Full Circle

ISSUE #174 - October 2021

Photo: Bernard Spragg. NZ (Flickr.com)

REVIEW

UBUNTU 12.10

CLONE YOUR SYSTEM
TO A NEW PC
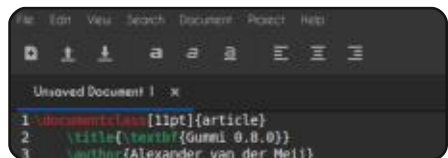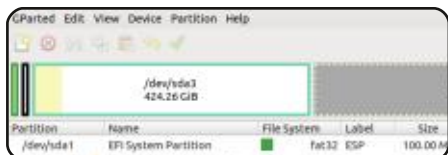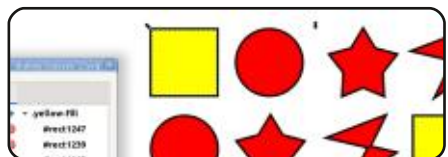
Full Circle

THE INDEPENDENT MAGAZINE FOR THE UBUNTU LINUX COMMUNITY

EDITORIAL

WELCOME TO THE LATEST ISSUE OF FULL CIRCLE

This month we have the usual suspects of Python, Inkscape, Latex, and Micro this, that, and the other. Filling the third HowTo space this month is the third, and final, article on cloning your PC. And with a bonus update on a previous part in the series.

No Command & Conquer this month. Erik is currently up to his eyeballs in the stress known as moving house. Good luck, Sir. You'll need it. I moved house several month's ago and it's a traumatic upheaval. Never again!

Since **Ubuntu 21.10** is now a thing so that means it's time for Adam to give it his regular looksy and opinion on its progress. Not only that, but he's also reviewing his shiny new System76 laptop!

Don't forget: if you're looking for some help, advice, or just a chit chat: remember, we have a **Telegram** group. I mention this as I've been giving out the wrong link in a couple of emails. The (new and updated) link is: https://t.me/joinchat/24ec1oMFO1ZjZDc0. I hope to see you there. Come and say hello.

Anyway, stay safe, and all the best for 2021!
Ronnie
ronnie@fullcirclemagazine.org

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http://tunein.com/radio/Full-
Circle-Weekly-News-p855064/

THE FIRST STABLE RELEASE OF GNU WGET2:

09/27/2021

After three and a half years of development , the first stable release of the GNU Wget2 project is presented , developing a completely redesigned version of the program for automating recursive loading of GNU wget content. GNU Wget2 is designed and rewritten from scratch, they moved the basic web client functionality into the libwget library, which can be used in standalone applications. The utility is supplied under the GPLv3+ license, and the library under the LGPLv3+.

Instead of gradually reworking the existing code base, it was decided to redo everything from scratch and they founded a separate branch of wget2 to implement ideas for restructuring, increasing functionality and making changes that break compatibility. With the exception of the end of support for FTP and the WARC format, wget2 can act as a transparent replacement for the classic wget utility in most situations.

https://lists.gnu.org/archive/html/info-gnu/2021-09/msg00011.html

PASH SHELL SCRIPT PARALLELIZATION SYSTEM MOVED UNDER THE WING OF LINUX FOUNDATION:

09/27/2021

The PaSh project, who develops tools for parallel execution of shell scripts, has announced a move under the auspices of the Linux Foundation, which will provide the infrastructure and services needed to continue development. The project code is distributed under the MIT license and includes components in Python, Shell, C and OCaml languages. The project is supported by MIT, Rice University, Stevens Institute of Technology, and the University of Pennsylvania.

https://linuxfoundation.org/press-release/linux-foundation-to-host-the-pash-project-accelerating-shell-scripting-with-automated-parallelization-for-industrial-use-cases/

FEDORA LINUX 35 HAS ENTERED BETA TESTING:

09/28/2021

Testing of the beta version of Fedora Linux 35 has begun. The beta release marked the transition to the final testing phase, where only critical bug fixes are allowed. The release is scheduled for October 26th. This release covers Fedora Workstation, Fedora Server, Fedora Silverblue, Fedora IoT, and Live builds delivered as spins with KDE Plasma 5, Xfce, MATE, Cinnamon, LXDE and LXQt desktop environments. Assemblies are formed for x86_64, Power64, ARM64 (AArch64) architectures and various devices with 32-bit ARM processors.

https://fedoramagazine.org/announcing-fedora-35-beta/

OBS STUDIO 27.1 RELEASED:

09/28/2021

Available now is OBS Studio 27.1 for streaming, compositing and video recording. The code is written in C / C++ and is distributed under the GPLv2 license. Packages are generated for Linux, Windows and macOS.

The development goal of OBS Studio was to create a portable version of the Open Broadcaster Software (OBS Classic) application that is not tied to the Windows platform, supports OpenGL, and is extensible through plugins.

What stands out is all the Youtube integration, done with the help of Youtube themselves.

https://github.com/obsproject/obs-studio/releases/tag/27.1.0

SuperTuxKart 1.3 released:

09/29/2021

SuperTuxKart 1.3, free racing game with plenty of go-karts, tracks and features, is out. The game code is distributed under the GPLv3 license. Binary assemblies are available for Linux, Android, Windows, and macOS.

Not much was said about the release, but there is a long list of changes. Those of you who like comics, it now contains Pepper, from Pepper and Carrot.

https://blog.supertuxkart.net/2021/09/supertuxkart-13-release.html

Firezone - create VPN servers based on WireGuard:

30/09/2021

The Firezone project is developing a VPN server for organizing access to hosts in an internal isolated network from user devices located in external networks. The project aims to achieve a high level of security and simplify the VPN deployment process. The project code is written in Elixir and Ruby, and is distributed under the Apache 2.0 license.

The project is being developed by a security automation engineer from Cisco, who tried to create a solution that automates the work with host configurations and eliminates the problems that had to be faced when gaining secure access to cloud VPCs. Firezone can be thought of as an open source counterpart to OpenVPN Access Server, built on top of WireGuard instead of OpenVPN.

https://github.com/firezone/firezone

New version of Exim mail server:

09/29/2021

The Exim 4.95 mail server has been released with the accumulated fixes and new features added. According to an automated survey of more than a million mail servers in September, Exim accounts for 58% (57.59% a year ago), Postfix is used by 34.92% (34.70%) of mail servers, Sendmail is 3.52% (3.75%), MailEnable is 2% (2.07 %), MDaemon - 0.57% (0.73%), Microsoft Exchange - 0.32% (0.42%).

https://lists.exim.org/lurker/message/20200601.152400.f7bce8f6.en.html

PostgreSQL 14 released:

09/30/2021

After a year of development, a new stable branch of PostgreSQL 14 is out. Updates for the new branch will be released for five years until November 2026. PostgreSQL 14 brings a variety of features that help developers and administrators deploy their data-backed applications. PostgreSQL continues to add innovations on complex data types, including more convenient access for JSON and support for noncontiguous ranges of data. This latest release adds to PostgreSQL's trend on improving high performance and distributed data workloads, with advances in connection concurrency, high-write workloads, query parallelism and logical replication.

https://www.postgresql.org/about/news/postgresql-14-released-2318/

Free Software Foundation Introduces JShelter Browser Add-on to Restrict JavaScript API:

10/01/2021

The Free Software Foundation has unveiled the JShelter project, that develops a browser add-on to protect against threats posed by JavaScript on websites, including hidden identification, movement tracking, and user data collection. The project code is distributed under the GPLv3 license. The add-on is prepared for Firefox , Google Chrome , Opera , Brave, Microsoft Edge and other browsers based on the Chromium engine.

The project is being developed as a joint initiative funded by the NLnet Foundation. JShelter has also been joined by Giorgio Maone, the creator of the NoScript add-on, as well as the founders of the J++ project and the authors of the JS-

Shield and JavaScript Restrictor add-ons . The new project is based on the JavaScript Restrictor add-on.

https://www.fsf.org/news/fsf-announces-jshelter-browser-add-on-to-combat-threats-from-nonfree-javascript

CRASHES IN OPENBSD, DRAGONFLY BSD AND ELECTRON DUE TO DEPRECATION OF THE IDENTRUST ROOT CERTIFICATE:

10/01/2021

The termination of the IdenTrust root certificate (DST Root CA X3) used to cross-sign the Let's Encrypt CA root certificate resulted in problems with Let's Encrypt certificate validation in projects using older versions of OpenSSL and GnuTLS. Problems also affected the LibreSSL library, the developers of which did not take into account the past experience related to failures that occurred after the AddTrust root certificate of the Sectigo (Comodo) certification authority expired.

As a workaround, they proposed you delete the "DST Root CA X3" certificate from the system storage (/etc/ca-certificates.conf and /etc/ca-certificates.conf and /etc/ssl/certs), and then run the command "update-ca-certificates -f -v ").

https://github.com/libressl-portable/portable/issues/595

GOOGLE DONATES A MILLION DOLLARS TO IMPROVE THE SECURITY OF OPEN SOURCE SOFTWARE:

02/10/2021

Google introduced the Secure Open Source (SOS) initiative, which will provide bonuses for work related to hardening critical open source software. A million dollars have been allocated for the first payments, but if the initiative is recognized as successful, the investment in the project will continue.

https://security.googleblog.com/2021/10/introducing-secure-open-source-pilot.html

The VirtualBox Networking Primer
Connecting and Configuring Virtual Machines

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

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

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

Author: **Robin Catling**
Publisher: Proactivity Press
ISBN13 : 9781916119482

Amazon US link:
https://www.amazon.com/dp/1916119484?ref_=pe_3052080_397514860

Amazon UK link:
https://www.amazon.co.uk/VirtualBox-Networking-Primer-Connecting-Configuring/dp/1916119484/ref=sr_1_1?dchild=1&keywords=virtualbox+networking+primer&qid=1600253699&s=books&sr=1-1

Kobo:
https://www.kobo.com/us/en/ebook/the-virtualbox-networking-primer

BACK NEXT MONTH

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.

Somewhere in the back of my mind, I believe that I touched on sets in an article many, many years ago. If I in fact did, I don't think that I really did the subject justice. So, I decided to fix that this month.

What is a set? The easiest way to answer that is to show you by example.

Assume we have two lists.

```
List1 = [''S01E01', 'S01E02',
'S01E03', 'S01E04', 'S01E05',
'S01E06', 'S01E07', 'S01E08']

List2 = ['S01E01', 'S01E03',
'S01E05', 'S01E07', 'S01E08',
'S01E03']
```

Let's say that List1 contains all of the episodes for a show called "My Life" that have aired so far. And let's further say that List2 contains the episodes that we have recorded on our home PVR. (The Sxx stands for Season (Series for my friends outside of the US) of the show, and the Exx stands for Episode number.) Just looking at the lists written down, it's easy to see that List2 (what we have recorded) is missing 'S01E02', 'S01E04' and missing 'S01E02', 'S01E04' and 'S01E06', and that 'S01E03' was recorded twice. But how can we do it programmatically?

One solution is to use the in operator, and step through each of the items in List1 and see if the item is in List2.

```
for epi in List1:
    if epi not in List2:
        print(f'Missing
Episode {epi}')

print('Finished')
```

result:
```
Missing Episode S01E02
Missing Episode S01E04
Missing Episode S01E06
Finished
```

The not in method takes three lines (not including the definition of the lists) to find the missing episodes. We can, however, do it better by using sets.

```
print(set(List1).difference(s
et(List2)))

{'S01E06', 'S01E02',
'S01E04'}
```

Using sets, we can do the same thing much quicker, and with only one line of code. The difference method will show all the items from set(a) which are not in set(b). What happens if we reverse the sets in the difference statement, comparing List2 to List1? Since every item in List2 is in List1, we get an empty set returned to us.

```
print(set(List2).difference(s
et(List1))

set()
```

Now, what exactly is a set? In Python, a set is defined as "an unordered collection of items. All items are unique within the set." If you remember, List2 has S01E03 duplicated, so how does List2 look when it's converted to a set?

```
print(set(List2))

{'S01E08', 'S01E03',
'S01E07', 'S01E05', 'S01E01'}
```

You can see that the set is just five items rather than the six we defined, so the duplicate S01E03 is excluded. Also notice that, as we saw in the definition of a set, the order is totally different from what we defined in the list.

You can also use a shortened version of our set difference statement. To do this, we use the - operator.

```
print(set(List1) -
set(List2))
```

So what else can we do with a set? We can add an item to a set and remove one as well.

```
set1 = set(List1)
set1.add('S01E09')
print(set1)

{'S01E04', 'S01E05',
'S01E01', 'S01E06', 'S01E02',
'S01E08', 'S01E09', 'S01E07',
'S01E03'}
```

```
set2 = set(List2)
set2.discard('S01E05')
print(set2)
{'S01E01', 'S01E03',
'S01E07', 'S01E08'}
```

The add operator works with only a single item. There is an update operator that can add multiple items which can be a list, strings, tuples, and other sets as well. You can also use remove to remove items, however if the item to be removed is not in the set,
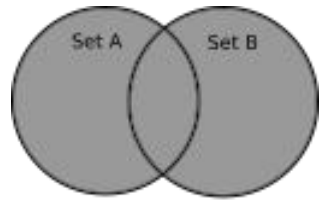
discard() will not return an error, but remove() will throw an error if it isn't in the set.

We have many other methods available to us that work with sets. They include intersection, union, symmetrical difference. For the use of the next examples, we will use the following values.

```
SetA={1,2,3,4,5}
SetB={5,6,7,8,9}
```

UNION

Union
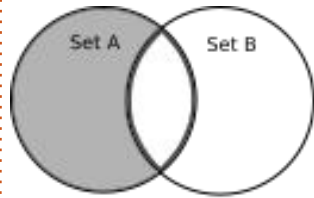
The union method returns all items from both Set A and Set B. For example:

```
SetA.union(SetB) returns
{1,2,3,4,5,6,7,8,9}
```

Notice that the value 5 is in both sets, but because a set can not include duplicates, it is in the union only once. You can also use the | operator to perform the union operation.
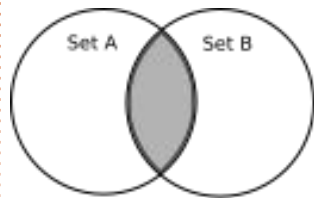
```
SetA | SetB
```

DIFFERENCE

Difference

We already have seen the difference method earlier. It returns the values that are in SetA that are not in SetB.

```
SetA.difference(SetB) returns
{1, 2, 3, 4}
```

You can also use the operator - to perform the difference operation.

```
SetA - SetB
```

INTERSECTION

Intersection

Intersection returns only the values that are in BOTH SetA and SetB.

```
SetA.intersection(SetB)
returns {5}
```

You can also use the operator & to perform the intersection operation.

```
SetA & SetB
```

SYMMETRIC DIFFERENCE
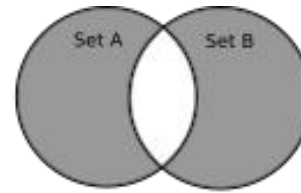
Symmetric Difference

The Symmetric Difference method returns all the values in SetA and SetB that are not in both.

```
SetA.symmetric_difference(Set
B) returns {1, 2, 3, 4, 6, 7,
8, 9}
```

You can also use the operator ^ to perform the SymmetricDifference operation

```
SetA ^ SetB
```

Sets don't have indexes like lists have. So while you can do something like

```
>>> MyList = [1,2,3,4,5,6]
>>> print(MyList[4])

5
>>>
```

If you tried that with a set, the attempt will fail.

```
>>> myset={1,2,3,4,5,6}
>>> print(myset[4])
Traceback (most recent call
last):
  File "<stdin>", line 1, in
<module>
TypeError: 'set' object is
not subscriptable
```

```
'set' object is not
subscriptable
>>>
```

There are also the methods issuperset() and issubset(). SetA is considered a superset if it contains all of the items in SetB. SetB is considered a subset of SetA if all of its items are in SetA

```
>>> SetA={1,2,3,4,5,6,7,8}
>>> SetB={1,2,3,4}
>>> SetA.issuperset(SetB)
True
>>> SetB.issuperset(SetA)
False
>>> SetB.issubset(SetA)
True
```

However, consider the following situation...

```
>>> SetC={1,2,3,4,10}
>>> SetC.issubset(SetA)
False
>>> SetA.issuperset(SetC)
False
>>>
```

SetC is not a subset of SetA, since SetC contains the value of 10 and SetA does not. In the same way SetA is not a superset of SetC.

FROZENSET

Frozenset is a class that has many of the same characteristics of a set, but a frozenset is immutable so there are no add or remove methods.

```
>>>
SetA=frozenset([1,2,3,4,6])
>>>
SetB=frozenset([5,6,7,8,9])
>>> SetA | SetB
frozenset({1, 2, 3, 4, 5, 6,
7, 8, 9})

>>> SetA - SetB
frozenset({1, 2, 3, 4})

>>> SetA & SetB
frozenset({6})

>>> SetA ^ SetB
frozenset({1, 2, 3, 4, 5, 7,
8, 9})

>>> SetA.add(10)
Traceback (most recent call
last):
  File "<stdin>", line 1, in
<module>
```

```
AttributeError: 'frozenset'
object has no attribute 'add'

'frozenset' object has no
attribute 'add'
>>>
```

There is a lot more that you can do with sets, but I wanted to cover the basics. I hope that you can see how beneficial sets can be for you.

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

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

What we will be covering this time: "*Gummi is a LaTeX editor based on GTK+. The basic features are:*
- *Live preview pane for the compiled document,*
- *BibTeX integration,*
- *Helpers for tables and matrices,*
- *Exporting to PDF,*
- *Error checking,*
- *Syntax highlighting,*
- *Spell Checking,*
- *Document statistics,*
- *Persistent configuration.*"

You may ask, "Why another Latex tutorial when there are so many Youtube videos?"

And my answer would be, after watching countless outdated videos that were badly planned and badly executed and gave me no answers, THIS tutorial was born. I am no expert, this is what I wish the tutorials actually taught me.

When it comes to typesetting, LaTeX is the undisputed champ. Boika, Boika... It outweighs its opponents in the sheer number of options alone. At first, LaTeX is a bit

confusing and difficult to use. Not to scare you, but I suggest looking here: http://tug.ctan.org/info/symbols/comprehensive/symbols-a4.pdf

Just to break the monotony, I want you to open your Ubuntu software centre and click on productivity. Now find 'Gummi' and install it. (don't worry, it removes cleanly) Gummi is another LaTeX editor, a 'simpler' version of TeXstudio if you wish. I don't want us to be tied to one editor, but learn about other editors too.

OPEN GUMMI

You should see the window below.

Initially, when I started this article it was Gummi v0.6.6, now we are on 0.8.0 and what I wanted to show you is not there any more. Delete and restart. Yes, life goes on and we are now on GTK3. Instead, let us take a quick tour around the interface. If you look above the standard preview pane, you will see more tabs. 'Build log', 'Project' and 'bibliography'. Then at the bottom of the editor you will see 'image',

'table', 'matrix' and 'bibliography' again. This should bring home how important bibliography is in LaTeX. (see last issue) Again, it is mostly used by scholars, but people have been known to write books in LaTeX and it is a champ for creating PDFs. You may say, so what? I can print my document to PDF in my LibreOffice writer. Well, a PDF isn't standard. The quality isn't standard. It's more of a blanket term, actually it's a bit of a mess if you ask me. Here is a nice explanation: https://www.youtube.com/watch?v=K7oxZCgO1dY

But that's not all --- as they say on the junk adverts. How about we make something useful, like a CV? Okay, that is waaay too ambitious for a Sunday morning 6 am. Let's grab a basic one and dissect it. (work from the other end in) Head over to: http://www.latextemplates.com/ and grab a CV template. In case the one I grab is gone or replaced, grab any one, it does not matter, you can learn from them all, I bet you! I just grabbed the second one, as it was the shortest and simplest. You will
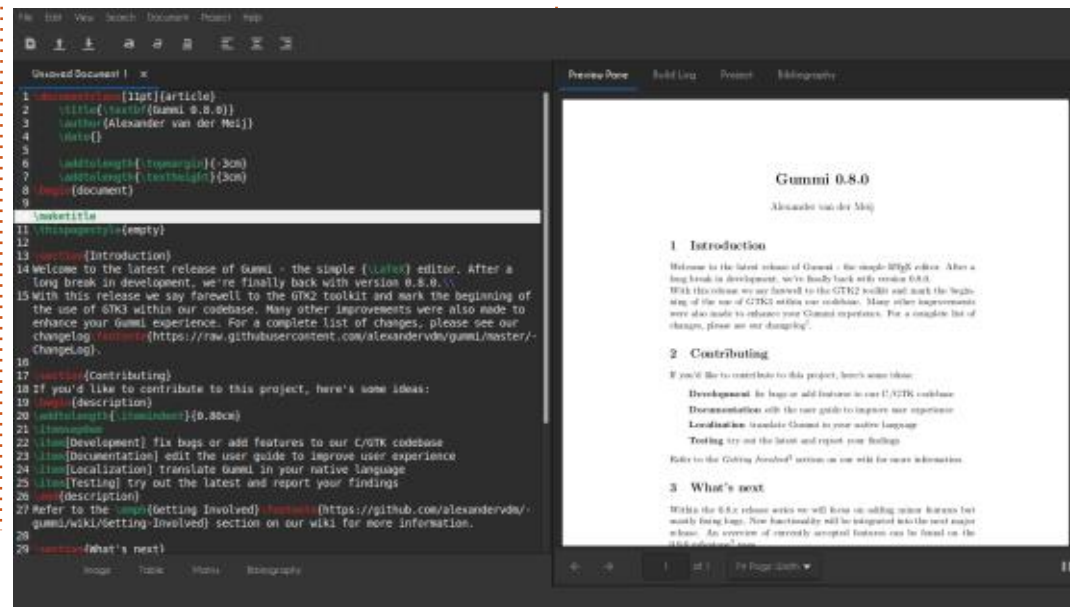
notice that there is a .tex file and a .cls file. The latter contains all the formatting information.

Something we have not discussed is the use of comments. The percent symbol will start a comment line. By this, I mean that everything after the '%' will be treated as a comment. I know you will 'get' this on the first go:

```
%
% This template has been
downloaded from:
% http://
www.LaTeXTemplates.com
%
```

This is simply for us, - the users - and will be ignored by the compiler. So any time you feel the need to add something you want to remember or bring attention to the person looking at your document code, add a %-symbol to the start of the line.

Another thing to point out, is the hrule -horizontal ruler, the line across the page. \moveleft\hoffset\vbox{\hrule width\resume width height 1pt} \smallskip % Horizontal line after name; adjust line thickness by changing the '1pt'

So why not go ahead and change some values on fonts and the like and see how it affects our document on the right? Play! We learn best when playing. Just pay attention to anything that you do not know ... YET!

Your mission, should you choose to accept it, is to use these two new items in your homework, namely adding them to your last project in some way. I won't tell you how, that is for you to figure out, but it will not be difficult.

If any of you want us to create a CV from scratch, let us know at the usual e-mail address. Next issue we will deal with mathematics. By that, I mean how to get them on the paper and how to space the symbols and equations. If your eyes gloss over at the mention of this, that is fine, still come read it as you may learn something that helps you in another area.

As you can see, the editor does not make such a huge difference, if you prefer one or the other, that is fine too. Just join in the fun and one day when you write your book free of charge on free software, just send me an evaluation copy to read, I do so like reading.

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.

Cloning Your System to a New Computer

Although the process I explained in "Create Hybrid Portable Clone of Your System" (Issue 171) provides a method to create a totally portable operating system, the resulting USB drive can also be used as an efficient way to run Ubuntu on a laptop with limited memory – a 64GB eMMC drive, for example, does not really have enough room for a dual boot Ubuntu/Windows installation. However, if you do buy a new laptop with sufficient storage space, you might still prefer to install Ubuntu on the hard drive and set up a dual boot system. In this final article of "The Clone Trilogy" I detail how to take a previously created portable clone USB and use it to install your own customized version of Ubuntu on a new computer; and, to configure it as a dual boot system with Windows. Although the Ubuntu installer can also produce a dual boot setup, it does a fresh install which then requires you to go through the tedious and time consuming process of modifying and tweaking your system to get it just right. Cloning your base system to a new computer avoids all of this aggravation and has the added bonus of providing a full backup of your base system on the new computer.

Once you have created your portable clone USB the process is quite straightforward and quick, requiring just 4 basic steps:
• Installing bootloader files on the new computer
• Making space and creating a new partition on the hard drive of the new computer
• Copying the Ubuntu partition from your clone drive to the new partition on the hard drive
• Making final adjustments to ensure correct boot sequence

You will require a portable clone USB as well as a second bootable USB (you can't use the portable clone USB to copy itself unfortunately), the easiest thing to use is the live USB media that you used to install your original system.

INSTALLING BOOTLOADER FILES

Since UEFI is now the standard, it is safe to assume that your new computer will use the UEFI boot protocol. This booting strategy requires a dedicated partition (EFI system partition) for the bootloader files which will already be on your new computer's hard drive. We need to know its partition number so that we can copy the "ubuntu" folder from the EFI system partition on the portable clone USB to the EFI system partition present on the hard drive of the new computer.

Plug in the portable clone USB and boot your computer from the USB, then open gparted. The partition layout from a recently purchased mid level laptop with a 1 TB drive is shown below.

Your system might have a few other things shown but it doesn't really matter, as you are only interested in two partitions: the Windows partition (/dev/sda3 in my case, yours may be different, it's generally by far the largest partition) and the EFI system partition (/dev/sda1). Write down the appropriate device names for your system, you will need to know them later; and, while you are at it, right click on the EFI system partition, select Information and make a note of the 8 character UUID for this partition.

Close gparted, open a terminal
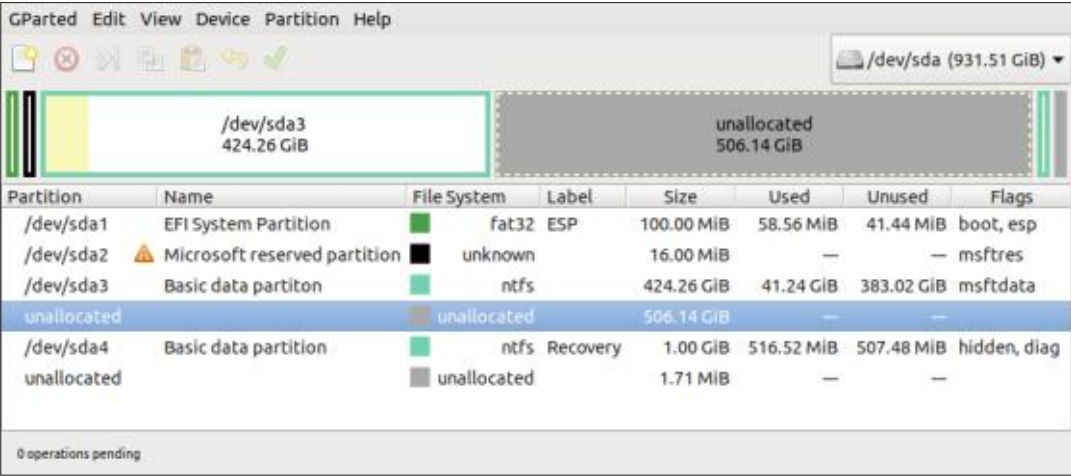
and type

```
sudo mount /dev/sdXY  /mnt
```

to mount the EFI partition of the hard drive (/dev/sda1 in my case, use appropriate values of X and Y for your system). Open File Manager and navigate to /mnt, then open the EFI folder displayed as administrator. A typical result is shown top left - this is the EFI system partition on the hard drive.

Open a separate instance of File Manager and Open as Administrator the folder /boot/efi, then open the folder EFI. The result should be as shown below – this is the EFI system partition on the portable clone USB.

Now right click on the "ubuntu" folder and Copy and Paste it into /mnt/EFI, the result is shown bottom middle.
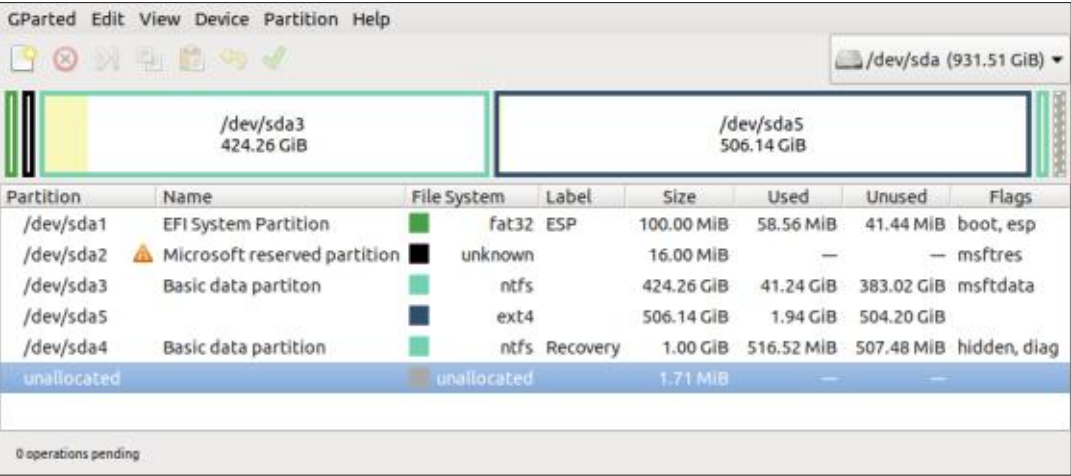
This ensures that the UEFI firmware will find two operating systems as boot choices when you power on the new computer. Close all instances of File Manager.

COPYING THE UBUNTU PARTITION

Open gparted again and use the drop down menu to display the

hard drive on the new computer. Right click on the Windows partition and select Move/Resize. Drag the right hand end of the partition to the left to create some unallocated space, how much is up to you, just make sure there is enough to copy the Ubuntu partition from the portable clone USB. Click the green arrow to apply this change. DO NOT try to create space at the beginning of the partition as this requires moving

Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sdc1	grub2 core.img		5.00 MiB	—	—	bios_grub
/dev/sdc2	fat32	/boot/efi	500.00 MiB	17.96 MiB	482.04 MiB	boot, esp
/dev/sdc3	ext4	/	118.74 GiB	12.21 GiB	106.53 GiB	

0 operations pending

Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sdc1	grub2 core.img		5.00 MiB	—	—	bios_grub
/dev/sdc2			500.00 MiB	17.96 MiB	482.04 MiB	boot, esp
/dev/sdc3			118.74 GiB	12.21 GiB	106.53 GiB	

0 operations pending

the partition and is much riskier than making space at the end.

Now right click on this unallocated space, select New and create a new ext4 formatted partition, label it if you like. Click on the green arrow to apply this change.

Close gparted and power down the computer. Temporarily unplug the portable clone USB, plug in your live USB and reboot the system from the live USB. Once the boot process is complete plug in the portable clone USB. Open gparted and navigate to the portable clone USB

Make sure the Ubuntu partition (/dev/sdc3 in this case) is unmounted, then right click on it and select Copy, navigate to the computer's hard drive, right click on

the new partition that you just created and select Paste to copy the Ubuntu partition into it. This will take a while depending on the size of the partition and how much of it is used. It is worth noting, however, that although gparted makes an exact and complete copy, it only copies used blocks so it is quite efficient.

Once the copy is completed without errors, close gparted. Now Open as Administrator the file /etc/fstab and change the UUID for the EFI system partition (see highlighted UUID in Figure 8) to the one you noted down from the computer's hard drive previously. This is an important step, otherwise at boot time the computer will be looking for a partition identifier from the portable clone USB rather than the hard drive and it will be unable to find it. Save this file and
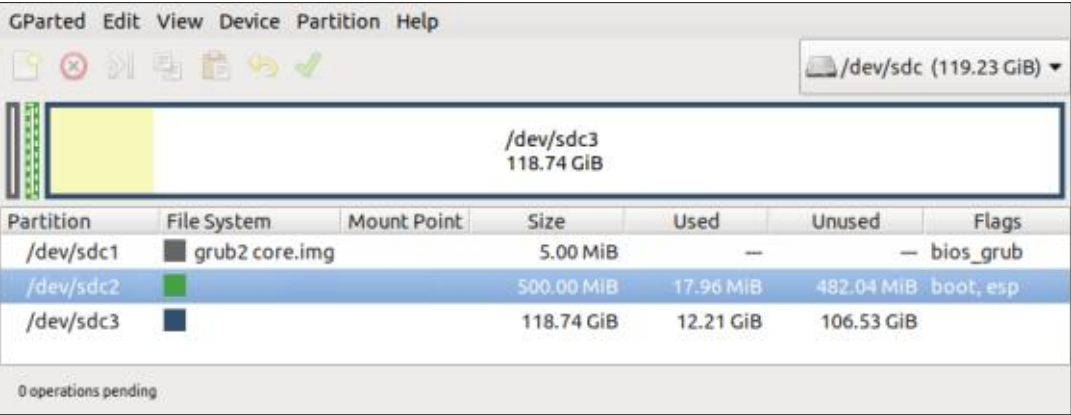
close the editor. Power down the computer and remove all external devices.

FINAL ADJUSTMENTS

Power on the computer and press the F12 key (or whatever one your computer uses) to bring up boot menu choices. You should see "ubuntu" and "Windows Boot Manager". Select "ubuntu" and boot the computer. You should get a GRUB menu, select the first option and this should boot you into your familiar Ubuntu installation. Open a terminal and type:

```
sudo update-grub
```

and when it is finished reboot as before. This time the GRUB menu that appears should have an entry for Windows as well as Ubuntu and

your dual boot system is complete. If you want to avoid having to press any keys to get the boot choice menu when you power up or restart, go into UEFI settings on the GRUB menu and set the boot order to boot "ubuntu" first. This will cause the GRUB menu to be displayed on boot, and then you can choose which operating system you wish to use.

Please note that you will not be able to reliably boot this laptop from the portable clone USB, as the UUID of the Ubuntu partition of the clone USB will be the same as the one on the laptop. Given two identical UUIDs the computer picks one to boot from; but, it is impossible to tell which one it will be in any given instance. However, since the point of the exercise was to avoid having to boot the new machine from a portable clone USB

this should not be a problem. You can still boot it from a live USB if needed.

As always, it is not possible to guarantee that this method will work on every system; however, I have successfully used it to clone Ubuntu to a new computer several times without any problems. Hopefully it works as well for you as it has for me.

Eric Wood is 72, retired, and lives in London, Canada. About 14 years ago he read a newspaper article profiling Mark Shuttleworth which motivated him to install Hardy Heron (Ubuntu 8.04 LTS) on his computer. The rest, as they say, is history. Email: eric@linuxmail.org

```
File Edit View Search Tools Documents Help

   Open ▾    Save      Undo           Q  Q

 fstab ✖
1 # /etc/fstab: static file system information.
2 #
3 # Use 'blkid' to print the universally unique identifier for a
4 # device; this may be used with UUID= as a more robust way to name devices
5 # that works even if disks are added and removed. See fstab(5).
6 #
7 # <file system> <mount point>   <type>  <options>       <dump>  <pass>
8 # / was on /dev/sda2 during installation
9 UUID=8ce9f9e1-9cde-49a3-aba8-b79bb494be64 /               ext4    errors=remount-ro 0       1
10
11
12 /swapfile                                none            swap    sw              0       0
13
14 UUID=2ACD-5866   /boot/efi   vfat    umask=0077  0   1

                                         Plain Text ▾  Tab Width: 4 ▾    Ln 1, Col 1    INS
```

UPDATE: CLONING A BIOS/ LEGACY INSTALLATION

I recently decided to create a hybrid USB with a clean Ubuntu installation to use for experimentation purposes. Using the same partitioning scheme as detailed in the first article of this series I used the "Do Something Else" option of the installer to install Ubuntu into Partition #3 of the USB drive. I chose to use my old laptop which uses BIOS/Legacy booting because I know that there is a bug in the installer when using removable media in UEFI mode which messes with the EFI partition on the hard drive. The USB booted fine on the BIOS machine so I switched to a UEFI laptop, booted into the USB installation and tried to install shim-signed but it failed!

A quick look at /boot/grub revealed that the x86_64-efi folder was missing and so shim-signed doesn't have the required files for installation. The solution is simple enough, open a terminal and type:

```
sudo grub-install --
target=x86_64-efi /dev/sdX
```

(replace X with the appropriate letter for your device) and then install shim-signed as explained in the article.

Now the USB booted successfully on both BIOS and UEFI machines.

I was still puzzled by the fact that I had cloned my old BIOS machine using the method in the first article to test the procedure and it worked fine! Again, a look at /boot/grub told the story – there was a x86_64-efi folder there, despite it being a BIOS machine. Then I recalled that I had added a "dummy" EFI partition to this machine so I could experiment with UEFI bootloaders and how they work. As part of that process I must have installed grub-efi, so everything worked when I tested the cloning technique using this computer.

I suspect very few readers will want to clone a BIOS system as they are dated; but, if you do, just check the contents of /boot/grub before you start. If there is no x86_64-efi folder (there probably won't be) install it as explained above and then proceed, using the method in the article.

This month, we'll continue looking at the Selectors and CSS dialog (or just "Selectors dialog" for short). Now would be a good time to review the previous couple of instalments if you need to, before we dive in deeper. As with last month, we'll be working with this collection of shapes arranged as four groups of objects, one for each row.
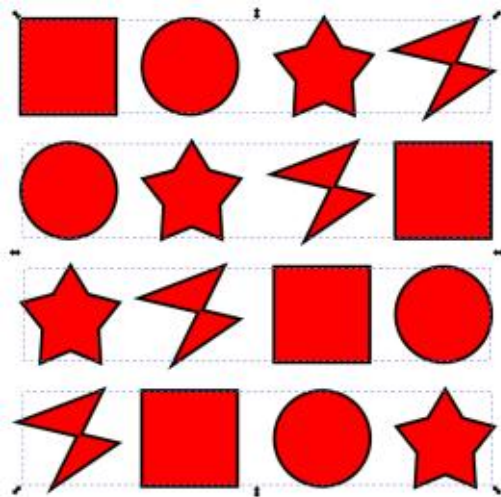
Starting with a blank Selectors dialog, last month I showed you how to select the first item in each row (Ctrl-Shift-Click each one), and add a new class to them all, so that they appear in the dialog. Let's do the same thing this time:
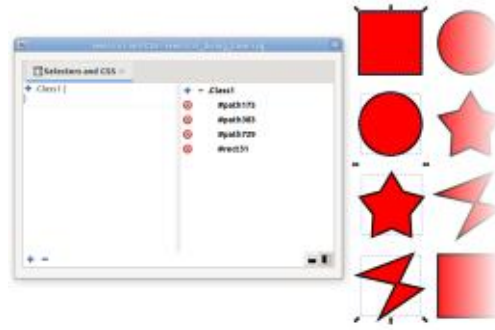
Previously, we used this capability to add some override styling for those objects. But what if we don't do that? What if we just leave the styles alone? In that case, what we've created is a convenient way to re-select all those objects any time we need to: clicking on the ".Class1" entry in the right-hand pane is all that is required.
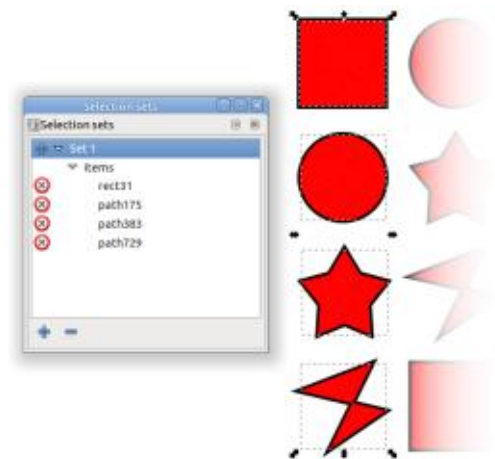
This, essentially, returns the capability of the Selection Sets dialog, which was introduced with version 0.92, but removed with version 1.0.

The Selection Sets dialog allowed you to name (and re-name) your sets, change the label for each object, and add or remove items from sets. The new Selectors dialog is slightly more limited. Double-clicking on the CSS selector won't let you edit it – so you're stuck with the class name you initially created. The listed items are now shown as IDs rather than labels (they include the "#" prefix that CSS uses for IDs, making this difference a little clearer). Double-clicking on an ID just selects it, it doesn't allow you to edit the label or the ID of the object in question.

The Selectors dialog updates in real-time to changes in the SVG content, however, so if you really want to change your class name, you can edit it in the Edit > XML Editor dialog. Just be aware, however, that editing the selector name in the stylesheet won't automatically apply that change to the class attributes in the individual elements – you will need to manually change all of those to suit, as well. In most cases, therefore, it's easier to delete the class entry from the Selectors dialog and re-create it.

You can still, however, add and remove things from the "set" – though in reality what you're actually doing is adding and removing the class from the object. We looked at removing items last time – you just need to click on the delete button to the left of each thing you want to remove. Doing this will also remove any style overrides, most likely returning you to a black fill with no stroke, but if you're using this dialog just for managing selection sets and haven't modified any styles, then this won't be a concern.

Adding new items to the set is also pretty straightforward. You simply have to select them on the canvas, then click the "+" button next to the CSS selector. In this example, I've selected the items

from the second column and clicked the button, and you can clearly now see that the set contains eight items.
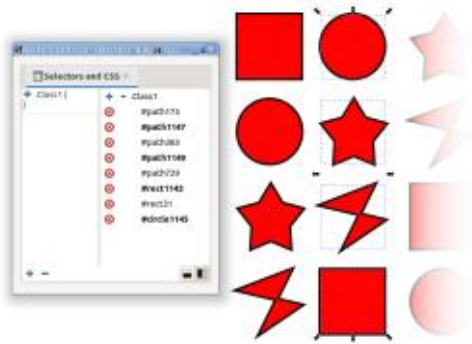
Clicking CSS selector (the ".Class1" entry on the right) will select all eight items on the canvas.

Using this technique, you can create new classes (i.e. selection sets) for any combination of items you want. Let's go through the steps to create a set that contains all the squares:
• De-select everything – by using Edit > Deselect, by pressing the Escape key, or simply by clicking on the canvas background.
• Click the "+" button at the bottom of the Selectors dialog. Unfortunately, you'll be presented with the same default class name (".Class1") every time you do this. It doesn't auto-increment, so you need to make sure you change it by hand to something unique. In this

case, I'm going to create a class called "squares" by just typing the name into the prompt, preceded by a dot. You don't need to supply the leading dot to indicate a class – Inkscape will add that for you – but I recommend always including it, for reasons I'll go into later in this article.
• Select all the squares, by Ctrl-Shift-Clicking each of them.
• Click the "+" next to the ".squares" CSS selector line in order to add the "squares" class to each item, thus making them appear in the set.

If done correctly, the dialog should now be showing both the ".squares" class (with four items) and the ".Class1" class (with the eight items we added previously).

The sections can be collapsed and expanded using the toggle triangles next to the class name, and selecting either of them will select the corresponding set of items on the page.

At any time you can select more items on the page and add them to the existing class using the plus button next to the relevant CSS class selector in the second pane. Or you can create another class entirely, using the plus button at the bottom of the dialog.

As mentioned, clicking on a class selector in the second pane will not only show you the relevant CSS properties on the left, but it will also select all the objects with that class on the page – a replacement for the Selection Sets dialog. You should use this capability carefully, however. I recommend treating "Selection Set" classes and "Styling" classes as two different things.

What do I mean by that? Last time, I demonstrated how you could use classes to change the style of the selected elements. But if you do that, it's very easy to end up with elements that have no styling applied at all, if you subsequently remove the class name from them.

So if you want to use this dialog to manage classes as though they were selection sets, it's best not to also apply any styles as part of those classes. I recommend using one class (or set of classes) for selections, with no style changes in the left-hand pane, and different classes for styling changes, even if it means you have two classes that actually select the same objects.

Here's that method in practice: the ".squares" class is as it was before, it just selects all the squares, but doesn't change their style. The ".yellow-fill" class contains exactly the same objects, but changes their fill color. Now if I want to also change the stars to have a yellow fill, I can add them to the latter class, without disrupting the "selection set" formed by the ".squares" class.
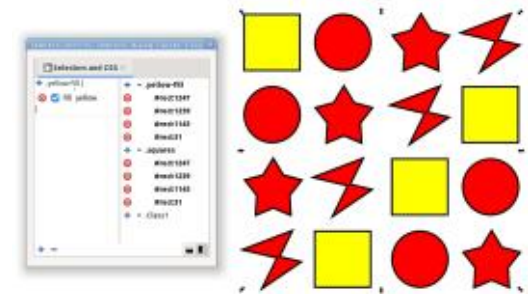
Up to now, I've looked at creating just class-based selectors in this dialog, but you can also use it to create other types of rules in your stylesheet. So far, we've added the "squares" and "yellow-fill" classes to all of the squares in the image, but because these are all the same type of SVG primitive, there's an easier way to select or style them all: the element selector. The squares are all <rect> elements in the SVG, which means they can be targeted with a selector that literally just contains the word "rect". Just create a new entry using the "+" button at the bottom of the dialog, but enter "rect" into the prompt, with no preceding dot. In this way, I've changed the stroke to a thick blue line on all of the squares, while still leaving them with the yellow fill from the previous class-based rule.
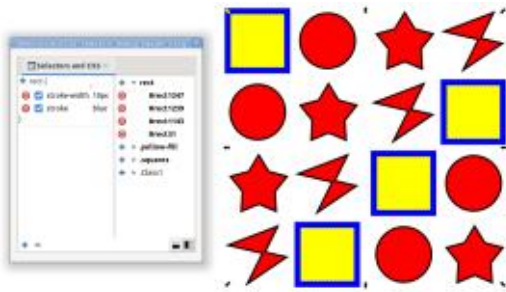
Inkscape did not automatically prefix the word "rect" with a dot, as it would have done when creating a class selector. This implies that the program must maintain a whitelist of element names which are allowed to pass through untouched. To avoid accidentally creating an element selector when you meant to create a class selector, therefore, I recommend always including the leading dot when entering a new class name. In this case, for example, typing ".rect" into the prompt does create a class selector as expected, whereas omitting the dot creates an element selector.

One advantage of element selectors is that they are dynamic in nature. Add another rectangle to the page and it will automatically be included in your "rect" selector. But be aware that inclusion in the selector may not be enough for it to behave the way you expect. In the example above, the "rect" selector defines a thick blue stroke, yet drawing a new rectangle doesn't produce that result.

The reason for this is that the new elements you draw will have their style properties set via their "style" attribute, as usual. As we found out previously, these will override those in the stylesheet, preventing the element rules from working. The solution is to remove the override rules from the "style" attribute – which can be done by selecting the element and then deleting the rules from the "element" section of the left pane in the Selectors dialog. Nevertheless, it's an additional few steps that may get overlooked, and can become tedious when dealing with many elements. Unless you've got a good reason to do otherwise, it's probably best to stick with class-based selectors for styling – at least you can then select all your new elements and add them to the class with a single click in the dialog.

Element selectors also exhibit some odd behaviour within the dialog. Each matching element has its ID shown below the selector, as you would expect, but they still have delete buttons next to them. Clicking one of those buttons does nothing: it doesn't delete the element itself (which would be the only practical way to remove them from the selector), so they appear to be completely redundant. Worse than that, clicking the selector itself ,then the "-" button at the bottom of the dialog, does not delete the selector. Removing an accidentally created element selector, or one that is no longer needed, requires a trip to the XML editor.

Element and class-based aren't the only types of CSS selectors supported by this dialog, however. The other types also come with a few potential inconsistencies and problems, but that's the subject of next month's instalment…
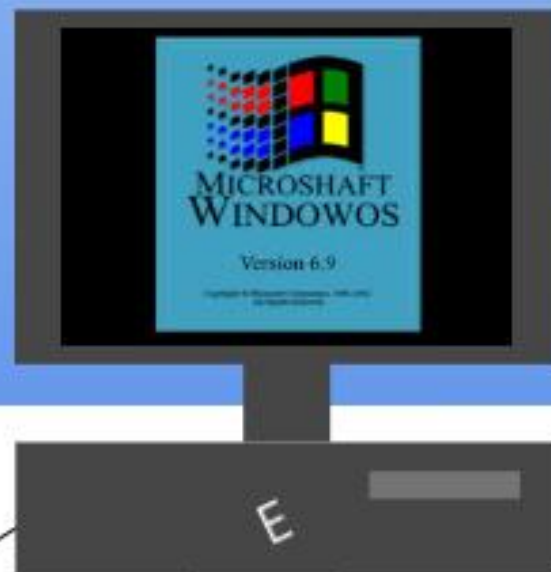
Written by Richard Adams

Last column, we installed the retro game Forgotten Realms: Unlimited Adventures from the SSI Gold Box series of computerized Dungeons and Dragons games, and we examined how to answer the copy protection challenge while running the game. We'll take a short look at loading up add-on modules in this month's Retrogaming Revisited.

BACKGROUND OF THE GOLD BOX ADVENTURE SERIES

As you'll remember from the last two columns, SSI (Strategic Simulations Inc. produced a series of Advanced Dungeons & Dragons games for DOS called the Gold Box series back in the late 80's and into the early 90's. They used a common game engine, and allowed you to play AD&D against your computer. Gold Box titles included Pool of Radiance, Curse of the Azure Bonds, Gateway to the Savage Frontier, and others. The final "game" to use the Gold Box engine was Forgotten Realms: Unlimited Adventures.

Rather than being an actual game, Forgotten Realms: Unlimited Adventures could be described as a game-creation toolkit. A still active online community grew up around this concept, and there are hundreds of modules free to download and play for anyone who owns Unlimited Adventures. Most of the modules published for the original Advanced D&D game are available, along with many original adventures.

Fortunately for us Linux users, GOG.COM has a version of FRUA remastered for Ubuntu, as part of their Forgotten Realms Collection 2 (which includes several other Gold Box games) for the price of $9.99. It's a great value, considering it amounts to getting hundreds, of games when you factor in how many free modules are available for download.

FINDING AND DOWNLOADING MODULES

Once you've installed the game,

you'll want to find modules in electronic format to download. There are multiple archives online where they can be found. Some of the best I've found are:

http://frua.rosedragon.org/

http://frua.reonis.com/
(a backup of the rosedragon site)

In addition, there are a HUGE number of other resources online regarding FRUA. For starters, there is a guide hosted on GOG.COM, located at https://www.gog.com/forum/forgotten_realms_collection/an_introduction_to_forgotten_realms_unlimited_adventures_frua_with_essential_links/page1. This provides tips on how and where to download modules and other content.

Remember last month we made a note of where FRUA was installed, by default at Home\GOG Games\Forgotten Realms Unlimited Adventures. This is where we'll need to place our downloaded and unzipped modules. Let's try with the classic AD&D adventure,

'The Tomb of Horrors'.

AN INFAMOUS PLAYER KILLER

Probably the most notorious and sinister module for the original pen and paper game is 'The Tomb of Horrors', written by D&D co-creator Gary Gygax. It is a truly challenging module filled with traps, a unique 'boss monster' designed for the module, and a vast number of challenging puzzles. So, since it's an entirely inappropriate choice as an introduction to AD&D, let's download it and use it as our example.

In actuality, back when I was playing pen and paper D&D, I played almost exclusively as a Dungeon Master, as opposed to as a player. In one of the rare exceptions, I played a single session of TOH, unfortunately Dungeon Mastered by a very poor DM who went out of his way to run the session as a confrontation between him and the players (very much NOT in the spirit of how the game

of D&D is intended to be run). I did purchase my own copy and read through it later, becoming resentful that this particular DM was not providing the players with information that he was supposed to convey. This largely explained why the game session was so frustrating that no one wanted to return to it (which is absolutely a predictable result of the confrontational approach to Dungeon Mastering).

Fortunately for me, this all took place literally decades ago, so I've forgotten pretty much every specific aspect of the module since originally reading it. FRUA therefore gives me an opportunity to experience the module as a single player (with a genuinely NEUTRAL DM in the form of the computer).

DOWNLOADING AND EXTRACTING THE MODULE

So, first let's go to http://frua.rosedragon.org/. You'll see 'Module Listing' near the top of the

page. Click this. On the new page, click 'Classic PC Modules', again near the top of the page. Scroll down until you find the first entry for Tomb of Horrors (there are multiple entries for it, as more than one person has converted it for FRUA). This one is by Ray Dyer, and should work fine. Click on game23.zip, and you'll see the screen shown bottom left.

I've chosen to establish a 'holding location' for my FRUA downloads, under Home/Downloads/Games/FRUA/Modules, so let's save it there (shown bottom right)

There is a 'data' folder under the game folder for FRUA and this is where we'll need to extract the contents of game23.zip. First, we'll need to open the File Manager, and navigate to the game install location. Open the 'data' folder and right click a blank area, then select 'New Folder'. We have to maintain an 8 character naming convention followed by '.dsn' to work with FRUA, so we'll harness the power of imagination to name it 'TOH.dsn' (shown top right).

Now that we've created a landing space for our extracted
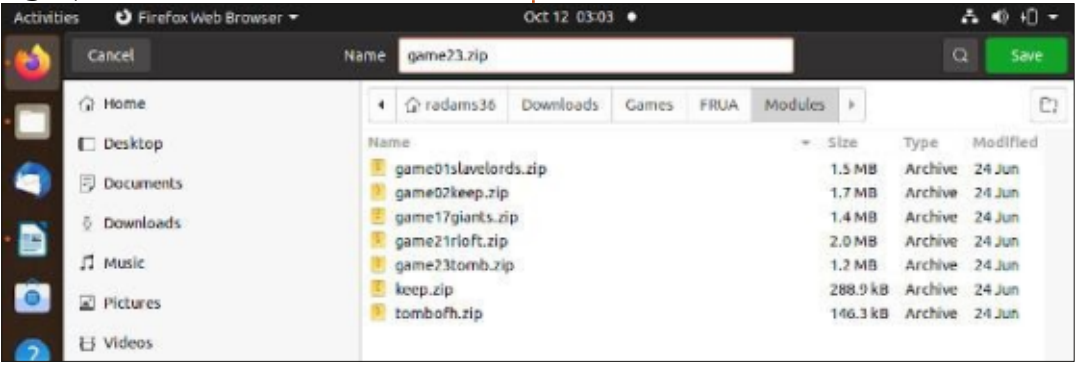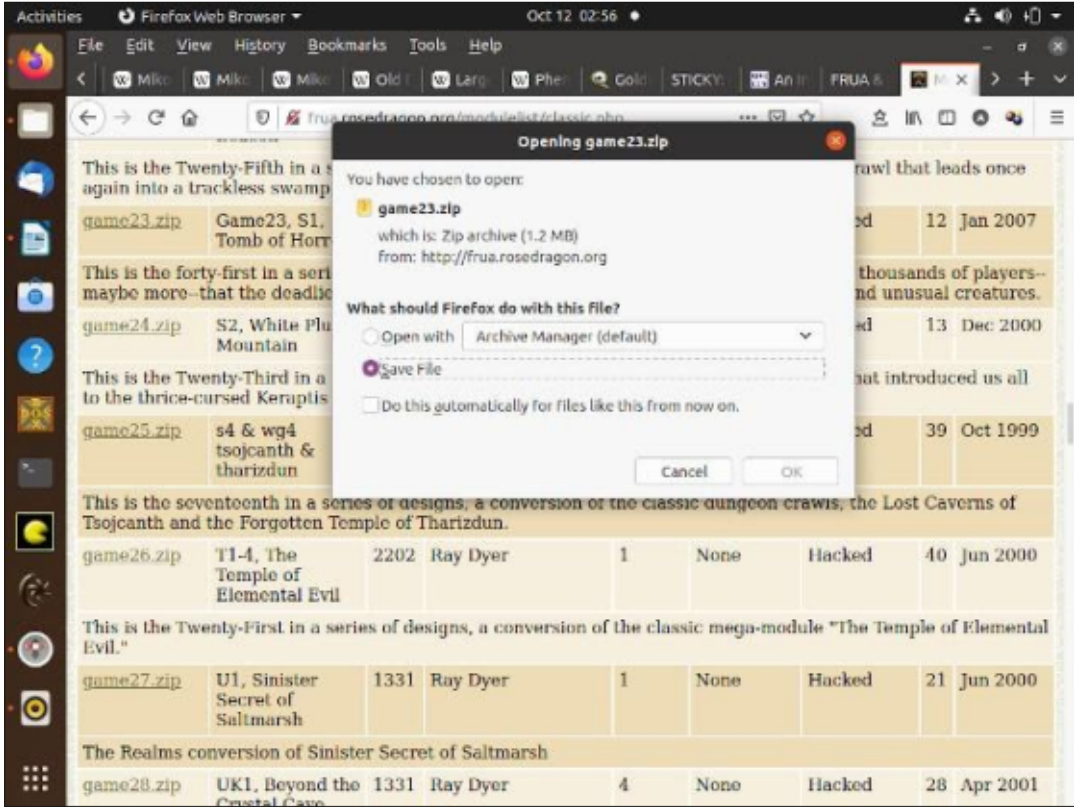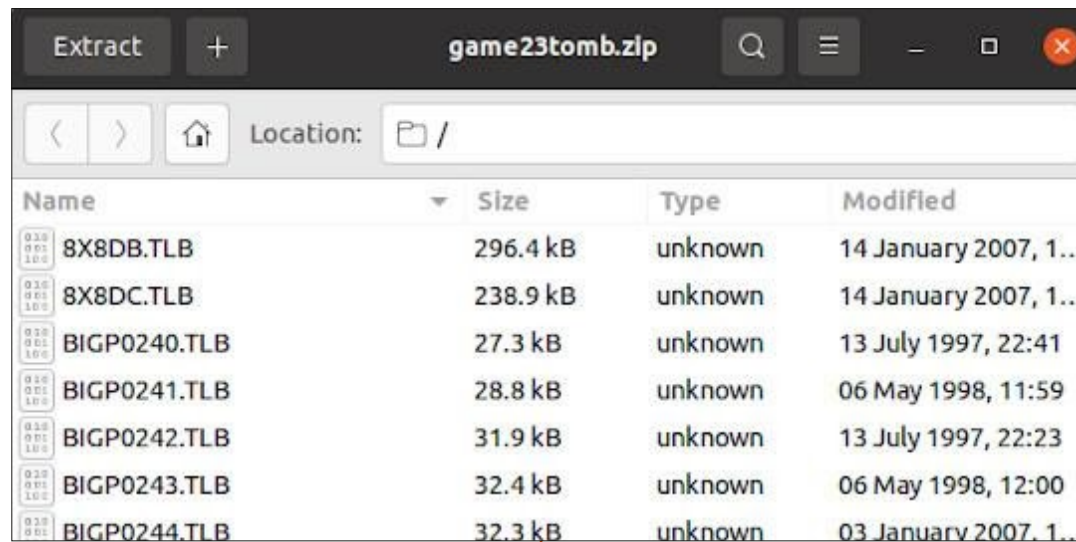
files, we'll go back to Home/Downloads/Games/FRUA/Modules and double-click game23.zip (shown above).

Click 'Extract' at the top left then navigate to Home/Downloads/Games/FRUA/Modules/TOH.dsn, and extract the files. Afterwards, you'll also need to go to the 'Hamburger' menu up top (great, now I'm hungry) and click the folder icon with a + symbol to create a new folder within the game folder. Name it 'SAVE', this will be where FRUA keeps your saved games and information:

PLAYING THE GAME MODULE

Now that we've gotten a module installed, it's finally time to

play! Go back to the FRUA desktop icon from last installment's setup, and double-click.

INTERRUPTION/CORRECTION: COPY PROTECTION

Last month, I made a mistake when describing how to get around the copy protection by using ALT-Enter to resize the DOSBox window and to open the manuals in PDF format. Turns out I should have paid closer attention to the intro screen: it specifies that the copy protection has been disabled. Conveniently,, now when it challenges you with a question about the manual text, you can actually type anything and hit ENTER, and the game will continue. Sorry for any confusion!
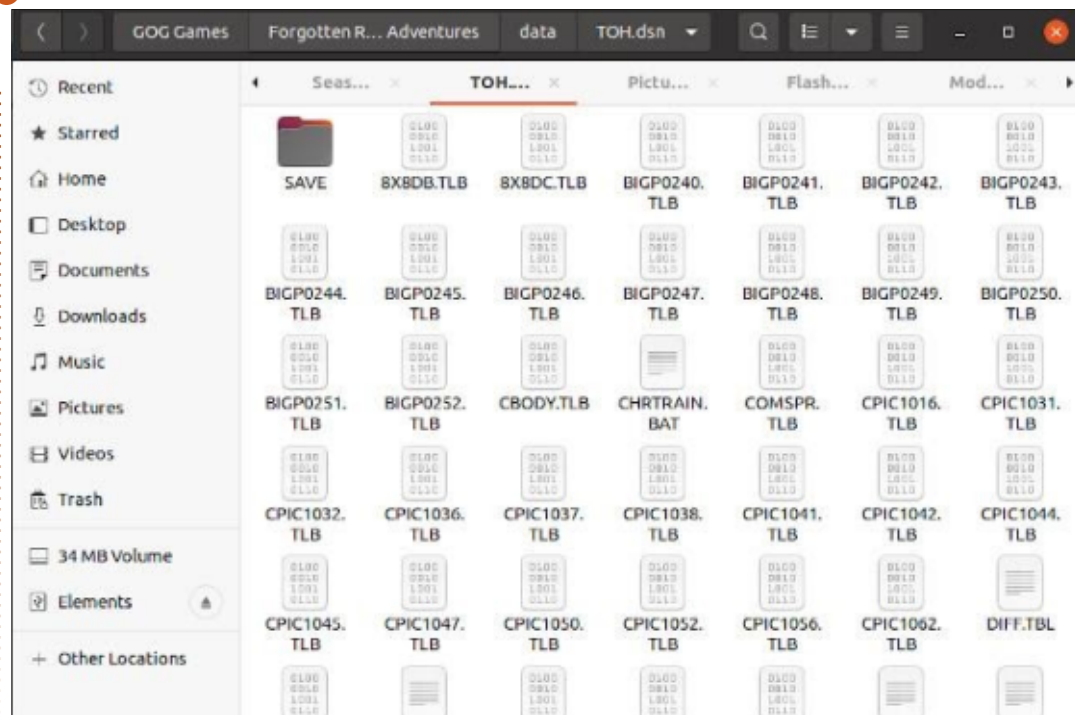
BACK TO PLAYING THE GAME MODULE

Once the game has launched and you've bypassed the copy protection, you'll get a screen with multiple game options. The one we're looking for is Select a Design. Click that with your sword pointer and you'll see an option screen including S1: Tomb of Horrors. Select that option. Click Select at the bottom of the screen. Prepare to actually enter The Tomb of Horrors! Next month, that is, in part 4 of our 2 part series on FRUA!

Richard 'Flash' Adams spent about 20 years in corporate IT. He lives in rural northwest Georgia, USA, with his adopted 'son', a cockatiel named Baby who now has a little brother, a dusky-headed conure named Skittles. Feedback welcome at: acer11kubuntu@gmail.com

```
$ ls /dev/tty*
/dev/tty      /dev/tty2   /dev/tty31   /dev/tty43   /dev/tty55   /dev/ttyprintk   /dev/ttyS2    /dev/ttyS31
/dev/tty0     /dev/tty20  /dev/tty32   /dev/tty44   /dev/tty56   /dev/ttyS0       /dev/ttyS20   /dev/ttyS4
/dev/tty1     /dev/tty21  /dev/tty33   /dev/tty45   /dev/tty57   /dev/ttyS1       /dev/ttyS21   /dev/ttyS5
/dev/tty10    /dev/tty22  /dev/tty34   /dev/tty46   /dev/tty58   /dev/ttyS10      /dev/ttyS22   /dev/ttyS6
/dev/tty11    /dev/tty23  /dev/tty35   /dev/tty47   /dev/tty59   /dev/ttyS11      /dev/ttyS23   /dev/ttyS7
/dev/tty12    /dev/tty24  /dev/tty36   /dev/tty48   /dev/tty6    /dev/ttyS12      /dev/ttyS24   /dev/ttyS8
/dev/tty13    /dev/tty25  /dev/tty37   /dev/tty49   /dev/tty60   /dev/ttyS13      /dev/ttyS25   /dev/ttyS9
/dev/tty14    /dev/tty26  /dev/tty38   /dev/tty5    /dev/tty61   /dev/ttyS14      /dev/ttyS26   /dev/ttyUSB0
/dev/tty15    /dev/tty27  /dev/tty39   /dev/tty50   /dev/tty62   /dev/ttyS15      /dev/ttyS27
/dev/tty16    /dev/tty28  /dev/tty4    /dev/tty51   /dev/tty63   /dev/ttyS16      /dev/ttyS28
/dev/tty17    /dev/tty29  /dev/tty40   /dev/tty52   /dev/tty7    /dev/ttyS17      /dev/ttyS29
/dev/tty18    /dev/tty3   /dev/tty41   /dev/tty53   /dev/tty8    /dev/ttyS18      /dev/ttyS3
/dev/tty19    /dev/tty30  /dev/tty42   /dev/tty54   /dev/tty9    /dev/ttyS19      /dev/ttyS30
```

Sometimes, when you update your microcontroller with a new version of MicroPython, your entire memory gets erased. When that happens, of course, all of the code that you worked on gets erased as well. If you are using Thonny, you have the ability to copy any files that you want to keep safe off of the Microcontroller onto your main computer. But only one file at a time.

I found a neat utility called mpfshell that can make your life a whole lot easier. You can find their repository at https://github.com/wendlers/mpfshell, and it's well worth your time to download, install and learn how to use it.

According to the repository main page, the utility is "*A simple shell based file explorer for ESP8266 and WiPy Micropython based devices.*" Just so you know, mpfshell works on more than just the ESP8266 and the WiPy. I've tested it on the ESP8266, the ESP32, and the Raspberry Pi Pico, and it works just fine on all three devices. For complete transparency, I haven't tried all the commands on all three Microcontrollers, because I use it only to copy and push files to and from the Microcontroller devices so far. Let's examine how you would use it.

Of course, you need to install the program to be able to use it, which is easy since it is on PyPi. In a terminal, you need to use only pip. On your main machine, open a terminal and type

```
$  pip install mpfshell
```

You can also download the entire repository and install it from that.

Once you have it installed, you will want to open a terminal in the folder where you want to either copy the files from the main computer to the Microcontroller, or from the Microcontroller to the main computer.

You'll want to know what serial port your device is connected to before you start (see above).

Usually, the device will be on either /dev/ttyUSB0 or /dev/ttyACM0, but the actual port your device connects to may change depending on what you have connected to your system at that moment. In the example above, my machine is connected to an ESP32 on /dev/ttyUSB0.

Now, just start the program...

```
$ mpfshell

** Micropython File Shell
v1.1.2, sw@kaltpost.de &
junhuanchen@qq.com &
lht856@foxmail.com **
```

MICRO THIS MICRO THAT

```
-- Running on Python 3.7
using PySerial 3.4 --
mpfs [/]>
```

Next, you have to tell mpfshell to connect to the device on the correct serial port with the open {port} command. I've seen this just seems to lock up sometimes. If that happens just do a <Ctrl> C in the terminal and start the shell again. It almost always works the second time.

```
mpfs [/]> open /dev/ttyUSB0
Connected to esp32
mpfs [/]>
```

Notice that mpfshell tells you what type of device you are connected to. This can be very helpful if you have multiple devices connected. Now that you are connected to your microcontroller, do an ls to find out what files and folders are on your device.

```
mpfs [/]> ls
Remote files in '/':
       boot.py
       esp32i2cscan.py
       gfx.py
       image1.py
       image2.py
       rnerd_ssd1306_esp32.py

rnerd_ssd1306_esp32_graphics1
.py
       ssd1306.py
mpfs [/]>
```

Of course, the files on your Microcontoller will be different from what's on mine, but you get the idea.

Now, let's do a complete copy from the ESP32 (or whatever your Microcontroller is) to the computer's hard drive. To do this, you need to use the mget command. However, you need to use a special command. The command is mget .*\.py . You might recognize that this command uses a regular expression (regex) to get all files.

```
mpfs [/]> mget .*\.py
 * get boot.py
 * get esp32i2cscan.py
 * get gfx.py
 * get image1.py
 * get image2.py
 * get rnerd_ssd1306_esp32.py
 * get
rnerd_ssd1306_esp32_graphics1
.py
 * get ssd1306.py
mpfs [/]>
```

To do a bulk copy from your computer to the microcontroller, you can use the mput command.

```
mpfs [/]> mput .*\.py
 * put ssd1306.py
 * put boot.py
 * put image2.py
 * put
```

```
rnerd_ssd1306_esp32_graphics1
.py
 * put rnerd_ssd1306_esp32.py
 * put image1.py
 * put esp32i2cscan.py
 * put .python-version
 * put gfx.py
mpfs [/]>
```

You can copy a single file by just using the get or put command.

```
mpfs [/]> get boot.py
mpfs [/]> put boot.py
       boot.py
mpfs [/]>
```

If you forget what command you might need to use at any given time, simply type help.

```
mpfs [/]> help

Documented commands (type
help <topic>):
===============================
===========
EOF    close   execfile   lef
ls     mpyc    put        r
runfile        c          e
get    lexecfile          md
mrm    pwd     repl       v
cat    ef      help       lls
mget           o          q
rf             view
cd             exec
lcd            lpwd       mput
open           quit       rm

mpfs [/]>
```

You can also get help on any of the commands...

```
mpfs [/]> help mget
mget <SELECTION REGEX>
   Download all remote files
that match the given regular
expression.
   The local files will be
named the same as the remote
files.
   "mget" does not get
directories, and it is not
recursive.

mpfs [/]>
```

And to leave mpfshell, simply type quit.

```
mpfs [/]> quit
greg@earth: $
```

I sincerely hope that you find this utility as helpful as I do.

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

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

Linux on Your iPad

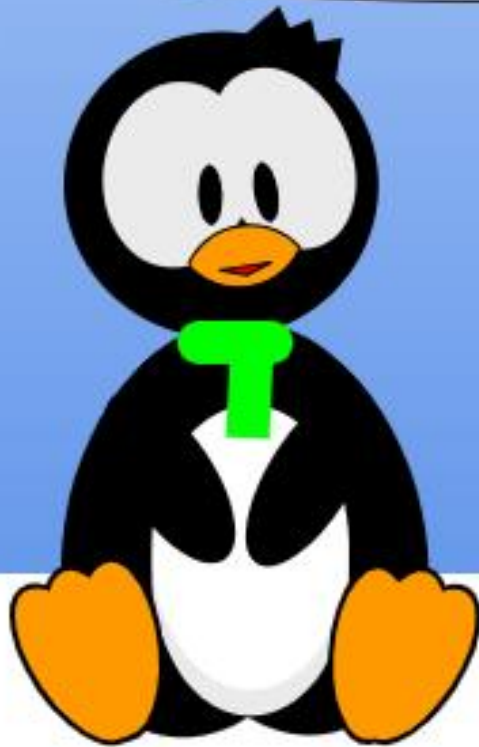For as low as $4.95, you can have your own personal Linux cloud computer in minutes on any device.

MY OPINION

Written by ...

NOTHING TO SEE HERE.

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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

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• 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 <u>not</u> use tables or any type of **bold** or *italic* formatting.

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

Ubuntu 21.10 was released on 14 October, 2021. This is the final "standard" release before the next Long Term Support (LTS) version is unveiled on 21 April, 2022 which will complete the development cycle since the last LTS version, Ubuntu 20.04 LTS.

The last two standard releases did not introduce many changes beyond new versions of the Linux kernel, updated applications, and the move to the Wayland display server. I was interested to see if that trend of "minimal changes" was going to be altered with

Ubuntu 21.10 and it has, with a sudden flurry of developer activity before the upcoming LTS release.

Ubuntu 21.10 is the 35th Ubuntu release and the ninth one since the interface transitioned from Unity to a modified version of the Gnome Shell. At this point in history, 15 years since the first Ubuntu release, Ubuntu 4.10 Warty Warthog, it is safe to consider Ubuntu as a mature and stable distribution that knows where it is going from release to release.

This release is code named

Impish Indri. For those users who are not primatologists, an Indri is the largest member of the lemur family. Found exclusively on the island of Madagascar, the International Union for Conservation of Nature lists it as "critically endangered".

INSTALLATION

I did not install Ubuntu 21.10 on my hard drive, but instead tested it from a USB stick, written using UNetbootin, which conveniently leaves the drive in FAT32 format.

When running from a USB stick, Ubuntu 21.10 runs very quickly and smoothly, just like it would do on an installed hard drive.

SYSTEM REQUIREMENTS

The recommended minimum system requirements for Ubuntu 21.10 have not changed since 20.04 LTS and remain:

- 2 GHz dual core processor
- 4 GiB RAM

- 25 GB of hard-drive, USB stick, memory card or external drive space
- Screen with a minimum of 1024x768 pixel resolution
- Either a CD/DVD drive or a USB port for the installation media
- Internet connection is useful, but not essential

There are indications that this release should run more smoothly and quickly than in the past, due to the new kernel, as well as some fixes and adjustments. That certainly seems to be the case when running it, as it feels light and quick.

NEW

This release has made up for the lack of new features in the last two releases and comes just in time to incorporate these into the upcoming spring LTS release.

Ubuntu 21.10 uses the Linux 5.13 kernel, which brings support for a lot of new hardware, including future Intel and AMD chips, such as
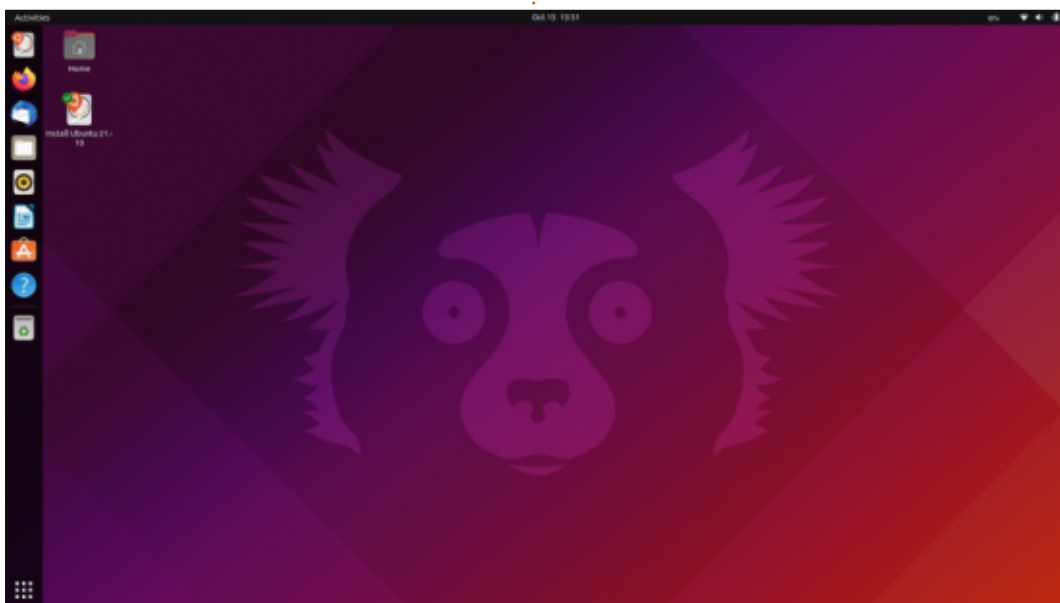
the Intel Alderlake S and AMD Adebaran. It also supports Microsoft Surface Laptops and tablets and introduces initial rudimentary support for the new Apple M1, ARM-based chipsets. Ubuntu 21.10 will also run NVIDIA graphic cards using Wayland.

This release moves to the Gnome 40 desktop but, as in the recent past, a modified version that still looks and works much like the old Unity 7 interface. As always in Ubuntu, the window minimize and maximize buttons that Gnome excludes by default are there, which improves usability a lot.

The desktop includes a horizontal-layout application launcher (main menu) that makes better use of screen space and a horizontal workspace switcher, which allows dragging and dropping of windows between workspaces or using the application launcher's top-displayed thumbnails. Workspaces can move horizontally by use of the mouse scroll wheel or the Page Up/Page Down keys. By default, there are two workspaces.

The Wayland protocol display server as default was introduced in Ubuntu 21.04 and continues in Ubuntu 21.10. This implementation of Wayland introduces scaled, multi-touch gestures for the workspace switcher, opening the main menu and exiting. The windows and workspaces move as you move: fast or slow.

The Ubuntu Dock now shows open applications at the bottom and pinned applications at the top, separated by a very subtle divider line. In fact, if it wasn't pointed out, you might not notice it. Also, the trash can has been moved from the desktop to the dock, leaving a totally clean desktop.

Since Ubuntu 20.10, the built-in firewall has been nftables, although it is not turned on by default. That can be accomplished from the command line with UFW or using the graphical GUFW.

There are many additional small upgrades and changes incorporated. For instance, the network connector now shows recently used WiFi networks at the top of the list to make them quicker to find and the "settings - about" page shows more hardware information than before, like the computer builder and model.

SETTINGS

Ubuntu has never offered a lot of user customization and Ubuntu 21.10 cuts the choices even thinner. Given that Ubuntu is really aimed at enterprise desktop users these days, this probably makes sense. People who like more choices in how their desktop looks and works
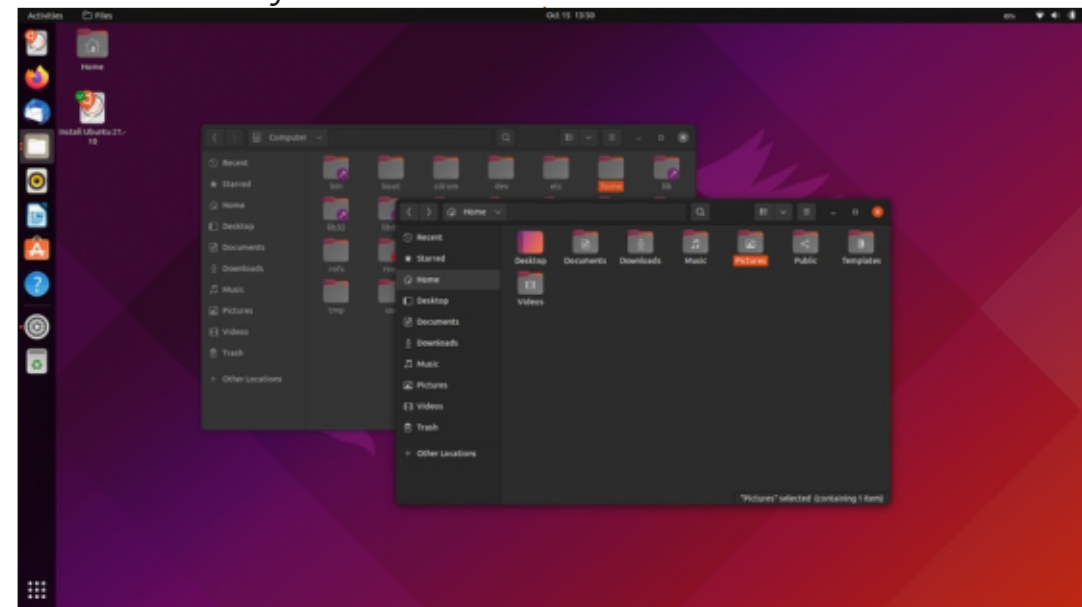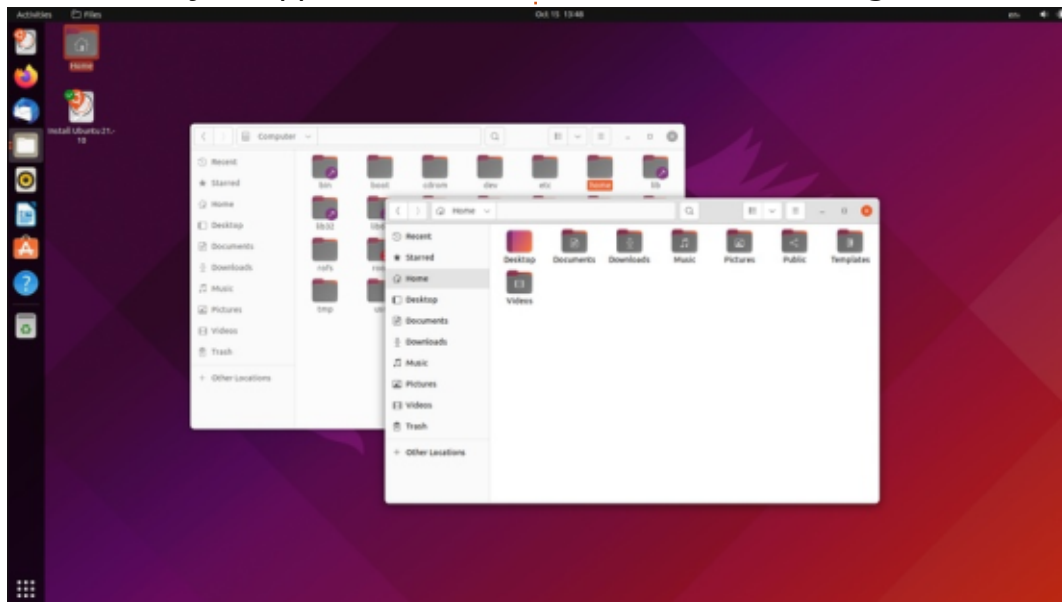
will probably have already moved from Ubuntu to another flavor, like Kubuntu which offers a literally bewildering array of user configuration choices.

Recent Ubuntu versions offered three choices of window themes but this release cuts that to just two Yaru themes, light and dark, eliminating the old compromise default "standard" theme which had dark window tops and light backgrounds.

The wallpaper choice is also reduced to four, including the default "indri" graphic wallpaper in the usual Ubuntu pallet of purple and orange. I will add that at first glance the indri looks an awful lot

like a surprised koala. As wallpapers go, it is one of the better designs in recent years. Unlike with the window themes, it is easy to add your own favorite wallpaper if you don't like the meager offerings.

As in previous Ubuntu releases, the dock bar can be set to the left, right or at the bottom of the screen, but not at the top, as it would conflict with menus on the top bar display there. The dock's icon size can also be adjusted, which changes the dock width. It can be made smaller to free up some more lateral space or bigger for touchscreen use. These can all be adjusted in the settings menu.

Ubuntu's single, unified settings

menu remains perhaps the best control panel available in any operating system today, with everything in one place. It at least makes the limited customization available easy to find.

APPLICATIONS

Some of the applications included with Ubuntu 21.10 are:

• Archive Manager (File Roller) 3.40.0 archiver
• Cheese 3.38.0 webcam application*
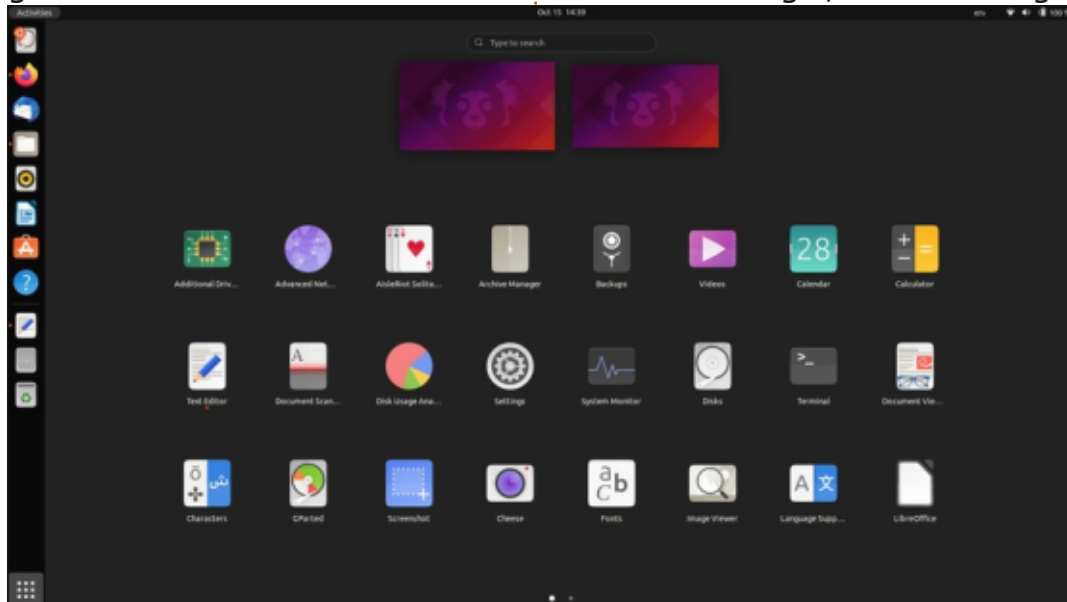• CUPS 2.3.3 printing system*
• Document Viewer (Evince) 40.4 PDF viewer
• Document Scanner (Simple Scan) 40.5 optical scanner
• Files (Nautilus) 40.2 file manager
• Firefox 93.0 web browser
• Gnome Calendar 41.0 desktop calendar
• Gnome Disks 41.0 disk manager
• Gnome Terminal 3.38.1 terminal emulator*
• Gparted 1.2.0 partition editor
• Image Viewer (Eye of Gnome) 41.0 image viewer
• LibreOffice 7.2.1 office suite
• PulseAudio 15.0 audio controller
• Remmina 1.4.20 remote desktop client

• Rhythmbox 3.4.4 music player*
• Shotwell 0.30.11 photo manager*
• Startup Disk Creator 0.3.11 (usb-creator-gtk) USB ISO writer
• Text Editor (gedit) 40.1 text editor
• Thunderbird 91.1.2 email client
• Transmission 3.00 bit torrent client*
• Ubuntu Software (Gnome Software) 40.4 package management system
• Videos (Totem) 3.38.10 movie player*

* indicates the same application version as used in Ubuntu 21.04.

As can be seen, the application collection includes a mix of software from Gnome 3.38, 40 and even 41.

Probably the most controversial application change in this release is that Firefox is now a snap package by default, instead of the previous .deb package. This change was actually requested by Mozilla to make their support for Linux easier and Canonical was happy to oblige. At least for Ubuntu 21.10, the .deb package remains available in the repositories and it will receive updates for the life of 21.10, until July 2022. All this

means that it looks like snaps are now an unavoidable fact of life for Ubuntu users, despite several tech writers providing instructions on how to ban them from your installation. Mostly snaps make life easier for Linux developers and package managers, and that is not a bad thing.

Snaps do have some advantages, including that applications come with all their needed dependencies packaged together, meaning they should work better. However, one of the main objections to snaps is their slow opening time but, in my testing, Firefox opened initially in four seconds and in subsequent openings in one second, which is fast. It is worth noting that snaps do not follow system themes and that is the case in Ubuntu 21.10, as Firefox only semi-conforms to the chosen light or dark Yaru theme, with a dark window top and then light or dark backgrounds as selected, although it does not look clunky or out of place and integrates well for themes.

The Ubuntu 21.10 version of LibreOffice is 7.2.1 and it is lacking only LibreOffice Base, the database application. Like Ubuntu 21.04, this release also includes LibreOffice Math, the math formula writer, although I am not sure what the user case is for including it. Does anyone really use this?

Gnome calendar can now import and open .ics files, the standard calendar export format used by applications like Google Calendar.

The included PulseAudio 15.0 brings support for both Bluetooth LDAC and AptX codecs and adds HFP Bluetooth profiles, which will give improved audio quality.

The latest version of the Gnome file manager, Nautilus, has new sorting capabilities and also the file transfer time progress bars have been improved for accuracy.
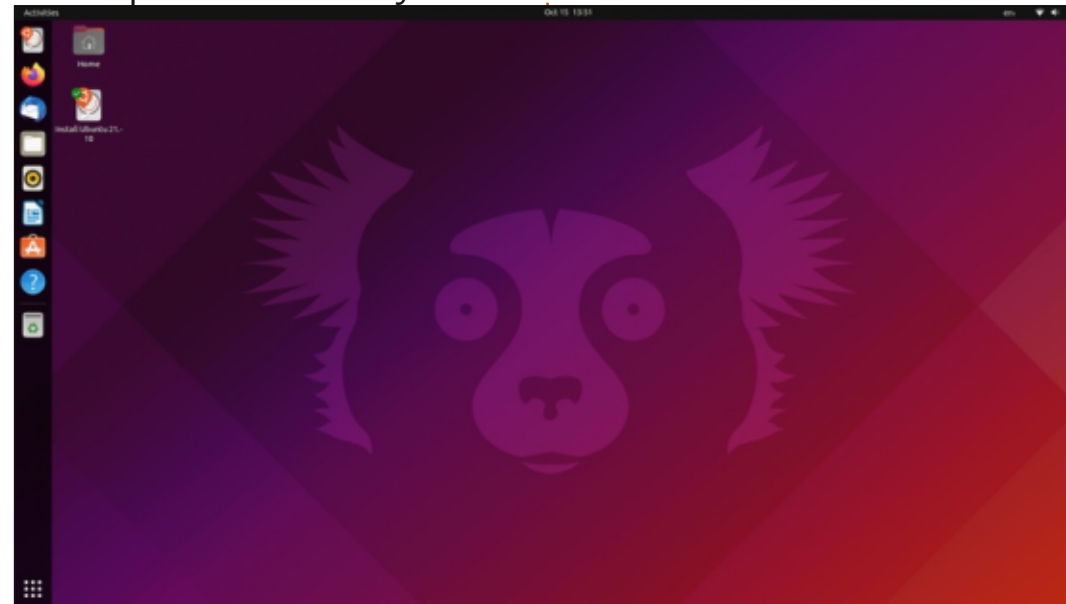
Nautilus' location bar now has "auto-complete" and Nautilus can also open password-protected zip files. Nautilus would still be improved by restoring the removed "up one level" button, however.

The gedit 40.1 text editor has syntax highlighting, now with a choice of nine different highlight color schemes, four of which are dark themes. It is notable that gedit includes spell checking and correcting by default (at Shift+F7). The application requires no set-up for tasks such as writing web pages; it is ready to go to work right out-of-the-box.

CONCLUSIONS

Overall 21.10 is another strong Ubuntu and close-to-flawless release with a surprising number of changes after the two previously "minimum change" releases. It has some performance enhancements, too, making it run fast and smoothly. Ubuntu 21.10 seems very well-polished and modern. All of this bodes well for the next release, Ubuntu 22.04 LTS, which is code named (I kid you not) "Jammy Jellyfish".

While most Ubuntu desktop users will probably stick with Ubuntu 20.04 LTS until the 22.04 LTS is out on 21 April, 2022, there are some who may be tempted to upgrade to 21.10 to take advantage of the work done like the addition of Wayland and the performance boosts included. Even if you hold out for 22.04 LTS to upgrade, the work done on 21.10 will be incorporated, so you will reap the benefits in six months.

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

My 2011 model System76 Pangolin Performance has been a truly great laptop computer. It is well-made, robust and nicely sized with a 15.5" screen. Just to put it in perspective historically, it originally came with Ubuntu 11.04 Natty Narwhal pre-installed on it, the first Ubuntu version with the then-new Unity user interface. That early version of Unity was pretty buggy and Lubuntu 11.04 was quickly installed instead.

Over the past ten years, Pangolin Performance has run several Linux distributions and has also been used to test many other ones for Full Circle reviews.

By modern standards, the Pangolin Performance is a bit heavy at 5.3 lbs (2.4 kg), with its CD/DVD drive and rotating hard drive, but, with 4 GB of DDR3 RAM and a dual-core 2.9 GHz Intel i5-2410M processor, it has been most recently running Lubuntu 20.04 LTS quite happily. That said, though, it is ten years old and is showing its age.

I have been thinking about replacing it for a while, and considering the options for doing so. Really, it came down to buying a brand-name laptop from a local Canadian discount store, or ordering a new System76 laptop directly from the Denver, Colorado based company and having it delivered here to Canada.

OPTIONS

Buying locally would typically involve a unit designed for Windows, but, of course, I would install Lubuntu on it instead. In my city, there are a number of shops that sell laptops, including some large volume discount houses. The brands are the usual assortment of Acer, ASUS, HP, Lenovo, and so on. Right now, prices are pretty low for the lower-end laptops due to the fall back-to-school sales, but the quality of those units is at best questionable, as is the Linux hardware compatibility, and the specs tend to be fairly low end, often the same as my ten year old Pangolin Performance.

In pricing out the better quality Windows laptops, like from MSI, I found a few in the same specification range as the System76 units, with the prices about the same or even higher.

I also priced some Mac laptops just for comparison purposes, and found that, for a comparable unit, with a slower processor and less RAM, they cost about 35% more, which was unsurprising.

In the end, based on how impressed I have been with the quality of my last laptop from System76, I decided to buy a new System76 Galago Pro with a 14.1 inch (35.8 cm) screen and a weight of 3.1 lbs (1.4 kg).

System76 names their laptops after African animals, and the galago, or bush baby, is a small nocturnal primate, so I presume this laptop will work well after dark.

CONFIGURING

The minimum baseline configuration for the Galago Pro includes:
• Processor: 4.2 GHz quad-core i5-1135G7

• RAM: 8 GB Single Channel DDR4 at 3200 MHz
• Hard drive: 240 GB SSD
• Graphics: Intel Iris Xe
• Price: US$1099.00 plus shipping and taxes

With this configuration, you get a capable laptop, but upgrades are available.

Aside from these features, the Galago Pro comes with open-source firmware, including the CoreBoot free software BIOS, which is really nice to have. CoreBoot means having all free software, and not the incongruity of a proprietary BIOS underpinning a free software operating system. It also has something else useful to me, an SD card port.

The factory operating system choices are Ubuntu 20.04 LTS or System76's own Gnome spin, Pop! OS in 20.04 LTS or the latest 21.04 versions.

The global chip shortage of 2020-21 is limiting the company's models available and also the options for upgrades in processors and graphics cards, but I was able to use the company's very simple configuration webpage to put together a unit upgraded from the base model that would be pretty much ideal for my use. This included:
• Processor: 4.7 GHz quad-core i7-1165G7
• RAM: 32 GB Dual Channel DDR4 at 3200 MHz

• Hard drive: 1 TB PCIe Gen3 NVMe SSD
• Graphics: Intel Iris Xe
• Operating system: Ubuntu 20.04 LTS (64-bit)
• Price: US$1,647.00, plus shipping and taxes

ORDERING

As with my last laptop order in 2011, System76 has a very impressive, simple, automated system for ordering. You create an on-line account with them, run though the configuration page for the model you want, place the order, pay by credit card, and then wait, although not for very long.

Even though I placed my order on the Saturday of a long weekend

with a Monday holiday, I instantly received three automated emails. The first acknowledged my account creation, the second confirmed my order was in process, and the third looked for a credit card validation, which I quickly confirmed.

I received an email first thing in the morning on the next business day from a real, live person, who confirmed that all was well with my order. That was followed one minute later by an automated email informing me that my "order has been processed and is in the assembly queue. All systems are built to order. We will update your order page and send an email when your order ships."

So far, so good.

This was the email I received on the third business day after my order was placed: "current order status: completely shipped." That is pretty quick service!

SHIPPING

System76 offers only one choice of shipping and that is via UPS.

I am aware that Americans love

UPS and perhaps they are fine at delivering packages within the continental US, but I have only had bad experiences with deliveries to Canada over dozens of packages. My Galago Pro did finally get here after five shipping days, including four days of it sitting here in my home city, plus many contradictory messages. Suffice to just say UPS couldn't organize a sock drawer.

I did suggest to System76 that they at least look at an option of some other method for shipping to Canada and they agreed to consider

the matter.

With my order placed on the Saturday of a long weekend, it was one week from the first business day until it arrived.

UNBOXING

The package arrived in good shape and I carefully opened it up. System76 uses its own packaging method that clearly says "wait, don't cut it, packaging is reusable" and it is, too.

The box yielded up the Galago Pro, along with its charger, all neatly protected for shipping, along with the paperwork and an envelope of System76 decorative stickers.

The unit was charged already and it booted up in seconds to the installation screen for my choice of operating system, Ubuntu 20.04 LTS. This is a slightly modified Ubuntu version, with a selection of System76 wallpapers, including the default one, and some specialized open-source hardware drivers installed, namely the system76-driver.

I was up and running on Ubuntu about a minute after opening the box!

THE HARDWARE

The Galago Pro is a very nice unit. It is lightweight, slim and portable. The overall dimensions are 12.79 × 8.86 × 0.69 inches (32.49 × 22.50 × 1.75 cm).

The case seems robust and well-made and normal use produces very little heat. The screen has a matte-finish, with a 1920 x 1080

pixel display and is very sharp. I found that on a 14.1 inch screen, the 1920 x 1080 pixel resolution made all the screen elements too small, but a quick monitor size adjustment to 1368 x 768 pixels addressed that.

The ports fitted are a USB 3.2 Gen 2 Type-C / Thunderbolt 4, one USB 3.2 Gen 2 Type-C, two USB 3.2 Gen 1 Type-A, HDMI, a built-in SD card reader, plus a Kensington lock port, which is quite a lot in a slim design like this.

The integral Intel wifi card offers both 2.4 GHz (802.11n) and 5 GHz (802.11ac) band wifi. For me, this is of great benefit, as my old laptop was 2.4 GHz-only, and, with just 11 wifi channels available, had frequent issues with RF interference from my neighbors. The 5 GHz band offers faster speeds, more channels and wider bandwidth, which all adds up to no interference at all, at least where I live.

SWAPPING OPERATING SYSTEMS

Nice as Ubuntu 20.04 LTS is, I had always intended to install Lubuntu 20.04 LTS instead. It's just my own personal favorite operating system. Once I was sure the hardware ran properly on Ubuntu, I was ready to install Lubuntu from a USB stick.

Lubuntu booted and ran well from the stick, even without the hardware-specific drivers installed. The wifi, keyboard, touchpad and everything else all tested as working fine, which was expected. System76 has website instructions for other operating systems and the company seems quite happy that customers use their hardware

to run any Linux distro at all.

With hardware compatibility confirmed, I went ahead and tried to install Lubuntu and immediately ran into a glitch. It didn't offer the usual "erase and use entire disk", and instead only offered "manual partition". Checking the Lubuntu website documentation suggested the issue might be hard drive swapping, and that running:

```
$ sudo swapoff -a
```

should fix it, which it did.

From that point, the installation was very fast, all completed in about four minutes! That compares to 14 minutes for the same operating system installation on my old laptop with its rotating drive.

Boot times with Lubuntu 20.04 LTS are similarly impressive at 16 seconds, compared to 1:45 on the old laptop. Even the shutdown took a paltry two seconds. Idle RAM after a reboot is 515 MB.

As part of my installation I also used the System76 drivers:

```
$ sudo apt-add-repository -y
ppa:system76-dev/stable

$ sudo apt-get update

$ sudo apt install system76-
driver
```

The rest of the installation was just a matter of setting up my own favorite configuration from my personal checklist and reinstalling documents, which took about 35 minutes.

In testing my new Lubuntu installation, I found that the Galago Pro's Li-Ion 49 Wh battery gives about 6-8 hours of normal use before it needs to be plugged in to

charge. That is quite impressive, as, in the past, many Linux distros have been noted as having short battery endurance. That certainly was true of the 2011 Pangolin Performance, which, even when new, had barely two hours on battery.

CONCLUSIONS

The Galago Pro is a really modern, slick and capable laptop that I think most Linux users would be happy to own and run their favorite Linux distro on.

While not cheap, System76 has a well-deserved reputation for quality and service that makes this a good value, especially when compared to equivalent quality laptops for Windows or to similar Macs.

Will this one last a decade, like my last System76 has done? Ask me in 2031.

EXTERNAL LINKS:

Official website: https://system76.com/laptops/galago

WAIT! DON'T CUT IT!

PACKAGING IS REUSABLE.

UNFOLD. SLIDE OUT.

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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.

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

We live in a "Socially" connected world. We chat on Telegram, WhatsApp, Signal, Discord and more. I read an article that the current generation would rather type than receive a phone call (search thegardian.com for silenced ringtones). I wonder about the "sterility" of it all; yes, these are the things that keep me up at night. On the positive side, text has no emotions, unless we add them, hence emoticons, I suppose. So any emotions you add are purely your own. I was assisting someone via WhatApp, but I was logged into their PC via Anydesk and also trying to get past a "support bot" (the ones where they try to brush you off so they don't have to employ real people) at the same time for something unrelated. Their Anydesk had sound on, so I could hear them talking as well as system sounds. I won't repeat what they said, but suffice to say, it wasn't nice. I recall meeting one of our members **@Swift110** on our Telegram channel this way, driving, and typing, yes I know, so it was very terse, as one cannot dot the i's and cross the t's when your attention is on the road. He never took it to be rude or personal, and he got his problem sorted. If he had huffed himself like this person did, for no other reason than adding emotion where there was none, I doubt he would have gotten sorted. Text is just that, but as we evolve in this online, connected world, is adding emotion to cold clinical text not a subliminal cry for human contact?

————————————————————

Q: Can I use the software centre OFFLINE, and how do I do that as it just freezes at downloading software catalogue, with the progress bar at 99%. I am on Ubuntu 20.04, but I want to try 21.04 next. People just give me stupid answers.

A: Yes and no. Yes, if you have the CDROM as a repository or maybe add an offline volume; that way you can grab from there, but you need to download the files to install them and that is not possible if there is no network. As to the "freezing/hanging", just wait, it has to time out. You should be able to uninstall software from there once it has, and install stuff already in your cache.

Q: My keyboard and mouse are the only USB devices in my PC. When I turn it on, Windows says "USB device malfunction", but in Ubuntu there is no peep. I am dual-booting on a ghetto black box with an i5 with 16GB RAM and AMD 5700 gfx card. My keyboard and mouse work anyway. Why is Windows warning me, but Ubuntu is not?

A: There is too little info here, but do you maybe have a disco-disco keyboard that maybe lights up with things programmed to it in Windows, that Linux does not support? It could be that it is drawing just a tiny bit more current that way. Also make sure about the USB statement; there may be a USB receiver for something in some arb port too.

Q: I uninstalled snapd, but cecconoid is available only as a snap, so I installed it again, but now cecconoid is not showing up in snap—list, why is that?

A: As far as I am aware, removing snapd will remove your snaps too. Just reinstall the game.

Q: How do I stop Shotwell from launching every time I plug my phone in to charge? Seriously, it's annoying.

Q&A

A: You need to open your settings and navigate to removable devices and unselect it there.

Q: Greetings. I have a Canon MB2070 Printer that just won't print on Ubuntu 18.04. It replaced my ageing Canon printer – This one's older / smaller brother MB2040. I can see the print and scan in the printer tab, but I can't print a test page. I have even tried CUPS and it adds another Canon2070USB printer to the list, so now it shows 2 printers and a fax. All I get is empty page after empty page.

A: I had a look at the manufacturer page, you can download the "debian" driver and install that. It is the third option down, don't take the first one as that is rpm built in the zipped file. Unzip the driver (right-click 'extract here'), and run the "./install" file from your terminal and follow the prompts. Remember to delete all those autoadded printers first.

Q: This will blow your mind. I have a black box PC with Ubuntu Budgie 20.04 with a D-link USB WiFi adapter and a USB Canon Maxify printer. When I do a scan for available scanners, the D-Link adapter picks up as one. So when I scan, there is no internet. When there is internet, the scanner is not detected. How do I solve this? <dmesg output removed> <image removed>

A: The first thing you need to do is remove "ippusbxd" and restart. Know that you cannot use Simple Scan any more. There are other options for scanning, I suggest using Xsane as it has decent options.

Q: I am trying to install software from the software centre, but it just seems to be hanging there, no rhyme or reason.

A: Try opening a terminal and typing:

```
sudo dpkg --configure -a
```

Q: I tried asking my question on askubuntu, but the ***holes just closed the question and downvoted me. I am hoping you can help me. I have been updating fine for months. Now on 20.04 I am getting failure messages with automatic and manual updates. I tried sudo apt-get upgrade and update commands. How can I fix this?

A: This depends on your error – and you will see it when you do the manual update in the terminal. I will point you here: https://www.maketecheasier.com/fix-ubuntu-update-errors/ and here: https://net2.com/how-to-fix-ubuntu-update-errors/ as you did not tell me the precise error.

Q: I have made a lot of screenshots from Youtube, but I need to cut out the logo on all of them. It's a lot of images. Instead of me wasting countless hours into the wee morning, is there a way for me to do it in one go?

A: You want imagemagick. You can use a 'for loop' to walk through the images. The base would be something like this:

```
convert image_in.jpg -crop
<width x height+left+top>
image_out.jpg
```

If you have a server with a disk array, you could also process them in parallel, but you need good I/O. https://imagemagick.org/script/command-line-options.php

Q: This is not working for me: https://www.jamescoyle.net/how-to/1974-how-to-fix-a-full-boot-partition-on-linux, in particular, dpkg --list 'linux-image*' ??? "dpkg: error: cannot access archive '*.deb': No such file or directory", and I need to clear out all the old kernels as the partition is getting full! My Ubuntu is 20.04 and my SSD is only 16GB.

A: The "cannot access" should be your clue. You need to run it with sudo. Also try using: sudo apt-get autoremove –purge and follow the prompts. I always recommend using Synaptic package manager, as it is visual and you can mark kernels for complete removal.

Q: Hi, all the information I find on Google is related to Ubuntu Gnome, but I am on Xubuntu, and I need to disable my keypad whilst trying. I have a Dell Latitude 5140 and Xubuntu 20.04 that I dual-boot with Windows.

Q&A

A: On XFCE, the setting is hidden in a sub-panel, go to settings-> mouse and touchpad, then below the device, you have "buttons and feedback", then another tab, "touchpad", what you want is in there.

Q: I was reading up on slideshow software and I am very confused. What would be the best software I need to use? It must be easy for a technically challenged person like myself. I want it to look nice, as it is mainly for family photos of my grandchildren, but I can't be bothered to niggle over timings and cropping and whatnot.

A: "Best" is always subjective. I have never really used that functionality, but I have heard good things about imagination slideshow maker. If you would like us to run a tutorial on it, let us know and we will include it in a future issue.

Q: PT [04.07.21 20:58] When I look at info images of other distributions, like arch, the people always have like 1000 packages, but Ubuntu seems to have 2000-3000. Why is that? Is this the bloat people talk about?

A: Ubuntu caters for the everyday computer user, so it includes things like printer and scanner packages, backup software, etc. If you add a package like blender or a music player, all the dependencies it downloads are also counted towards those packages. These other distributions are bare and you need to add all of that. It is simply a design choice and not "bloat".

Q: I was watching a Youtube video and the instructor made his terminal bigger with a keypress. I have the same Xubuntu setup, but mine does not zoom bigger. I wanted to make screen recording with the terminal as big as possible, but dragging it with the mouse only makes the canvas bigger. If that makes any sense?

A: Zooming in Xubuntu is done with the ALT key and mouse wheel, but I suspect you did not pay real close attention. (One terminal looks a lot like the next). This is why I use Sakura instead of the standard terminal, so that when I teach, I can use the CTRL and '+' keys to make it bigger and I suspect your teacher does too.

Q: Where can I look to see why my wifi is just turning off. Coming from a Windows background, I can look at the event viewer.

A: There are also log file viewers for Linux, but it may just be easier and faster to peruse the output of the 'dmesg' command or 'sudo journalctl'. WiFi that just turns off is usually a power saving setting, just by-the-by.

Q: I have returned to Ubuntu after a few years, actually it was Ubuntu 8.04 last. I used to get my open-source games and apps from getdeb and playdeb, but the website seems spammy now.

A: Those places are gone with the wind, I am afraid. You can try pling.com, navigate to apps -> games, and grab what you want there; alternatively, they also have a store, like your software store, that you can peruse and install from.

Q: I was drawn into a few interview rounds and was wondering what were good questions to test Linux knowledge with, but not questions and answers on the internet, as those can be learned parrot-fashion.

A: I find that switches are a good way to see if someone has used Linux or not. They may know the commands, but do they know how to use the switches? For instance the tar command; what switches would you use to extract a file? Then follow that up with, why those specific switches? That tells me a lot more than if the person knows "what is a kernel".

Q: I am trying to use Rufus via WINE in Ubuntu 21.04 to write some liteOS images to a USB drive. I just feel stupid, I can't get this right. How difficult is it to burn an ISO to USB thumb drive?

A: My first question is why flog yourself? I am not sure what liteOS is (searching brings up both Windows and Linux), but if it is Linux-based, you have a USB writer program built in, or you can grab Balena etcher. If the images are Windows-based, you can use WoeUSB, Unetbootin or even Ventoy.

Q : I had to sell my computer after Covid and built up one from random spares. The mainboard has a B75 chipset and a gen3 CPU. The only "modern" thing in there is a 256GB SSD. However, I cannot boot Ubuntu from a USB stick. It just gives; no boot device, insert boot device. The boot order is correct, and boot from USB is enabled.

Intel's website for the mainboard is dead, so I am not sure if I have the latest BIOS patch. If I can just get Ubuntu on it, I can function again.

A : B75 boards are notorious for that kind of thing, it has something to do with fast boot, I think. I can't tell you why, only that you need to plug the SSD on another SATA port when you boot with USB (after changing it in the BIOS), and it should boot. Enabling hot-plug is a good idea. Then, you can move the SSD back to the original SATA port (usually 1.5 and 3GB/s ports?). Then set the boot order again. Wash, rinse, repeat.

Q : I downloaded and installed Ubuntu 21.04. I wasn't paying attention and used the whole disk. Is there a way I can get my stuff back on the Windows partition that is now not there?

A : Yes, I would suggest using another Windows machine and load something like Easus recovery on it and recover it there (do not install anything on the disk you are trying to recover as it will just overwrite things you may want to get back). Linux has recovery programs, but the proprietary Windows ones are a lot more targeted towards Windows files. If you want to use Linux, you will need to install testdisk and photorec.

Q : So I switched from Gnome to Cinnamon and now I want to switch to KDE, but it says I have broken packages. When I try to repair it, it wants to remove 1789 packages of my 2940 packages, that can't be right?

A : That is why you don't just snap on another desktop. Yes, I know it is possible, but there is always something that supersedes another component that does the same work. Vanilla Gnome is not the Gnome that ships with Ubuntu, for instance, that is why it takes so long for Canonical to test and tweak it for you. You also now invite Gnome things and configs to sit next to KDE things and configs, and installed apps may get confused as which to use, etc. Just consider it bad practice. Write it off as a lesson learned, and install Kubuntu fresh. (It will be a lot quicker than trying to fix it.)

Q : Does Ubuntu work with secure-boot yet?

A : Yes.

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

Website: http://deathtrash.com/

Price: Not released yet (at time of writing)

Blurb: "*A post-apocalyptic world, where cosmic horrors crave humanity but meet punks with shotguns. Influenced by cyberpunk, science fiction, horror, grotesque and black humor.*"

THE STORY

Humankind travelled to the stars and settled on the planet Nexus with its ancient secrets of stone and flesh. The machines were installed as protectors, but they were corrupted and brought terror. You are a raider among the ruins of the past. But fate might lead you to the Bleeding Head Oracle, the Ever-growing Heart, and towards a war with the machines, giving you the power to mend or destroy.

Playing the Demo, the story actually differs. You are expelled from the underground human habitat for being infected with something. Your citizenship has been revoked. You are told in no uncertain terms that you are not allowed back or allowed to breed (say what?). You are banished to the surface world to make your way. Current release date is August 5.

> **WARNING:** This game is not for those who are squeamish or easily offended.

Death Trash would not run on my potato laptop, screen size being 1366 x 768, and all combined with the fact that it does not support "shader model 4.0" capabilities. Oh well, PC time.

Let me start out by saying that I am not a fan of the art style. It may appeal to others, though. That said, it works. It is consistent throughout, even on the map screen, so I am fine with it. As rough as it is, there still is a lot of detail, and one can see a lot of hard work has gone into the project. Being bad and being good is a good thing, you see, as it let's your imagination fill in the blanks. I suppose that is why the developer is called Crafting Legends.
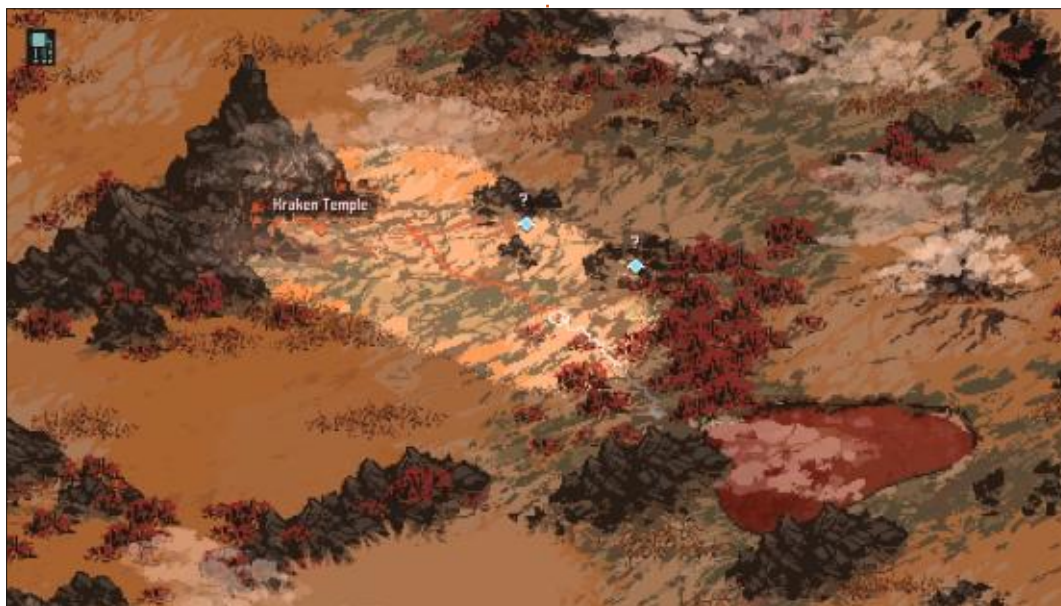
With you coming out of a cave and fighting monsters and collecting quests, you immediately get that Fallout vibe. Not the abomination that Fallout 76 had become, but rather Fallout 1.

The sound and the music is just great, I cannot wait for the OST to release. The sounds are spot-on. Doors slide open al-la Star Trek, clubbed dustbins sound like clubbed dustbins, and squelching through blood puddles will not have you thinking otherwise. There is no voice acting at the moment, but that may come later. The font is not too horrible, as is usually the case with this weird pixel art-style of game, and the text is quite readable. Even on the map, the font works well enough for small font sizes.

The crux is, the game is fun to play and there is a half decent story for you to explore. Yes I said it. Even if your character walks like a polio victim sometimes, it will have you scratching your head as to why you cannot get your blunt melee weapon attack timing right. While it

shares a lot of similarities with Fallout, you also have magic! Yes, that is the "occult" section of your attributes. (We will talk about character creation and development soon.) That, and the "Cybertech" skill, put you right in the cyberpunk genre. Think Neuromancer, Warhammer 40K, or Shadowrun. This game could easily slot in with any of those when it comes to the story. You even have the Lovecraftian (is that even a word?) flesh kraken you encounter early on. Speaking of the flesh kraken, when you encounter the cave that looks like it could be the kraken's butthole, it's not, enter it.

Your character has attributes and skills. However, that is not all; you will see a spanner in your menu, this will bring up the crafting system. This should give you some incentive to harvest the flora. That does not mean you can stop and smell the roses, though. Danger lurks everywhere and especially in the bunkers where manoeuvrability is reduced. When making your character, and in the intro, you may get a DUNE vibe, but it is not. Fair warning.

I am looking forward to this game. If you like your top-down gory games with story, I reckon you should wishlist it on Steam now.

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

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

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

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

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

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