscape. And Oscar (Ubuntu Games) is out at the moment due to ill health (get well soon!).

What does this mean for you, dear reader? It means that if articles aren't submitted from the outside world, FCM may have to come to an end. I know I (very?) often whine about a lack of articles, but now I'm running on one-off articles with no guarantee of monthly submissions. I think I can get a couple of people to take over the website (from Lucas). It's a bloated behemoth of a thing spanning over ten years. So I'm hoping we can get a new streamlined website but keep all the old links intact, but (as Lucas would, I'm sure, testify) it's not the easiest of tasks.

So, please, send in some form of communication (to: ronnie@fullcirclemagazine.org). Let me know you're out there. I don't even get readers emailing me letters any more and I'm tired of having to beg for articles. Next year (2020) will be the 13th year of FCM. **I don't want it to be unlucky 13!**

I know that all sounded a bit whiny, but I don't want FCM to die.

All the best, and keep in touch!
Ronnie
ronnie@fullcirclemagazine.org

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Ubuntu 18.04.3 LTS Easier to Patch Kernel without Rebooting

Powered by the Linux 5.0 kernel series from Ubuntu 19.04 (Disco Dingo), Ubuntu 18.04.3 LTS is the third maintenance updates to the long-term supported Ubuntu 18.04 LTS operating system series, which is supported by Canonical with security and software updates for at least five years, until 2023. Apart from the updated kernel and graphics stacks, the Ubuntu 18.04.3 LTS release also introduces enhanced Livepatch desktop integration to make it easier for users of the GNOME desktop environment to patch the Linux kernel without rebooting their systems. The new Livepatch desktop integration included in Ubuntu 18.04.3 LTS consists of an indicator in the system tray area of the top panel, which displays the current status of Livepatch and notifications to inform users when new patch are available and if they've been applied.

Source: https://news.softpedia.com/news/ubuntu-18-04-3-lts-makes-it-easier-to-patch-the-linux-kernel-without-rebooting-527132.shtml

Neptune 6.0 Linux Distro Released, It's Based on Debian GNU/Linux 10 "Buster"

The development team behind the Neptune Linux operating system have released a new major version that's based upon the latest Debian GNU/Linux release. Dubbed "Spike," the Neptune 6.0 release is based on the Debian GNU/Linux 10 "Buster" operating system and powered by the Linux 4.19.37 kernel, which is patched with all the necessary hardware support for latest devices. It also ships with the KDE Plasma 5.14.5 desktop environment, which brings various improvements and new features over previous releases. mong the apps included in Neptune 6.0, we can mention the Chromium 76 web browser, LibreOffice 6.1.5.2 office suite, Mozilla Thunderbird 60.8 email and news client, GIMP 2.10 image editor and viewer, VLC 3.0.7 video player, Audacity 2.2.2 audio editor, Kdenlive 18.08.2 video editor, Ardour 5.12 digital audio workstation, and the latest Amarok music player.

Source: https://news.softpedia.com/news/neptune-6-0-linux-distro-released-it-s-based-on-debian-gnu-linux-10-buster-527129.shtml

NPM: Standard 14 shows advertising

The Node Package Manager (NPM) is a management tool for the JavaScript runtime Node.js. The software is responsible for installing modules and manages the dependencies between the various components. NPM is being developed by the eponymous company »npm inc.«, Which, among other things, is responsible for the operation of the repositories and also finances various developers. Among other things, revenue is generated by hosting private packages that are not visible to the public.

As the developers of Standard announced, the behind-the-counter team plans to tap into new revenue streams and therefore, as of the current version of the application, displays ads promoting the installation of NPM.

The revenue from this advertising would use the team directly for the development of the tool. Among other things, the development of new functions and the correction of errors found will be financed.

Source: https://www.pro-linux.de/news/1/27378/npm-standard-14-blendet-werbung-ein.html

Debian and Ubuntu plan to remove Python 2

Python 3 was introduced back in 2008, and the transition period for distributions to maintain two incompatible Python versions has come to an end, with support for Python 2 ending on December 31, 2019. Already in 2014, Python project leader Guido van Rossum had extended the support for Python 2.7 to 2020, declaring that this is the latest release in the Python 2 cycle. So it's high time to migrate packages based on Python 2 to the successor.

Debian and Ubuntu also see it that way. After all, Ubuntu first wanted to declare version 14.04 Python 3 as standard. Debian 10 will continue to support Python 2 until the end of support for Buster. For Canonical this applies to the lifetime of Ubuntu 18.04 »Bionic Beaver« LTS, ie until 2023. Both projects want to stop using Debian 11 "Bullseye" respectively Ubuntu 20.04 LTS their support of Python 2.

Source: https://www.pro-linux.de/news/1/27379/debian-und-ubuntu-planen-die-entfernung-von-python-2.html

GNOME Wants to Make Linux Firmware Updates Easier to Deploy with New Tool

At the moment, the GNOME Software Center only displays devices when firmware updates are pending, but Richard Hughes and Andrew Schwenn, an intern from Dell, have been working lately on a new tool that would be integrated as a panel into GNOME Control Center, which promises to make it easier for users to install new firmware versions for their hardware.Meet GNOME Firmware Updater, a new power user tool that would help you keep your hardware secure and up-to-date at all times by allowing you to more easily install new firmware updates that are available from the vendor. It comes as a GNOME Control Center panel and it's complimentary to the current fwupd functionality built into GNOME Software.

Source: https://news.softpedia.com/news/gnome-wants-to-make-linux-firmware-updates-easier-to-deploy-with-new-tool-527174.shtml

Microsoft wants to bring exFAT to the Linux kernel

ExFAT, the Extended File Allocation Table, is Microsoft's file system for flash drives and SD cards, which launched in 2006. Because it was proprietary, mounting these drives and cards on Linux machines generally involved installing additional software. Today, however, Microsoft announced that it is supporting the addition of exFAT to the Linux kernel and publishing the technical specifications for exFAT. In addition to wanting it to become part of the Linux kernel, Microsoft also says that it hopes that the exFAT specs will become part of the Open Invention Network's Linux definition. Once accepted, the code would benefit "from the defensive patent commitments of OIN's 3040+ members and licensees," the company notes.

Source: https://techcrunch.com/2019/08/28/microsoft-wants-to-bring-exfat-to-the-linux-kernel/?guccounter=1&guce_referrer_us=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_cs=X1_tmdwHBuxKjixGrInI7Q

Drauger OS Makes a Capable Linux Game Console Platform

Drauger OS is a relatively new Linux distro for users with a penchant for games. Several design elements make this Linux gaming platform different from typical distributions that merely pack digital titles. However, it lacks a few productivity tools that otherwise would make this Linux choice a daily computing driver out of the box. Drauger OS, a Linux distribution based on Xubuntu, uses a modified Xfce4.12 desktop environment and runs only on 64-bit (x86_64) computers; no 32-bit gear is supported. This is a distro targeting game players who want good desktop performance. It

ships with Steam installed by default, along with WINE and PlayOnLinux. Drauger OS also comes with the modified, low-latency, Liquorix Linux kernel. Liquorix is a distro kernel replacement to optimize multimedia and gaming applications. It is based on the ZEN kernel for balancing responsiveness at the cost of throughput and power usage.

Source:
https://www.linuxinsider.com/story/86210.html

BlackArch Linux Ethical Hacking OS Adds over 150 New Tools in Latest Release

Powered by the Linux 5.2.9 kernel, the BlackArch 2019.09.01 ISO snapshot for September 2019 is now available featuring more than 150 new tools for ethical hacking and penetration testing tasks, the Terminus font for all supported window managers, and an updated installer (blackarch-installer) to version 1.1.19. New ~/.vim and ~/.vimrc configuration files for the Vim text editor have been added as well in BlackArch 2019.09.01, along with an updated look and feel consisting of a brand-new BlackArch theme that's available for all supported window managers, as well as for the bootloaders (GRUB and Syslinux). Among other changes, the dwm window manager has been removed and the default XTerm terminal emulator has been replaced with rxvt-unicode.

Source:
https://news.softpedia.com/news/blackarch-linux-ethical-hacking-os-adds-over-150-new-tools-in-latest-release-527173.shtml

ExTiX 19.8 "The Ultimate Linux System" Ditches Ubuntu & Debian for Deepin Linux

As its name suggests, ExTiX Deepin 19.8 is based on the Deepin Linux operating system, which in turn is built upon the Debian Unstable repositories. More specifically, ExTiX Deepin 19.8 is based on the latest Deepin 15.11 release, which adds numerous enhancements and new features, and it uses the 6th Release Candidate (RC) build of the upcoming Linux 5.3 kernel series.

Highlights of the ExTiX Deepin 19.8 release include the ability to choose your favorite language before starting up the Deepin 15.11 desktop, Deepin Installer Reborn as default graphical installer, support for watching Netflix with Google Chrome, pre-installed Spotify and Skype dedicated clients, as well as the ability to run ExTiX directly from RAM so you can eject the bootable medium.

Source:
https://news.softpedia.com/news/extix-19-8-the-ultimate-linux-system-ditches-ubuntu-debian-for-deepin-linux-527208.shtml

Linux Lite 4.6 Officially Released, It's Based on Ubuntu 18.04.3 LTS

After several months of work, the final version of the Linux Lite 4.6 operating system is here, coming five months after the previous version, Linux Lite 4.4. The entire system is based on Canonical's recently released Ubuntu 18.04.3 LTS (Bionic Beaver) operating system, but it doesn't ship with its newer HWE (Hardware Enablement) Linux 5.0 kernel by default.

Hightlights of the Linux Lite 4.6 release include a new theme selector in Lite Welcome to more easily select between the Light and Dark themes, as well as a new "Keyboard and Numlock" informational page, new "Volume toggle" and "USB Persistence" tutorials in the Help Manual, and updated Lite Sources with comments only about the Linux Lite repositories.

Source:
https://news.softpedia.com/news/linux-lite-4-6-officially-released-it-s-based-on-ubuntu-18-04-3-lts-527222.shtml

Open source Kodi 18.4 'Leia' now available for Windows, macOS, Linux, and more

Officially, Kodi is not for piracy, but the reality is... it sort of is. Look, not everyone uses the software for nefarious purposes, but let's be honest here, folks, in these days of inexpensive streaming media, people setting up a media center to access locally stored files are few and far between. So, yeah, Kodi is a platform used by many pirates.

Regardless of what you use Kodi for, you should be excited today. Why? Well, a new version of the open source software is now available for download. No, it is not a monumental release by any means -- Kodi 18.4 "Leia" is pretty much all about bug fixes. In fact, end users may not even notice any changes.

Source: https://betanews.com/2019/09/02/kodi-184-leia/

Kali Linux Ethical Hacking OS Switches to Linux 5.2, Now Supports OnePlus 7

Kali Linux 2019.03 kicks off important changes to the default toolset, which will be split in three main categories, kali-linux-default with essential tools for penetration testing, kali-linux-large with a wider collection of penetration testing tools, and kali-linux-everything with all the hacking tools. It also brings better support for ARM architectures, a few helper scripts that makes finding information about packages more easily and automatically runs Windows binaries with Wine, or make it easier to discover what resources can be transferred over to a Windows system. Under the hood, Kali Linux 2019.03 switches to the Linux 5.2 kernel series, which brings much better hardware support than the Linux 4.19 series used in the previous release. Linux kernel 5.2.9 is being used by default in this version, which updates many tools, including Burp Suite, HostAPd-WPE, Hyperion, Kismet, and Nmap. Last but not least, Kali Linux 2019.03 adds support for several ARM devices, including the PINEBOOK and Gateworks Ventana systems.

Source: https://news.softpedia.com/news/kali-linux-ethical-hacking-os-switches-to-linux-5-2-now-supports-oneplus-7-527239.shtml

SparkyLinux 2019.09 with Xfce 4.14 available

SparkyLinux 2019.09 is the first distribution released with the recently released Xfce 4.14 as the default desktop. In addition, a variant with LXQt 0.14.1 and the two images "MinimalGUI" and "MinimalCLI" with Openbox 3.6.1 are also available. As special editions, the team also offers the editions »GameOver«, »Multimedia« and »Rescue«, the latter being the only variant available in 32 and 64 bit. Common to all images is kernel 5.2.9. Kernels 5.2.11 and 5.3-rc6 are already ready for installation in the repositories. As compiler installed SparkyLinux 2019.09 GCC 9 as standard, the predecessor GCC 8 has been removed. Linux Mint included Timeshift, an application for creating system images.

Source: https://www.pro-linux.de/news/1/27399/sparkylinux-201909-mit-xfce-414-verf%C3%BCgbar.html

Canonical Outs Major Linux Kernel Security Updates for All Supported Ubuntu OSes

Affecting the Linux 5.0, 4.15, and 4.4 kernels of Ubuntu 19.04 (Disco Dingo), Ubuntu 18.04 LTS (Bionic Beaver), and Ubuntu 16.04 LTS (Xenial Xerus), the most critical vulnerability (CVE-2019-10638) fixed in this new security update was discovered by Amit Klein and Benny Pinkas in the Linux kernel when randomizing IP ID values generated for connectionless networking protocols, which could allow a remote attacker track particular Linux devices.

While Ubuntu 19.04 and Ubuntu 18.04.3 LTS users using the Linux 5.0 HWE (Hardware Enablement) kernel must update to linux-image

5.0.0-27.28, Ubuntu 18.04 LTS and Ubuntu 16.04.6 LTS users using the Linux 4.15 HWE kernel need to update their systems to linux-image 4.15.0-60.67. Ubuntu 16.04 LTS users using the Linux 4.4 kernel will have to update as well, to linux-image 4.4.0-161.189.

Source: https://news.softpedia.com/news/canonical-outs-major-linux-kernel-security-updates-for-all-supported-ubuntu-oses-527247.shtml

Android 10 released

After the recently announced versioning change, the new version of Android, unlike the beta versions, is no longer "Q" but only "10", and there is no longer any code name. The new version features significant improvements in machine learning, support for foldable and 5G enabled smartphones, improved privacy and security, and improved usability.

As part of the Strobe project, Android continues to be enhanced with new measures to enhance security and privacy. Android 10 now includes an expanded selection of whether apps get access to location information. Already so far one could allow this individually for each app. Now you can still differentiate whether the app in the foreground or in the background may read the data. To access apps on shared files, new permissions have been introduced. Apps running in the background can no longer bring themselves to the foreground. You can only attract attention with a notification. Furthermore, access to the device identification has been restricted. Android 10 also includes the improved Adiantum algorithm for user data encryption, TLS 1.3 as the default, and preventative security measures.

Source: https://www.pro-linux.de/news/1/27405/android-10-erschienen.html

Kernel developers slip up at simple Specter-Fix

In a detailed analysis in their blog, developers of the Linux kernel's Grsecurity patches describe how the upstream community of Linux misrepresented a supposedly simple safeguard against the Specter vulnerability. This bug has also been backported into the stable kernel versions.

The origin of the problem is due to a patch by the developer Dianzhang Chen. This adds the use of the macro array_index_nospec () to a specific function. This eliminates Specter v1 exploit by purging the index to access an array, even on speculative execution, and is guaranteed to be within the limits of the array. First introduced this macro with Linux 4.16.

The developers of Grsecurity historically have a very difficult relationship with the rest of the Linux community. Chief developer Torvalds has even called their code "garbage". Accordingly, the team uses the blog entry not only for analysis, but also very strikingly as self-promotion for its patches and its technology. Likewise, the fundamental criticism of the Grsecurity team for the maintenance of stable kernel branches by the Linux community is repeated in the blog. Probably not entirely wrong.

Source: https://www.golem.de/news/linux-kernel-entwickler-verhauen-einfachen-spectre-fix-1909-143628.html

Go 1.13 makes TLS 1.3 the standard, supports Android 10

Go 1.13 is compatible with Android 10, enables TLS 1.3 by default, brings a handful of new environment variables and updates prefixes for different literals.

According to the release notes, Go now supports a "modernized set" of prefixes for number literals. For example, the prefix "0b" or "0B" refers to a binary integer literal, such as "0b1011". Furthermore, Go offers 1.13 prefixes for octal integer literals ("0o" and "0O") and hexadecimal floating point literals ("0x" and "0X"). The suffix "i" for imaginary literals can now also be used with binary, decimal and hexadecimal integers and floating point literals. In addition, developers now group numbers in number literals using underscores.

Other changes to the language affect the shift count, which may now be signed. The developers may then waive workarounds with "uint" conversions when working with "<<" and ">>" operators.

Source: https://www.linux-magazin.de/news/go-1-13-macht-tls-1-3-zum-standard-unterstuetzt-android-10/

Tails 3.16 closes gaps - Tails 4.0 in the starting blocks

The Amnesic Incognito Live System, Tails for short, has been released in version 3.16, which includes various security vulnerabilities in the included programs.

With the Tails distribution, users without configuration can securely and anonymously access the Internet via the Tor network. The live system starts from USB stick or DVD. In addition to the updates, including for Firefox, Tor Browser (8.5.5) and Thunderbird is also a new kernel for the underlying operating system based on Debian 9.9 here. Debian Kernel 4.19.37-5 + deb10u2 includes a Fix for Specter Gaps of recent date.

The developers also touched the default settings and removed the bookmarks predefined by the Tails project from the Tor Browser. Instead, the default bookmarks are supplied from the Tor Upstream. The changelog lists all the details. In October, the new branch of the system is expected with Tails 4.0. Issue 3.16 should therefore have been one of the last in the 3-branch.

Source: https://www.linux-magazin.de/news/tails-3-16-schliesst-luecken-tails-4-0-in-den-startloechern/

Thousands Of Linux Servers Infected By Lilu (Lilocked) Ransomware

A new strain of ransomware named Lilocked or Lilu has affected thousands of Linux-based servers all over the world. The ransomware started infecting servers back in mid-July but in the last two weeks, the attacks have become more frequent.

The very first case of Lilocked ransomware came to light when a user uploaded a ransomware note on ID Ransomware, a website used for identifying the name of ransomware from the ransomware note or demand specified in the attack. It targets servers and gains its root access. The mechanism behind how it gets access in unknown yet. According to a Russian forum, bad actors might be targeting Linux-based servers that are running defunct Exim software. Lilock ransomware does not affect system files but files with extensions including HTML, SHTML, JS, CSS, PHP, INI, and other image formats. Since system files are not affected, Linux systems are running normally.

Source: https://fossbytes.com/lilocked-ransomware-infected-linux-servers/

Debian-based MX Linux 19 Beta 2.1 now available for download

MX Linux is apparently becoming increasingly more popular these days, and I am not really sure why. Lately, I have been testing out the open source operating system, and I simply don't understand the hype. Xfce, which MX uses, remains one of the worst desktop environment for end users -- it is lightweight, but that aside, it offers nothing over the superior GNOME or KDE. If you own a HiDPI monitor (which more and more people have), Xfce remains a terrible experience. Some of the mx-apps and tweaks are appreciated, but nothing is really notable. The installer is average at best -- hardly a positive experience. Conversely, I recently installed Pop!_OS again, and that installation was an absolute dream. Ultimately, MX's fanfare seems unwarranted -- it feels very outdated in 2019. But OK, some people (who should have their heads examined) actually like MX Linux and use it as their daily operating system. If that is you, I have some potentially interesting news -- today, a new beta of version 19 becomes available.

Source: https://betanews.com/2019/09/08/mx-linux-19-beta-21/

Arch Linux-based Manjaro forms a company, but will it fail?

Some people may think a company focused on Linux can never be successful. That's false thinking, actually. True, some people use Linux as just a hobby, but it is so much more than that. As Red Hat shows us, Linux can be a billion dollar business. Plus, System76, for example, has been selling personal computers running Linux for many years. So, yeah, a Linux-focused company can be a success.Of course, that does not mean a Linux-focused company is guaranteed to be a success. Case in point, today, popular Linux distribution Manjaro announces that it has formed a limited partnership business entity. The question, however, is whether or not creating such a company is a good idea. Well, that depends on how its success is defined. While the company's donations will be transferred to a non-profit for dispersal, the company itself seems to be for-profit. If the company will be satisfied with simply generating enough money to compensate its developers, then yeah, that may be doable. However, if these folks think they are going to get rich or see serious growth as a result, they will probably be in for a rude awakening.

Source: https://betanews.com/2019/09/08/manjaro-linux-company/

LXLE 18.04.3 Linux OS Released for Old PCs, It's Based on Ubuntu 18.04.3 LTS

Several weeks in the works, the LXLE 18.04.3 release is based on Canonical's latest Ubuntu 18.04.3 LTS (Bionic Beaver) operating system and features a new "Open 'File' as Root" option, increased applications menu speed, keyboard shortcut overlay list, screen magnifier tooltips, reshuffled Games section, and an updated lock screen that now includes random fortune quotes. LXLE 18.04.3 also comes with Pinta instead of GIMP, Lxtask instead of Htop, Sakura as default terminal, Bookworm instead of FBreader, Abiword, Gnumeric, and Spice-Up instead of LibreOffice, and Pitivi instead of OpenShot. The PulseAudio equalizer, Lubuntu Software Center, and Java OpenJDK packages have been removed from this release. The system is very fast and boots in less than one minute, and it's perfect to revive that old PC.

Source: https://news.softpedia.com/news/lxle-18-04-3-linux-os-released-for-old-pcs-it-s-based-on-ubuntu-18-04-3-lts-527319.shtml

Microsoft Teams is coming to Linux

Microsoft is working to bring its Teams software to Linux. The company has said that it is "actively working" on creating a Linux version of the client, although there is no word on quite when it might be released. There have long been calls for Microsoft to cater for Linux users. The collaborative Teams software is used by many people in mixed platform environments, and the announcement from Teams engineers have been greeted with enthusiasm. Linux users are not currently completely cut out of using Teams -- they have the option of using the web-based version of the tool, but a dedicated client will make life a great deal easier.

Source: https://betanews.com/2019/09/10/microsoft-teams-linux/

Ubuntu's Snapcraft Snap Creator Tool Will Soon Get a Windows Installer

Made for Ubuntu, but also available on the software repositories of various other popular GNU/Linux distributions, the Snapcraft tool lets application developers easily distribute their apps across multiple operating systems by packaging them in the Snap universal and containerized binary format. These days, Snaps are being packaged and published by some of the major tech companies, such as Microsoft, Google, Mozilla, Spotify, and others, to make it easier for users to install cross-platforms apps on their GNU/Linux distributions. That's why Canonical decided to make a Windows installer for Snapcraft.

Source:
https://news.softpedia.com/news/ubuntu-s-snapcraft-snap-creator-tool-will-soon-get-a-windows-installer-527336.shtml

Canonical Fixes Linux 4.15 Kernel Regression in Ubuntu 18.04 LTS and 16.04 LTS

Earlier this month, Canonical published major Linux kernel security updates for all supported Ubuntu Linux operating systems, addressing no less than 28 security vulnerabilities. However, one of the patches also introduced a regression causing the Linux kernel 4.15 on Ubuntu 18.04 LTS and Ubuntu 16.04 LTS systems to crash when handling fragmented packets. Canonical urges all users of the Ubuntu 18.04 LTS (Bionic Beaver) and Ubuntu 16.04.6 LTS (Xenial Xerus) users using the Linux 4.15 kernel to update their systems as soon as possible to linux-image 4.15.0-62 and linux-image 4.15.0-62.69~16.04.1 respectively, replacing the linux-image 4.15.0-60.67 from the previous kernel update.

Source:
https://news.softpedia.com/news/canonical-fixes-linux-4-15-kernel-regression-in-ubuntu-18-04-lts-and-16-04-lts-527359.shtml

Ubuntu 19.10 "Eoan Ermine" Promises More Boot Speed Improvements

According to Colin Ian King, the Ubuntu Kernel Team worked hard during the past few months to find a faster compression/decompression algorithm for the upcoming Ubuntu 19.10 (Eoan Ermine) operating system, which will hit the streets later this fall on October 17th. The Ubuntu Kernel Team benchmarked six compression methods for the initramfs, including BZIP2, GZIP, LZ4, LZMA, LZMO and XZ, to measure the loading time of the Linux kernel, as well as the decompression time. The benchmarking was conducted on x86 configurations using the x86 TSC (Time Stamp Counter). In the end, they realized that LZ4 is the best compression/decompression method for Ubuntu 19.10.

Source:
https://news.softpedia.com/news/ubuntu-19-10-eoan-ermine-promises-more-boot-speed-improvements-527358.shtml

Arch Linux-based Manjaro 18.1.0 'Juhraya' now available with GNOME, KDE, or Xfce

Manjaro may have lofty goals of becoming a successful company, but let's be honest -- users of the Linux-based operating system don't really care about that. Don't get me wrong, I am sure most members of the Linux community are rooting for the newly-formed company's success, but they are probably more interested in the excellent operating system itself. All three of Manjaro's desktop editions -- Xfce, KDE, and Gnome -- have been significantly enhanced with new features designed to bring the desktop and operating system into perfect harmony. This includes the new 'Matcha' theme of the Xfce Edition, KDE's completely redesigned messaging system variant and new buttons for the Gnome version. It uses Xfce 4.14, KDE Plasma 5.16 and Gnome 3.32.

Source:
https://betanews.com/2019/09/12/manjaro-linux-1810-juhraya/

KaOS 2019.09 Linux Distro Released with KDE Plasma 5.16.5 and Linux Kernel 5.2

KaOS 2019.09 comes two months after the release of KaOS 2019.07 earlier this summer and brings with it all of the latest KDE technologies that have been released during this period, including the KDE Plasma 5.16.5 desktop environment, KDE Applications 19.08.1 and KDE Frameworks 5.61 software suites, as well as the Qt 5.13.1 application framework. Another major change in the KaOS 2019.09 release is the updated kernel stuck, which is now based on the latest Linux 5.2 kernel series. In fact, KaOS 2019.09 is powered by the latest Linux kernel 5.2.13 release, and it also

ships with an updated graphical installer based on the latest Calamares 3.2.13 release, patched against two major vulnerabilities.

Source:
https://news.softpedia.com/news/kaos-2019-09-linux-released-with-kde-plasma-5-16-5-and-linux-kernel-5-2-527373.shtml

Huawei embraces deepin Linux as Microsoft Windows 10 future remains uncertain

Huawei makes some of the best laptops around -- the company actually puts Apple's design team to shame. This focus on elegance cannot be said for many other Windows PC manufacturers, as they often just set their sights on cutting corners to keep prices down. And that is why Donald Trump's attacks on Huawei are so tragic. Huawei's computers and smartphones are wonderful, but with uncertainty about access to Windows and proper Android (with Google apps), consumers are correct to be a bit concerned. Thankfully, Huawei has no plans to have its success be dependent to the actions of one country. For instance, the company has already announced HarmonyOS -- an intriguing Android alternative. Now, Huawei is looking beyond mobile and making sure its laptop business can survive without dependence on Microsoft or Windows 10. As you can expect, Huawei is doing this by embracing Linux! More specifically, the Chinese company is turning to an excellent Linux distribution that is developed in its home country of China -- deepin.

Source:
https://betanews.com/2019/09/15/huawei-deepin-linux-windows10/

PineTime is a $25 smartwatch companion for Linux smartphones

The folks at Pine64 have been selling inexpensive Linux laptops for a few years, and they're getting ready to launch their first Linux smartphone. But the team also has other products in the works, including new single-board computers, a tablet, and a previously unannounced smartwatch/smartphone companion called the PineTime. The PineTime is interesting for a few reasons. First, it's expected to be cheap: Pine64 says it'll sell for around $25. Second, it's designed to run open source software, based on ARM Mbed or FreeRTOS. The company describes the PineTime watch as a companion for Linux smartphones… you know, like the company's upcoming $150 PinePhone. For either or both of those reasons, it could appeal to folks who may not have wanted in on the smartphone space until now. Just don't expect a $25 watch to be a speed demon or to have high-end specs. There's no word on the materials, display technology, battery life, or other features. But it does appear likely that the watch will feature a low-power, ARM-based processor (probably a NORDIC nRF2832 ARM Cortex-M4 chip).

Source:
https://liliputing.com/2019/09/pinetime-is-a-25-smartwatch-companion-for-linux-smartphones-work-in-progress-from-pine64.html

First-Ever Microsoft Linux Conference Announced for March 10-11, 2020

Microsoft announced something Linux users would have never dreamed of, the first Microsoft Linux Conference for their WSL (Windows Subsystem for Linux) implementation. If you never heard of WSL, let us tell you that Windows Subsystem for Linux is a compatibility layer designed by Microsoft to let you install GNU/Linux distributions and natively run Linux binaries on Windows 10 and Windows Server 2019 operating systems. Now that Microsoft finally takes Linux seriously, the tech giant announced the first ever Microsoft Linux Conference for WSL (Windows Subsystem for Linux). Dubbed WSLconf, which stands for Windows Subsystem for Linux Conference, the event will take place next year between March 10th and March 11th. According to Microsoft, the WSLconf event will be organized by the community and no registration fee is required to attend it, though attendee space will be limited. The

conference will be held on the Microsoft Redmond campus in Washington, the United States, in Building 20.

Source: https://news.softpedia.com/news/first-ever-microsoft-linux-conference-announced-for-march-10-11-2020-527424.shtml

Linux 5.3 kernel bundles new, cuddlier, swear-free Torvalds with AMD Radeon Navi graphics support

A softer, gentler Linus Torvalds released the Linux 5.3 kernel over the weekend and swung open the doors on 5.4. Things were held up a little this time around, something Torvalds attributed to his travel schedule rather than anything more sinister. He was, however, pleased to note that the extra week meant that a few last-minute fixes could be squeezed in. While not an earth-shattering release, the 5.3 kernel has brought support for the new AMD Radeon Navi graphics cards, such as the Radeon RX 5700 and RX 5700 XT and x86 Zhaoxin CPUs. Other silicon-supporting tweaks included improvements to Intel Icelake graphics and Intel HDR display support.

Source: https://www.theregister.co.uk/2019/09/16/linux_5_3_kernel_arrives/

Boot problems due to missing random numbers

In the latest release 5.3 of the Linux kernel, a last-minute change in file system operations has been dropped. Linus Torvalds explains in the release announcement that the change itself was not flawed, but indirectly caused applications in userspace to stop working correctly. The background: The change caused less entropy due to disk operations, causing the random number generator to initialize later.

For some years, Linux has a syscall called getrandom (). This command, which allows an application to query random numbers from the kernel, should fix problems with the previous interfaces. Traditionally, Linux has two virtual devices - / dev / random and / dev / urandom - from which applications can read random numbers.

Source: https://www.golem.de/news/linux-kernel-bootprobleme-wegen-fehlender-zufallszahlen-1909-143906.html

CentOS 8 will be released in a week

New versions of CentOS typically follow with a month's delay after a new version of Red Hat Enterprise Linux (RHEL) - such as version 7.6. This is not so easy with version 8.0, however, because the version jump from 7.x to 8 that RHEL made in May 2019 means that there are many more changes than a mere update from 7.5 to 7.6. In fact, RHEL 8 brings a lot of fundamental changes, a many generations newer Linux kernel, the migration of YUM's package management to DNF, and above all the reorganization of the packages into so-called "application streams".On July 4, the CentOS team still estimated that the release of CentOS 8 would take another month or two. This would probably have succeeded, but in the meantime, Red Hat released RHEL 7.7. The CentOS team decided to prioritize the development of CentOS 7.7 as users deploy CentOS 7 productively, but CentOS 8 does not. Although CentOS 7.7 has not yet been announced, this work seems to have been completed so that the team could continue with version 8. Also, this work is now complete, as you can see on the wiki page, which informs about the scope and progress of the work. Only the release of CentOS 8 has yet to be completed. The date was set for September 24th.

Source: https://www.pro-linux.de/news/1/27444/centos-8-erscheint-in-einer-woche.html

Canonical Outs New Linux Kernel Security Update for All Supported Ubuntu OSes

The new Linux kernel security update addresses three vulnerabilities affecting the

Ubuntu 19.04 (Disco Dingo), Ubuntu 18.04 LTS (Bionic Beaver), Ubuntu 16.04 LTS (Xenial Xerus), Ubuntu 14.04 ESM (Trusty Tahr), and Ubuntu 12.04 ESM (Precise Pangolin) operating systems. Canonical urges all Ubuntu users to update their systems as soon as possible to the new Linux kernel versions, which are linux-image 5.0.0-29.31 on Ubuntu 19.04 and Ubuntu 18.04.3 LTS, linux-image 4.15.0-64.73 on Ubuntu 18.04 LTS and Ubuntu 16.04.6 LTS, linux-image 4.4.0-164.192 on Ubuntu 16.04 LTS and Ubuntu 14.04 ESM, and linux-image 3.2.0-143.190 on Ubuntu 12.04 ESM. These are the new Linux kernel versions for 32-bit and 64-bit systems, but today's security patch is also available for Raspberry Pi 2 devices, Snapdragon and OEM processors, cloud environments, as well as Oracle Cloud, Amazon Web Services (AWS-HWE), Amazon Web Services (AWS), Google Cloud Platform (GCP), Google Container Engine (GKE), Google Container Engine (GKE), and Microsoft Azure Cloud systems.

Source: https://news.softpedia.com/news/canonical-outs-new-linux-kernel-security-update-for-all-supported-ubuntu-oses-527454.shtml

Firefox will be released soon every four weeks

Mozilla accelerates the cadence of the releases in Firefox. In the future, the browser will be re-published approximately every four weeks. The rhythm of Firefox ESR is not affected. This is reported by Mozilla currently in the company blog. Over the years, Mozilla has developed a development model with Firefox Nightly, Beta and Developer Edition, which has so far produced a stable new version of Firefox every six weeks.

According to the browser manufacturer, the new model is designed to increase agility and make new features faster. Especially the latter is often desired by applying. New features, Mozilla says, are increasingly being developed by developers into sprints, which will be better suited to a shorter release cycle. Firefox 72 will launch the new model after the current planning on January 7, 2020.

The quality of the publications should not suffer and the localizations in many languages are adapted to the rhythm.

Source: https://www.pro-linux.de/news/1/27446/firefox-erscheint-bald-alle-vier-wochen.html

Canonical introduces IBM LinuxONE III with Ubuntu

In the Ubuntu blog, Kara Todd, responsible for Linux at IBM, IBM Z and LinuxONE, reports on the deployment of Ubuntu on the new enterprise server for distributed databases and cloud applications on the s390x platform. With LinuxONE III, enterprises can seamlessly integrate cross-stack hybrid multi-cloud platforms and container workloads with Kubernetes, Red Hat OpenShift and IBM Cloud Paks. The new hardware platform can handle all currently supported Ubuntu server LTS versions. For those who want to use the latest features, Ubuntu Server 19.04 is available. This applies not only to LinuxONE III but also to IBM Z. Suse Linux Enterprise Server and Red Hat Enterprise Server are also supported. The community also features images for Debian, Alpine and CentOS-based ClefOS.

In addition to regular updates to the distribution, Canonical provides a set of tools for managing multi-cloud deployments, including Juju, MAAS, and Charmed Kubernetes.

Source: https://www.pro-linux.de/news/1/27453/canonical-stellt-ibm-linuxone-iii-mit-ubuntu-vor.html

GhostBSD 19.09 released

GhostBSD is a former FreeBSD-based Unix derivative launched by Eric Turgeon and Nahuel Sanchez in 2010. The project's goal is to combine security, privacy, stability, usability, openness and freedom. The system is aimed primarily at desktop users and wants to give all interested users an easy way to use a BSD system for their daily work. After GhostBSD originally delivered Gnome as a desktop,

Mate has now become the standard.

Further innovations represent corrections of errors.

Source: https://www.pro-linux.de/news/1/27452/ghostbsd-1909-ver%C3%83%C2%B6ffentlicht.html

LLVM 9.0 RELEASED

LLVM defines a virtual instruction set that is similar to RISC machines but provides rich type information and data flow information. This allows on the one hand sophisticated transformations of the object code, on the other hand, the information can be attached to the executable program. This allows further transformations during the link, at run time, and at the executable itself while the program is not running.

One of the biggest changes in LLVM 9 is that the RISC V architecture is no longer experimental. The basic instructions for RV32I and RV64I as well as the MAFDC extensions are supported. Both 32-bit and 64-bit support the hard-float and soft-float binary interfaces. What's new in 64-bit ARM are Scalable Vector Extension 2 (SVE2) and Memory Tagging Extensions (MTE).

Source: https://www.pro-linux.de/news/1/27457/llvm-90-freigegeben.html

ORACLE AUTONOMOUS LINUX IS THE WORLD'S FIRST AUTONOMOUS OS

Oracle Autonomous Linux OS has been announced to simplify cloud computing needs for server-side computers. It is the world's first autonomous operating system and comes with Oracle OS management services. Oracle Autonomous Linux OS will mainly be used as a server-side solution on an enterprise scale. This Linux OS will provide a great deal of elasticity and peace of mind in maintaining cloud servers. It is mainly employed to make the process of patching, scaling, and maintaining cloud servers completely autonomous. According to the company, the new automated OS can offer monitoring capability and control over systems no matter if they run Linux, Windows or the latest Autonomous Linux. With the help of machine learning, the cloud infrastructure API can perform automated patching, security reporting, and configuration management.

Source: https://fossbytes.com/oracle-autonomous-linux-os/

LINUX KERNEL 5.3 GETS FIRST POINT RELEASE, IT'S NOW READY FOR MASS DEPLOYMENTS

Released by Linus Torvalds on September 15th, Linux kernel 5.3 is the latest and most advanced kernel series for Linux-based operating systems and introduces support for the Intel Speed Select feature to make power tuning much easier on some Xeon servers, as well as support for AMD Radeon Navi GPUs in the AMDGPU driver. Greg Kroah-Hartman released the first point release of the Linux 5.3 kernel series, Linux 5.3.1, which marks the Linux 5.3 kernel as stable on the kernel.org website, meaning that it is now ready for mass adoption and deployments across all Linux-based operating systems.

Source: https://news.softpedia.com/news/linux-kernel-5-3-gets-first-point-release-it-s-now-ready-for-mass-deployments-527518.shtml

PARROT 4.7 ETHICAL HACKING OS RELEASED WITH LINUX KERNEL 5.2, MATE 1.22 DESKTOP

Coming more than four months after version 4.6, the Parrot 4.7 release is here with up-to-date penetration testing and ethical hacking tools for security researchers and everyone else how wants to get started with security releated tasks. Powered by the Linux 5.2 kernel, Parrot 4.7 introduces a new sandbox behavior to make it easier to use sandboxed apps. Also new in the Parrot 4.7 release is a revamped penetration testing menu structure that makes it easier to access your favorite

pentesting tools in a logical hierarchical structure, along with new tools for pentesters. More pentesting apps are available in the official software repositories and even more are coming in the next weeks and months.

Source: https://news.softpedia.com/news/parrot-4-7-ethical-hacking-os-released-with-linux-kernel-5-2-mate-1-22-desktop-527520.shtml

Ubuntu 19.10 with a little ZFS

As early as 2015, Mark Shuttleworth had announced ZFS as standard. Back then, if there was only a PPA for retrofitting or ZFS on FUSE, Canonical has been offering an appropriate driver based on ZFS on Linux since Ubuntu 16.04 »Xenial Xerus«, which is able to manage mass storage via ZFS.

The long road to use as a root file system will bear fruit for the first time with Ubuntu 19.10 »Eoan Ermine«, as the developer Didier Roche reports in the Ubuntu blog. In the installer, there will be an even more experimental option to set ZFS as the root file system. This should initially apply only to the desktop version and initially offer only a few options for partitioning. Initially, the creation of pools and datasets for root and user is provided.

Source: https://www.pro-linux.de/news/1/27464/ubuntu-1910-mit-ein-wenig-zfs.html

Canonical Releases New Kernel Live Patch for Ubuntu 18.04 LTS and 16.04 LTS

The new Linux kernel live patch is here to address just a single security vulnerability, namely a buffer overflow (CVE-2019-14835) discovered by security researcher Peter Pi in Linux kernel's virtio network backend (vhost_net) implementation, which could lead to DoS attacks. If you're using the Canonical LivePatch service on your Ubuntu 18.04 LTS (Bionic Beaver) or Ubuntu 16.04 LTS (Xenial Xerus) operating system, it is recommended to apply the newest kernel live patch as soon as possible to mitigate the aforementioned security vulnerability.

Source: https://news.softpedia.com/news/canonical-releases-new-kernel-live-patch-for-ubuntu-18-04-lts-and-16-04-lts-527536.shtml

Zorin OS 15 Education Edition Officially Released, Based on Ubuntu 18.04 LTS

Talking advantage of all new GNU/Linux technologies and features of the Zorin OS 15 operating system, which was released in early June 2019, the Zorin OS 15 Education Edition is packed with a great selection of educational apps for all educational levels, aiming to provide a free alternative to the Microsoft Windows OS in schools and other educational institutions. Highlights of the Zorin OS 15 Education Edition operating system include the Veyon app to allow teachers to view and control what students are doing on their computers in the class, Childsplay and eduActiv8 apps with new educational games for preschoolers and primary school students, and the Musescore app for writing music sheets.

Source: https://news.softpedia.com/news/zorin-os-15-education-edition-officially-released-based-on-ubuntu-18-04-lts-527562.shtml

First Librem 5 Linux Phones Start Shipping to Customers Around the World

Earlier this month, Purism announced their shipping plans for the Librem 5 Linux smartphone, which has been in development since October 2017. Two years later, the Librem 5 phones will finally start ship to customers who pre-ordered them, in batches, until Q4 2020. The first batch, will start shipping from September 24th until October 22nd. Librem 5 promises to be the very first smartphone on the market that focuses only on security and privacy by not tracking, nor exploiting your digital

life. It features hardware encryption, layered security protection, hardware kill switches, decentralized and IP-native communication, and user controlled source code.

Source: https://news.softpedia.com/news/first-librem-5-linux-phones-start-shipping-to-customers-around-the-world-527544.shtml

Patent lawsuit against Gnome Foundation

In a brief note, the Gnome Foundation mentions that it was sued by a Texas company called Rothschild Patent Imaging. The company accuses the Gnome Foundation of violating US Patent 9,936,086 with its Shotwell (and F-Spot) program. Shotwell, originally developed by the Yorba Foundation, is a program for organizing photos for gnomes. It allows you to import photos from the camera, view, edit and share them. Obviously, Rothschild Patent Imaging believes that the Gnome Foundation sells the programs. That's what the indictment (PDF) sounds like, which demands patent fees and damages from the Gnome Foundation.

Neil McGovern, managing director of the Gnome Foundation, has announced, according to the announcement, that the Gnome Foundation does not consider the lawsuit to be justified.

Source: https://www.pro-linux.de/news/1/27473/patentklage-gegen-gnome-foundation.html

Univention Corporate Server 4.4-2 released

Two months after the first update of Univention Corporate Server (UCS) 4.4, the second update is now ready. According to the manufacturer, the new version 4.4-2 of the Univention Corporate Server contains numerous minor improvements and innovations. The REST API for the Univention Directory Manager, which was added as a beta version to the previous version, is now included as a stable version. The API connects applications to the UCS directory service; Access is via a web service via HTTPS, and the data is exchanged in JSON format. In terms of function, the REST API offers the same scope as the command line program udm.

Source: https://www.pro-linux.de/news/1/27470/univention-corporate-server-44-2-freigegeben.html

Time Saving Tips

I've always been a firm believer in efficiency in whatever it is you do. It doesn't matter to me if I'll only do the task two or three times, if putting a bit more effort in the first time will save me time and energy later, I'll do it. Efficiency can also mean knowing whether or not optimization is useful (sometimes optimizing a task takes longer than doing the task normally a hundred times in a row). As such, I wanted to take this month to talk about a few time-saving tips I find useful. Hopefully you will too!

Note Taking

I often take notes on things I've done (bugs I fixed, an idea I had, or just a log of some task). This started back in high school, and I have carried it forward through everything since then. Due to the fact that my handwritten notes are always of questionable utility (even I have trouble reading my handwriting when I write quickly), the notes are typically electronic. For a time, I'd write it in software like LibreOffice, or Word, and eventually Google Docs.

While that software is intended for writing documents, I don't believe it's an optimal method of writing fast notes. My notes are almost always focused on the content, and not the formatting. Whenever I write these kinds of things in Google Docs, I find myself taking time to try to format things as I write to make the content clearer. I've gotten pretty good at using the shortcuts to format as I go, but it's still effort that is essentially taken away from my main goal. Naturally, I've also considered going back and doing the formatting after the fact. While this is a noble goal, I find it was a task I also never actually went back to do.

In university I started using LaTeX for a lot of things (including writing a nearly word-for-word transcript in Linear Algebra). Here I would actually go back and reformat things. I even shared the project on GitHub amongst my classmates so we could crowdsource corrections and additions. My problem? I was fast enough to keep up with my professor, but the actual syntax was sometimes awkward to type and I'd have to spend time fixing typos in the syntax before I could actually view the PDF.

Once I started dealing with static site generators, and web development in general, I discovered things like Markdown and reStructuredText that I could use to generate PDFs or HTML quickly and easily. These soon became my go-to formatting languages for writing notes or documentation. I've even included some tips for quickly generating PDF from markdown in C&C in the past. Very recently, however, I've also heard a lot about Eleventy (a static site generator), and I've now started to mix the two (Markdown and Eleventy) to create an automatically refreshing HTML documentation I can style before or after (using HTML and CSS).

Setting it up was pretty easy - I created an empty node project, installed @11ty/eleventy, and wrote some markdown. If you don't care about formatting, you're done. If you do want to format things, I then installed Tailwind and set up a basic CSS file (with some styles for the generated HTML from the markdown files, where I couldn't directly add classes).

Sure, it's not a full-fledged site - I didn't add a menu. However, it's certainly a good jumping off point, especially if you integrate links into the body text as you go. I can easily place images, link to other sites or media, and adjust/tweak the appearance of the site completely separately from the content. If you need to then generate PDFs from the site, you could theoretically set up a print stylesheet and a single page template to generate the PDF via the print dialog of your browser.

The best part is the basic structure of an eleventy site is simply - the markdown files (and perhaps some configuration/css), and an _includes folder that contains your template. Next time

you need to start taking notes? Just copy the folder (or set up some sort of automated generator).

If you're interested in a full-on tutorial on the topic, let me know via the email address at the end of this article and I will cover it next.

Updates & Quick Access to PC

I'm sure everyone has had this before - you're sitting somewhere away from your main computer and you realize you need to check something (notes, PDF receipt, available updates, etc). This happens to me quite often, and so I've always set up some sort of SSH access to my boxes (using keyfiles instead of passwords). On Linux machines, I then always set up tmux and ranger. Tmux allows me to create a terminal session that won't close when the connection is closed (useful for when updates are taking a while or the connection is spotty). Ranger, on the other hand, is a file manager. It runs in the console and allows me to easily browse my files. It also offers a (again, console-based) preview system where it will render a file without you having to open it. If you're looking for a text file, you can read it right there, and it even does a good job of rendering PDFs as text in the preview.

Naturally, this doesn't work for every possible file, but it has been useful in about 80% of the cases where I would otherwise have to interrupt everything and return physically to my computer. It also doesn't work completely remotely without more configuration (port forwarding, dynamic DNS, etc), and is also a question of security.

Easy Hosting

Tying in to my note-taking point above - I have a lot of notes on things for our internal network (such as notes on common phone issues, or configuration settings for the NAS backup). I could run them off a Raspberry Pi or my NUC all the time, sure, but not everyone has access to a computer that's on 24/7. What everyone should do is backup their data frequently - and a NAS makes that quite simple. So if you already have a NAS lying about for backing up data, most NAS software will offer you the ability to throw up a basic HTTP server. Combine that with something like Eleventy and Git, and you can have an always available home wiki that you can access from any device in the house. This sort of documentation has saved me a lot of looking and repeat googling for some common issues around the house.

Lastly, your keyboard...

Now, I'm not going to be a mechanical keyboard snob and say everyone should get themselves an ergonomic mechanical keyboard. I will, however, say that everyone should have a keyboard they find comfortable. It doesn't matter if it's a cheap no frills membrane keyboard, or some fancy gaming keyboard with RGB everywhere. If it's a keyboard that's uncomfortable for you in your setup (perhaps it's too small, or sits at an awkward angle from your mouse, etc), then you're doing yourself a disservice. It will slow down your typing, frustrate you, and may even cause health issues down the line. It's well worth it to take some time to check out a few different keyboards or give some thought on what it is you need from your keyboard before purchasing.

Do you need a numpad? If not,

you can probably reduce elbow movement towards your mouse by having a keyboard without one so it sits closer to the mouse. Do you use the function keys a lot? Try to find a keyboard with a smaller gap between the number row and the function keys (or a keyboard with an fn button that turns the number keys into function buttons). Perhaps you tend to move your keyboard around a lot as you shift at your desk - instead of fighting with a cable, you may want to find a bluetooth keyboard.

You can do something similar with your mouse too - if you don't like to move the mouse all the time, you can learn keyboard shortcuts or buy a trackball to reduce the movement. Perhaps you have only a touchpad on your laptop - investing in even a cheap mouse might help make you more comfortable.

Conclusion

I find efficiency to be a cumulative state - if you're optimizing the last 10% of a task (i.e. customizing your app) but the other 90% is as inefficient as you can imagine, you won't notice much of an improvement. On the other hand, if you can optimize the first few percent (such as your keyboard and mouse), you'll notice an improvement everywhere.

Have you got some time saving tips to share? Email them to me at lswest34+fcm@gmail.com and I'll collect the best ones together. They do not need to be Linux (or even computer-based). As always, I hope this article was useful for some people. If you have a request for a specific article, please let me know at the email address above.

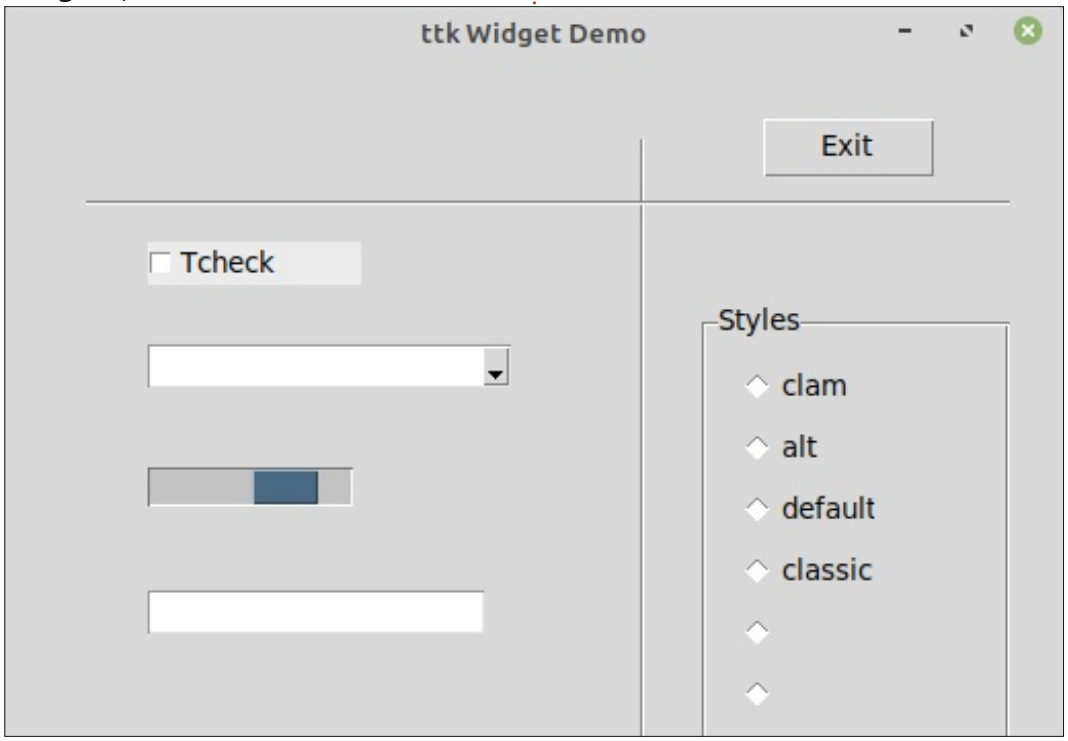
Lucas has learned all he knows from repeatedly breaking his system, then having no other option but to discover how to fix it. You can email Lucas at: lswest34@gmail.com.

Python In The REAL World Pt.97

Occasionally, I help Don Rozenberg, the creator of Page (a GUI designer for Python) with testing, demos, tutorials and support. This week, we had a user who was asking about an issue with the ttk themed widgets. Don passed the question down to me and I had to scramble since it's been a long time since I've used the ttk specific widgets.

If you are unfamiliar with ttk widgets, it is an additional set of widgets available for Tkinter from the Tk toolkit, which is part of Tcl. The Tk toolkit is available for Perl and Ruby as well as Tcl and Python. The ttk portion of the toolkit gives alternate widgets for many of the standard Tk widgets…

They pretty much act as the standard widgets do, they just have a different, more updated look to them (at least to some people). There are also preset styles that you can use that changes the look of them. On Linux machines, there are 4 pre-defined styles, named clam, alt, default and classic). On Windows machines, there are three others as well, called "winnative', 'vista' and 'xpnative'. And Mac users have other choices, but the bottom line there are on all platforms, the 4 base styles that are on Linux.



When I am making a UI, I usually shy away from the ttk widgets for the most part because they have less "visible" attributes than the standard widgets and I feel like I lose some control over my program. Here is an example using Page's attribute editor…

I know this graphic is mostly unreadable, but it is illustrative of the number of attributes that you can control for a standard button (on the left side) compared to the ttk button (on the right). Part of the discrepancy stems from the fact that the style controls most of the attributes that seem to be missing. In a good way, this is a good thing. On the other hand, since the style is "taking care of these attributes for you", for the most part the style keeps you from making changes to what could normally be an important attribute when you are trying to "push the envelope" and make your GUI program look more modern than standard Tkinter widgets allow.

While the above might dissuade many users from even trying ttk

widgets, a larger number of users are overwhelmed by how hard it is to find really good documentation on the use and customization of ttk widgets. Even those sites on the Internet that touch on how to do it, only give a small amount of information and even then, there isn't much about using ttk goodies in Page. So, I thought I'd try to fix this in some small way.

One of the problems with using ttk widgets in Page is that Page has (at least currently) no way to set which of the styles you want to use either when you are designing your GUI and to make it work when you try to run your program shows the 'default' style at least under Linux. I believe that Windows users have the 'winnative' style as the default. While it is easy to change/setup the style in the startup function (def init()), a casual user who's done no serious research on the subject would look at the results and say "We'll, that doesn't look like what I wanted!" and go back to using the standard widgets. Moreover, there could be issues when doing cross platform GUI design. Since Linux doesn't support the 'winnative' style, there could be issues at best (the program uses the default style) and at worst, simply throws error messages that, again, for those who haven't spent a fair amount of time researching would be meaningless.

So we'll try to get a handle on some of the issues and get the hard stuff out of the way in this article. The latest version of Page is 4.25.1 and you can get the latest at https://sourceforge.net/projects/page/ . Once you have it installed, get it fired up and we'll throw together a quick demo.

Start by making your new form about 516 pixels wide by 450 high. Now set the title to something like "ttk Widget Demo".

Next, add a TButton widget to act as our Exit button. Put it in the upper right corner of the form. Set the command attribute to "on_btnExit" and change the text attribute to "Exit".

Now, place a TLabel frame below the Exit button and size it to about 150 by 285. This will hold 7 TRadiobuttons. Set the Text attribute to "Styles". Next add 7 TRadiobuttons into the TLabelframe. They should be aliased to "TRadiobutton1" to "TRadiobutton7". This is important because we will reference them directly when the program runs. For each of the buttons, you need to set a few attributes. In the command attribute box, enter "on_rbClick". It is important that each TRadiobutton references the same callback. Then set the value attribute to the count of that widget minus 1. So, for example, for TRadiobutton1, the value would be 0, TRadiobutton2 would be 1, TRadiobutton3 would be 2 and so on. Finally, for the TRadiobuttons, simply make sure that the Variable attribute reads "::selectedButton", again the same for all 7. I used a vertical separation of 30 pixels between each one and lined them all with an X position of 20.

We are over half way done. Now you need to put a TCheckbutton, a TCombobox, a TProgressbar and a TEntry widget in the form on the left side of the form. You can space it anyway you want. Finally, if you want, you can add a vertical and horizontal TSeparator for some decoration. You can see what my final form looks like in the image at the top of this article.

Save the Page file as "ttkdemo.tcl", then generate both of the Python modules. They will be saved as "ttkdemo.py" and "ttkdemo_support.py" automatically by Page. You can close Page now.

Now for the code. In your favorite text editor or IDE, open the "ttkdemo_support.py" file. That's where all of our code will be entered.

If everything went correctly during the GUI design process, Page should have created the following functions for you...

```
set_Tk_var()
on_rbClick()
on_btnExit()
init()
destroy_window()
and the if __name__ routine.
```

Our code will be pretty minimal. We'll start with fleshing out the on_rbClick() function. This is a callback function that fires whenever the user clicks on one of the TRadiobuttons. Code is shown on the next page, top right.

Page put the first two statements (print(...) and sys.stdout.flush() in for you. So the first line of our code prints the

value of the TRadiobutton that we entered in the 'value' attribute of the widget when we were designing the form in Page. This way the program knows which button was clicked on. The next line gets the styles that ttk supports for this operating system. In Linux, there will be 4 items and on Windows there will be 7 and they will be returned as a tuple, like this...

```
('clam', 'alt', 'default', 'classic')
```

Next we repeat the operation in the print statement that gets the value of that TRadiobutton and finally, we tell ttk to use the correct style to draw the widgets. This happens immediately.

Now we'll put in the code for the on_btnExit() callback...

```
def on_btnExit():

print('ttkdemo_support.on_btnExit')

sys.stdout.flush()

destroy_window()
```

We'll add just one line to the bottom of the init function, which if you remember, is the very last thing that gets run before the form is shown to the user and the program actually starts. This will call the routine that will do all of our setup on the form.

```
setup_styles()
```

This is the longest and some would say the most complicated function in the program. It is also the only one that we have to create fully by hand. I'll break up the function in parts (see above).

So first, we have the function definition and we create a list that consists of the 7 TRadiobuttons that we entered. We use their names directly and preface each with a "w.". By doing this, we can reference any of the 7 widgets directly.

```
def on_rbClick():
    print('ttkdemo_support.on_rbClick')
    sys.stdout.flush()
    print("RadioButton {0} clicked".format(selectedButton.get()))
    style = ttk.Style()
    selected = selectedButton.get()
    style.theme_use(style.theme_names()[int(selected)])
```

```
def setup_styles():
    rblist = [w.TRadiobutton1, w.TRadiobutton2, w.TRadiobutton3,
              w.TRadiobutton4, w.TRadiobutton5, w.TRadiobutton6,
              w.TRadiobutton7]
```

```
    s = ttk.Style()
    cntr = 0
```

The next two lines, create an object named "s" that holds all of the style information from ttk. We'll only be using one part of it, but once you get more familiar with ttk, this gives you access to many things. We also create and initialize a counter variable.

```
    def
clear_radio_buttons():

for i in range(7):

rblist[i].configure(text='')

rblist[i].configure(state='disabled')
```

Now we create a function within our function that clears the text field and disables all 7 of the radio buttons. I'm sure you realize why we clear the text fields, and the reason we disable all the TRadiobutton widgets at this point is so that if we are running under Linux, the user can't click buttons 5 through 7, but if we are under Windows, all 7 will be activated in the next bit of code. Welcome to cross-platform programming!

```
    clear_radio_buttons()
```

Now we call our in-function function that sets up the TRadiobuttons and we are ready to "load" them all up.

```
    for i in s.theme_names():

rblist[cntr].configure(text=i)

rblist[cntr].configure(state='normal')
        cntr += 1
```

We'll use a simple for loop to do this. We will again, use the list that

we created of all the TRadiobutton widgets to get the actual widget object name, set it's text to the style name for that position in the loop and set the state back to "normal".

Finally, we'll set the TProgress bar so it does something. The progress bar has two modes, 'determinate' for when you know how far into a process you are and you want to show a percentage of that progress. The 'indeterminate' mode simply causes a bar to move back and forth to show something is happening. You use the '.start()' method to begin the motion and the '.stop()' method to stop it. We'll use the 'indeterminate' method just for fun.

```
w.TProgressbar1.config(mode='
indeterminate')

w.TProgressbar1.start()
```

That's it. Save your program and you can run it in Python. Now, anytime you want to use ttk widgets in your GUI, you know what they will look like under any style and once you have selected one to your liking, you can put somewhere in the init() function (after the first four lines) the following lines…

```
style = ttk.Style()

style.theme_use('your_style_h
ere')
```

That was easy and pretty much painless. As always, I've put all the code up on pastebin at the following links...

ttkdemo.tcl - https://pastebin.com/yFnH6QXF

ttkdemo.py - https://pastebin.com/BWV1CxWN

ttkdemo_support.py - https://pastebin.com/N72NXsUC

When you download them, they will most likely come down as "ttkdemo.tcl.txt", "ttkdemo.py.txt" and so on. That's just a pastebin thing. Simply delete the ".txt" from the files and you're good to go.

Until next time, have a great month and keep programming!

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 .

Automation Pt.1

We will be using xdotool: https://www.semicomplete.com/projects/xdotool/

Here is a story for you to read; it involves a guy who automated everything that took any of his time: https://www.businessinsider.com/programmer-automates-his-job-2015-11?IR=T

Though his scripts were in Ruby, it presents an interesting angle. Though I will not be showing you how to automate sending text messages to your boss when you have a hangover, I will try to start you on the path to automating things in Ubuntu.

What you will need:
A computer running Ubuntu Linux (I am using Xubuntu).
Geany.
A learning mindset.

Before we begin, I want you to look at the xdotool man page. You can also type: xdotool - -help to see a list of valid commands.

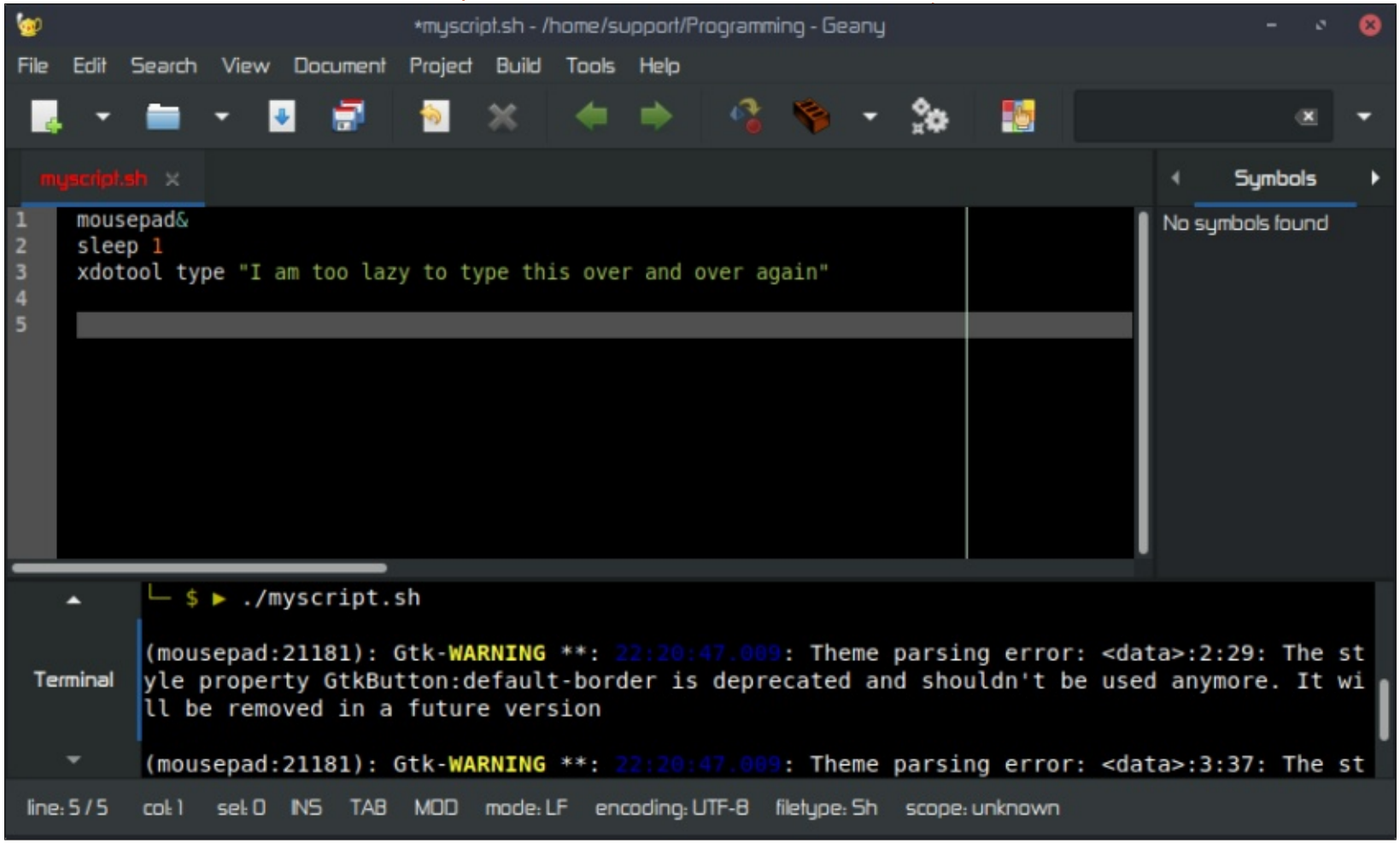
Let us start by creating an empty file, naming it myscript.sh, and making it executable.

If this is your first time -

```
touch myscript.sh

chmod +x myscript.sh
```

Now open the file (myscript.sh) with Geany and insert the following:

```
mousepad&

sleep 1

xdotool type "I am too lazy
to type this over and over
again"
```



I am using mousepad, as I am on Xubuntu, but you may have another text editor, like leafpad or featherpad. Please feel free to substitute your text editor.

So let us dissect it.

- We start mousepad.
- We pause for a second – I will tell you why *
- We type something in mousepad.

If you are using Geany, you have a terminal in your bottom pane. If not, open a terminal and run the script:

```
./myscript.sh
```

The terminal is fast, much faster than GUI programs, if we do not pause to wait after opening mousepad, half of out text will be in the terminal and half inside notepad.

Ever wonder how something spookily types notes on a computer in the movies? Now you know!

How about simulating key-presses?

Key presses are as simple as typing the key you want pressed, or combination of keys, first key followed by the plus sign '+' and the second key. For now append the following line to your code and run it.

```
xdotool key F1
```

This will launch the help file right after typing your message. How about we save our mousepad file instead of opening help? If you click on "File" in your text editor window, chances are you will see 'Save' and 'Ctrl+S' as the shortcut key next to it. The way that you simulate the Enter-key is:

```
xdotool key KP_Enter
```

Your homework is to name your text file 'test.txt' and save it.

You have everything you need to do it. So do it. I will show you how I did it in the next issue and we will continue with our automation journey with more hands-on examples. We will also go into mouse movement and clicking.

Feel free to contact me on Telegram if you have any questions.

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.

Darktable - Pt7

If you have been following our Darktable tutorials, you will know we are working with the latest version, not the version that is bundled in the Ubuntu Software centre.

This time, I want you to get a RAW picture. There are a few sites on the internet we can download RAW images from. Please feel free to substitute your own. Sites like: https://www.wesaturate.com/ or https://raw.pixls.us/#repo - be aware that many sites offer RAW downloads but mean raw as in uncooked and jpegs. (The struggle is real...).

The reason I want you to use a RAW image is that a lot of the .jpeg or .jpg photos you find have already been manipulated and some tools work on RAW images only.

Disclaimer: In no way am I an expert in photo manipulation, I just know a guy who had a dog that gave me some fleas. I thought I may help you scratch an itch also. (Everything I do can be found here: https://www.darktable.org/usermanual/en/index.html).

The image we will be working with today, is: https://www.wesaturate.com/photo/cPSYvxuz - please download the RAW image.

I created an account for you to use:
User: culiz
Pass: 123QWE123!!

It is a .nef file, but Darktable opens it just fine (and .xmp file).

First things first. This file is a horrible edit. What we have is a very bright sky that the photographer tried to make 'dramatic' with post processing. The guy has a great eye for photography, but should have used Darktable instead of Photoshop presets. Have you ever seen a model that has been 'shopped' so hard she looks like she is made from plastic? This is what this edit screams to me. The picture itself is great in basic photography rules, one third sky, one third mountains and one third ground. Our motto here is "less is more".

When you download the file, you will notice it downloads the edits too. Please delete the .xmp file. Here is a copy of the image for those reading this who have no access to the site.

(In the immortal words of Little Britain: "Yes, but no, but yes, but no.").

From the website:

The original:

Let's see if we can fix this?

Turn on the "Chromatic Aberrations" module. This is an automatic process. Ninety percent of the time you can do this before you do anything else. You do remember where to find modules that you do not see, right? If not, download the previous issues of Full Circle magazine and see. (Hint: more modules).

The main issue we need to address immediately is the light. Open your tone curve module. Change the "blend options" to "drawn mask".

This tutorial has lots of screenshots, but bear with me, as this is intended for those new to Darktable. We have not talked about these options before. The area we are discussing is between “drawn mask” and “invert mask”. The first icon looks like a pencil “add brush”, but we are interested in the last square icon, “add gradient”. Click the “add gradient” and click in the centre of the picture. (You may also have noticed that the mouse icon next to “no mask used” illuminated). You should see a line appear. The line has two handles that cross your line at ninety degrees, forming a cross. If you grab the ends (small circle) you can rotate the line. If you click on the centre square where the lines cross, you can use your mouse wheel to adjust the width of the tool. Should your line have appeared vertically instead of horizontally, use the above mentioned handles to rotate it. Pay attention to the two handles. You will see one is filled while the other is hollow. This indicates which way your mask is facing. Hollow indicates the fill side. Align it more or less with the river. *If you have OCD, you can straighten the picture first, but I am just trying to teach you fun stuff. The little off-kilter never hurt anyone. Now if you are unsure of which way your fill will happen, there is a yellow square at the very bottom of the module. When you click this, it will fill the screen with yellow for you to see.

You can turn off the yellow by clicking the same icon again. Please also click the pointer icon I mentioned earlier to turn off the line. Now go back up to the tone curve and drag the top left corner of the white line to the vertical centre dark grey line. You should see the logs ‘pop’. Like bones bleached in the sun! <insert dramatic pause>. Already the light balance in the picture will shift to a more ‘neutral’ feel. You want to match the lightness of the sky. The reason for this is that it makes your uniform edits look more natural. Collapse the tone curve module. Do you remember the four icons on the right? When you middle-click the very last one, you will create a fresh instance of the tone curve for you to play with. It should read, “Tone Curve1”.

Now for your homework: Wash, rinse, repeat what we just did, but vertically, to bring out the trees. Yes, doing things is the way to learn. Once you see how easy it is, you will be editing like a pro. Align your line before or on the tree and this time move the top right and the bottom, (left horizontally only!), until your trees pop, but not over exposing the sky. Small changes!

Done? Good!

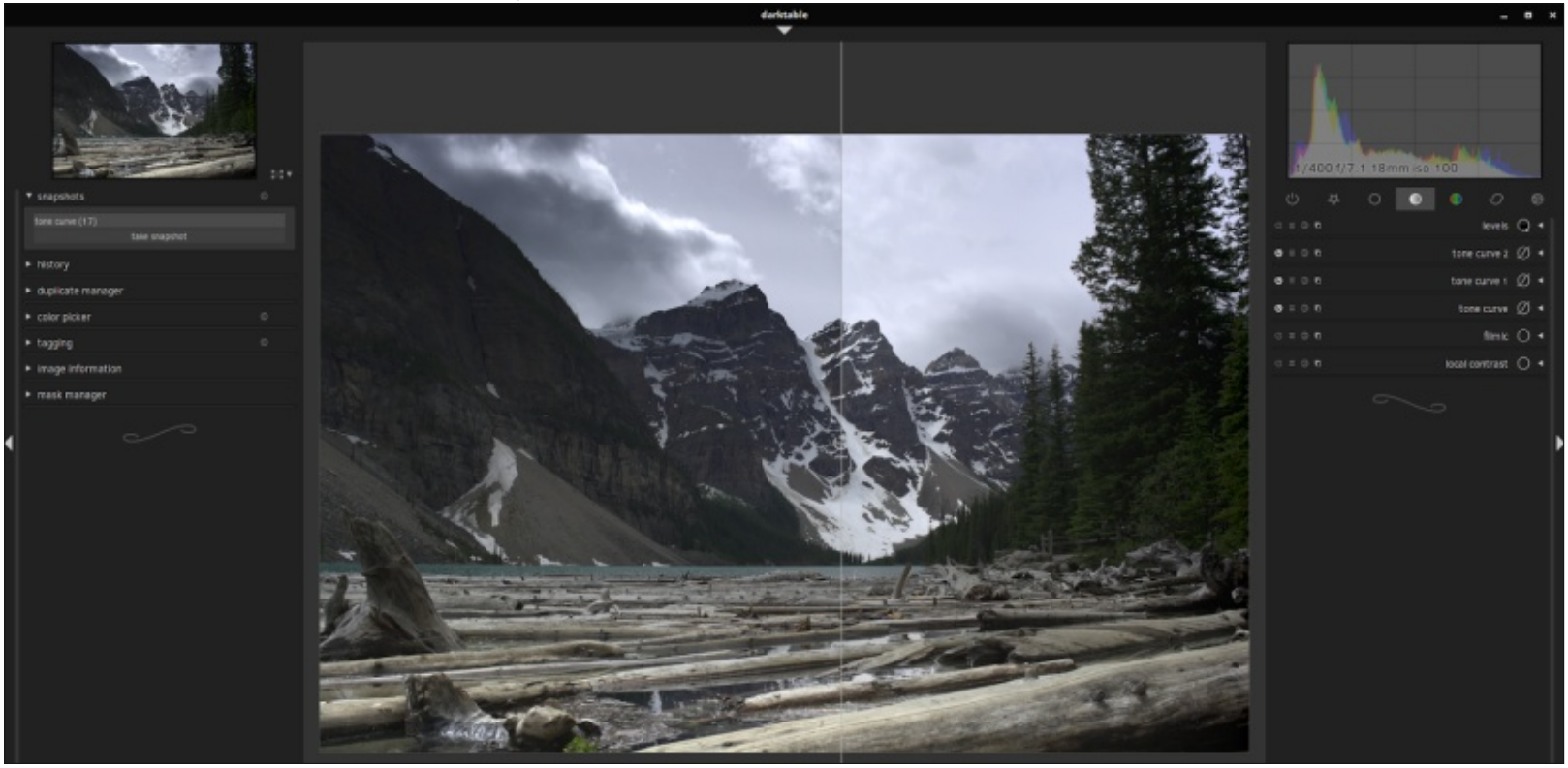
Like the previous tutorial, we

will now use the same tool to make changes in contrast to a small area. This repetition enhances your ROTE learning. Also it will help you think "outside the box". I hate that term, this will let you get creative with the tools that you already know. Let's dissect the picture as it was presented to us. Darkened skies that looked like a four-year old took a brush to it. We do not want ours to look like that. We want to enhance the natural clouds by contrast. How would we do that? First answer to misc@fullcirclemagazine.org wins a free digital copy of issue 1!

Collapse "Tone Curve 1", then wash, rinse, repeat, to add another tone curve, "Tone Curve 2". This time, we will be framing the clouds with not one, but two drawn masks! You can use this technique whenever you want to place emphasis on a particular part of your photograph. We want to darken our clouds a little – maybe set a mood, but we want it to seem that the sun is just out of the frame. A more natural mood, in contrast to the fake blued mess we saw originally.

Now you need to pay close attention:

Add two line masks on either side of the clouds. The catch is they have to be facing each other. When you click the yellow icon, it should fill a space between the two lines and not all over the picture. Turn the yellow off and go to the tone curve graph. This time, click the "eye-dropper" icon above it. On the right, "color picker" - expand and choose area as we did in the previous tutorial. Select an area in the clouds, preferably with some cloud in it. Just above the eye-dropper icon, change the "RGB" to "Lab independent channels". (We touched on these in the very beginning of this series). Make sure the "L" is highlighted. You should now see a pink area highlighted inside the square, where your line runs through. This is the area that you need to work in. We will get back to RGB when we play with the colours next issue. On the left side of the pink bar is your black balance and the right your white balance. You can drag your white up (staying on the pink bar's edge), and your black down. Staying on the edges to create a mini S-curve. The clouds should darken and the white edges should appear more prominent, as if the sun is just outside the shot. Please play until you are happy. It should look much more natural than the very first picture!



Next issue, we will enhance the colours. This is where we are at. (I did not take a snapshot at the start, forgive me, but it is far enough back to see the change in clouds).

Inkscape - Part 89

Last time, we looked at some different ways to use JavaScript to modify your SVG file dynamically in a web browser. We concluded with a verbose way to create a new SVG element, set its attributes, and append it to an existing element. In this instalment, we'll build on those same ideas to do even more with our elements – so go ahead and re-read last month's column if you need a refresher before we plough on.

Our test file last time was made up primarily of an SVG <text> element – picked because it's one of the few SVG elements that has text content within it, and I wanted to demonstrate how you might go about getting and setting such content. Most SVG elements, however, have either no content or only other elements as their children, so that's the sort of structure we'll focus on this time. Here's the SVG file you'll need to create as a starting point:

```
<svg

xmlns="http://www.w3.org/2000
/svg"

viewBox="0 0 100 100">

</svg>
```

Okay, that's admittedly a pretty terse SVG file, even by the standards of this series, but that's because it doesn't actually have any content. Instead we're going to create all the content dynamically, using the browser's developer tools as we did last time. So save the file, load it into a browser, open the developer tools, switch to the Console tab, and clear any existing messages. Phew! Now that we're ready to proceed, let's begin by creating a square using the 'simple' approach from last time:

```
var svg =
document.querySelector("svg")
;

svg.innerHTML = '<rect
id="s1" x="10" y="10"
width="50" height="50"
fill="red" />';
```

This 'innerHTML' approach is simple, and can create complex nested structures, but it doesn't return a 'handle' that we can use to further manipulate the created content. What if we now want our red square to be blue? We'll need to do something like this, relying on the fact that we gave the square an ID:

```
var square1 =
document.querySelector("#s1")
;

square1.setAttribute("fill",
"blue");
```

The more long-winded approach we took last time gives us a JavaScript object representing our element which we then use to set all the attributes. But we can hang on to that handle to use later on, if we wish. Let's add another red square, this time using the verbose method (below):

```
var ns = "http://www.w3.org/2000/svg";
var square2 = document.createElementNS(ns, "rect");
square2.id = "s2";
square2.setAttribute("x", 30);
square2.setAttribute("y", 30);
square2.setAttribute("width", 50);
square2.setAttribute("height", 50);
square2.setAttribute("fill", "orange");
svg.appendChild(square2);
```

Now if we want to change the color of the second square, we can simply use the same 'square2' variable we used when creating it, even though it's now been added to the page:

```
square2.setAttribute("fill",
"yellow");
```

I'll spare you a screenshot – I'm sure you can guess what it looks like now.

So far, we've mostly revised the content from last month, but in doing so you've got a nice arrangement of two squares, a yellow one on top of a blue one. But why are they in that order? Why isn't the blue one on top? You might think it's because we created the blue one first, and the yellow one second – and to some extent you'd be right. But there is a little more to it than that.

The reason isn't that we created the squares in a particular chronological order, but rather that they ended up in the XML structure in a particular document order. When we added the second square we used the appendChild() method, which inserts it as the last child of the selected parent, so our XML structure ends up looking roughly like this:

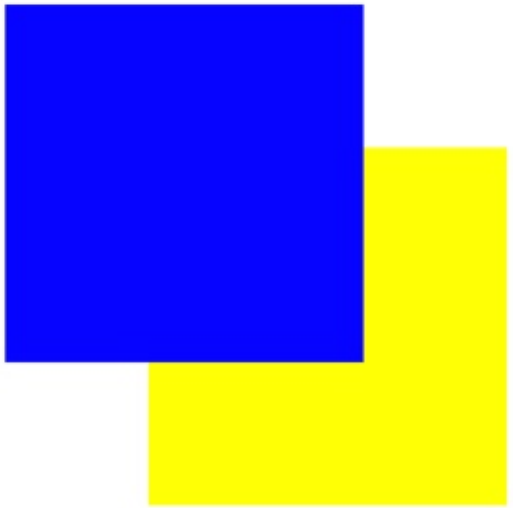
```
<svg>
      <rect id="s1" />
      <rect id="s2" />
</svg>
```

The blue <rect>, with ID "s1" is first in the document, so it gets drawn first. The yellow <rect> ("s2") is second in the document, so gets drawn second. SVG uses what's called the "painter's model" in which later objects in the document are painted on top of earlier objects – so the yellow square is rendered on top of the blue square.

If you're familiar with HTML and CSS, you might imagine that you could override this ordering using the "z-index" CSS property. Unfortunately, that approach doesn't work for SVG. The SVG2 spec does add z-index but, as with many of the useful additions in SVG2, no browser yet supports it. Currently, if you want to put things into a particular stacking order, you have no choice but to rearrange the content of your SVG document.

So how would we go about putting the blue square on top of the yellow one? It's a two step operation: first we remove the blue square from the document, but keep it hanging around in memory; then we insert it back into the document, at the end. Given that we've already assigned the blue <rect> to the "square1" variable, we can use these two lines of JavaScript to achieve our goal:

```
square1.remove();

svg.appendChild(square1);
```



So now we know how to add an object to the top of the image, and how to move an object from a lower level up to the top. What about inserting a new object at the top of the document, so that it appears right at the bottom of the stack? If appendChild() adds it to the end of the document, surely insertChild() will put it at the start?

Uh-oh! That's not so good. The problem is that there's no XML method called insertChild(), regardless of how much sense it would make. Instead, you have to insert your node into the document before another reference node – in other words, you have to specify that you want to insert it before the existing first child. Given that our yellow square is first in the document, and we already have a handle to it in our "square2" variable, we can run the following JavaScript line in the console to inject "square3" into the "svg" parent, before "square2":

```
svg.insertBefore(square3,
square2);
```

This is great when you've already got a handle to the first child element, but that's not always the case. Perhaps it was inserted dynamically by some other code, or you've just lost track of which element is which. You can

```
var square3 = document.createElementNS(ns, "rect");
square3.id = "s3";
square3.setAttribute("x", 40);
square3.setAttribute("y", 40);
square3.setAttribute("width", 50);
square3.setAttribute("height", 50);
square3.setAttribute("fill", "pink");
svg.insertChild(square3);
```

always append a new node at the end of the parent's list of children, so it would be useful to have an equivalent bit of code to insert a new node at the start of the list. Every XML element has a "firstElementChild" property that can be used to retrieve a handle to its first child (skipping any text content) without needing to know anything more about it. We can use this to insert another element at the bottom of the stack (top right).

There's still a bit of a gap between the yellow and the blue squares. Time to insert an element in the middle of the list of child nodes. As a reminder of where we stand at the moment, switching to the "Inspector" (Firefox) or "Elements" (Chrome) tab in the developer tools will show you the current state of your XML document:

```
<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 100 100">
  <rect id="s4" x="50" y="50" width="50" height="50" fill="purple"></rect>
  <rect id="s3" x="40" y="40" width="50" height="50" fill="pink"></rect>
  <rect id="s2" x="30" y="30" width="50" height="50" fill="yellow"></rect>
  <rect id="s1" x="10" y="10" width="50" height="50" fill="blue"></rect>
</svg>
```

To mix things up a little, we're not going to create a brand new square this time – instead we'll create a copy of an existing one. In browser terms, we're going to create a "clone" of the node, but don't confuse it with Inkscape's concept of clones – the two are completely different things (Inkscape's "clones" are actually implemented as SVG <use> elements). First, let's clone our purple square – which we've still got assigned to the "square4" variable – and assign the clone to a highly-imaginatively named variable:

```
var square5 =
square4.cloneNode(true);
square5.id = "s5";
square5.setAttribute("x",
20);
square5.setAttribute("y",
20);
```

All we needed to do was call the cloneNode() method of the node we wish to duplicate. The "true" parameter ensures that we clone not only the node itself, but any descendants it may have – if we had passed "false" instead, we would get only a duplicate of the node itself. In this case, the results are identical, since our <rect> has no children. But consider cloning a <text> or <g> element, where the content inside is just as important as the node itself, and you can see why passing "true" is usually the safest option.

You'll also note that I've changed the ID of the cloned element. We're about to put it back into the same document and, although browsers don't enforce it, the XML rules specifically prohibit duplicate IDs in a single document. For the sake of correctness, therefore, we change the ID while the cloned node is still just a fragment in memory that hasn't yet been inserted into the SVG.

```
var square4 = document.createElementNS(ns, "rect");
square4.id = "s4";
square4.setAttribute("x", 50);
square4.setAttribute("y", 50);
square4.setAttribute("width", 50);
square4.setAttribute("height", 50);
square4.setAttribute("fill", "purple");
svg.insertBefore(square4, svg.firstElementChild);
```

To insert the clone, we're just going to use the same insertBefore() method we used earlier. But, this time, our reference element (the one we're inserting before) will be the blue <rect>. Of course we could use the reference we already have to it (square1), or get a fresh reference using document.querySelector(), but instead, we're going to do something more generic. We've already seen a generic way to insert before the first child, now we're going to write some equally generic code to insert just before the last child:

```
svg.insertBefore(square5,
```

```
svg.lastElementChild);
```

As a reminder, the last child is the one that's drawn on top (the blue square), so inserting just before the last child actually puts the cloned purple square below the blue square in the z-order.

The "firstElementChild" and "lastElementChild" properties are useful shortcuts, but you don't always want to use the first or last child as your reference point. For more general purpose requirements, XML nodes have a "children" property, which returns a collection of all the children. A "collection", for what it's worth, can be described as an object that's a bit like an array except different enough to be annoying. So don't expect to have access to all the array methods, but you can read the "length" property, and reference individual child nodes using a square bracket syntax:

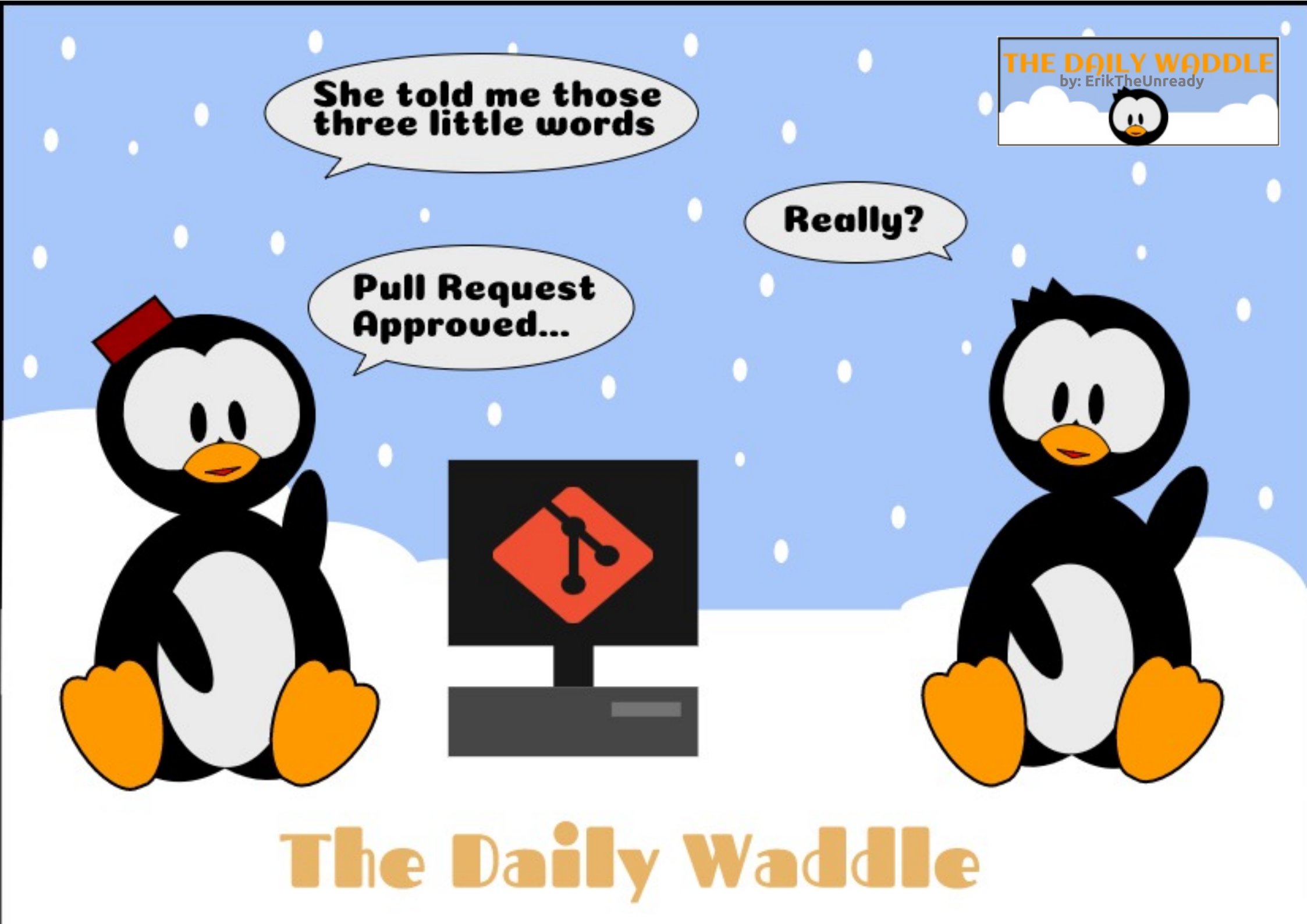
```
// How many child nodes are
there?

console.log(svg.children.leng
th);


// Remove the third one

svg.children[2].remove();


// Remove the penultimate
node, regardless of how many
there are

svg.children[svg.children.len
gth - 2].remove();
```

Remembering that array (and collection) indexes start at zero, it should be clear why the third child has an index of 2. For the same reason the index of the last child is always "children.length – 1", so the penultimate node will be "children.length – 2". Of course if there are fewer than two child nodes present, this call will fail – a real program would have to check the length first, before trying to remove the penultimate child.

Consider all this in terms of Inkscape: when you move things up and down in the z-order within Inkscape, or move entire layers up and down, what you're actually doing is removing nodes from the document and reinserting them at a different position. If you've got multiple items selected, or a group or layer containing lots of other items, they all have to be removed and reinserted. If you ever find yourself wondering why Inkscape is taking a long time to paste something, now you've got an idea of how involved this process actually is!

With the JS you've learnt so far, you have enough knowledge to write some code that will move objects around the canvas, as well as up and down in the z-order. You can use document.querySelector() to get a JS handle to an element in your drawing, and setAttribute() to dynamically change its parameters. Next time, we'll look at how you might use some of these features to animate your SVG image.

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


THE DAILY WADDLE
by: ErikTheUnready
She told me those three little words
Really?
Pull Request Approved...
The Daily Waddle

LINUX LOOPBACK

Written by S. J. Webb

MAYBE NEXT MONTH

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.

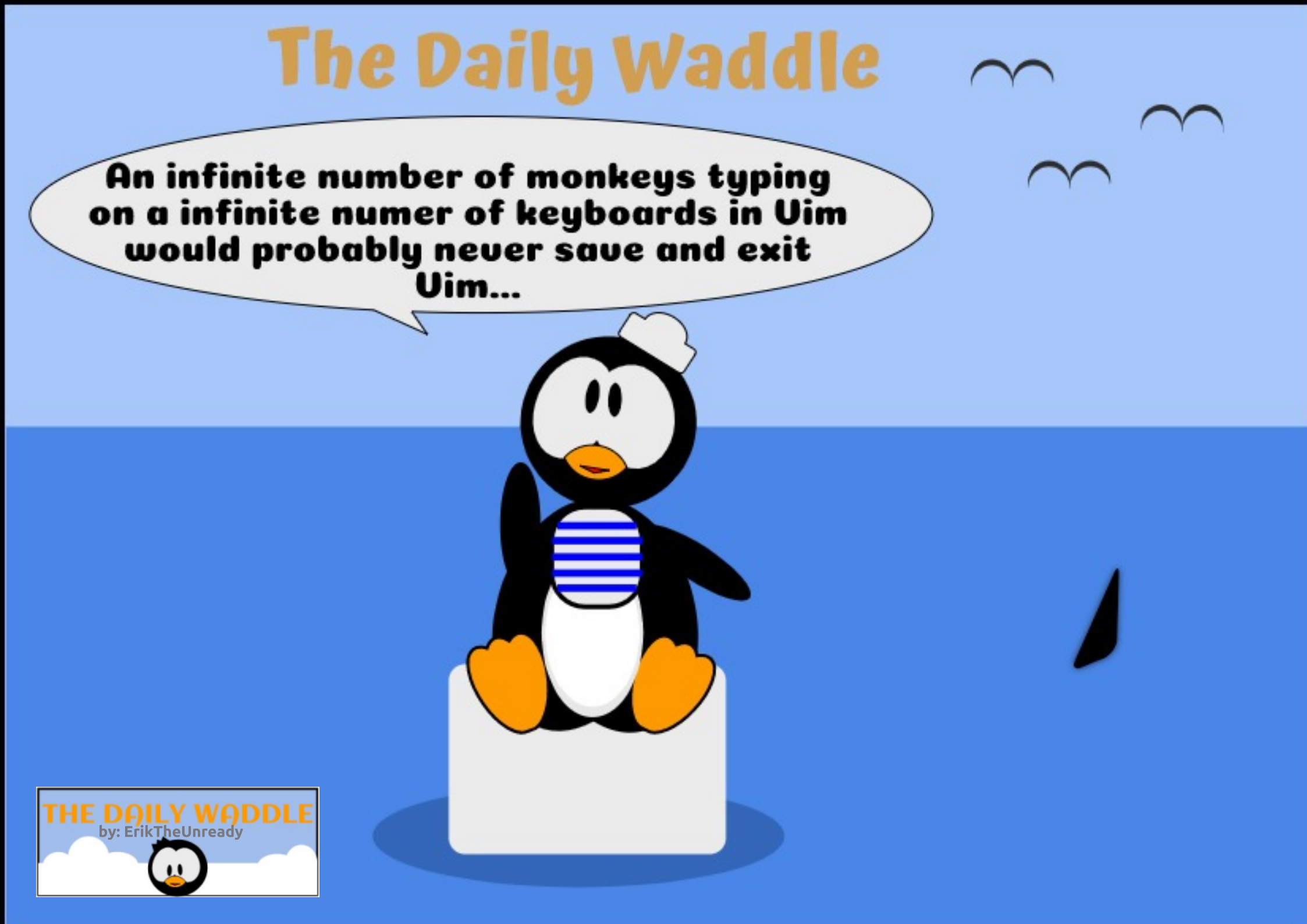
BACK NEXT MONTH

UBPORTS DEVICES

Written by UBports Team

MAYBE NEXT MONTH

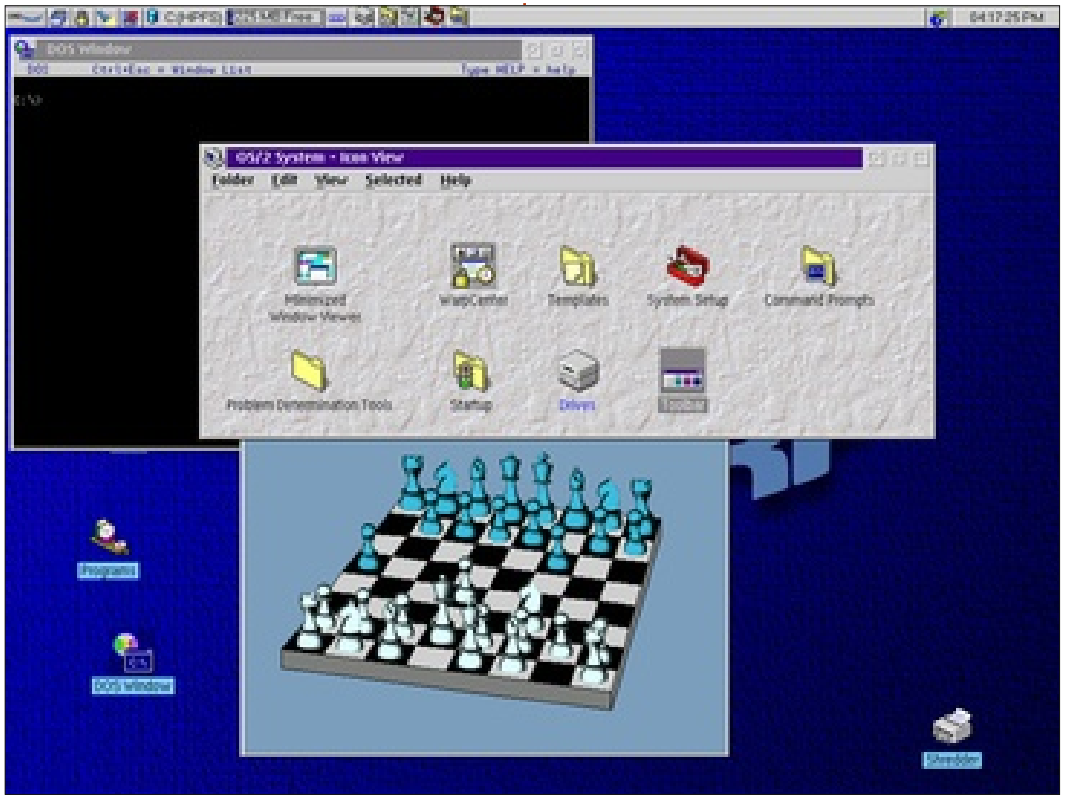
The Daily Waddle



To give you some background, I have been using Ubuntu since before it was Ubuntu. That's correct, since the beta of IMPI linux. IMPI Linux was the first time I wanted to move away from what I knew at that stage. It was the first time I did not have to do a lot of work from my side. The company I worked for tried to make us all into Novell engineers, as they saw it as the future. I ended up with the local municipality as my client. They were using Sinix Z at the time, and I was sent to Siemens for Linux training. Though I saw Linux as powerful! (it certainly was, compared to some of the other stuff I worked on like WANG systems), I did not expect it ever to make it to the desktop. More exciting things were on the way from IBM, like OS/2. Remember the phrase: "No one ever got fired for buying an IBM"?

Compared to Windows 95 and OS/2, the Unices were as ancient as the Burroughs systems I worked on, you could not even stop and start your printing yourself. Red Hat was the only pseudo desktop OS around. I say pseudo as you could do more with your little green desktop on an Atari from the eighties than those. RPM commands were cryptic in comparison with other operating systems. You could not even play music. You had to enable extra repositories that would break your system the first chance they got. No thank you, Linux desktop sucked!

The late 80s, early 90s, was an exciting time for operating systems. How Linux grew amid so many better operating systems failing, is beyond me. One day, a friend introduced me to Debian. The deb package commands were a lot simpler than rpm, and it kindled my interest in Linux again. KDE desktop was by far the most useful desktop. Then Gnome2 arrived. A combination of Gnome2 and Debian actually made for something useable. BeOS also looked very promising as a business desktop. Still, I did not really consider Linux on the desktop. Too many things did not work, and the amount of available software was tiny. Windows seemed to be the future as the pricing was so much better than Apple or IBM. I mean Linux could not even run Lotus 123. What kind of operating system can't run Lotus 123? Lotus 123 was what all the businesses were using. *big smile*



So I only experimented with Linux as a desktop OS on the side every now and then. The friend, who introduced me to Linux as a desktop OS, came over one day and asked me what was on my Pentium II. I told him Xandros, but it was slow. I had a brief fling with Gentoo, and saw how fast Linux as a desktop OS can be, but it was so much work and took so long to install (3days), that Gentoo fell by the wayside. It was not until I was handed a copy of IMPI Linux that I actually considered Linux as a

desktop OS. When IMPI Linux 2 was released 6 months later, I signed up for a CD and it was mailed to me. I installed it and was surprised at how much I liked it. Impi became Ubuntu, and, for the first time, everything worked on my desktop and laptop. Internet connection was still a bit of an issue as dial-up and ISDN fell by the wayside, but I was up and running with my PCMCIA card in no time. Looking back at that ugly brown Ubuntu now, and comparing it to my slick install of Ubuntu 18.04 this year, with modern applications like Onlyoffice, I can only say it has come a long way. Is it the year of Linux on the desktop? No, not as long as people fear Linux as the evil hacker operating system. Not as long as OEMs put Linux on inferior machines that would not even run Windows, just to get stock out the door. Not as long as Windows execs tell old fuddy-duddy CEOs that only Windows provides support for their operating systems and Linux has no "owner" thus no free support, (Not that you get free Windows support anyway) or that using Linux opens you to litigation.

I think Linux IS ready for the desktop, the only thing still keeping it back is support by the productivity companies. People need their Photoshop, their affinity, their outlook, their games. Yes, games are important as it will pique the interest of the next generation - and if Linux cannot deliver, they will stick with proprietary operating systems and carry that into the workplace with them one day.

THE GOOD:

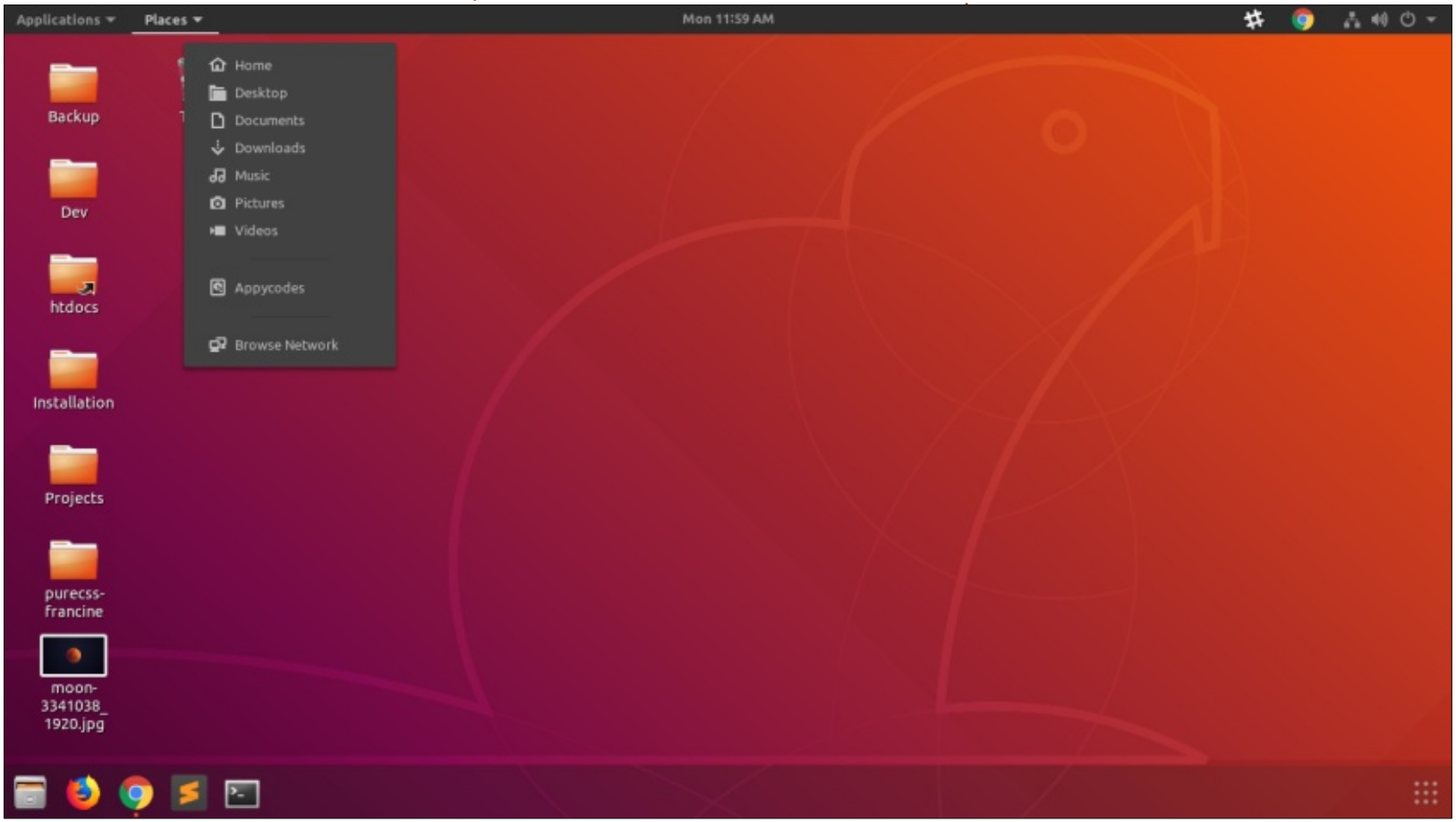
It boots faster.
It feels snappier.

THE BAD:

Snaps are incorporated, whether you want it or not (cryptomining scares).
Settings are hidden from the user.

THE UGLY:

Gnome3 feature creep.
Easy customizing removed.



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

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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:

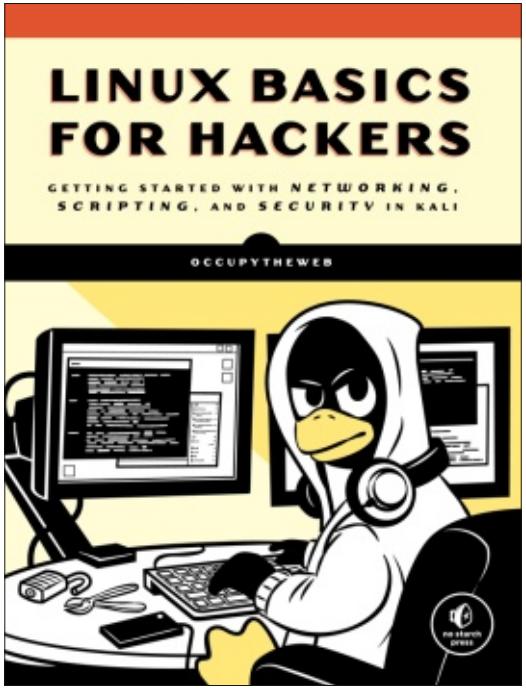
- make and model of the hardware
- what category would you put this hardware into?
- any glitches that you may have had while using the hardware?
- easy to get the hardware working in Linux?
- did you have to use Windows drivers?
- marks out of five
- a summary with positive and negative points

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

BOOK REVIEW

Written by Erik

Linux Basics for Hackers



Website: https://nostarch.com/linuxbasicsforhackers
Author: Occupy the web
Price: $34.95

At first I did not want to read this book at all. Two reasons: I judged the book by its cover (hey, who has not?), and it was being reviewed by so many other people online, another review would be pointless. Let's touch on reason one. The cover is supposed to depict a "hacker" who is an angry teenager (clothing) who is a penguin, suggesting Linux is bad. This ties into the F.U.D. that had been created around Linux. When I recently suggested a customer switch to Linux – as they do nothing Windows-specific, they were shocked by the suggestion as they would come under suspicion for illegal hacking software.... WHAT? Let us not even go to the "author" naming himself "occupy the web". This sounds more ominous than the title of the book. To most people this book screams to be avoided. (Myself included, as I would have said this is a script-kiddie book, without reading it).

But with so many people actually reviewing it, could I still ignore it? See: https://distrowatch.com/weekly.php?issue=20190128#book

Instead of these top down reviews, I will give you a chapter by chapter review, to better understand the book.

First, something about Kali Linux. Kali Linux is one of the few security distributions not from Italy. It originates in Switzerland and is considered the de-facto standard for teaching penetration testers.

I am not going to harp on about ethical hacking, information is neither good nor evil, instead we jump right into the introduction. "What's in this book" lays out each chapter for your perusal. If you feel you have mastered the basics, this lets you jump ahead with a clearer understanding of what you are letting yourself in for, than, say, an index. If you are a regular Full Circle reader, you can skip the rest of the chapter and go to one. A good breakdown of Kali Linux is given and examples are clear, with the last instruction being : " go play now!" The second chapter felt a bit light and short, but you have to remember that this book is aimed at people who need to get up to speed with Linux quickly. The third chapter touches on Linux networking and "disguising yourself" - but the latter is not the case. No Proxy chaining, or DNS query encryption, etc, (though proxy chains are touched upon in later chapters). Chapter four is about apt in a nutshell. If you know how to install and update software, you can give this one a skip. For the regular Full Circle reader, the exercises may feel dumb, but again, you are not the target audience. If you are not afraid of your command-line, there is nothing new in the book.

Chapter five, with file and folder permissions, can thus also be skimmed. Chapter six is processes, and I dare say that it sometimes does not seem so 'white hat'. "A hacker often will need to find processes on the target they want to kill, such as the antivirus software or a firewall." - judge for yourself. Chapter seven takes us to the environment variables, nothing you did not know, and no interesting snippets, nor code examples, nor exercises. Chapter eight is where the real hands-on approach starts, with bash scripting, but do not expect much. The constant references to

'hackersarise' website is the author's home page. Throughout, the book is very basic, but also illustrates that Linux is not difficult at all. Chapter nine is compression, zip, gzip, tar, etc, and then touches on the dd command. In chapter ten, it is devices and file systems, touching very lightly on each. I feel that the information presented is a bit light in the pants. A "hacker" would encounter old systems too and has to know tools that are not available in Kali, that may be on the target systems, but no mention of that. Like in the following chapter regarding logging, chapter 11. Do not misunderstand; the information presented is 'spot on', but not all distributions store logs where Kali Linux does.

Again we move out of "ethical hacking" territory as was pushed in the beginning of the book to more "black hat" way of writing: " Once you've compromised a Linux system, it's useful to disable logging and remove any evidence of your intrusion in the log files to reduce the chances of detection." Chapter 12 takes us into services, but does not touch systemctl? This book provides just enough information to actually be a danger to yourself if you would use it as a 'hacking manual'. Chapter 13, becoming secure and anonymous, also has the basics, but does not touch the engineering part, or explain that most 'hackers' are caught hacking from home. Encrypted email is covered, but not anonymous email. Chapter 14 is Wi-Fi networks, which covers some of the basics and some of the tools, albeit very shallow coverage. Chapter 15 is kernel modules and it is at this stage that I wonder if the intent of the book is for you to break stuff, so you can learn by fixing them. This is a very rewarding, but also very frustrating way to learn. Here is a very brief touch on sysctl as the chapter would be broken without it. Only five exercises here, as it is not 'hacking' related really. Chapter 16 is Cron jobs, more or less.

When we get to chapter 17, it is touted as "python scripting basics" - which is really, really basic, then jumps into 'building a TCP client', which maybe can be said to be the practical part of the book.

This book pretends to be a primer on Linux for ethical hackers, but does not stand in one camp, either be a manual on basic Kali Linux usage, or basic hacking, or concepts, but it is neither. This book is a waste of time for anyone who has encountered the command-line, rather it is a look into what hacking / Linux is about for the layperson. It is not practical as laid out in the Distrowatch link given at the start; in fact, the exercises feel bolted on as an afterthought. The book did touch on Apache and Raspberry pi, here and there, but there is never enough 'hacking' information given.

I got through the book in one sitting, so it is very lightweight, that said, the price tag is hefty. I cannot in good conscience give this book more than two stars. (If it was not so easy to read, I'd give it 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.

Before we dive in to this, a few thoughts. This review is the first for a "non-systemd" Distro. I will not get into the aspects or controversies regarding systemd vs Init… suffice to say, both sides have some compelling arguments:

• The anti-systemd crowd concentrate on how systemD keeps growing the amount of things/process it runs/is involved with.

• The pro-systemd crowd points out how aging init was/is and how it needs to be updated to keep with the times.

[That is a very VERY generalized overview of the main arguments, for a more in-depth, google the info and read across the spectrum of articles] I do not review that low-level technical stuff, I concentrate more on what you see and interact with on a regular basis, as a general user.

Even though I have screenshots that show my laptop specs, I am including them in the text just in case the pictures lose resolution when enlarging them, or if you are reading a text only version of this review.

So my specs:

• Presario CQ56 Notebook PC 058D

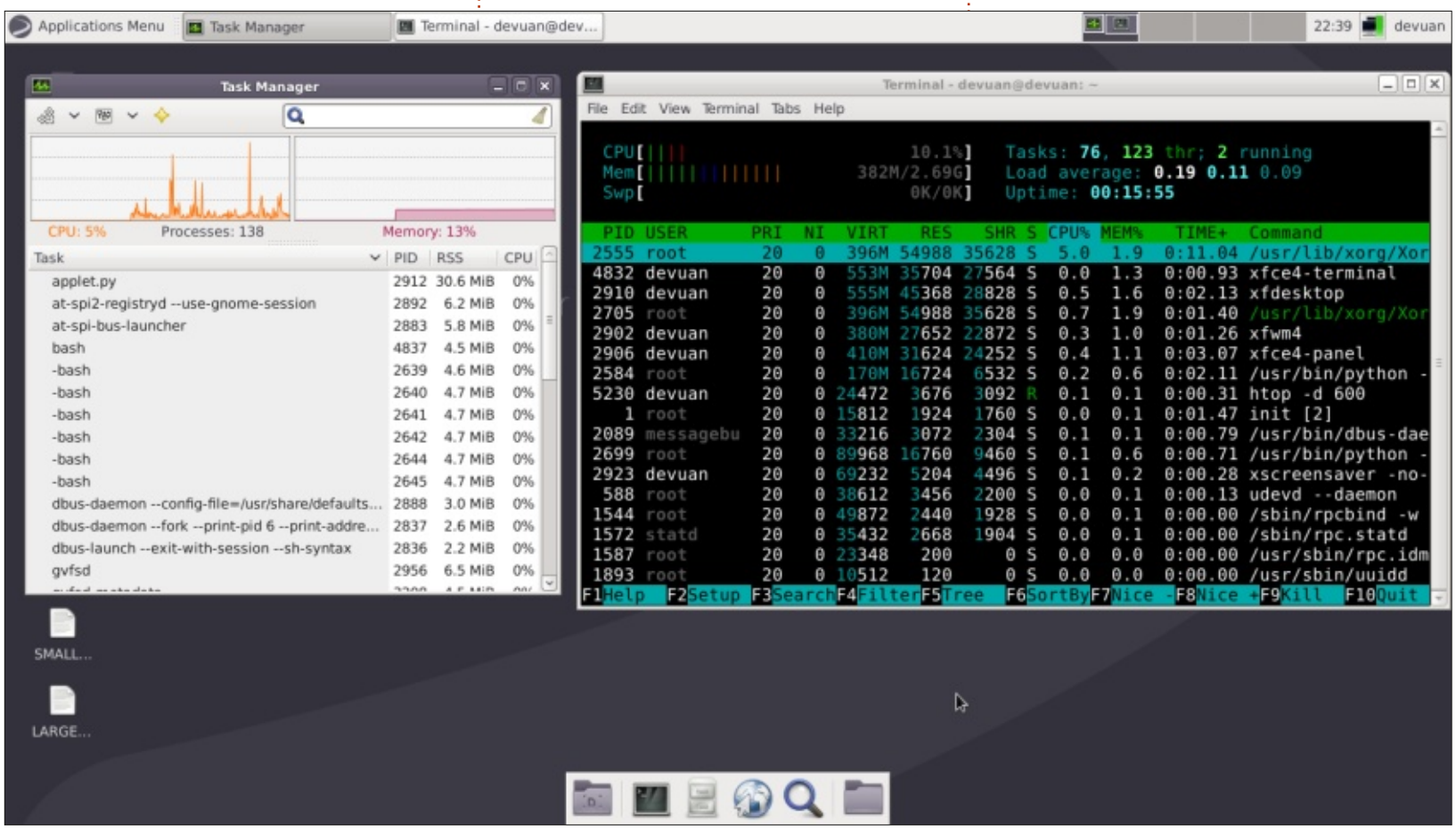
• 64-bit AMD v140 CPU running at 2.3 GHZ

• AMD/ATI Radeon HD 4225 [integrated] graphics

• 4 Gigs of Ram

Remember, I ran this test by live booting a usb flash drive and not by doing a minimal or full install. Now, saying all that, my intro and my laptop specs, let's get to my review, shall we?

The first thing I noticed, and really liked, about DeVuan is how quickly it booted. Even booting on this "older" laptop, that has USB 2.0, it was less than 60 seconds from selecting to run it live and getting to a working desktop. If it boots that fast live, I would assume it does so installed to a hard drive



as well. So long as you don't bog it down with tons of startup programs, that is. [Personally I tend to have as few startup programs as possible. But you may be different, that's alright! One nice thing about Linux, and many of us Linux users, is you set it up so it works for YOU!].

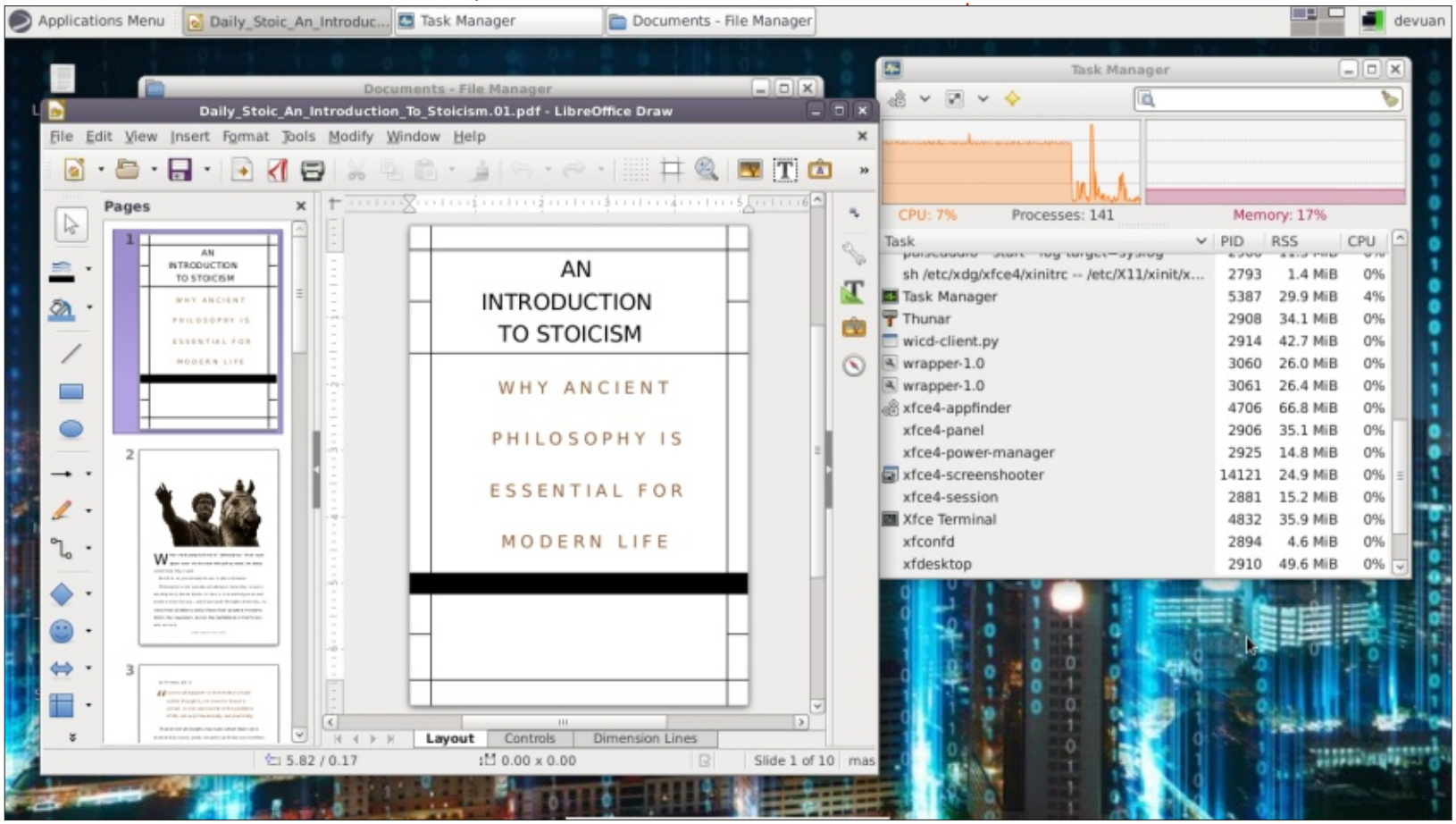
By default, DeVuan uses XFCE 4.0 for a desktop environment. This was the first time I had ever really jumped in to this environment. While somewhat "plain" and "boxy" [reminded me of Windows 95/98/98SE and 2000], it worked well. It was quite fast and light on resources as well. All that equals speed and usability! Based on the usage stats, XFCE will play nice on old hardware, and will be blazing fast on new hardware.

Keep in mind, while XFCE is plain by default, it can be made to look prettier and fancier! Unlike Gnome 3.x, and like KDE, by default, I could tweak just about anything my heart desired! From "boxy" windows to "rounded" windows, from flat to 3D, from bland to shiny… all the options were available! For me, that is a huge plus!

I tested different interface settings, from plain to fancy, and while the fancier obviously used more resources, it never got to a point where XFCE seemed "heavy" or "resource hungry" [mind you, I would switch this or that, and have no programs running except neofetch in a terminal and the system monitor. I used both so I could rate each one's impact].

Mentioning that I could tweak what seemed like everything, there is a complaint here though. Some tweaks seemed to assume you knew what you were doing, that you had experience. I think, and this is a deficiency in many distros, that maybe, just maybe, some of the options should have tooltips available by default.

One HUGE example here. The panel. Now, in some environments, and in some distros, if you want to edit the panels, when you select "panel 1"; it highlights which panel you are working with. Not so in XFCE. Panel 1 is the top panel, panel 2 is the bottom, both are there by default. For me personally, this isn't/wasn't an issue, but for a newbie or less experienced user, it could cause a headache. I also noticed transparency did NOT work on the top panel. Didn't matter if I set it to a solid color, or picture, or



what… no transparency even though it was an option.

Going through the settings manager, most things worked well. I did have an issue with my media keys on my laptop keyboard, and a mouse pad issue that we decided was a driver issue and not an XFCE or DeVaun issue – thanks @ Rob Shockley and @ BJ Steeves for the help with that. Being a "driver issue", it's logical to think that if I had installed to my hard drive, the problem would have been solved.

As to the settings manager itself. It was laid out pretty standard, pretty much like most are. It worked well also. When changing a setting it applied quickly. The exception to this is the wallpaper manager. It really sort of sucked! I mounted my hard drive, and attempted to browse my wallpaper collection but nothing showed up. Not a jpg [or jpeg] or png or webp… nothing! All I could do, from in the wallpaper manager in the Settings Manager, was browse and use the handful of built-in wallpapers. BUT if I opened Thunar [the file browser] and navigated to my wallpaper collection, I could right-click and set any picture to be my wallpaper. For my other reviewed distros so far, I didn't need to go through those added steps. Makes me wonder how good DeVaun's implementation of wallpaper management is.

I mentioned the file manager, Thunar. It is lightweight yet powerful enough to get the job done! Even has a right-click – open in terminal option built in, enabled by default! That is a nice option, makes it a lot easier to edit things or open things via the command-line. You browse in the file manager, find where you want to be, and then open it in the terminal. A lot less typing and possibly mistyping the directory/file path!

The terminal is standard. It's XFCE's implementation of bash. Sadly, regarding the terminal, like pop_OS, DeVaun failed my "control-alt-t" test. [That being, when you click that key combo together, it's nice to have the terminal open, like it does in Ubuntu and Linux Mint and KDE Neon.] Thankfully, it was fairly easy to set up that hot key combo in the settings manager!

The programs on the live image were great! A nice large selection, with some handy extras! They had Firefox ESR [Extended Security Release], two photo/image viewers, GIMP, LibreOffice, and even WICD. [WICD is a more powerful wifi management program, more powerful than the built-in one that is]. The large selection gives you a good idea of how various things can run on DeVaun. Speaking of running, I was delighted to discover mp3 and mp4 support built in! [Although I tested both in VLC, and not in the other two music players or other one video player. But, really, why use anything else when VLC can do it all? I'm just joking, use what works for you!]

DeVuan is in the "Debian" family. That means any .deb file can be installed, and it uses apt for a package management system; it also has synaptic installed by default, which is nice! I mention this because, as I look at my ever growing list of distros to test (remember I am now taking requests), not all are in the Debian Family; a few are in the Red Hat family, and a few in the Arch family. So I plan on starting to mention that aspect as well.

Overall, DeVuan seems solid! XFCE4 as a DE is usable and easy to customize by default! [I can see why Linus Torvalds likes it!]. For some, the fact it doesn't use systemd is a huge plus as well. It's use of XFCE makes it fairly lightweight. Although, as you can see, sometimes the CPU tapped out at ~100%, usually when first opening a big program, like Firefox ESR or LibreOffice. My complaints about it are few, and if you are looking for a non-systemd Distro, it's worth checking out!

Jason M is old millenial who's been an avid Linux user since Ubuntu Dapper Drake. He lives in Washington State, loves sports, and does plenty of geeky stuff like Ham Radio, web dev and these reviews!

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!

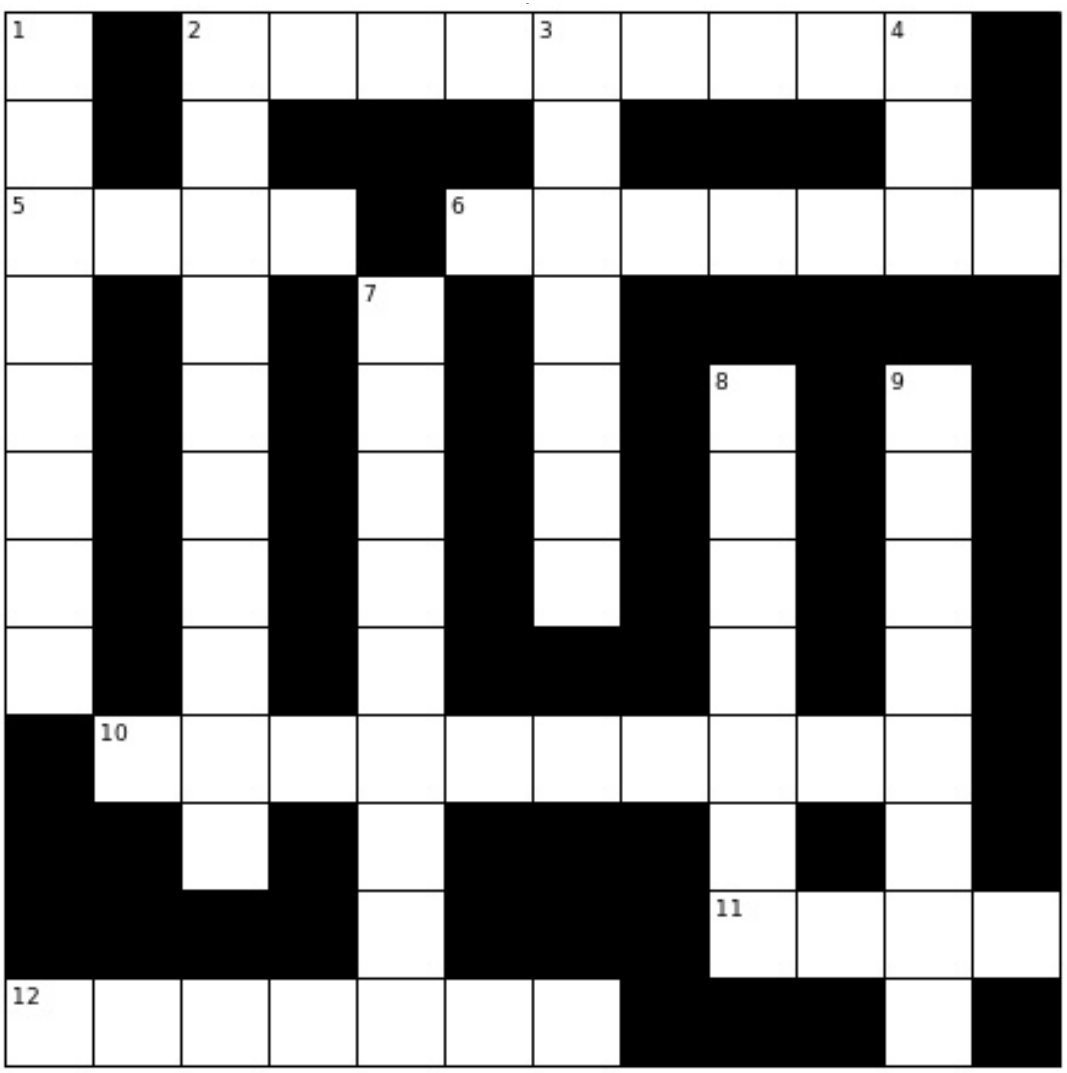
Without reader input **Full Circle** would be an empty PDF file (which I don't think many people would find particularly interesting). We are always looking for articles, reviews, anything! Even small things like letters and desktop screens help fill the magazine.

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.

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

CROSSWORD - DISTROSHUFFLE 5



ACROSS

2A: Originally developed by Linus Torvalds in 1991.
5A: Source based, rolling release for the Raspberry Pi.
6A: Based on Morphix, it is entirely free software.
9A: Copyleft-ed Arch with Budgie.
10A: Need to image a machine?
11A: Sometimes you spend all day fixing it...
12A: Server, based on Ubuntu, with a 45-day trial.

DOWN

1D: It's a graphical desktop in 12MB.
3D: Made by Jörg Schirottke (Kano), first codename was Thor's hammer.
4D: One of the three Trinity desktop distros.
7D: It's BSD with wings.
8D: BSD from Japan, where the ISO is always up-to-date.

Compiled by Erik

Answers are elsewhere this issue.

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.

I once had to stand in for a technician who had resigned, and who was stationed on-site at a client. Something happened when the administrator restarted an old server remotely. It would not start up properly. They called me and I went to the server room, to find that the network service had failed. They were actually so paranoid, or stupid, I haven't decided - I had to hold the power button in and let the server shut down. Then start it up again to see if the error goes away so they can log in. This was 9am. After about ten tries, I gave up. At noon, I went to lunch and took the portable phone with me. Tired of bumping my head against a brick wall. I would get a call to turn it off again. "Sure" I would say, "try again in five minutes". Like clockwork, five minutes later I would get a call asking if the service had started. "No" I'd say, and it was wash, rinse, repeat. Sitting having lunch, not even in the server room. This went on until 2pm! I did not even enter the server room again before that. If you keep doing the same thing over and over, expecting a different outcome, do not count me in. I could fix the problem in a jiffy, but they would not give me the Admin password (or account with rights to start a service) to log on and fix it. Eventually, they sent someone from head office to restart the service once the server had booted. They actually expected me to stand there for five hours, in a freezing server room, pressing a button like a monkey, waiting for the outcome to change. Sometimes, even in IT, one can be penny-wise and pound-foolish. (The only data that server held was the clocking data for the biometric scanners... in case you were wondering – nothing super sensitive). If you have tried something three times in a row and got the same outcome, chances are it will not change. Don't be that guy.

Q: Is it true that my T2 chip prohibits the installation of Linux?

A: Yes. See here: https://bugzilla.kernel.org/show_bug.cgi?id=202567

Q: I have 3 accounts set up in thunderbird. Everything works well, except I don't want to send email via my gmail. I want it to always go through my proton mail. So, when I send an email, I still want to be able to choose where I send it through, but I would prefer proton mail to always be at the top, so I can just hit send most of the time.

A: Okay, not to my knowledge. You can change your send settings to all point to proton, if you want to, for each account. (But what you want does not exist in Thunderbird yet).

Q: I managed to get a small SSD to boot from. It can't hold much, so I need to move my data to my second drive. Problem is I am not sure how? My Lubuntu is 18.10.

A: You can follow this guide: https://help.ubuntu.com/community/Partitioning/Home/Moving

Q: I have installed the proprietary Nvidia driver and I rebooted. After startup, everything seems to work great. Except teamviewer. It doesn't even start. What can I do? I have uninstalled the Nvidia driver, but teamviewer still does not launch. I can't find anything in Google about incompatibility with the driver.

A: You need to uninstall Teamviewer with the 'purge' option , reboot and reinstall it. Open a terminal and type: sudo apt purge teamviewer - to get rid of all traces, before rebooting and reinstalling.

Q: I can't get Ubuntu 19.04 to install on my Compaq evo D3D/P1.5/20/128C/6. It still had old windows on and I think it had a virus, Can the Virus make Ubuntu not install?

A: First, I need to wrap my brain around this. You did not give me an error or something to work with. That machine had a CD not a DVDROM if memory serves. So, If you wrote a DVD, you are out of luck. (I do not think it could boot off USB). I hope it is Xubuntu, as Gnome will probably not run. The line you gave me says 128c - meaning it came with 128MB of memory. Gnome needs 786MB, so I hope it is upgraded. Can I suggest first try Antix, or TinyCore, or something small. It will not be the virus – as viruses for Windows do not affect Ubuntu. Most likely it will be hardware related or a BIOS setting.

Q: I have just upgraded my laptop from Ubuntu 18.04LTS to 19.04LTS but my wifi stopped working. My issue is that my network port on my laptop is blown, so I can't update my driver that way. Any way I can use 18.04LTS driver on 19.04LTS?

A: Firstly 19.04 is not LTS, be warned. The only way you are going to get your proprietary drivers is by sticking in another USB network card, be it WiFi or wired. Then download your proprietary driver.

Q: On my HP laptop under Windows 7, I could tap the top-left corner of my touchpad and a little orange light would come on and it would be disabled. This does not seem to work in Ubuntu. I type a lot and touching the touchpad causes the cursor to jump and I don't see it until much later. This is a problem for me.

A: That 'feature' is part of the windows driver. You will have to look at the synaptics driver package and maybe the advanced features like turn off while typing. As far as I know, that 'feature' is not available in Linux. Look here: https://help.ubuntu.com/community/SynapticsTouchpad

Q: What will I need to have on my laptop to start a podcast? My laptop is an HP G2 with 8GB of memory and 128GB SSD with Kubuntu 17.10.

A: There are many options for you but my suggestion (easiest) would be Audacity and an external microphone, as the internal microphone on a laptop is horrible. Once you are done recording, you can edit and upload it to the provider of your choice.

Q: My desktop runs SolusOS 4 Budgie, and my laptop runs Xubuntu 18.04. When I shut down SolusOS, it closes Firefox for me and when I turn the computer on again, it will ask me to resume in Firefox. Xubuntu, however, when I choose shut down - won't shut down without me having to close all the tabs in Firefox. It is not a deal breaker, but it is an inconvenience for me. How can I fix this behaviour?

A: This has to do with the way that XFCE sees the computer as 'busy" with open files. Budgie is not that picky as it is newer. XFCE, being older, carries legacy baggage.

Q: I have replaced my spinning rust with a new SSD on my Mac Mini. I have the drive in an external enclosure and want to play music or movies off it, but it won't play. What is the matter with Ubuntu? Ubuntu 18.04.02 on an HP G2 laptop. My root password was the same on both machines. My username and password was the same on both machines. Now what now?

A: Even though the user / pass is the same on both OSes, the user is still not the same. You will have to first take ownership of the files. You can use chown from the command line, or you can fire up your file manager with sudo, then change the files. (pkexec with XFCE).

Q: Hey, my logitech keyboard has these keys for playing music and volume and such, but it

is not working properly in Ubuntu. I have the driver CD that came with the keyboard, but it doesn't support Linux. What is the best way for a newbie like me?

A: You can just edit the key bindings yourself or you can install playerctl with: sudo apt install playerctl - it is too long for me to give you the full run down in a Q&A, so here is a web link: https://www.addictivetips.com/ubuntu-linux-tips/fix-media-keys-not-working-on-linux/

Q: How to run .jnlp file on Ubuntu?

A: Install the icedtea-plugin and open it with that. Otherwise javaws <package>.jnlp from the command-line.

Q: I am so excited, I ordered a Raspberry pi 4. I need to learn about IOT stuff. Where do I start?

A: Not sure you contacted the right magazine, but YouTube is a great starting point. Type IOT training or IOT tutorial in the YouTube search bar.

Q: Please help me. I use PoP!OS on my thelio PC. I don't like Chrome, I use Opera. I want to get full sized pics from 500px.com. I do not see any addons to download them. I hate the bad quality that gets presented to you, but I can't find the pics on other sites. If I had my way I would kneecap the site's devs.

A: Not strictly an Ubuntu question, but you can look at add-ons like 'tineye', maybe greasemonkey scripts? I tried manually and see why you want to harm the developers. Do not right-click within the picture, but somewhere else on the page, and choose "inspect element". Under the "sources" tab, you will see "drscdn", expand that. Expand the sub-categories (usually photoxxxxx) until you find your picture. Right-click that and "open in new tab". That should net you the full-sized picture.

Q: My laptop is an HP 450 Gen2 with Ubuntu 16.04. It's getting very hot. Can I control it's fans with Ubuntu software?

A: My first reaction is – check the airflow coming out of the vent. With the laptop off, put your mouth over a quarter of the vent and blow. Did dust come out? Probably blocking the airflow. Laptops have very limited cooling and airflow. Clean that first, then maybe look at TLP. As far as I know, you cannot control laptop fans any more, it is hard wired to the CPU temperature. A cooling stand is also a good idea, but get the heat sink cleaned.

Q: I managed to get a Pentium laptop with Ubuntu for Rs18000. How much of it was for Ubuntu?

A: As much as the laptop is more than the stock standard price, or the price on Amazon, or Flipkart minus the windows tax. Ubuntu is free, but it does not mean you cannot sell it.

Q: Why do all the coders use Ubuntu on their laptops?

A: That is a very broad question, but I will try. Community, they seem to like to work together. Lots of programming languages install with one command on Linux. Lots of programming languages and IDE's provide free versions on Linux. As most of the internet runs on Linux, it makes sense. Usually, Linux is more secure than windows. Lastly, Ubuntu is not going to steal your work and pass it off as their own, like Microsoft.

Q: Are the Online Accounts in Ubuntu settings not a privacy risk?

A: I cannot say as I have never used them, but I would not think so. But this would be confirmed only if security audited, and I cannot find anything on that.

LINUX CERTIFIED

Written by EriktheUnready

Part 6

Welcome back learners, and a nod to those "just interested". We are continuing from last issue with the very first topic, capacity planning. We are still busy with resource availability and troubleshooting. Last issue, we covered netstat and how you can use it to troubleshoot. This time, let us look at predicting the future... <queue spooky music>...

This is the final part of measuring and troubleshooting before we move on to the exciting topic of the kernel. The nice thing about Linux is that you are spoilt for choice, even if you don't know it. There are many – yes, many – monitoring tools for Linux and that list grows each day. The LPI want you to know of some of them. You have to understand that the LPIC is a grooming certification for enterprise – so we look at enterprise products here. Usually, those with colourful dashboards. Therefore, I will start you off with some homework – you need to Google Cacti, Nagios, MRTG, and read the 'about' sections on their respective home pages. If you feel brave, you can install them at home to play with. (If I remember correctly, I botched my first Cacti install, but you don't break anything).

For the LPIC level2, we need to know about 'collectd'. Collectd is used to collect statistics of a particular system. What it collects is governed by its plugins. As the name suggests, it is a collector. (I think the 'd' at the end of the name gives it away – it's a daemon). It does not automatically display colourful graphs and charts like Cacti or Nagios. If you want to play with it, I suggest setting up an Ubuntu LAMP server. Installing collectd is as easy as:

```
sudo apt install collectd
```

Once installed, head on over to: /etc/collectd, and open the 'conf'-file:

```
sudo nano collectd.conf - please peruse the file.
```

If you find the 'plugins' section, you will see some lines uncommented and this is where you decide what you want. Just be aware that some of the plugins require additional setup. If you look further down this file, you will find the "Plugin configuration" section. There you will see templates for things like Apache, and what the plugin needs to work. In Apache's case, a template with user / password and certificate is provided. Do not comment out the 'rrd-tool' as your reports are in ".rrd" format. If you look at the rrdtool configuration, you will see the path to where the rrd files will be saved (DataDir). Before you head off configuring, be aware that Ubuntu automatically starts the daemon after installation, so stop it with:

```
service collectd stop
```

but you know how to do this, right? As always, with services, double-check with:

```
service collectd status - it is a good habit.
```

So where can we see these plugin's are working? Head over to /usr/share/collectd and list the contents. You should see a .db file. However, this is not a binary database file, you can open it with a text editor. This makes it really nice if you need to pipe it through grep – if you want to find something quickly. Please look at the layout of how this works, the first column gives you the name, eg: "voltage", and the second column tells you how it gets a measurement – mostly "value:GAUGE:<range>". You will see lots of others too; this is the source types of information collectd can gather. Note that collectd can collect data from local and remote servers. Please remember that you need to provision reasonable disk space if you are going to start collecting from a lot of servers. The drive of your /var folder should have enough free space for you to add your collected data.

Let us have a look at this – head over to /var/lib/collectd/rrd – the default path in the collectd.conf-file (you can change this). Each server you tagged will have its own folder here in the FQDN format, so

there is no confusion. If you go into one of the listed folders, you will see sub-folders which match your uncommented plugins in the collectd.conf file. Nice! See I told you Linux was easy! If you do not see how this ties up, please install collectd on an Ubuntu server and follow along. I have warned you about space, but I also need to warn you about running your disk ragged. Collectd constantly collects data, but only writes that data once every ten minutes. You can change this, but you do not want to write to the disk all the time.

Gathering all this data is good and well, but how do you read .rrd-files or get an overview of what you have collected?

Obviously our lab LAMP server at home does very little, so you can use "stress" to stress the server a bit to get a bit of a spike in the data. The study guide walks you through getting the graphing up via a git repository (nethuis.nl), but know there are plugins for tools like Nagios for collectd too. I suggest following the tutorial as it is fun, but it is not important for the exam.

To understand the needs of your organisation, you need to interpret the graphs and output you get – over time. This is important, the longer your snapshot, the better you can predict where your IT infrastructure is going. Graphing for a month trumps a day, and so forth. If your graphs are always going up, you will soon reach capacity and will have to plan accordingly. That is precisely what is meant by "capacity planning". Be sure you are measuring the right metrics though – you need to measure SQL on a SQL server, Apache on a web server, etc. Measuring things like temperature, can assist in troubleshooting your environment, so do not think those are not important.

Before you tell me about all the other wonderful tools out there, I know, but you need to know this for your LPIC2 exam.

Now for a quick exam-type question:

When is historical data of resource usage important? (select THREE correct answers)?:
A. Predicting when resources will need to be increased.
B. Selecting a computer vendor.
C. Identifying processes killed during out-of-memory occurrences.
D. Diagnosing capacity problems.
E. Troubleshooting a software problem.

Did you have any difficulty in finding the correct answers immediately? (It is A,D,E). Then read the chapter in your study guide again please!

What mechanism does collectd use to gather monitoring information on systems?
A. It uses a library of plugins
B. A master server connects to a collectd service on each machine to collect information
C. It collects its own information on each server and sends it to a master server
D. It makes SNMP queries to the clients being monitored.

You KNOW this answer!

If you would like to jump ahead, or test your skills at an LPI exam, do a test paper here: https://www.itexams.com/exam/117-201. (These were once valid LPI questions and will ease you into the format).
• The new exam number is 201-400, 117-201 was the old one.
• The site does require signing up, but sign up with temporary email – not your real email.
• DO NOT learn these questions parrot fashion, as they are probably not real exam questions.

Let us know how you did – good or bad, it does not matter. Good, means you are ready to write and confident in your skills. Bad means you will be learning new stuff!! Yay! There is no downside here. If you do not know why an answer is the way it is, contact us.

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.

Irony Curtain

Website:
https://ironycurtaingame.com/

Buy:
https://store.steampowered.com/app/866190/Irony_Curtain_From_Matryoshka_with_Love/
or
https://www.gog.com/game/irony_curtain_from_matryoshka_with_love
Price: $17.99

Game Type: Point and click.

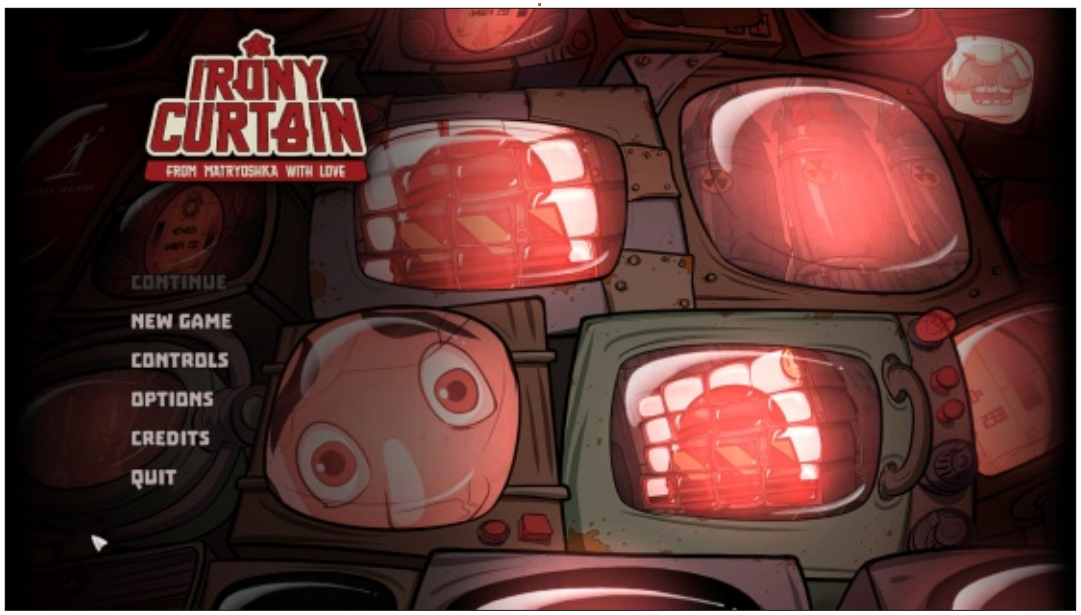
From the web: I*rony Curtain: 'From Matryoshka with Love' is a satirical p'n'c inspired by the classic adventure games. It smuggles you out of your comfort zone and throws you into the middle of a Cold War spy intrigue – and there's an even bigger game being played… Experience Matryoshka through Evan – a low-ranking, goofy journalist involuntarily pulled right into the middle of an espionage stand-off between two powers. Hop onto the wacky spy adventure, uncover secrets of the bizarre communist country (and the powerful capitalistic empire!), witness the story full of unpredictable twists and turns, and discover the true agenda of the mysterious Supreme Leader!*

Talk about a mouthful? Say that title five times in a row, very quickly! Irony... When your fortune-telling classes get cancelled due to unforeseen circumstances... In this case, it feels like Deponia in a different sauce.

Let's talk about the bad first. It feels like a console game with autosave. Two people can not play it as you can not create profiles.

That said, the game is well thought out. You have hints if you get stuck, but hints are just that. 'Hilarious' is not the word I would use to describe it. It did however bring a smile to my face. The puzzles are clever and make you think. There are a few reaction puzzles too, which I am not so keen on.

Graphics and sound.
The graphics feel a bit like cut-outs, but the quality is great. The animation is smooth, even on a built-in Intel graphics chip. The colours are vibrant. Keep your peepers peeled for the little details. The whole game seems to have been designed with humor in mind, which is good. The sound is where I had an issue on my Lenovo laptop with 4GB of memory. It took a while to kick in. If I shoot straight to playing, there is none.



On a machine with a dedicated sound card though, it is a different story. The sounds are cartoon-y (I did say it seems designed with humor in mind), the voice acting is clear, and the music fits the game like a glove.

Story

This is where the meat and potatoes of the game lie. Someone thought long and hard about this. Humor seems to be extracted from the setting too. It feels well rounded, and, here and there, I even detected some innuendo. You need to play this.

Gameplay

Whilst the gameplay is based on puzzles, it remains fun. The difficulty level of the puzzles also increases as you play further into the game. Soon you will be scratching your head before that 'AHA!' moment. You will not get stuck as at any time you can request a hint. This is not the hint of a hidden object game, though. The controls are solid, I did not find any glitches or anything odd.

Overall this is a point-and-click adventure you need in your collection. We do not laugh enough, and this may help you smile.

The game gets 4 stars – great design, good sound and graphics, let down a bit by the autosave feature, and missing profiles, and maybe the romanticized version of communism.

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.

Crossword answers:

T		S	L	A	C	K	W	A	R	E	
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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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