

The PCLinuxOS magazine

Volume 155

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PCLinuxOS

Short Topix: Google Wants Us To Trust It With Our Medical Records We Never Knew They Had

De-Googling Yourself, Part 7

Casual Python, Part 11

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HomeBank: How To Add New Categories and Create Split Transactions

How To Setup DoH On Firefox, Opera, Chrome

A Cartoon Intro To DNS Over HTTPS

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The **PCLinuxOS** magazine

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The PCLinuxOS Magazine is a monthly online publication containing PCLinuxOS-related materials. It is published primarily for members of the PCLinuxOS community. The magazine staff is comprised of volunteers from the PCLinuxOS community.

Visit us online at <http://www.pclosmag.com>

This release was made possible by the following volunteers:

Chief Editor: Paul Arnote (parnote)

Assistant Editor: Meemaw

Artwork: ms_meme, Meemaw

Magazine Layout: Paul Arnote, Meemaw, ms_meme

HTML Layout: YouCanToo

Staff:

ms_meme

Meemaw

Gary L. Ratliff, Sr.

Daniel Meiß-Wilhelm

daiashi

Cg_Boy

YouCanToo

Pete Kelly

Smileeb

Alessandro Ebersol

Contributors:

David Pardue

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From The Chief Editor's Desk ...

Sometimes, it's quite easy trying to figure out how to "help" Santa Claus figure out what the kids want for Christmas. For my son, it's anything to do with Transformers (he knows quite a lot of them, along with which side they are on) and most anything to do with Paw Patrol. Spider Man and Batman are also some of his favorites. For my daughter, it's anything to do with the Frozen movies. She also loves pretending to "make food" and tending to her baby dolls. He loves Legos, and she loves Play-Doh.

At other times, trying to "help" Santa find quality, educational and therapeutic toys is quite challenging. For every quality toy out there, there are at least four that are cheaply made, of poor quality, and are a complete waste of money. Trying to separate the "wheat from the chaff" can be very difficult.

We – their mom and I – don't want to "help" Santa get them a lot of the same thing. We want to encourage varied interests to fuel personal growth across a wide range of subjects and topics. With the release of the Frozen II movie (which she saw just the other night for her first indoor theater visit), my daughter will get quite a bit of Frozen stuff from Santa. My son wants Santa to bring him Transformer and Paw Patrol toys.

On November 6, 2019, Texstar posted that Mr Cranky Pants - YouCanToo had suffered a heart attack, and was being transferred to the VA Hospital in Portland, Oregon. While there, they successfully stented open the blockages that were causing the issue. In the ensuing recovery, he picked up an infection that they had to treat. He finally made it back home on the evening of November 18, 2019.

MCP-YCT, a.k.a. David Moore, does an awful lot for PCLinuxOS. He hosts the main repository. He creates and sells computers with PCLinuxOS installed on them. He hosts the PCLOS-Talk messaging service. He hosts the PCLOS-Cloud file sharing service. He hosts the server for The PCLinuxOS Magazine. He also lays out the HTML

version of The PCLinuxOS Magazine. He creates the ebook versions of The PCLinuxOS Magazine. He even has some monthly columns he writes for the magazine, as well as the occasional article. He hosts the PCLinuxOS forum. Plus, he is a popular and much-loved member of our PCLinuxOS family.

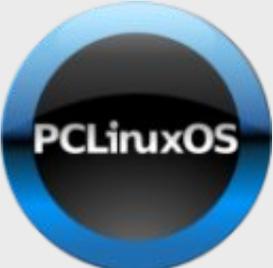
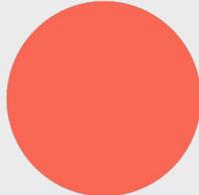


Dad and Ryan at a Cub Scout meeting.

Having worked every month with David for over seven years on getting the magazine released, I assure you that working with him is truly a joy. Every month, he goes above and beyond to help get the magazine out in a timely manner. All of us associated with The PCLinuxOS Magazine, and PCLinuxOS users from all around the globe I'm sure, wish for David a fast, successful and complete recovery from this very scary ordeal.

This month's special holiday cover was created by Meemaw. It features a pair of Tux penguins enclosed in a snow globe.

Until next month, I bid you peace, happiness, serenity and prosperity!

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PCLinuxOS Users Don't

Text
Phone
Web Surf
Facebook
Tweet
Instagram
Video
Take Pictures
Email
Chat

While Driving.

*Put Down Your
Phone & Arrive Alive.*



Paul's 2019 Holiday Gift Guide

by Paul Arnote (parnote)

Oh, my! It's that time of year again! The winter holidays are literally right around the corner, so we here at The PCLinuxOS Magazine are presenting you some ideas for your holiday gift purchases. Of course, these could be gifts for others, or gifts for yourself.

We hope you find some gift ideas that help you in your holiday gift purchases. Who knows. Maybe one of us has found that one perfect thing that you have been looking for. We attempt to find things that we think have broad appeal, and items to fit into every budget.

All prices are expressed in U.S. dollars. We cannot guarantee the availability of the highlighted products in markets other than the U.S. market. In fact, since we're only presenting the products here from other retailers, we really cannot make any guarantees at all. Please plan ahead and allow for sufficient time for the products to arrive to your shipping address/place of residence. Otherwise, you might not receive them in time for holiday gift giving.

Personalized "World's Best" Beer Glass

The Lakeside Collection, \$16.99

Now, I'm not much of a beer drinker, but this is one cool gift. Shaped like a beer (or soda) can, this 16 ounce (473 ml) glass may become your gift recipient's favorite glass! And, there's nothing that says you **HAVE** to use it for only drinking beer. You can personalize the name (represented by "DADDY" in the picture), and the year. In fact, both are required fields when ordering. So, be sure to enter the name you want, exactly as you want, paying



particular attention to spelling and the use of lowercase and uppercase letters. Plus, even if it's not used every day, it makes a great keepsake and "special use" gift.

Easy Change Artwork Frames

The Lakeside Collection, \$8.99 to \$9.99

I would have never even thought of something like this four or seven or more years ago. But, once my son started school and bringing home artwork, something like this makes perfect sense. Now, when he brings home artwork, we can display his artwork proudly in the frames on the wall! It is available in

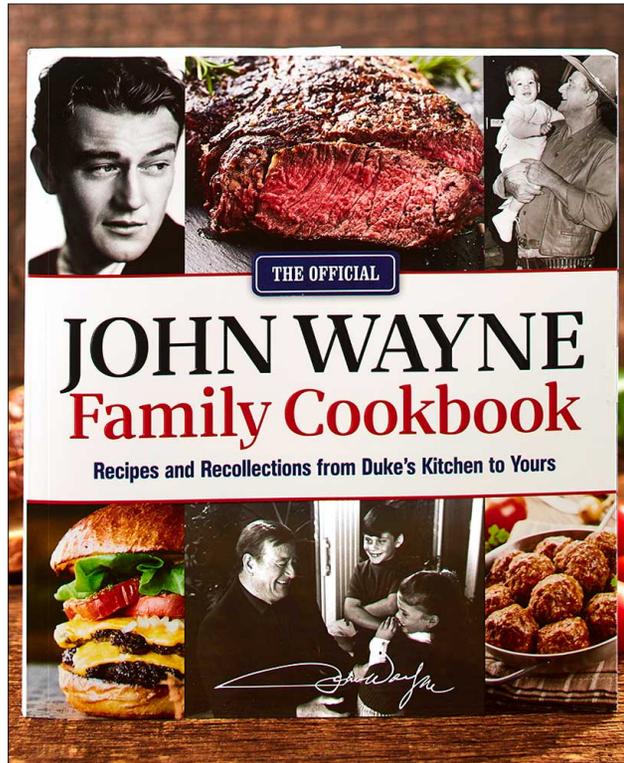


two sizes: 8½ x 11 inches (21.59cm x 27.94cm), or 9 x 12 inches (22.86cm x 30.48cm). Each frame is ¾" (1.9cm) deep, making it capable of holding about 50 sheets of paper before you have to empty it out to make more room for newer pieces of artwork. This would make an awesome gift not just for parents, but also grandparents and anyone else wanting to display a child's artwork.



The Official John Wayne Family Cookbook

The Lakeside Collection, \$9.99



Without a doubt, Marion Robert Morrison was one of the most popular Hollywood actors to have ever graced the silver screen. What? You don't recognize his name? He was more commonly known by his professional acting name, John Wayne, also nicknamed "The Duke." He starred in 146 movies over his career that spanned five decades. He started acting in small bit roles in 1930, and became "star material" with the lead in John Ford's 1939 movie, Stagecoach.

The Official John Wayne Family Cookbook presents recipes that are sure to appeal to the whole family. Each page pairs hearty down-home recipes with sidebars, facts and stunning photos from Duke's amazing film career and joyous family life. Duke knew that life's most cherished memories are often

made around the table and over plates of home-cooked food. With this book, you'll learn how to create meals that will bring the entire family together--it's great for breakfast, lunch or dinner!

This 252 page cookbook features such recipes as Lone Star Skillet Mac & Cheese, Beef Tenderloin with Horseradish Sauce, and Slow Cooker Chicken.

Team 128GB microSDXC UHS-I/U1 Class 10 Memory Card with Adapter

Newegg.com, \$14.99



You won't go wrong buying this microSD memory card! It features Class 10 high speed write speeds, and comes with an adapter card that allows you to use it in devices that use the full size SD memory cards. While this particular card is 128GB, it is also available in 16GB or 32GB sizes for \$3.99, or 64GB size for \$6.99. I've actually used this item to supplement the limited storage space on my Lenovo X230 laptop. I bought the laptop used off eBay, and it came with a 128GB SSD. The addition of this microSD memory card, coupled with its full size SD adapter card, allowed me to more than double my available storage space. This card would also be perfect to use in a smartphone, tablet, drone, or any other electronic device that allows you to expand

storage memory with microSD cards. These memory cards are shockproof, temperature-proof, waterproof, magnetic proof and X-ray-proof, which offer your precious files all-around protection. At this price, you can pick up multiple units to serve as stocking stuffers!

IOGEAR GFR3C15 3 in 1 USB-C Quantum Card Reader/Writer - CF, MicroSD, UHS-II SD

Newegg.com, \$17.99



Let's say you're on vacation, and you need/want to download images from your digital camera to your smartphone. Maybe you ran out of space on your digital camera's SD storage card, and downloading them to your smartphone and uploading them to your online photo storage account is a viable solution for freeing up space on your SD storage card. Or, if you're like me, you can check the SD cards from your trail/game cameras while you're out in the field by downloading them to your smartphone.

This card reader hooks up to your smartphone via its USB-C connector (common on all the latest

smartphones), allowing you to read CF, SD, and microSD cards directly on your smartphone. Heck, this is the only reason I take a laptop with me when I go hunting ... so I can look over the images captured by my trail/game cameras. I have no internet connection where I go hunting, so my laptop is only used to look at trail/game camera images.

PCLinuxOS Mens Baseball Tee

PCLinuxOS CafePress Store, \$24.99



You can't go wrong with this item! You'll definitely be "stylin'" as you wear your PCLinuxOS Men's Baseball Tee around town. Made from a spun cotton and polyester blend, this shirt features ¾ length sleeves, and the PCLinuxOS logo emblazoned across the front. It is available in multiple colors. It is available in sizes from small to 2XL. It's the perfect gift for the PCLinuxOS user in your life ... or for yourself! A portion from the sale of items with the PCLinuxOS logo on them in the special PCLinuxOS store on CafePress goes to help support PCLinuxOS.

PCLinuxOS 16 oz Stainless Steel Travel Mug

PCLinuxOS CafePress Store, \$15.65



This insulated stainless steel travel mug will keep your favorite beverage hot or cold for hours. Grab up your favorite drink as you head out the door and take your favorite drink with you as you go about your day. All the while, you're helping to spread the word about the world's best Linux distro EVER ... PCLinuxOS! The 16 oz (473ml) Stainless Steel Travel Mug measures 7.25"x3.5" (18.42cm x 8.89cm), and fits easily in most cup holders. A portion from the sale of items with the PCLinuxOS logo on them in the special PCLinuxOS store on CafePress goes to help support PCLinuxOS.



250 Watt 5 Tray Food Dehydrator With Digital Timer & Temperature Control

Amazon.com, \$75.99



There are few methods of food preservation and preparation that are as healthy as food dehydration. With a food dehydrator, you can dehydrate all kinds of fruits, vegetables, flowers and meats. Dehydrated, a lot of foods will keep a lot longer, while preserving their flavor and nutritional value.

When most people think of using a food dehydrator, it's the latter that they most likely think of first: making jerky. Others think of being able to make their own homemade fruit rollups. Regardless of what comes to your mind first when thinking of dehydrated foods, when done properly, it can help make food last a lot longer before becoming spoiled. Food dehydration removes the vast majority of moisture from foods, which is what bacteria and fungi need to breed, multiply and thrive. Virtually all dehydrated foods have less than 10% moisture content.

This food dehydrator has five dehydration trays, an adjustable temperature setting from 95° F to 158° F, and a timer to turn the unit off when the desired amount of time has elapsed (up to 72 hours). The trays are made with BPA-free, food grade plastic. A low-noise fan keeps the heat circulating throughout the dehydration process.

Sure, there are less expensive dehydrators available, but the old adage “you get what you pay for” really does hold true when it comes to food dehydrators. There are also more expensive dehydrators available, too. This particular food dehydrator should do well for anyone looking to get started with making their own dehydrated food, such as jerky, banana chips, dried kiwi, dried apricots, dried apples, dried tomatoes, or any other of tons of foods that can be dehydrated and preserved. Imagine being able to buy food items on sale, and then preserving them at home in your own food dehydrator, turning them into healthy, tasty snacks and food items.

Plantronics Explorer 52 Bluetooth Headset

Walmart.com, \$24.80



I don't know about you, but one of my BIGGEST pet peeves is people driving down the road, either with a phone permanently/surgically attached to their head, or talking on their phone in speaker mode with it in one hand and driving (actually, attempting to drive) with the other. Virtually EVERY. SINGLE. PHONE. SOLD. TODAY. has Bluetooth connectivity. As such, true hands-free calling is possible for a very inexpensive price.

Plantronics is a storied company that went to the moon. Literally. From the Plantronics [website](#):

The Mission was Apollo 11.

At the height of the race to space, NASA challenged us to build a comfortable headset that would equip astronauts to communicate with Mission Control from the earth to the moon, and back again.

Their quality standards are high, and those standards are reflected in their very affordable Bluetooth headset, the Plantronics Explorer 52. The sound and vocal transmission quality is outstanding (I actually have one of these). My wife also had one, until she lost it (she has since replaced it with a comparable model). I could easily tell when she was using her phone's native mic and speaker, vs using her Bluetooth headset. Furthermore, the built-in rechargeable LiON battery lasts and lasts and lasts, providing up to 11 hours of talk time between charges. It's lightweight, and you can hardly tell you have it on your ear, even after having it on all day.

So, what better gift to give someone you care about than this Bluetooth headset, where the recipient can make true hands-free calls while minimizing distractions ... and all the while keeping their hands truly free for other tasks (that are probably way more important).

DOS GAMES ARCHIVE
WWW.DOSGAMESARCHIVE.COM

Wine Ziz Wine Air Pressure Pump Bottle Opener | Foil Cutter | Amazingly Simple Wine Opener Air Pressure Wine Opener

Amazon.com, \$14.99



Some of you may not know this, but one of my “hobbies” is making homemade wine. We don't drink much; I end up giving a lot of it away to friends and family. I have my jugs that I ferment the fruit juice in. I have bottles out the wazoo. I have corks and a corker. I put shrink wrap bands on my bottles after they are corked. I even make my own homemade labels, using glabels in the PCLinuxOS repository. As you can imagine, my wine rack in the basement is nearly overflowing with wine, most of it homemade.

One thing that is a real pain is removing the corks when you want to drink a bottle of wine. But the Wine Wiz bottle opener makes it super easy to uncork a bottle of wine. Using the accompanying foil cutter, remove the foil top from your bottle of wine. Then, gently push the needle (be very careful ... the needle is VERY sharp!) through the cork until the tip of it emerges from the bottom of the cork. Now,

pump the handle of the Wine Wiz decorker, and the air pressure inside the bottle should make the cork slip right on up and out.

This is a perfect holiday gift for any wine lover on your list!

Bonus Ideas For Stretching Your Money

If you're on a tight budget (an increasingly common situation these days), you might want to look for gift ideas on [Amazon's Warehouse](#) deals. There, they sell returned, refurbished, used and warehouse damaged goods (often, just the packaging is damaged). They have a bit of everything there, so you're likely to find items for those on your list at a very budget-friendly price. While there, also check out [Amazon's Outlet](#), where they sell overstocked items for up to 75% off. Are you NOT an Amazon Prime member, and you want to qualify for free shipping? Maybe your cart total sits at \$23, but you need \$25 to qualify for the free shipping. Type "add on items" into the Amazon search bar, and you'll find a whole list of small items to bring your total up to the minimum required to qualify for free shipping.

Other sites, as well, may offer huge discounts on refurbished products. I do know that you can find some awesome buys on Newegg.com by typing "refurbished" into the search bar on the Newegg site. That's how I found my HTPC!

Summary

This should give you some ideas for gifts for those on your gift list. The lists from Meemaw, YouCanToo and others can also get your gift giving karma off to a good start.

No matter which of the winter holidays you celebrate ... or even if you don't celebrate any of them at all ... we at The PCLinuxOS Magazine wish you and your family happy holidays!

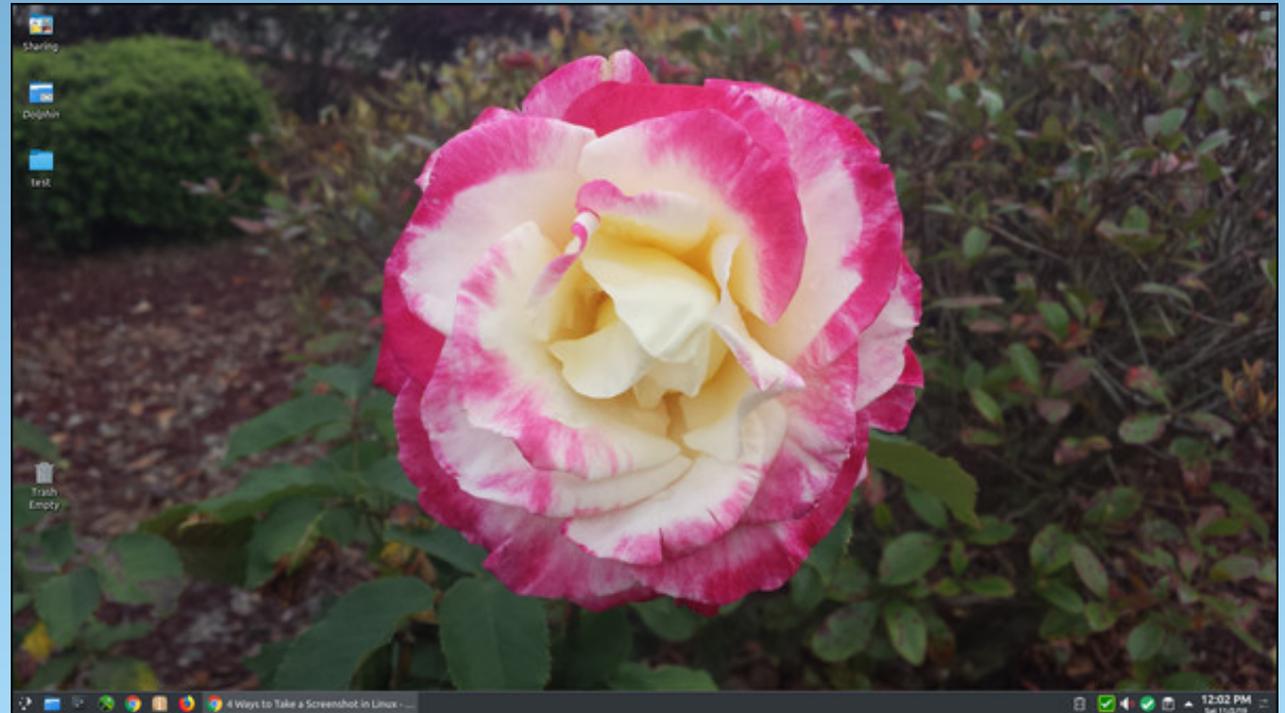


PCLOS-Talk
Instant Messaging Server

Sign up TODAY! <http://pclostalk.pclosusers.com>



Screenshot Showcase



Posted by cw987 on November 2, 2019, running KDE.

Meemaw's 2019 Holiday Gift Guide

by Meemaw

Wow! Here we are, on the verge of another holiday. The year has gone pretty fast! I'm one of those people who waits until December to do all my shopping, and then I always hope I've gotten something for everyone! Let's see what interesting gifts I can find this year... arranged at random, with item name, price, website and at least one link.

Graphic T-shirts \$19.99 Bits & Pieces

<https://www.bitsandpieces.com/product/i-have-daughters-tee-44793>

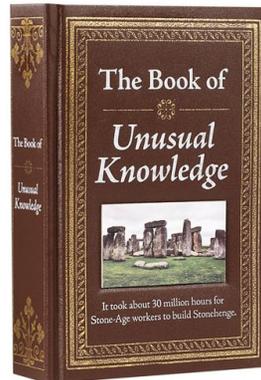
<https://www.bitsandpieces.com/product/rules-for-dating-my-daughter-tee-44484>

<https://www.bitsandpieces.com/product/lets-assume-im-right-tee-44502>



Seems like everyone is buying and wearing t-shirts with funny sayings on them nowadays. This is a fairly new item on Bits & Pieces' website. There are over 25 different t-shirts, and several of the t-shirt sayings are available on ball caps as well.

The Know-It-All Library of Books \$16.99 Bits & Pieces



This is also a fairly new offering from Bits & Pieces, who are best known for jigsaw puzzles. They still have the puzzles, but have added loads of other interesting items. Besides the Book of Unusual Knowledge, the Know-It-All Library series also includes Bizarre Truths, Amazing History, Extraordinary Facts and Useless Information.

Shaved Ice Machine \$239.00 Amazon



I've seen children's shaved ice machines, but this one seems a bit bigger and much more complete, including the syrup, cups and spoons. It's 13" tall and can use any kind of ice (meaning you can take ice cubes out of the freezer rather than having to make a specially-shaped block of ice to use). Flavored syrup supplies are also available at Amazon.

Beer Machine \$129.99 - \$149.99 Amazon



This caught my eye, although I'm not a big beer fan. From what I read, you can put a can or bottle of beer inside and dispense it like it's a draft. From the site, it "converts any beer's natural carbonation into uniformed sized bubbles called micro-foam, a rich and creamy head that delivers enhanced aroma, flavor, and mouth-feel."

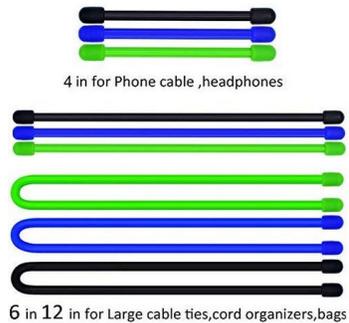
PackIt Freezable Wine Bag \$15.99 - \$16.99 Amazon

Since I did a beer machine, I thought I'd show something for the wine lovers (I like wine). This is a case you can put in the freezer, then use it to keep your wine cold. Generally, I am at someone's house and we use their refrigerator, but if you were going to travel for several hours or the party was outside, this would be very handy.



Meemaw's 2019 Holiday Gift Guide

Gear Ties \$4.49 - \$20.00 Amazon



These days, everyone is trying to keep their cords (all of them) tied up and out of the way. These are heavier than your usual wire tie, and hold whatever shape you twist them into. They are available in several sizes and colors and are even capped on the ends to minimize damage to furniture and equipment.

Charging Station \$11.99 - \$16.99 Amazon



I don't know about you, but my husband and I each have a laptop, a phone and a tablet (and he has some other equipment as well). This item would be really handy and clear out some of the clutter we have in our dining room! Charging both phones and his tablet (at least) would be really convenient. A similar station with 8 ports is also available for \$39.99.

Pollinator Garden \$18.00 Uncommon Goods



From the website: *"For the tiny pollinators essential to our food production, life isn't always a bed of roses. Make their jobs a little easier with these cute and convenient wildflower gardens. Each is designed with a custom collection of seeds to attract specific pollen lovers—bees, butterflies, and hummingbirds. They include nutrient-rich material and instructions for planting a one square-foot garden patch in a few simple steps. Designed by Sarah Burrows and Nick Behr; made in Illinois."*

Face it - if we didn't have pollinators, we wouldn't have many of the flowers we see, and wouldn't have the variety of food we enjoy. We really do want to take care of them. Planting a garden patch just for them is a good step.

Radio-Controlled Robots \$26.99 - \$150.00 newegg



For the kid in your life, a radio-controlled car that transforms into a robot to save the world, and also

has dance moves for the celebration afterwards!

Newegg's site also has one ([Whiskers the Orange Tabby](#)) that's \$472.00... Whiskers follows you around the house and can sense your actions. It also has sensors to react when you pet it, snuggling and purring.

theFube Fidget Cube \$13.99 Amazon



I go to a "White Elephant" gift exchange every year. If you've never been to one, they are very fun, but you don't always give (or get) anything useful. While I was browsing Amazon's site I came across a category of 'white elephant' gifts. I'd never seen a "fidget cube" so I had to investigate. This is a small, 12-sided solid with something to manipulate on each side. Some are buttons, some are switches and there's even a small joystick on one side! It's made of silicone and everything is supposed to be silent (unless you want it to make noise). It comes with a carrying case as well.

I hope your holidays are fun and relaxing!



Mind Your Step #4: Holiday Gift Guide 2019

by phorneker

At this time, I would normally create a Holiday Gift Guide. This year, the gift guide is part of the Mind Your Step series.

Before I get to the gift guide, I am required to tell you that I am an associate of Kohl's Department Stores and opinions here are those of my own, and not that of Kohl's or any of its subsidiaries. This disclaimer is required per their Social Media policy.

Gift Idea #1: HP Deskjet 3639



Regularly \$79.99 at kohls.com, officedepot.com. (Also available at their local brick and mortar stores.)

This year, Hewlett-Packard brings us this all-in-one printer to the masses. It is available in all black as well as the blue and white design. The asking price for this Deskjet as \$79.99, and depending on where and when you get it, you could have this model for as low as \$29.99.

Obviously, **the price is the selling point**. Yes, Hewlett-Packard had its fiasco with the firmware updates, but this is an attempt to make a comeback.

The good:

- This will work **wirelessly** with your tablet, smartphone or PCLinuxOS machine.
- Takes HP 63 and 63XL cartridges (with the XL being the larger capacity for ink)
- Top loader to allow for cardstock, photo paper, transparencies, and (of course) plain paper (both letter and legal)
- USB cables can be used for wired connections to your PCLinuxOS machine.
- PCLm for the printer control language. (PCLm is to Hewlett-Packard what ESC-P/R is to Epson)
- Available in all black or blue and white (as shown here).

The not so good:

- Membrane buttons can and will wear out over time.
- The thin plastic used to hold printed output could break from the printer easily.
- The overall construction of the unit looks as if something could crack if the printer were heavily used.
- Ink costs (even for the regular 63 cartridges) **exceed that of the printer itself** if both cartridges were to be replaced at the same time. This could be remedied with generic equivalents (where available), provided the firmware allows for such cartridges to be used.

This would be a great printer to use for someone who does not do much printing, or has an occasional need to print.

Gift Idea #2: Not Your Ugly Sweater



\$14.99 at H&M

Tired of those traditional ugly sweaters? Leave it to the folks at H&M to make even the ugliest of sweaters something you would be proud to wear. Enough said here. (You won't find this at your local Wal-Mart.)

Gift Idea #3: MHz Choice

MHz Networks is another public television network providing foreign language mysteries, comedies, and dramas as well as news from Deutsche Welle, France 24, and Al-Jazeera English to the US audience. If you are tired of the so-called entertainment provided by the major vendors in the US, this should be a refreshing change.

The network's [Shop MHz](#) is where you go to shop for DVDs of programs that have been aired on MHz, or are now airing on MHz. As MHz Networks is a **public** network, you can contribute donations to the network.

In Chicago, contributions to WTTW cover MHz programming in addition to programming for PBS, World and Create networks. WYCC is the Chicago affiliate for MHz Networks, and as of 2009, is part of the WTTW family.

There is a [mug](#) available called "Don't Fear the Subtitles" available for purchase (\$14.95).

Some of what is available on DVD are:

[Captain Marleau](#)



Played by Corinne Masiero, Captain Marleau is a French detective series in the style of Columbo (for those of you who remember the 1970's detective series), with a bit of subtle humor, a veneer, and a Range Rover instead of a beat up Cadillac for the vehicle.

The series can be purchased as individual DVDs for one season, or as a **two pack** combination (normally priced at \$79.90, but as of this writing, currently on sale for \$47.94).

[Welcome to Hindafing](#)



If you think political shenanigans happen only in small town USA, this series will change your mind. Hindafing is a German political satire about a small town in the Bavarian forest. The first episode focuses on attempts to get a highway exit from the Autobahn to the town itself, along with a shopping mall built on sales of organic food.

The western Chicago suburb of Bavaria was named for the region in Germany of the same name. In fact, the grocery store chain **Aldi** (originally called **Albrecht Discount**) has its US corporate headquarters in this suburb.

Yes, Agatha Christie's mysteries are available on this website, too, in French, with English subtitles.



Gift Idea #4: Miniature digital video camera



This next find is a digital video camera that was found in the Men's department instead of electronics as one would normally expect.

[The Protocol Spy Cube HD](#) is designed as a security camera similar to the Ring doorbell except that it records video onto SD memory cards (up to 32GB) rather than streaming through Wi-Fi, Bluetooth or 4G/5G networks. The video from this camera is in standard DVD resolution (720x480) and the USB connector on the camera is for charging of the internal battery only. The infrared LEDs around the lens provide illumination at night. As it is a security camera, the device can be mounted discreetly and records video **only when there is movement detected by the camera.**

Gift Idea #5: I'll Drink to That!

Available on [rubylane.com](#) is a [vintage stein](#) that I find interesting. Though this salt glaze and pewter stein was made in the early part of the 20th Century, the look is reminiscent of the Renaissance period. At the asking price of \$159.00 USD for this, I do not recommend **actually drinking anything** from this unless the stein is thoroughly washed first.



What inspired the last gift idea was a Youtube video I absolutely loved:

Der Papst im DROGENKLOSTER

Which translates to "The Pope in Drogenkloster". This is a routine from the ZDF network series Sketch History, which is a comical look at world history. The cast could be described as the German equivalent to Monty Python.



In this sketch, the ritual performed is nothing short of hilarious. Instead of sipping wine from a chalice as one would expect, the members would chug down a stein of beer, **belch out loud**, and make a gesture that resembles the opening of a stein.

This sketch was set in the time period just after the Reformation period (which established the Lutheran church). Pope Benedict XIV was visiting the church for its annual inspection.

The song performed at the end of this video is: *Non mulier, ne flevetis!*

Which can be considered sexist as this translates to: *Not a woman, do not weep!*

...so much for church reformation.

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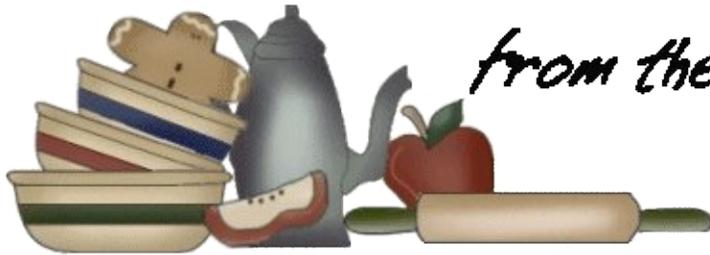
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PCLinuxOS Recipe Corner



*from the kitchen of
youcantoo*

Slow-Cooker Pork Tenderloin with Bacon and Mushroom Gravy

Ingredients:

4 slices applewood smoked bacon, chopped
1 package (8 oz) baby bella mushrooms, sliced
2 teaspoons finely chopped garlic (about 2 cloves)
1 pork tenderloin (1 1/4 lb), trimmed of silver skin
1/4 teaspoon pepper
3 tablespoons butter
1 can (18 oz) Creamy mushroom soup
1 tablespoon chopped fresh sage leaves
2 teaspoons chopped fresh rosemary leaves
1 tablespoon cornstarch
1 tablespoon water

Directions:

1. Spray 3 1/2- to 4-quart slow cooker with cooking spray. In 10-inch skillet, cook bacon over medium heat 12 to 14 minutes or until bacon is crispy and browned. With slotted spoon, transfer cooked bacon to a paper towel-lined plate. Add mushrooms to skillet with bacon drippings; cook over medium heat 5 to 6 minutes or until mushrooms are tender. Add garlic; cook 30 to 60 seconds or until fragrant. Transfer mixture to a medium bowl.

2. Season pork tenderloin with pepper. Heat 1 tablespoon of butter in skillet; add pork and cook 1 to 2 minutes on each side or until browned. Transfer

pork to slow cooker. Add cooked bacon, soup, sage and rosemary to mushroom mixture in a bowl; mix well. Pour on top of pork in slow cooker.

3. Cover; cook on Low heat setting 3 to 3 1/2 hours or until thermometer inserted in center of pork reads at least 145F. Remove from slow cooker to cutting board; cover and keep warm.

4. In small bowl, mix cornstarch and water; stir into mushroom gravy in slow cooker. Cover; cook on High heat setting 15 to 20 minutes or until bubbly and thickened. Stir in remaining 2 tablespoons butter.

5. Slice pork and serve with mushroom gravy. Garnish with additional chopped sage and rosemary. Serve with mashed potatoes.

Expert Tips:

Mashed potatoes is a great side dish to serve with this slow-cooker pork.

Cooked green beans are a great addition to complete your meal.



ms_meme's Nook: PCLinuxOS Guys



Those Windows men are little boys
Playing with their OS toys
They got no spunk the OS is junk
Just making a lot of noise

I tried XP and Vista
Never ever did run right
Windows Seven and Eight out of date
Always acting contrite

I wish they all could be PCLOS
I wish they all could be PCLOS
I wish they all could be PCLOS guys

Linux runs oh so smooth
Like a breath of fresh air
It's very nice I like the price
Nothing else can compare

I've been around the Internet
Looking for the very best
Found PCLinuxOS what a success
Forgot about all the rest

I love all my PCLinuxOS
I love all my PCLinuxOS
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MP3



OGG



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Podcasts For
Linux & BSD

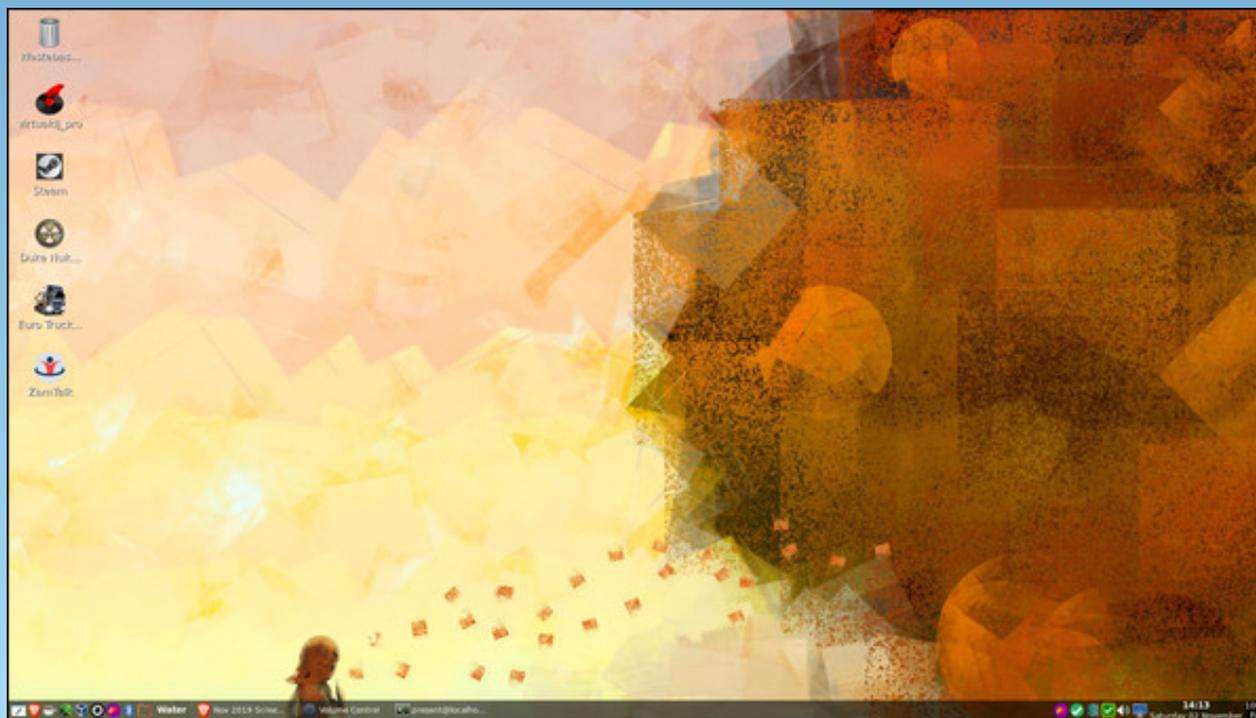


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Screenshot Showcase



Posted by present_arms, November 2, 2019, running Openbox.



Short Topix: Google Wants Us To Trust It With Our Medical Records We Never Knew They Had

by Paul Arnote (parnote)

Google Seeks Help To Clean Up Android Malware Mess



For all of its faults, you do have to praise Android's open ecosystem, especially when compared to Apple's tightly controlled App Store. Virtually anyone with a modicum of programming ability can create an app and upload it to the Google Play store. But that openness makes it especially easy for bad apps to quite regularly find their way into the official Google Play store. Plus, third-party app stores and malicious website can harbor even more nastiness in the form of malware. It is a problem that has plagued the Google Play store, and Android in general, since its inception.

According to an [article](#) from Wired.com, Google has enlisted help from three antivirus firms who have

extensively monitored Android malware for years. They are ESET, Lookout and Zimperium. In partnership with Google, they have formed an alliance, called the App Defense Alliance. They will scan new apps in the Google Play store before they go live, in an effort to help prevent malware from ever appearing in the Play store.

Since each member of the alliance has different methods and approaches for scanning apps, together they should be able to detect trojans, adware, ransomware, banking malware, and phishing attacks before the apps are allowed to go live in the Play store.

Even though a friendly relationship has existed between Google and the other members of the alliance for over two years, the coordinated effort is just now getting off the ground. So, it remains to be seen how much of a dent can be made in the growing Android malware problem.

But then, it is a start to taming the wild, wild west that the Google Play store has become.

Facebook Secretly Accesses Camera On iOS 13

iOS does probably the best job of any of the mobile platforms of protecting user privacy. So it came as a complete surprise when it was discovered that the Facebook app on iOS was secretly accessing users' cameras in the background on iOS 13.

According to an [article](#) on The Next Web, a user named Joshua Maddux posted on [Twitter](#) about his discovery of the Facebook app on iOS accessing his phone's rear camera without his knowledge. He subsequently confirmed the behavior on five different iPhones running iOS 13.2.2. Further testing



confirmed that the issue did not seem to be present on phones/devices running iOS 12 (but that's not to say that the camera wasn't being accessed).

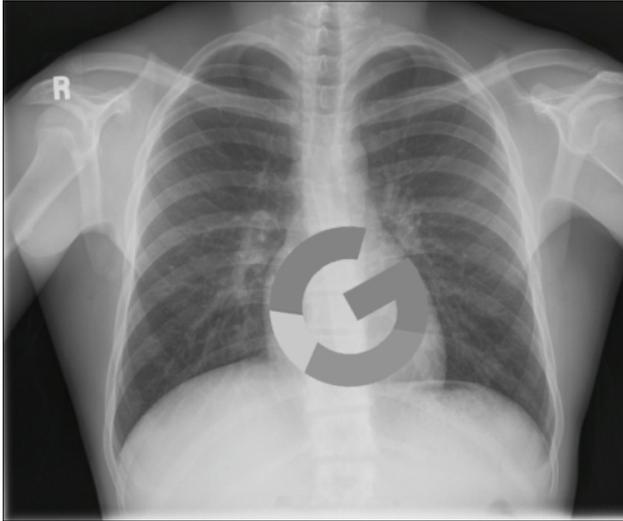
Initially, it wasn't clear if this was a problem inherent in iOS 13 or the Facebook app. In a follow-up on The Next Web, Facebook confirmed that the issue was a bug with their app. Whenever a user clicked/tapped to view a photo, the camera was activated. Facebook VP of Integrity (how would you like to have THAT job/title?) claimed that there has been no evidence of photos or videos being uploaded because of the bug. Facebook has submitted a fix to the App Store. Given Facebook's awful, horrible track record in regards to user privacy, it's reason enough for grave concern.

Unless and until an update is issued, the only way to eliminate the potential privacy threat is to turn off camera access to any app that you don't want to

Short Topix: Google Wants Us To Trust It With Our Medical Records We Never Knew They Had

have access to the device's camera ... including the Facebook app. Meanwhile, there is no evidence of anything like this occurring on the Android platform.

Google Wants Us To Trust It With Our Medical Records We Never Knew They Had



It's doesn't seem to be enough that Google has permeated virtually every part of our online lives. Now, Google wants us to trust it with our medical records/data that we never realized they had in their possession.

Google, through a project called "Project Nightingale," has been secretly collecting the health records of more than 50 MILLION Americans. Google claims to be working on an AI project to develop artificial intelligence programs to help determine the best course of medical treatment for patients.

The online tech giant has partnered with Ascension Healthcare, the second largest system in the U.S. Based out of St. Louis, Missouri, Ascension has healthcare facilities in 23 states and Washington, D.C.

Neither patients nor doctors have been notified about the data collection, data that is readily available to hundreds of Google employees, according to a Wall Street Journal [article](#) (subscription required to access article). It is/was BIG news, so fortunately, there is plenty of information available [elsewhere](#).

Not only is Google storing medical information on patients, but they are also storing personal details, such as birthdays and patient names. While Google claims that the project is compliant with federal laws, users are concerned (and have a right to be concerned) due to Google's cavalier attitude towards user privacy.

Having personally worked for over 30 years in healthcare, a huge concern is compliance with HIPAA (Health Insurance Portability and Accountability Act) laws. Apparently, under the current HIPAA laws, because Ascension and Google are acting as business associates, HIPAA laws are not being violated. As a result, some IT executives are calling for an overhaul of the HIPAA law that was written 23 years ago, to prevent these types of partnerships with giant tech firms that couldn't have been foreseen back when the law was written.

According to an [article](#) on the Healthcare Dive website:

HHS' (Health and Human Services) Office of Civil Rights opened an investigation into the partnership and multiple legislators including Sens. Mark Warner, D-Va., Bill Cassidy, R-La., and Richard Blumenthal, D-Conn. issued statements decrying the actions of both companies.

HIPAA allows healthcare companies to share patient data with third parties under business associate agreements, as long as the data is being used to help that third party "carry out its health care functions." That definition does constrain Google from using the data for any marketing or non-R&D related purposes, but privacy experts still say it may be overly vague for today's data-rich and regulation-light technology landscape.

Ascension Health is the largest Catholic owned/operated healthcare system in the U.S. Google is ... well, we're all too familiar with who they are. You know ... the company that once had "Do No Evil" as its motto, who is now the embodiment of evil to many, many users across the globe.

To say that there is reason for concern could be the understatement of the century.

Some Older Roku, Samsung, Vizio Devices To Lose Netflix Over DRM



Sometimes, it doesn't pay to be an "early adopter" of technology. This will be evident in early December to users of certain Roku, Samsung and Vizio devices when they will no longer be able to connect to their beloved Netflix accounts using those affected devices.

According to an [article](#) on bgr.com, Netflix initially claimed on its product support [pages](#) that unspecified technical limitations were to blame. But the real reason came out later, and it has to do with how Netflix employs DRM (Digital Rights Management) to prevent piracy.

Short Topix: Google Wants Us To Trust It With Our Medical Records We Never Knew They Had

Since 2010, Netflix has been using Microsoft's PlayReady technology to provide that DRM solution. Older devices that are unable to be updated to PlayReady will cease functioning December 2, 2019.

So, other than suddenly being unable to log into your Netflix account(s), how do you know if your older device will be affected? If you're an owner of a Roku device, the following devices are affected: Roku SD (N1050), Roku HD-XR (N1101), Roku HD (N1100, 2000C), and Roku XD (2050X, 2050N, 2100X, 2100N). If you have a Samsung Smart TV set built in 2010 or 2011, select models will be affected. Vizio TVs affected include select devices/apps sold between 2012 and 2014.

Fortunately, the "news" couldn't come at a better time, with the winter holidays literally right around the corner. If you ... or someone you know ... has a

device that is affected, you should be able to find a replacement among all the winter holiday sales that precede those holidays.

YouTube Content Creators Fear New TOS Agreement

Being a YouTube content creator used to be a profitable undertaking, at least for some content creators. YouTube has been and remains the premiere site for users to share video content, often unique and unavailable anywhere else. Then "Adpocalypse" happened, when YouTube changed the monetization scheme, and even demonetized other content creators.

Now, YouTube content creators have something new to be concerned about, according to an [article](#) on



bgr.com. YouTube is changing its Terms of Service [agreement](#) with content creators, effective December 10, 2019. Specifically, content creators are concerned with this one new clause in the YouTube ToS agreement. It reads, "YouTube may terminate your access, or your Google account's access to all or part of the Service if YouTube believes, in its sole discretion, that provision of the Service to you is no longer commercially viable."

So, it sounds as if Google, at its sole discretion, can terminate YouTube accounts that it doesn't feel are "commercially viable" ... whatever that means, and it could mean different things to different people. But different people don't matter. It's only what Google says it means, which can vary on a case-by-case basis and depending on which way the wind is blowing at that time. Even more frightening is that the content creator's OTHER Google accounts can also be summarily terminated, right along with the YouTube account.

As you might expect, the outrage was swift, spreading like a wildfire across a drought-stricken prairie (or the annual mass burning of California). [Reddit](#) exploded with the news. So much fiery

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rhetoric had spread that Google had to don its firehat and man the fire hoses.

A YouTube spokesperson reached out to 9to5Google.com [website](#) with a “clarification.” They explained that YouTube has “made some changes to our Terms of Service in order to make them easier to read and to ensure they’re up to date. We’re not changing the way our products work, how we collect or process data, or any of your settings.” They also went on to explain that this isn’t a “new clause,” but rather has always been a part of existing terms (although no one on Reddit could find similarly worded clauses in YouTube’s previous ToS agreements). The article went on to explain, “The enhanced visibility and prominence has been added to help ensure that creators and users are far more aware of the already existing terms. Despite that it’s still difficult to ascertain how this particular clause is currently enforced, or how it may be enforced in future.”

Despite their efforts, Google and YouTube were unable to extinguish the firestorm of controversy. So, [@TeamYouTube](#) further explained that they would NOT terminate channels if they do not make money. The 9to5Google.com article went on to say, “The wording is, in fact, referring to the actual YouTube platform rather than ‘channels’. Meaning that termination will be of defunct or underused features like the internal YouTube messaging platform or YouTube Studio Classic.”

It does sound a bit like a cat trying to cover his “business” in the proverbial cat litter box, but so far, it appears that the initial panic is “over.” We’ll have to wait and see how this plays out in the ensuing months.



Screenshot Showcase



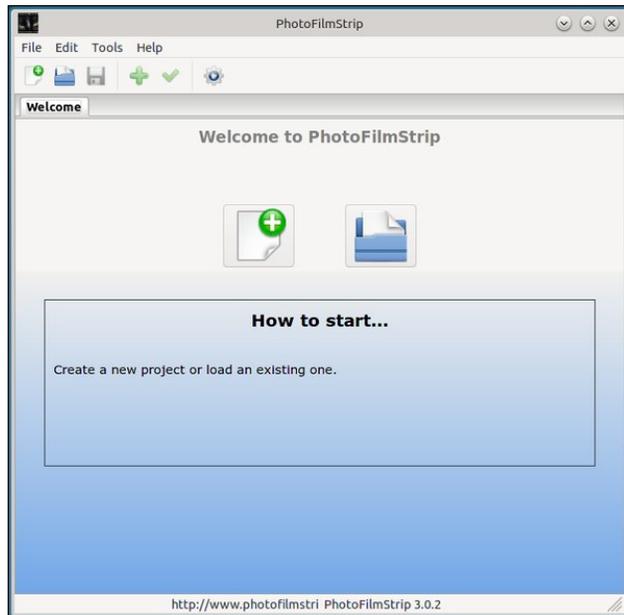
Posted by mutse, November 6, 2019, running Mate.



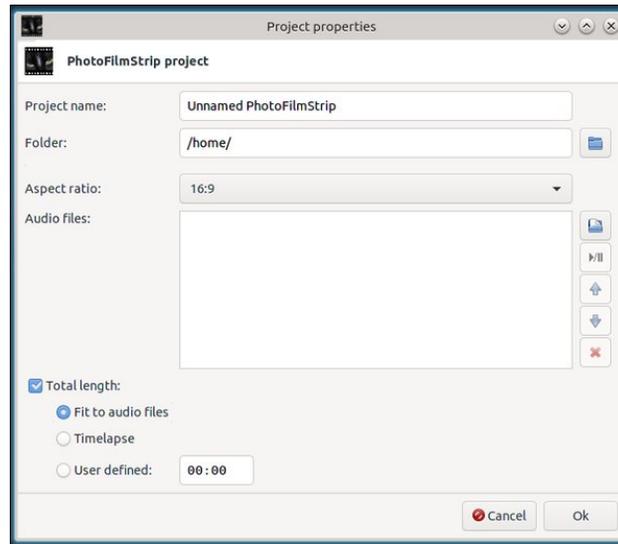
Repo Review: PhotoFilmStrip

by CgBoy

PhotoFilmStrip is a nice program for easily creating video slideshows of your photos. It supports audio tracks, panning and zooming, and has a few transition and image effects. The interface is quite well designed, making the program quick and easy to use.

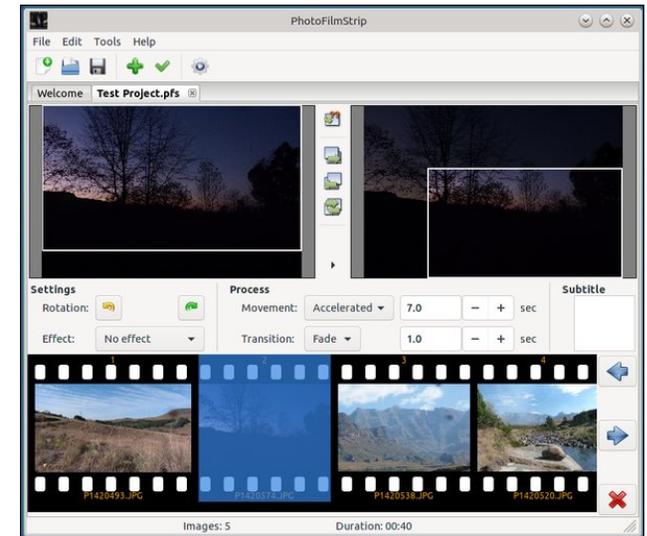


To begin, click on the New Project button, which will bring up a new window where you can set the project name and location, the video aspect ratio, and the length of the slideshow. If you don't want your video to be silent, you can then also add audio files that will play during the slideshow. Once you've set all of that, press OK, and you'll be taken to the editing screen.



Now it's time to add the images you want to use in your slideshow. Basically, the image preview on the left hand side is the starting point for the pan and zoom, and the one on the right is the end point. You can drag and resize the highlighted boxes to set where in the image the zoom and panning motion begins and ends. The top button in between the two image previews will randomize the panning.

You can also change the image orientation, if need be, or apply one of the two image effects (Black and White, and Sepia tone). After that, you can then set the amount of time it takes to pan across the image, and you can also change the movement method to Linear (Moves at a constant speed), Accelerated (Starts slow and speeds up, then slows down again), or Delayed (Only starts moving after a short time). The transition effect can be changed to None, Fade, or Roll. As with the movement, you can also specify the amount of time it will take to transition to the next image in the slideshow. Along with all that, you can even add your own subtitles to the images.



At the lower half of the screen is the filmstrip, where you can rearrange the order of the images, or go back and edit them again. Once you have finished editing the slideshow, just hit the green check mark button at the top to render the project in the format and resolution of your choice.

Summary

I really like how PhotoFilmStrip makes it very easy to quickly produce a high quality slideshow of your favorite photos. It's definitely far simpler than doing it all manually in dedicated video editing software. I recommend PhotoFilmStrip to anyone looking for a quick and easy solution to photo slideshows.



How To Setup DoH On Firefox, Opera, Chrome

by Paul Arnote (parnote)



DNS over HTTPS (commonly referred to as DoH) has been making headlines over the past few months. Basically, it adds another “privacy cog” to the gears that make the internet go ‘round.

Is it perfect? Far from it, but it’s at least a start. DoH **helps** prevent ISPs from logging what sites you visit. Of course, there are a few other methods your ISP can utilize to figure out what sites you are visiting. Those methods, though, aren’t as easy to use as merely logging the DNS address(es) that are passed between your computer and your ISP ... unencrypted.

DoH fixes this glaring privacy hole by making DNS requests part of the usual HTTPS traffic. Instead of DNS requests being passed along as unencrypted plain text on port 53, it becomes a part of the encrypted traffic on port 443, which is used by HTTPS. Thus, your ISP cannot easily intercept your DNS requests by monitoring your unencrypted DNS requests coming over port 53.

This allows DoH to bypass local ISP filters and access content that might have otherwise been blocked by the ISP or local governments. This led to a group of U.K. ISP’s declaring [Mozilla Internet Villian of the Year, 2019](#) “for their proposed approach to introduce DNS-over-HTTPS in such a way as to bypass U.K. filtering obligations and parental controls, undermining internet safety standards in the U.K.”

Of course, this is an overly simplistic explanation of how DoH works. To get a better grasp of how DoH works, I refer you to the “[A Cartoon Intro To DNS Over HTTPS](#)” article from Mozilla Hacks elsewhere in this issue of The PCLinuxOS Magazine.

DoH also isn’t the only game around. Another competing method, called DoT (short for DNS over TLS) has been touted by some as better and more secure. However, the emergence of DoH isn’t necessarily a death blow to DoT. I suspect that DoH gained its more rapid adoption because it’s easier to implement than DoT, despite DoT seeming to have a lot of supporters. I also suspect that we’ll be hearing more from the DoT camp after the TLS 1.3 specs have been finalized.

As a result, **most** of the major browsers (led by Mozilla with Firefox 70) have started implementing DoH. So, let’s take a look at how to turn on DoH in Firefox, Opera and Google Chrome browsers. Yes, I know that there are other browsers; the PCLinuxOS repository has something like 20 or more browsers, including Flashpeak Slimjet, Vivaldi, Brave, and others. And no, I’m not going to review how to enable DoH on all of them. For example, I looked in Slimjet (one of the browsers I already have installed) and cannot find any DoH settings available. I already have five different browsers installed, and I’m not going to install them all just to see if they support DoH and figure out how to implement it.

If you use one of those “other” browsers, you will have to visit their support forums to figure out how to turn on DoH, if it’s even available or supported. Also, if you use one of those “other” browsers and discover that it does support DoH, I’d welcome you writing it up in a separate article for The PCLinuxOS Magazine to share the process with everyone else.

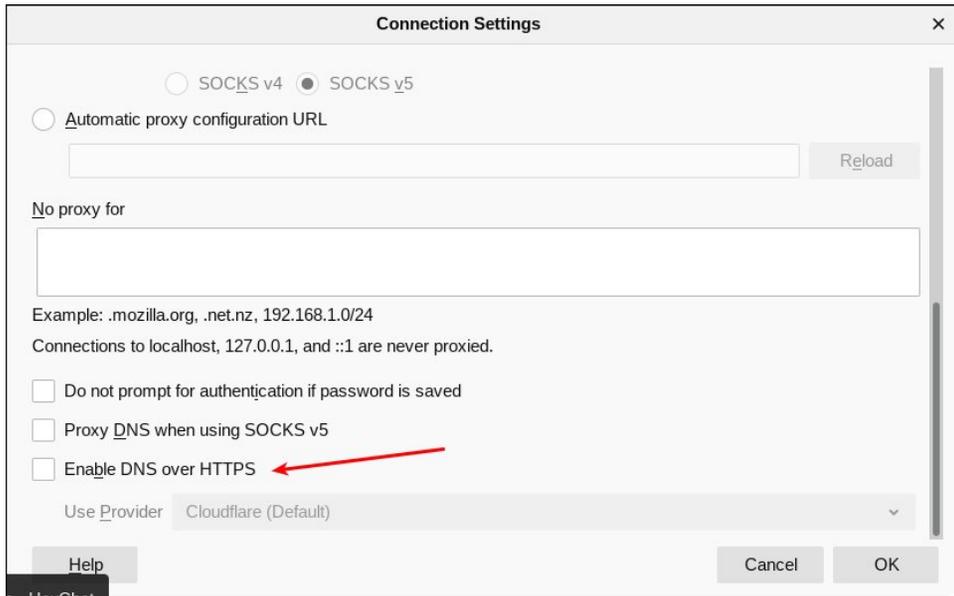
So, let’s take a look.

Firefox

Mozilla got this whole DoH thing rolling by including the ability to enable DNS over HTTPS in Firefox 70. To enable it, Go to Firefox’s Edit menu, then select Preferences. On the “General” tab, scroll all the way to the bottom, to “Network Settings.” Click on the “Settings” button there.

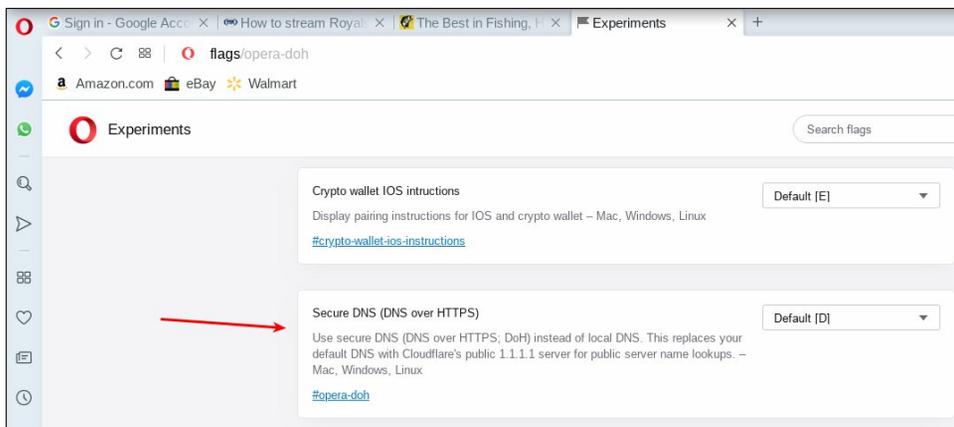
In the dialog box that appears, scroll (once again) all the way to the bottom. Place a check in the box next to “Enable DNS over HTTPS,” as indicated in the image

How To Setup DoH On Firefox, Opera, Chrome



above. Once you check that box, you will be able to set whether to use the default provider (Cloudflare), or a [different](#) one. Most users will be just fine sticking with the Cloudflare choice. Mozilla partnered with Cloudflare to provide the anonymizing DNS service.

Opera

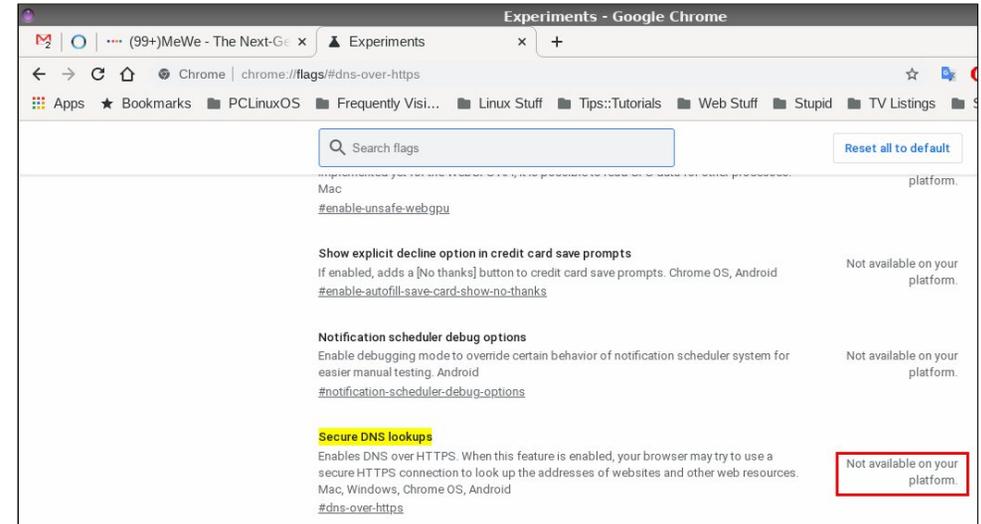


Opera has a history of going the extra mile to protect user data, so it's not surprising that it too supports DoH. To setup Opera to use DoH, follow these brief, simple steps.

First, open a new tab and point it to `opera://flags/opera-doh`. This should bring up a whole list of experimental settings in Opera.

Second, scroll down the list until you find "Secure DNS (DNS over HTTPS)" in the experimental settings, like in the image above. You will find that Opera has DoH set to "Default [D]." The "[D]" means that it is turned off by default. Click on the dropdown box, and change the setting to "Enabled."

Google Chrome



The real disappointment comes from Google, who has supposedly "signed on" to the DoH movement, touting it as an effective way to help improve user privacy on the internet. Unfortunately, the "Secure DNS lookups" setting in Google Chrome says "Not available on your platform," as highlighted by the red box in the image above. I don't know if this is yet another case of Google not adequately supporting Linux (despite using Linux to conduct their business in most every way ... same ol' shenanigans, different day), because I don't use any other platforms (Windows, Mac) to compare it against.

So, for the most part, Google Chrome users can just eat dust when it comes to using DoH. It simply isn't available, at least on the Linux platform. Ha! As if I

needed another reason to dislike the Chrome browser. Using DoH on Google Chrome under Linux is ... well ... just a big old DOH!

Summary

Of course, enabling DoH in the browser will have benefits, since most people interact with the internet mostly through their web browser. But, not everything happens in a web browser, so anything that happens outside of the web browser won't receive the encryption of DNS requests.

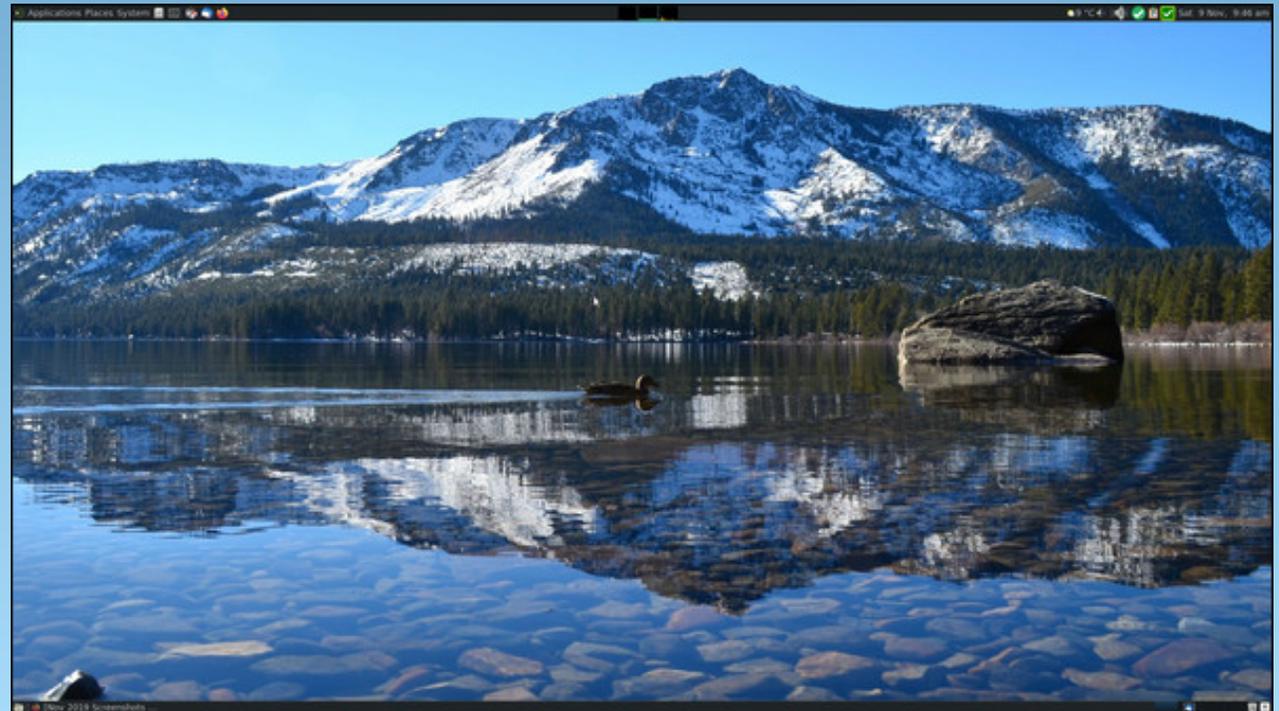
There is, however, another alternative that is probably better than DoH, and simultaneously gives users the same protection both inside and outside of a web browser. We published a short [article](#) on Cloudflare's 1.1.1.1 DNS service in the May, 2018 issue of The PCLinuxOS Magazine. By simply replacing your DNS service with Cloudflare's DNS service, you will gain protection for all DNS requests, for all internet data.

Still, 40 some years after it was originally created, DoH gives significant privacy upgrades to DNS servers. In every case that I found, DoH was NOT turned on by default. You owe it to yourself to turn it on to give you an extra layer of protection. Plus, does your ISP *really* need to know everywhere you've been on the web? It's not as if every other entity out there is trying to leech as much of your personal and private data as possible. Why make it easier for them to do so?



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Posted by PendragonUK, November 9, 2019, running Mate.



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A Cartoon Intro To DNS over HTTPS

by [Lin Clark](#)

Reprinted from Mozilla Hacks

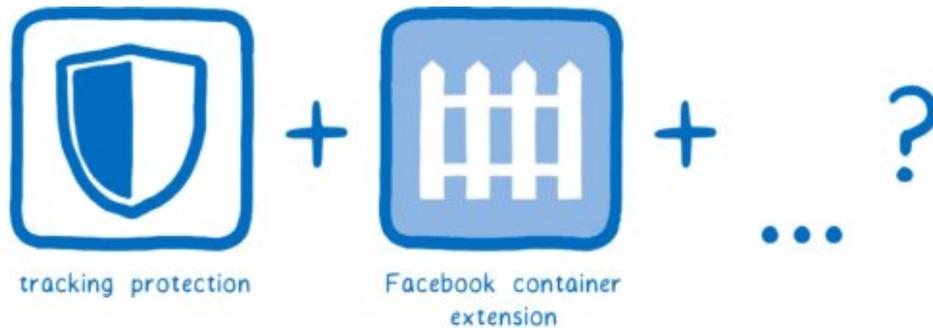
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Originally posted on May 31, 2018

Editor's Note: I set out to write up an article on DoH, to try to demystify and untangle the whole thing. DoH is the hot topic d'jour, and all the major web browsers have implemented DoH. So, I thought it would be appropriate to inform PCLinuxOS users about DoH. Then I found this article on Mozilla Hacks. Despite being initially published 18 months ago, it does a perfect job of demystifying and untangling exactly what DoH is.

Threats to users' privacy and security are growing. At Mozilla, we closely track these threats. We believe we have a duty to do everything we can to protect Firefox users and their data.

We're taking on the companies and organizations that want to secretly collect and sell user data. This is why we added [tracking protection](#) and created the [Facebook container extension](#). And you'll be seeing us do more things to protect our users over the coming months.



Two more protections we're adding to that list are:

* DNS over HTTPS, a new IETF standards effort that we've championed

* Trusted Recursive Resolver, a new secure way to resolve DNS that we've partnered with [Cloudflare](#) to provide

With these two initiatives, we're closing data leaks that have been part of the domain name system since it was created 35 years ago. And we'd like your help

in testing them. So let's look at how DNS over HTTPS and Trusted Recursive Resolver protect our users.

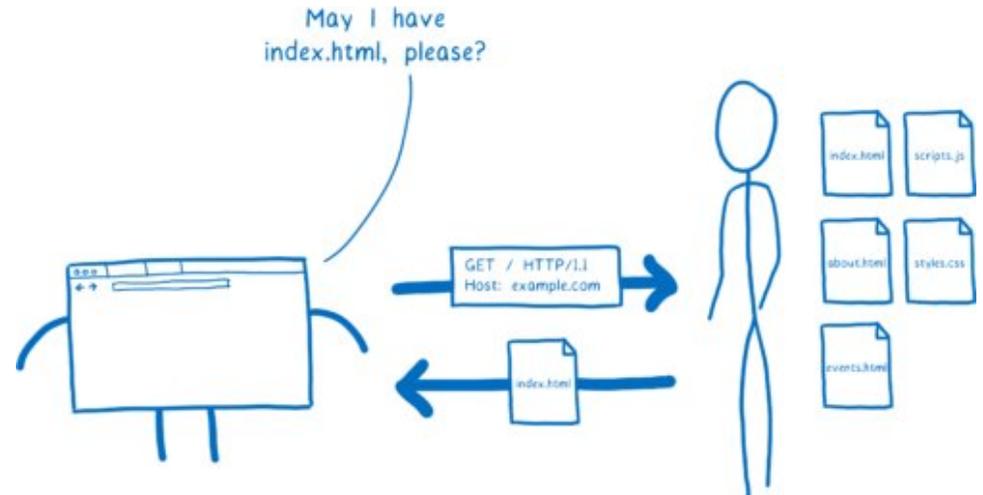
But first, let's look at how web pages move around the Internet.

If you already know how DNS and HTTPS work, you can skip to the [how DNS over HTTPS helps](#) section.

A brief HTTP crash course

When people explain how a browser downloads a web page, they usually explain it this way:

1. Your browser makes a GET request to a server.
2. The server sends a response, which is a file containing HTML.

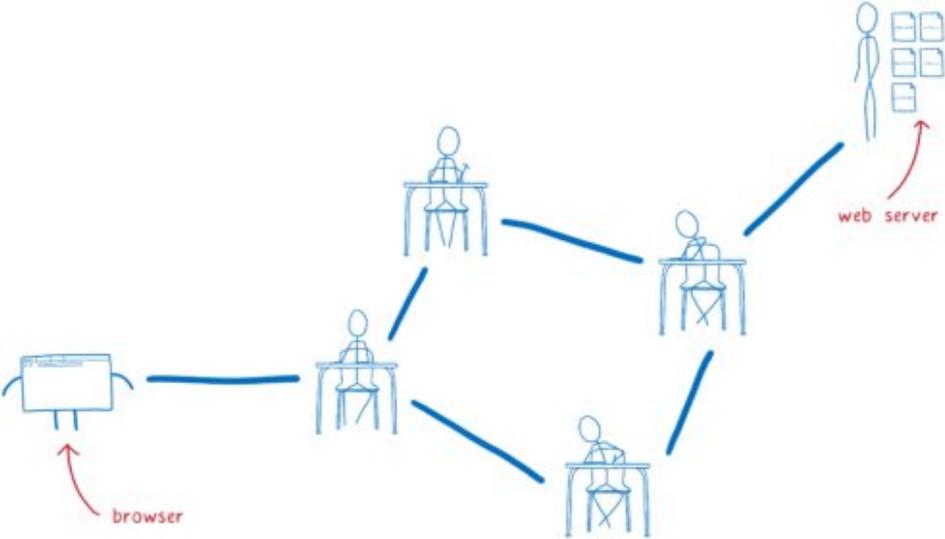


This system is called HTTP.

But this diagram is a little oversimplified. Your browser doesn't talk directly to the server. That's because they probably aren't close to each other.

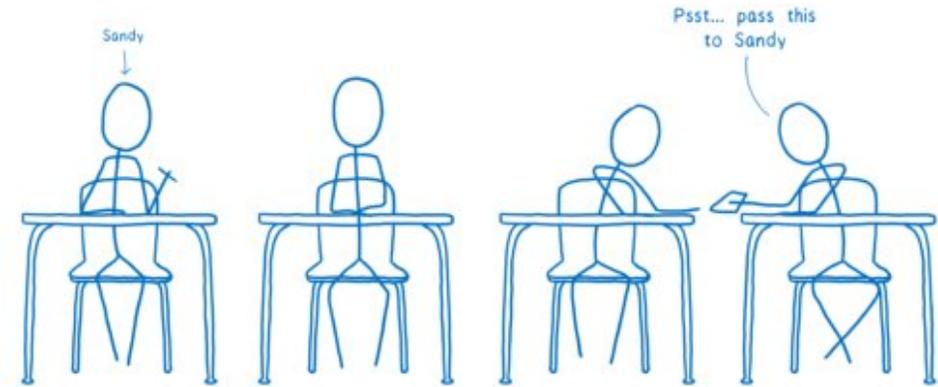
A Cartoon Intro To DNS over HTTPS

Instead, the server could be thousands of miles away. And there's likely no direct link between your computer and the server.



So this request needs to get from the browser to that server, and it will go through multiple hands before it gets there. And the same is true for the response coming back from the server.

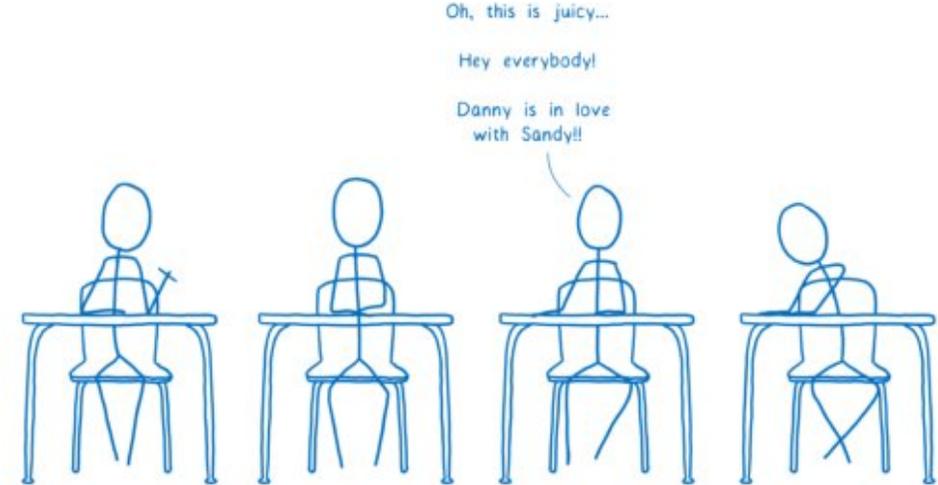
I think of this like kids passing notes to each other in class. On the outside, the note will say who it's supposed to go to. The kid who wrote the note will pass it to their neighbor. Then that next kid passes it to one of their neighbors — probably not the eventual recipient, but someone who's in that direction.



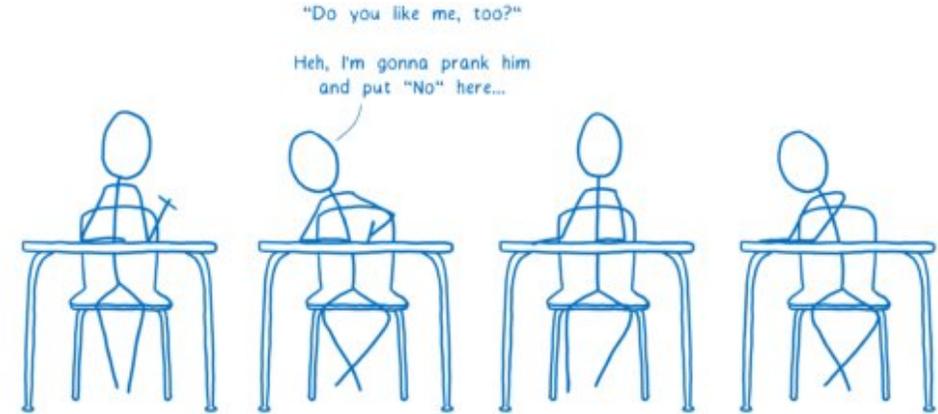
The problem with this is that anyone along the path can open up the note and read it. And there's no way to know in advance which path the note is going to take, so there's no telling what kind of people will have access to it.

It could end up in the hands of people who do harmful things...

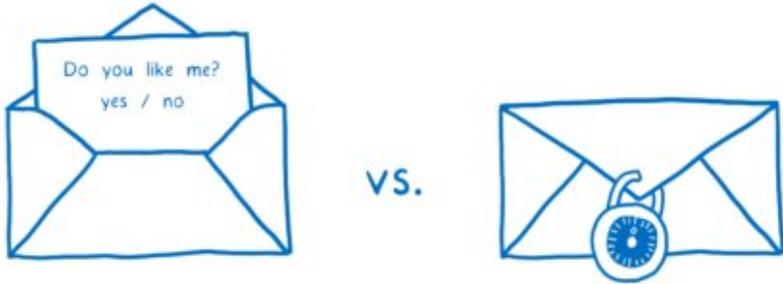
Like sharing the contents of the note with everyone.



Or changing the response.



To fix these issues, a new, secure version of HTTP was created. This is called HTTPS. With HTTPS, it's kind of like each message has a lock on it.



Both the browser and the server know the combination to that lock, but no one in between does.

With this, even if the messages go through multiple routers in between, only you and the web site will actually be able to read the contents.

This solves a lot of the security issues. But there are still some messages going between your browser and the server that aren't encrypted. This means people along the way can still pry into what you're doing.

One place where data is still exposed is in setting up the connection to the server. When you send your initial message to the server, you send the server name as well (in a field called "Server Name Indication"). This lets server operators run multiple sites on the same machine while still knowing who you are trying to talk to. This initial request is part of setting up encryption, but the initial request itself isn't encrypted.

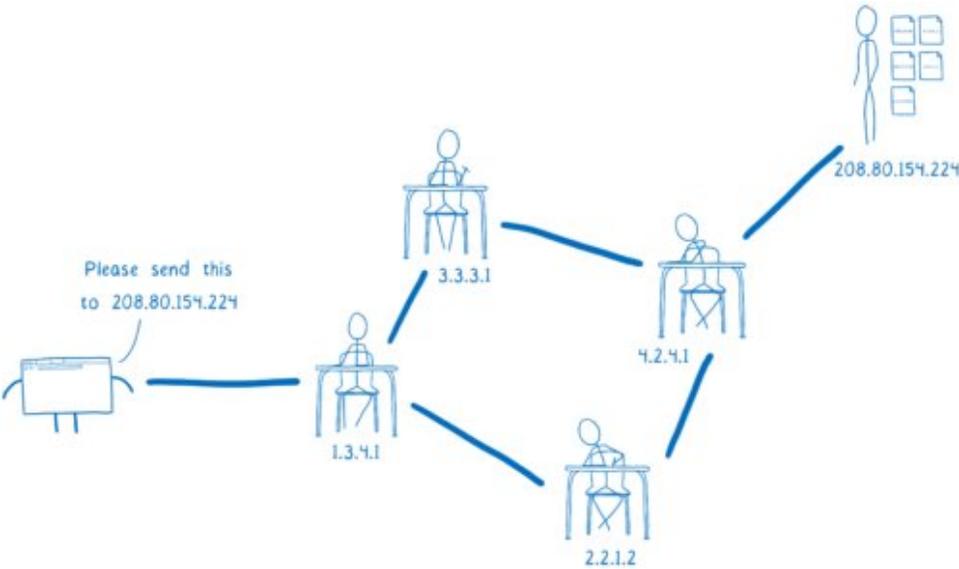
The other place where data is exposed is in DNS. But what is DNS?

DNS: the Domain Name System

In the passing notes metaphor above, I said that the name of the recipient had to be on the outside of the note. This is true for HTTP requests too... they need to say who they are going to.

But you can't use a name for them. None of the routers would know who you were talking about. Instead, you have to use an IP address. That's how the routers in between know which server you want to send your request to. network with IP addresses

This causes a problem. You don't want users to have to remember your site's IP address. Instead, you want to be able to give your site a catchy name... something that users can remember.



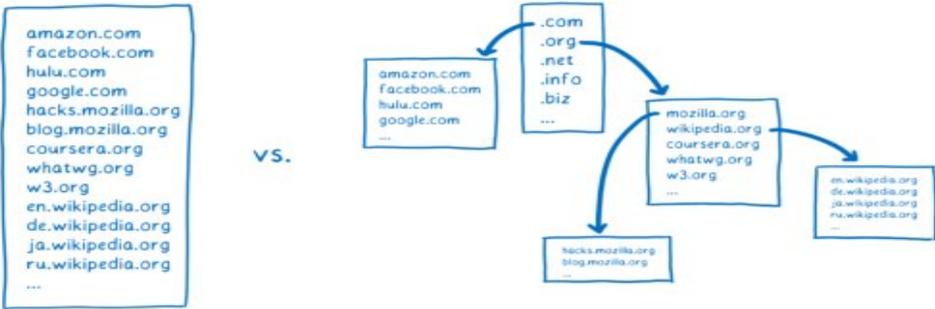
This is why we have the domain name system (DNS). Your browser uses DNS to convert the site name to an IP address. This process — converting the domain name to an IP address — is called domain name resolution.

en.wikipedia.org = 208.80.154.224

How does the browser know how to do this?

One option would be to have a big list, like a phone book in the browser. But as new web sites came online, or as sites moved to new servers, it would be hard to keep that list up-to-date.

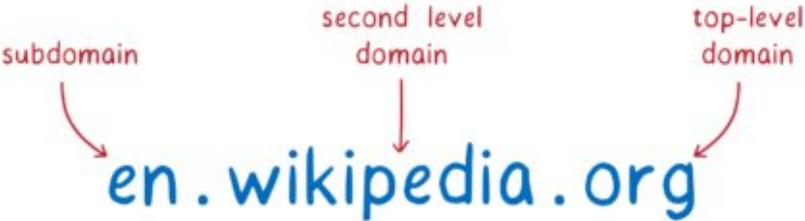
So instead of having one list which keeps track of all of the domain names, there are lots of smaller lists that are linked to each other. This allows them to be managed independently.



In order to get the IP address that corresponds to a domain name, you have to find the list that contains that domain name. Doing this is kind of like a treasure hunt.

What would this treasure hunt look like for a site like the English version of Wikipedia, en.wikipedia.org?

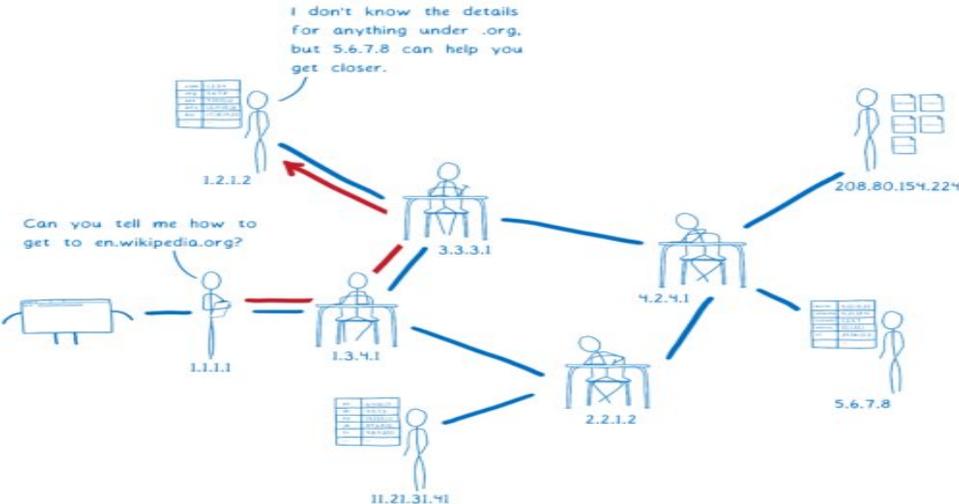
We can split this domain into parts.



With these parts, we can hunt for the list that contains the IP address for the site. We need some help in our quest, though. The tool that will go on this hunt for us and find the IP address is called a resolver.

First, the resolver talks to a server called the Root DNS. It knows of a few different Root DNS servers, so it sends the request to one of them. The resolver asks the Root DNS where it can find more info about addresses in the .org top-level domain.

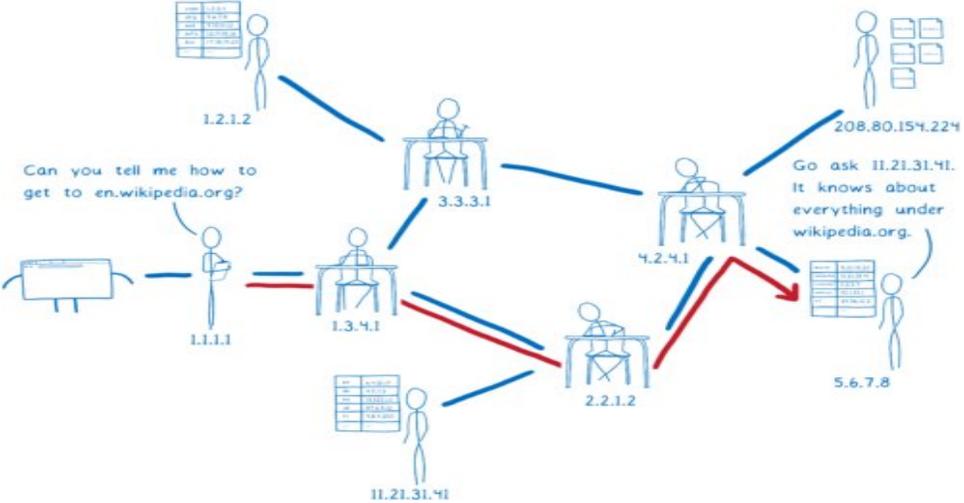
The Root DNS will give the resolver an address for a server that knows about .org addresses.



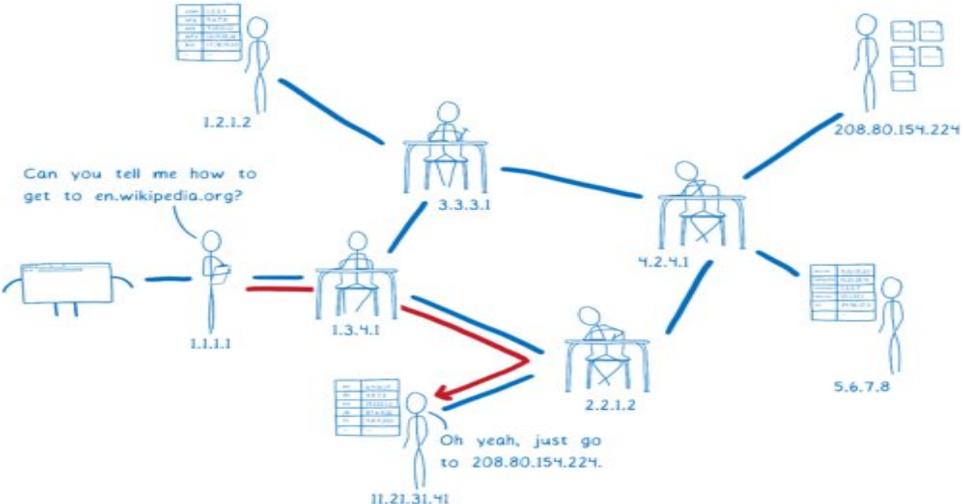
This next server is called a top-level domain (TLD) name server. The TLD server knows about all of the second-level domains that end with .org.

It doesn't know anything about the subdomains under wikipedia.org, though, so it doesn't know the IP address for en.wikipedia.org.

The TLD name server will tell the resolver to ask Wikipedia's name server.



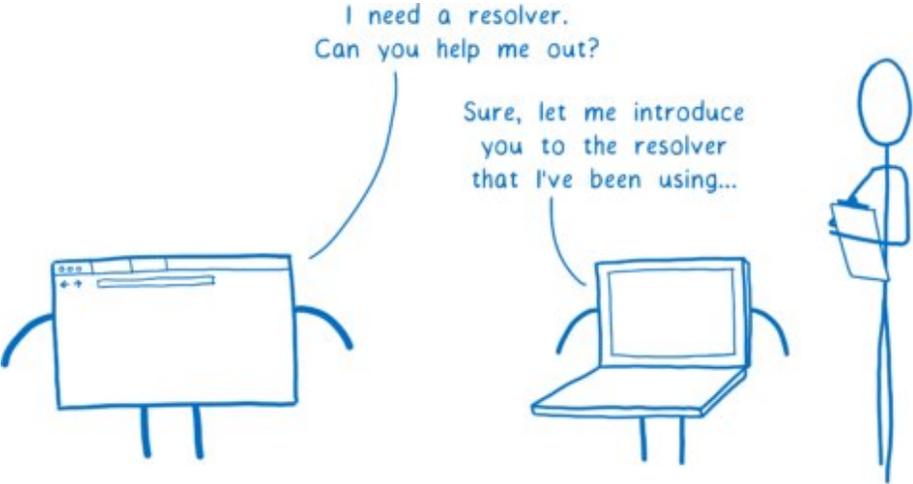
The resolver is almost done now. Wikipedia's name server is what's called the authoritative server. It knows about all of the domains under wikipedia.org. So this server knows about en.wikipedia.org, and other subdomains like the German version, de.wikipedia.org. The authoritative server tells the resolver which IP address has the HTML files for the site.



The resolver will return the IP address for en.wikipedia.org to the operating system.

This process is called recursive resolution, because you have to go back and forth asking different servers what's basically the same question.

I said we need a resolver to help us in our quest. But how does the browser find this resolver? In general, it asks the computer's operating system to set it up with a resolver that can help.



How does the operating system know which resolver to use? There are two possible ways.

You can configure your computer to use a resolver you trust. But very few people do this.

Instead, most people just use the default. And by default, the OS will just use whatever resolver the network told it to. When the computer connects to the network and gets its IP address, the network recommends a resolver to use.

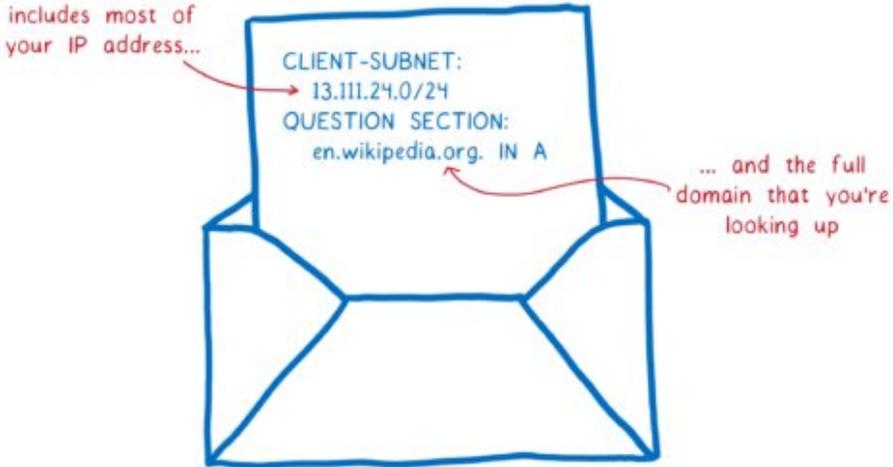


This means that the resolver that you're using can change multiple times per day. If you head to the coffee shop for an afternoon work session, you're probably using a different resolver than you were in the morning. And this is true even if you have configured your own resolver, because there's no security in the DNS protocol.

How can DNS be exploited?

So how can this system make users vulnerable?

Usually a resolver will tell each DNS server what domain you are looking for. This request sometimes includes your full IP address. Or if not your full IP address, increasingly often the request includes most of your IP address, which can easily be combined with other information to figure out your identity.



This means that every server that you ask to help with domain name resolution sees what site you're looking for. But more than that, it also means that anyone on the path to those servers sees your requests, too.

There are a few ways that this system puts users' data at risk. The two major risks are tracking and spoofing.

Tracking

Like I said above, it's easy to take the full or partial IP address info and figure out who's asking for that web site. This means that the DNS server and anyone along the path to that DNS server — called on-path routers — can create a profile of

you. They can create a record of all of the web sites that they've seen you look up.

And that data is valuable. Many people and companies will pay lots of money to see what you are browsing for.



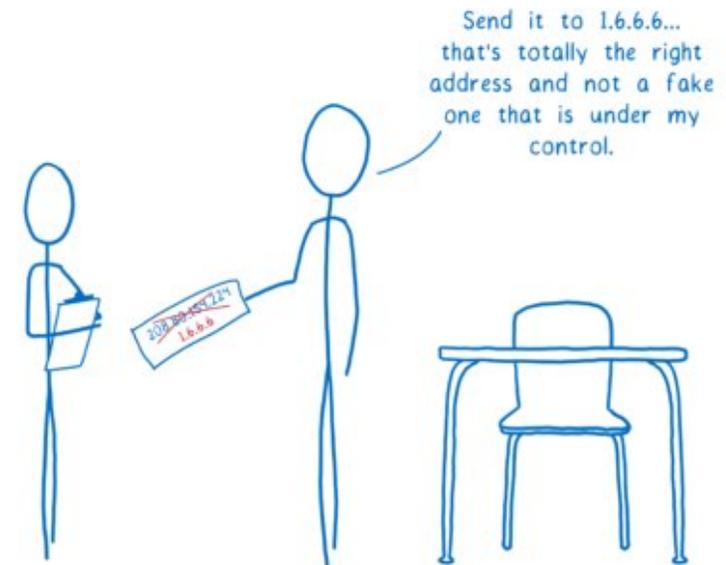
Even if you didn't have to worry about the possibly nefarious DNS servers or on-path routers, you still risk having your data harvested and sold. That's because the resolver itself — the one that the network gives to you — could be untrustworthy.

Even if you trust your network's recommended resolver, you're probably only using that resolver when you're at home. Like I mentioned before, whenever you go to a coffee shop or hotel or use any other network, you're probably using a different resolver. And who knows what its data collection policies are?

Beyond having your data collected and then sold without your knowledge or consent, there are even more dangerous ways the system can be exploited.

Spoofting

With spoofing, someone on the path between the DNS server and you changes the response. Instead of telling you the real IP address, a spoofer will give you the wrong IP address for a site. This way, they can block you from visiting the real site or send you to a scam one.



Again, this is a case where the resolver itself might act nefariously.

For example, let's say you're shopping for something at Megastore. You want to do a price check to see if you can get it cheaper at a competing online store, big-box.com.

But if you're on Megastore WiFi, you're probably using their resolver. That resolver could hijack the request to big-box.com and lie to you, saying that the site is unavailable.

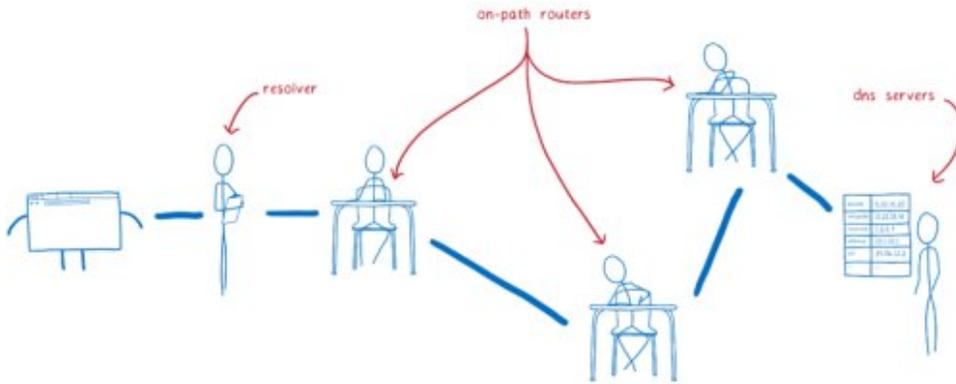
How can we fix this with Trusted Recursive Resolver (TRR) and DNS over HTTPS (DoH)?

At Mozilla, we feel strongly that we have a responsibility to protect our users and their data. We've been working on fixing these vulnerabilities.

We are introducing two new features to fix this — Trusted Recursive Resolver (TRR) and DNS over HTTPS (DoH). Because really, there are three threats here:

1. You could end up using an untrustworthy resolver that tracks your requests, or tampers with responses from DNS servers.
2. On-path routers can track or tamper in the same way.
3. DNS servers can track your DNS requests.

POTENTIAL THREATS



So how do we fix these?

1. Avoid untrustworthy resolvers by using Trusted Recursive Resolver.
2. Protect against on-path eavesdropping and tampering using DNS over HTTPS.
3. Transmit as little data as possible to protect users from deanonymization.

Avoid untrustworthy resolvers by using Trusted Recursive Resolver

Networks can get away with providing untrustworthy resolvers that steal your data or spoof DNS because very few users know the risks or how to protect themselves.

Even for users who do know the risks, it's hard for an individual user to negotiate with their ISP or other entity to ensure that their DNS data is handled responsibly.

However, we've spent time studying these risks... and we have negotiating power. We worked hard to find a company to work with us to protect users' DNS data. And we found one: [Cloudflare](#).

Cloudflare is providing a recursive resolution service with a pro-user privacy policy. They have committed to throwing away all personally identifiable data after 24 hours, and to never pass that data along to third-parties. And there will be regular audits to ensure that data is being cleared as expected.

With this, we have a resolver that we can trust to protect users' privacy. This means Firefox can ignore the resolver that the network provides and just go

straight to Cloudflare. With this trusted resolver in place, we don't have to worry about rogue resolvers selling our users' data or tricking our users with spoofed DNS.

Why are we picking one resolver? Cloudflare is as excited as we are about building a privacy-first DNS service. They worked with us to build a DoH resolution service that would serve our users well in a transparent way. They've been very open to adding user protections to the service, so we're happy to be able to collaborate with them.

But this doesn't mean you have to use Cloudflare. Users can configure Firefox to use whichever DoH-supporting recursive resolver they want. As more offerings crop up, we plan to make it easy to discover and switch to them.

Protect against on-path eavesdropping and tampering using DNS over HTTPS

The resolver isn't the only threat, though. On-path routers can track and spoof DNS because they can see the contents of the DNS requests and responses. But the Internet already has technology for ensuring that on-path routers can't eavesdrop like this. It's the encryption that I talked about before.

By using HTTPS to exchange the DNS packets, we ensure that no one can spy on the DNS requests that our users are making.

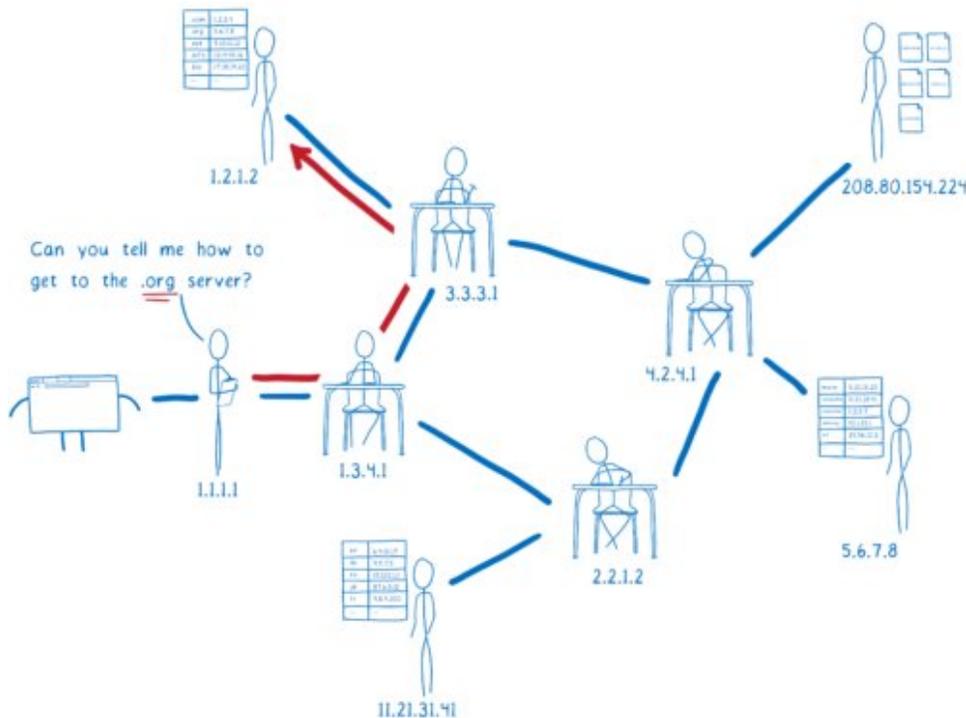
Transmit as little data as possible to protect users from deanonymization

In addition to providing a trusted resolver which communicates using the DoH protocol, Cloudflare is working with us to make this even more secure.

Normally, a resolver would send the whole domain name to each server—to the Root DNS, the TLD name server, the second-level name server, etc. But Cloudflare will be doing something different. It will only send the part that is relevant to the DNS server it's talking to at the moment. This is called [QNAME minimization](#).

The resolver will also often include the first 24 bits of your IP address in the request. This helps the DNS server know where you are and pick a CDN closer to you. But this information can be used by DNS servers to link different requests together.

Instead of doing this, Cloudflare will make the request from one of their own IP addresses near the user. This provides geolocation without tying it to a particular user. In addition to this, we're looking into how we can enable even better, very fine-grained load balancing in a privacy-sensitive way.



Doing this — removing the irrelevant parts of the domain name and not including your IP address — means that DNS servers have much less data that they can collect about you.



What isn't fixed by TRR with DoH?

With these fixes, we've reduced the number of people who can see what sites you're visiting. But this doesn't eliminate data leaks entirely.

After you do the DNS lookup to find the IP address, you still need to connect to the web server at that address. To do this, you send an initial request. This request includes a server name indication, which says which site on the server you want to connect to. And this request is unencrypted.

That means that your ISP can still figure out which sites you're visiting, because it's right there in the server name indication. Plus, the routers that pass that initial request from your browser to the web server can see that info too.

However, once you've made that connection to the web server, then everything is encrypted. And the neat thing is that this encrypted connection can be used for any site that is hosted on that server, not just the one that you initially asked for.

This is sometimes called HTTP/2 connection coalescing, or simply connection reuse. When you open a connection to a server that supports it, that server will tell you what other sites it hosts. Then you can visit those other sites using that existing encrypted connection.

Why does this help? You don't need to start up a new connection to visit these other sites. This means you don't need to send that unencrypted initial request with its server name indication saying which site you're visiting. Which means you can visit any of the other sites on the same server without revealing what sites you're looking at to your ISP and on-path routers.

With the rise of CDNs, more and more independent sites are being served by a single server. And since you can have multiple coalesced connections open, you can be connected to multiple shared servers or CDNs at once, visiting all of the sites across the different servers without leaking data. This means this will be more and more effective as a privacy shield.

What is the status?

You can enable DNS over HTTPS in Firefox today, and we [encourage you to](#).

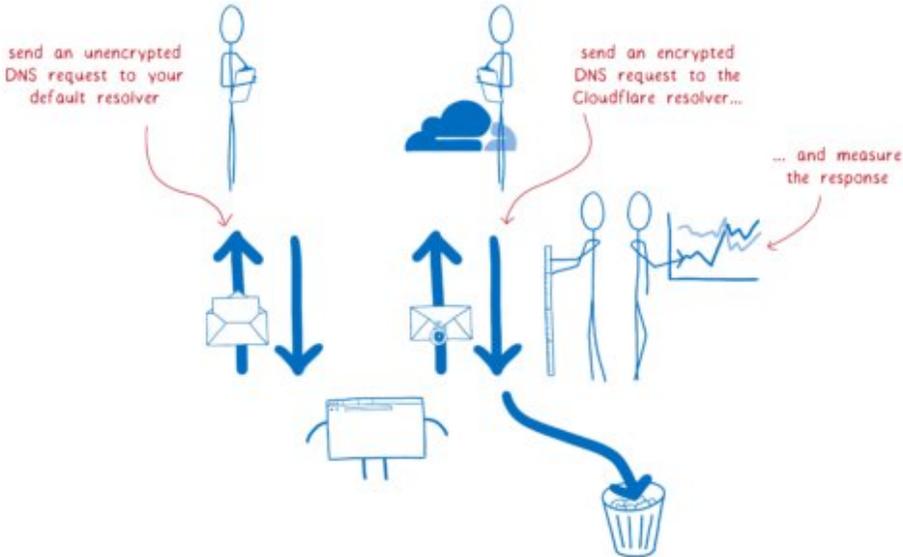
We'd like to turn this on as the default for all of our users. We believe that every one of our users deserves this privacy and security, no matter if they understand DNS leaks or not.



But it's a big change and we need to test it out first. That's why we're conducting a study. We're asking half of our Firefox Nightly users to help us collect data on performance.

We'll use the default resolver, as we do now, but we'll also send the request to Cloudflare's DoH resolver. Then we'll compare the two to make sure that everything is working as we expect.

For participants in the study, the Cloudflare DNS response won't be used yet. We're simply checking that everything works, and then throwing away the Cloudflare response.



We are thankful to have the support of our Nightly users — the people who help us test Firefox every day — and we hope that you will help us test this, too.

About Lin Clark

Lin works in Advanced Development at Mozilla, with a focus on Rust and WebAssembly.

- * <https://twitter.com/linclark>
- * @linclark

The PCLinuxOS Magazine Special Editions!

The collage features several magazine covers:

- Windows Migration Guide** (September 2013): A penguin looking through a magnifying glass.
- Enlightenment Special Edition** (May 2011): A penguin on a globe.
- The KDE 4 SC Special Edition** (Fall 2010): KDE desktop icons.
- Gtk Lightweight Desktops: Xfce & LXDE Special Edition** (November 2010): A yellow robot holding a pencil.
- Openbox Special Edition** (March 2012): A penguin with a box of Ubuntu (UB) software.
- Command Line Interface Intro Special Edition** (October 2010): A terminal window with command-line text.

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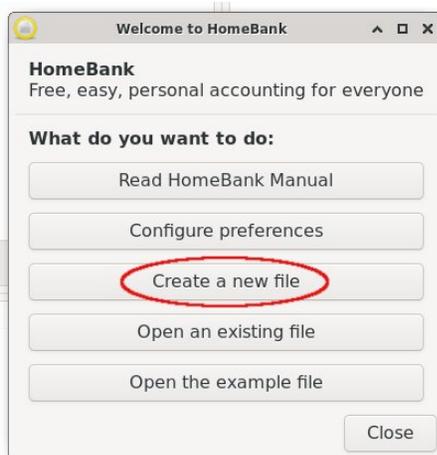
HomeBank: How To Add New Categories And Create Split Transactions

by David Pardue (kalwisti)

Although I primarily use GnuCash to track my family's personal finances, I decided to try HomeBank as a secondary program. HomeBank was a pleasant surprise; it is easily configured, has a friendly interface, can generate nice charts and reports, and is accompanied by good documentation. If GnuCash seems too complex or intimidating for your needs, HomeBank just might be the alternative that hits the sweet spot.

If you are brand new to HomeBank, a good starting point is Meemaw's article in the [March 2012](#) issue of The PCLinuxOS Magazine, called "Linux Financial Apps: HomeBank".

Her tutorial covers what is probably ver. 4.4 of the program. HomeBank's interface and behavior have not changed drastically since then. However, I should mention that the term "wallet" is no longer used to refer to files. When you start HomeBank ver. 5.2.8 for the first time, you will see a Welcome dialog window:



After selecting the "Create a new file" option, a wizard will guide you through the steps to create this file, beginning with a "File properties" window (Owner name, Currency type). You will next be asked to verify "Preset categories" (Language settings), as well as to fill information into a "Create an account" dialog window: Account Name, Type (Bank, Cash, Credit Card, etc.), Account Number (optional), Initial Balance, and, if desired, an "Overdrawn at" amount (if you want to designate a reserve amount of money in your account). The final screen is a confirmation window, in which you click on an "Apply" button to save this account information.

I had to manually enter my data because my bank offers neither OFX or QIF exports of account activity. While manually entering four months' worth of my checkbook data, I encountered a few minor difficulties. It required some trial and error to figure out how to:

- Add a new expense category.
- Add a new income category.
- Create a split transaction.

Therefore, I wrote this how-to as a supplement to Meemaw's article. I hope it will be helpful for other PCLinuxOS users who are new to HomeBank.

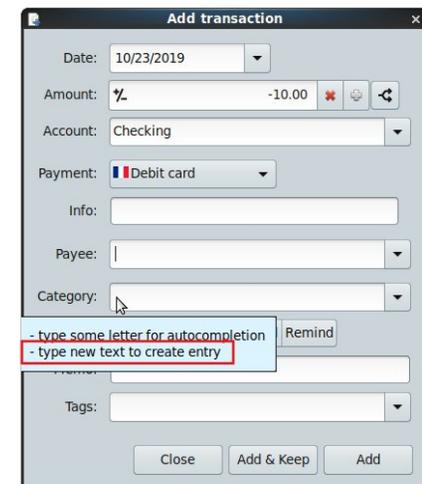
Note: These instructions pertain to HomeBank ver. 5.2.8, which is the current version at the time of writing.

Adding a New Expense Category

Although HomeBank has a fairly extensive list of preconfigured expense (and income) categories, the program does not cover every financial scenario, so

you will likely need to create some new categories tailored to your personal needs.

Users can add new expense—or income—categories "on the fly," i.e., during the process of adding transactions. While adding a transaction, if you wait a moment and hover your mouse over the Category box, you will see the tooltip prompt below:



The beauty of Linux is that there is always more than one way to do something. This direct-entry method works with both expense and income categories. It allows you to create a new main/primary category, or a new subcategory. You may also simultaneously create a new main category with a subcategory, if you wish.

I will show you the direct-entry method (which I've dubbed "The Short Way") and a menu-driven method that involves more pointing and clicking (which I call "The Long Way"). It is important to note that the indirect method (a.k.a. "The Long Way") means that if you are in the midst of entering

HomeBank: How To Add New Categories And Create Split Transactions

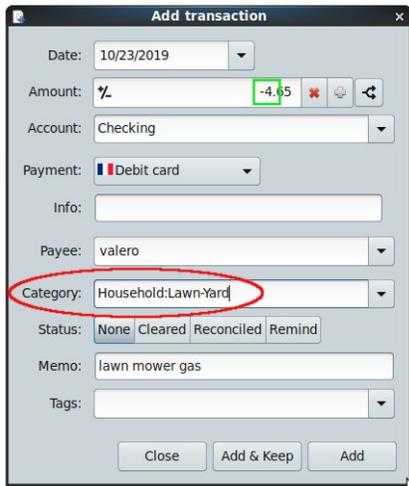
transaction data, only to realize that the (sub)category you need does not exist yet, you must close your current Add transaction window. Next, you will create your desired (sub)category. Afterwards, you may open a new Add transaction window, input the appropriate data and assign it to your new (sub)category.

Once you are aware of both options, choose whichever method best suits your workflow.

Create an Expense Subcategory (The Short Way)

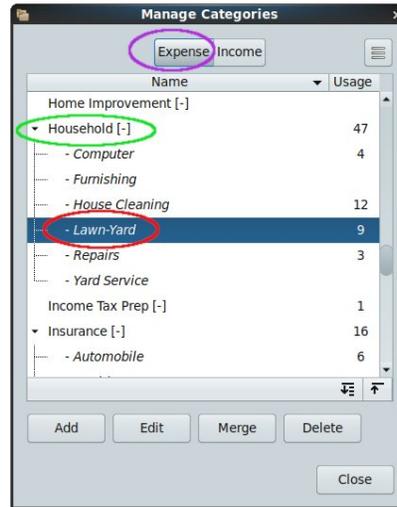
Open an **Add transaction** window. In this example, I need to create a new expense subcategory called "Lawn-Yard," under the parent expense category of "Household."

Fill in the relevant information for Date, Amount, Payment method, Payee and Memo (if desired). In the Category box, type "Household:Lawn-Yard" (with no spaces before or after the colon).



The structure above tells the program that "Household" should be treated as the parent category, and "Lawn-Yard" as the subcategory. HomeBank will detect that this transaction is a debit

(since its Amount is a negative number) and automatically add it as an Expense category (rather than as an Income category). We can verify this new subcategory was created by selecting **Manage > Categories** from the main menu. If we look at the list of Expense categories, voilà!



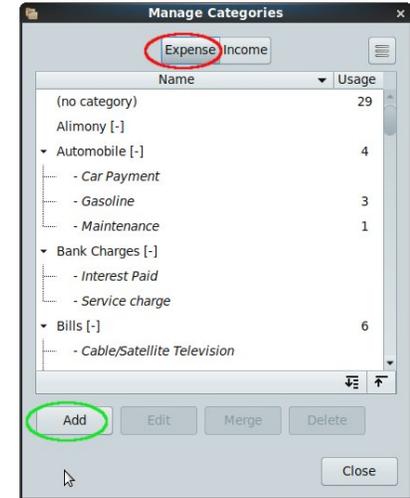
Create an Expense Subcategory (The Long Way)

First, close any active Add transaction windows. On the main toolbar, click on the **Configure the categories** icon:

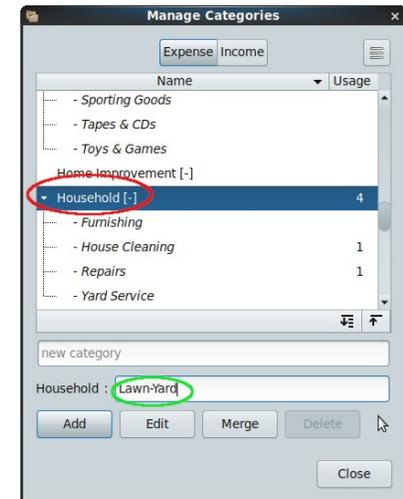


The Manage Categories window will open. Click on the Expense button to display the list of preconfigured categories (top right):

Click on the Add button. Under the main/parent category of "Household," I want to create a new subcategory called "Lawn-Yard." Scroll down the list until you find the "Household" category, then select it



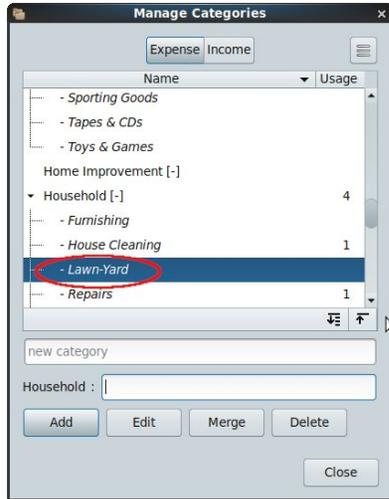
by clicking on it. In the empty "new subcategory" box, type "Lawn-Yard":



To activate this new category, press the Enter key. This is the tricky step. (I learned from several failed attempts that neither clicking on the Add button, nor clicking on the Close button will save your freshly typed category).

HomeBank: How To Add New Categories And Create Split Transactions

Check the Categories list to make sure that your new subcategory was added:

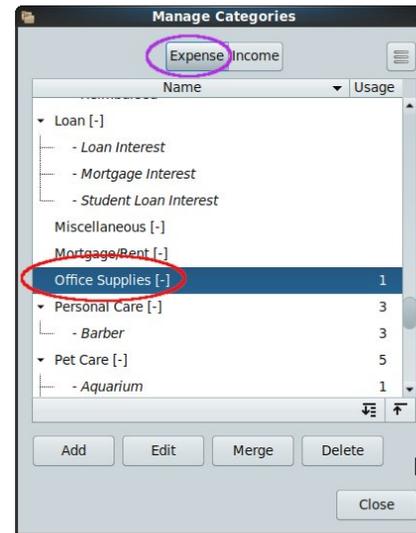
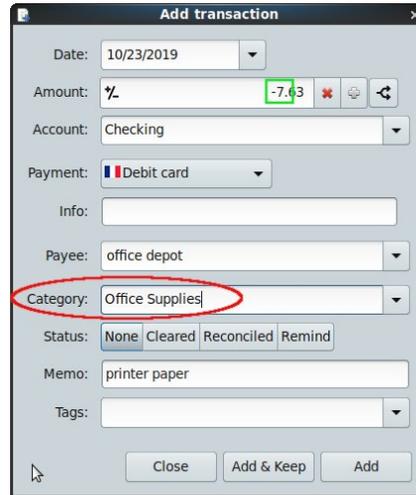


Click on the Close button to dismiss the Manage Categories window. You may now open an Add transaction window, and input the relevant data for the transaction involving the “Lawn-Yard” subcategory.

Create a Main/Primary Category (The Short Way)

Open an Add transaction window. In this example, I want to create a new main/primary Expense category called “Office Supplies.” Fill in the relevant information for Date, Amount, Payment method, Payee and Memo (if desired). (center, top)

In the Category box, type “Office Supplies.” HomeBank will detect that this transaction is a debit (since its Amount is a negative number) and automatically add it as an Expense category. We can verify this new primary (main) category was created by selecting **Manage > Categories** from the main menu. It now appears in the list of Expense categories (center):



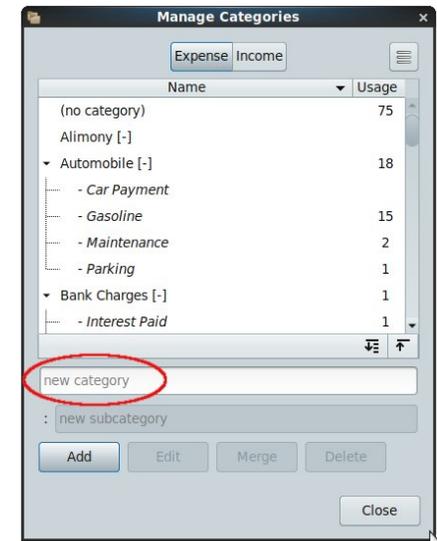
Create a Main/Primary Category (The Long Way)

The process of creating a new main/primary expense category is almost identical to adding an expense subcategory.

First, close any active Add transaction windows. On the main toolbar, click on the **Configure the categories** icon:



The Manage Categories dialog window will open. Click on the Expense button to display the list of preconfigured categories. Click on the Add button. Look for the empty “new category” box:

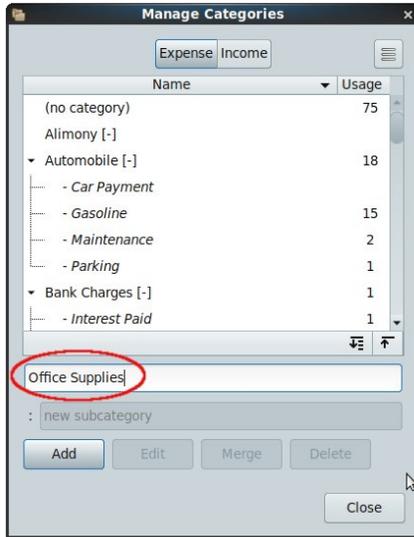


In this example, I want to create a new main/primary category called “Office Supplies”.

In the empty “new category” box, type “Office Supplies” (next page, top left).

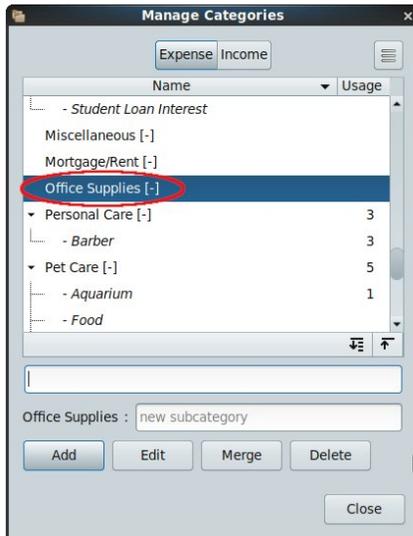


HomeBank: How To Add New Categories And Create Split Transactions



To activate this new category, press the Enter key.

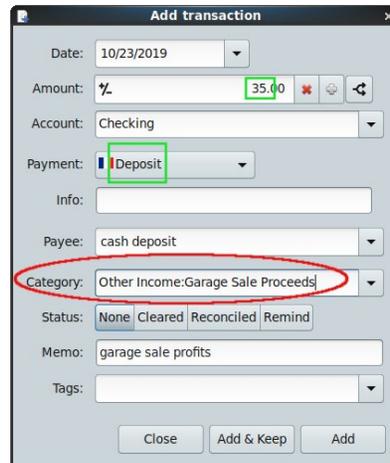
Check the Categories list to make sure that your new main category was added:



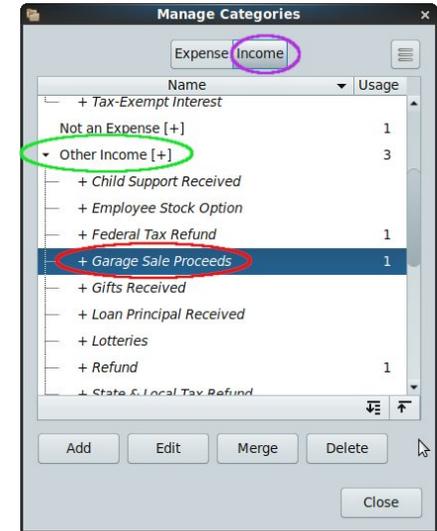
Click on the Close button to dismiss the Manage Categories window. You may now open an Add transaction window, and input the relevant data for the transaction involving the “Office Supplies” category.

Adding a New Income Category (The Short Way)

Open an Add transaction window. I want to create a new Income subcategory called “Garage Sale Proceeds” under the main/primary category of “Other Income”. Fill in the relevant information for: Date, Amount, Payment method, Payee and Memo (if desired).



In the Category box, type “Other Income:Garage Sale Proceeds” (with no spaces before or after the colon). The structure above tells the program that “Other Income” should be treated as the parent category, and “Garage Sale Proceeds” as the subcategory. HomeBank will detect that this transaction is a credit (since its Amount is a positive number) and automatically add it as an Income category (rather than as an Expense category). We can verify this new subcategory was created by selecting **Manage > Categories** from the main menu. It should appear in the list of Income categories (top right):



Adding a New Income Category (The Long Way)

First, close any active Add transaction windows. On the main toolbar, click on the **Configure the categories** icon:

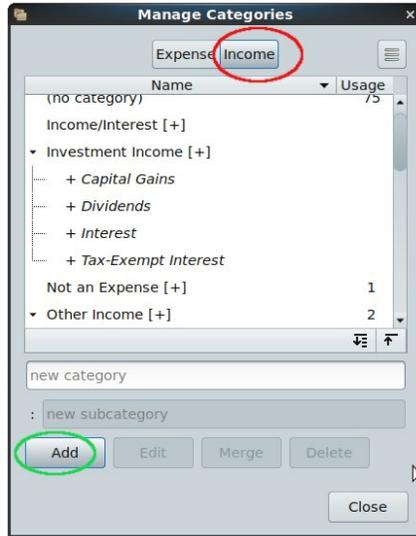


The Manage Categories window will open. Click on the Income button to display the list of preconfigured categories. Click on the Add button (next page, top left):

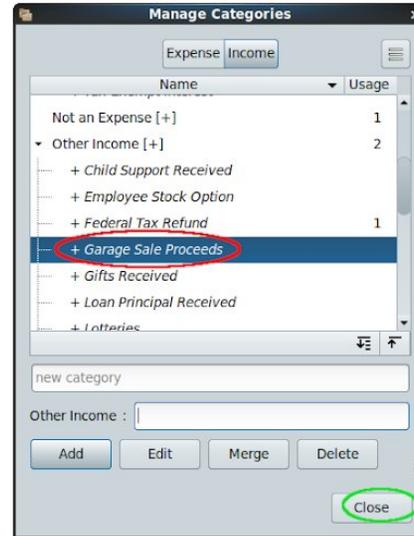
Under the main/primary category of “Other Income,” let’s create a new subcategory called “Garage Sale Proceeds.”



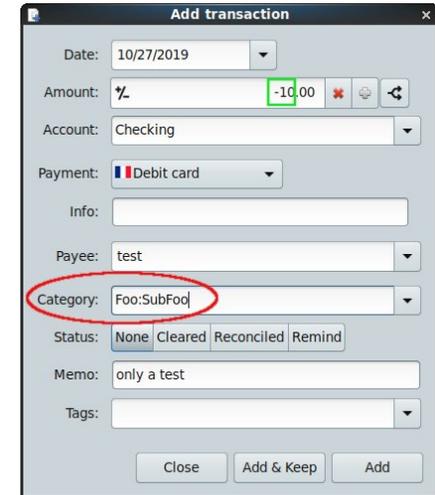
HomeBank: How To Add New Categories And Create Split Transactions



Scroll down the list until you find the “Other Income” category, then select it by clicking on it. In the empty “new subcategory” box, type “Garage Sale Proceeds”:

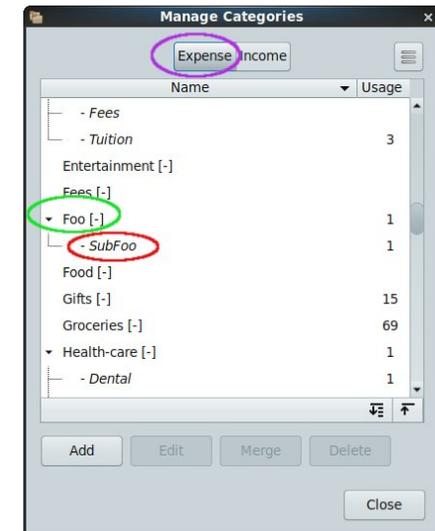


Click on the Close button to dismiss the Manage Categories window. You may now open an Add transaction window, and input the relevant data for the transaction involving the “Garage Sale Proceeds” subcategory.



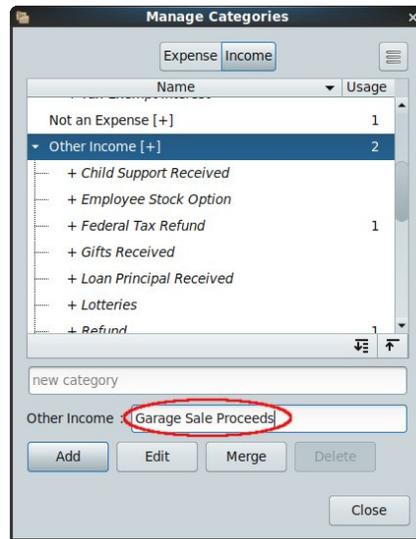
Simultaneously Adding a New Main Expense Category and Subcategory (The Short Way)

Open an Add transaction window. I want to simultaneously create a new main/primary category of “Foo,” with a new subcategory of “SubFoo.” Fill in the relevant information for Date, Amount, Payment method, Payee and Memo (if desired). (right top)



Creating Split Transactions

I previously experimented with HomeBank in 2010; at that time, it lacked the split transaction feature, which was a deal-breaker for me. Maxime Doyen, HomeBank’s developer, responded to users’ requests by implementing a split transaction feature



To activate this new category, press the Enter key. Check the Categories list to make sure that your new subcategory was added (center top):

In the Category box, type “Foo:SubFoo” (with no spaces before or after the colon). The structure above tells the program that “Foo” should be treated as the parent category, and “SubFoo” as the subcategory. HomeBank will detect that this transaction is a debit (since its Amount is a negative number) and automatically add it as an Expense category. Verify these new categories were created by selecting **Manage > Categories** from the main menu. They will appear in the list of Expense categories (right):

HomeBank: How To Add New Categories And Create Split Transactions

in ver. 4.5 of the program. A single transaction can now be split in up to 60 different categories.

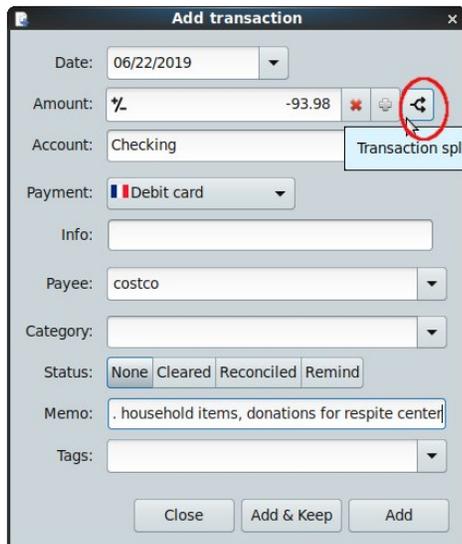
HomeBank's user manual briefly discusses split transactions, but it does not include any examples – nor is there one in the program's example file. (The Example file is offered as a choice when HomeBank is opened for the first time; afterwards, you can access it by selecting the **Tools menu > Show welcome dialog... > Open the example file**).

The simple example below demonstrates how to split a single purchase between two different expense categories.

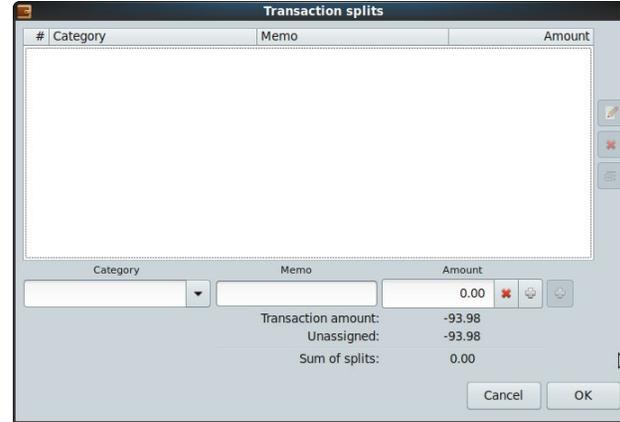
Fill out the majority of your transaction in the Add transaction window as usual: Date, Account, Payment method, Payee and Memo. Include the total Amount, prior to the split.

Don't forget to click on the minus sign (-) in the "Toggle amount," since this transaction is a debit. Do **not** select anything in the "Category" box at this time.

Click on the Transaction splits button:

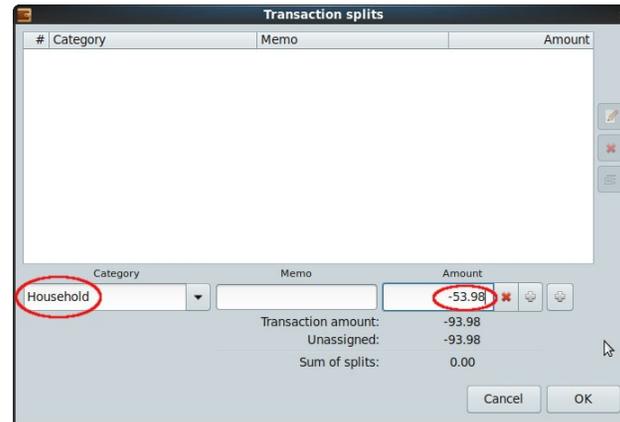


A new Transaction splits window will open:

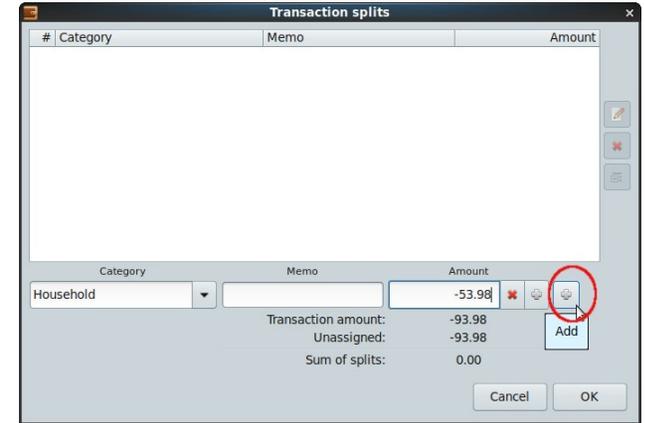


Add the information for your first Split category. (In this example, I will assign the amount of \$53.98 to the expense category of "Household"). **Precede the amount with a minus sign (-)**, since this is a debit.

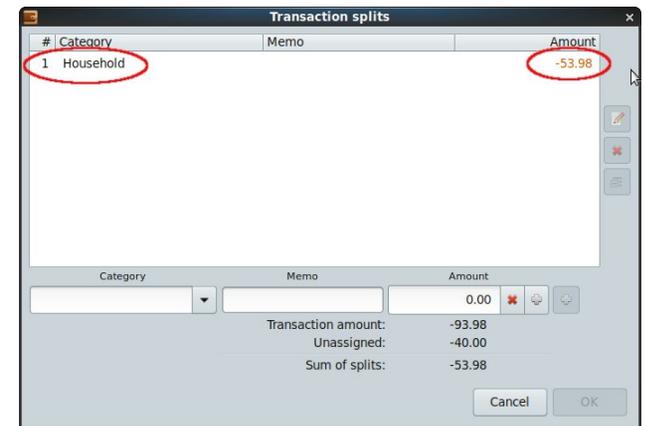
(You can type additional information into the Memo box, if you wish).



Click on the second Add (+) button, i.e., the one on the right (right top).



You will see this data line move up into the main window.

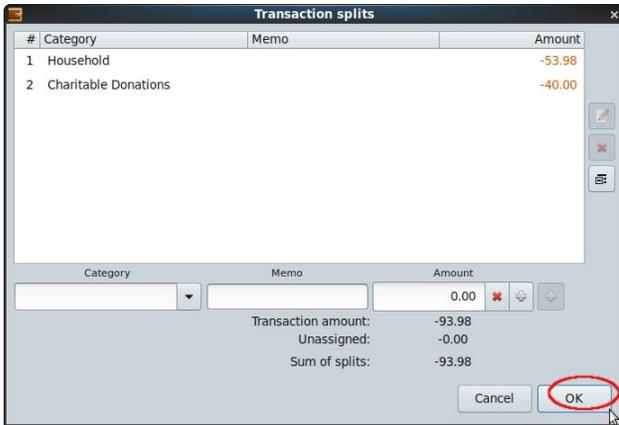
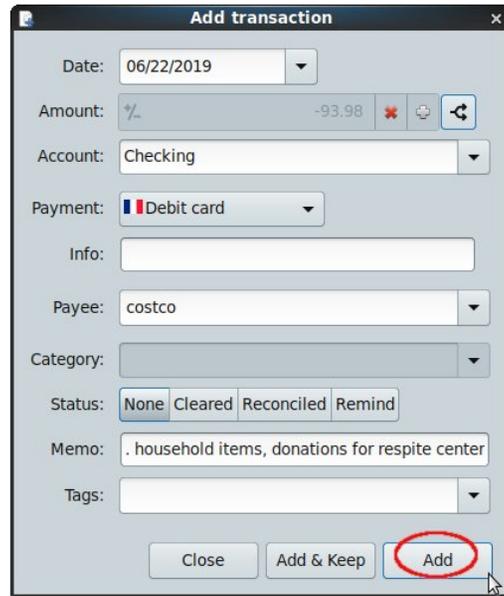
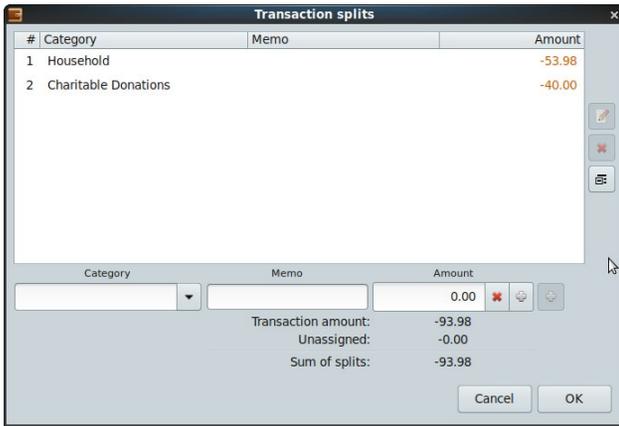


Repeat this process for your next split category. (In this case, I assigned the amount of \$40.00 to the expense category of "Charitable Donations"). (next page, left top)

Double-check that the Unassigned amount shows as "-0.00" (**Sometimes it will show as "-.---**"). To close the Transaction splits window, click on the OK button (next page, left center).

HomeBank: How To Add New Categories And Create Split Transactions

Next, you will be returned to the Add transaction window. Click on the Add button to enter/finalize this split transaction.



Afterwards, in the Account window, notice that the Category column will indicate "-split-". (below)

06/21/2019	🇫🇷	Walmart	Gifts	\$ -12.66	flowers
06/21/2019	🇫🇷	animal hos...	Pet Care...	\$ -91.25	bordetella vacc., check-up for prin...
06/21/2019	🇫🇷	espresso	Dining Out	\$ -30.03	birthday supper + tip
06/22/2019	🇫🇷	costco	- split -	\$ -93.98	misc. household items, donations ...

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PCLinuxOS Family Member Spotlight: Revoluz

As told to YouCanToo

What is your name/username?

Revoluz

How old are you?

58

Are you married, single?

I don't know.

How about Kids, Grandkids (names and ages)?

I don't know.

Do you have pets, what is your favorite?

Big Dog

Are you retired, still working and if working, what do you do?

Hard working

Where do you call home? What is it like? IE: weather, scenery?

Europa. Hot and Cold



This is where I Live. Home Sweet Home.

Where did you go to school and what is your education level?

Very bad

What kind of things you like doing? hobbies, travel, fishing, camping?

70. Classic muscle car.

Testing applications like user friendly and self-explanatory they are, how fast a product can be made with it with very few clicks etc. I love small, effective, full-featured tools such as Ksnip, HotShot.

..

Pleasant and joyful company with a lot of respect, without envy or resentment and without aggressiveness.

Why and when did you start using Linux?

2006 Open-Suse, 6 Months later PCLinuxOS my only distro.

What specific equipment do currently use with PCLinuxOS?

Office, Graphics, Multimedia - Jack-Audio, HTML Website build and not so often anymore, 3D CAM

Do you feel that your use of Linux influences the reactions you receive from your computer peers or family? If so, how?

Trying to make people curious by talking about it.

What would you like to see happen within PCLinuxOS that would make it a better place. What are your feelings?

That Mini Live CD correspond to the Sinn Mini, only for the wide hardware compatibility and peripherals such as printers and scanners.

With a possible neutral burning program like Acetoneiso and Brasero, with all compression - extraction libraries and audio / video codecs, a slim audio player > Audacious, a slim internet browser and all CD, DVD and CD-Iso libraries, with Ksnip and a minimal Gimp, MPV, SMPlayer, PDF Viewer... in short, strong under the hood with practically very few applications on which every user gets a very good base.

- No Pulse audio
- No Jack audio
- No LO
- No Audacity
- No video renderer
- etc.

Repo:

Applications for as wide a user group as possible, such as with more 2 and 3D applications, e.g. CAD and CAM alternatives, more for doctors, and more for scientists (The Distro CAE-Linux once built on PCLinuxOS, now it has unfortunately become Ubuntu).

PCLinuxOS Family Member Spotlight is an exclusive, monthly column by YouCanToo, featuring PCLinuxOS forum member. This column will allow "the rest of us" to get to know our forum family members better, and will give those featured an opportunity to share their PCLinuxOS story with the rest of the world.

If you would like to be featured in PCLinuxOS Family Member Spotlight, please send a private message to youcantoo, parnote or Meemaw in the PCLinuxOS forum expressing your interest.

De-Googling Yourself, Part 7



by Alessandro Ebersol (Agent Smith)

We come to part seven of this series, and let's cover Google's mobile operating system, Android.

Android was created by Andy Rubin at his company, Android Inc, founded in 2003 in Palo Alto, California.

android 

A little history ...

Android Inc. was founded in Palo Alto, California, in October 2003 by Andy Rubin, Rich Miner, Nick Sears and Chris White. Rubin described the Android

project as "tremendous potential in the development of smarter mobile devices, more aware of its owner's location and preferences." The company's first intentions were to develop an advanced operating system for digital cameras, and that was the basis of its April 2004 investor presentation. The company then decided that the camera market was not big enough for its goals, and five months later it had diverted its efforts and was launching Android as an operating system for mobile devices, which would rival Symbian and Microsoft Windows Mobile.

Rubin struggled to attract investors from the start, and Android, Inc. was facing eviction from its office.

In July 2005, Google acquired Android Inc. for at least \$50 million (US). Its key employees, including

Rubin, Miner and White, joined Google as part of the acquisition. Not much was known about the secret Android at the time, with the company providing few details beyond that it was producing mobile software. At Google, the team led by Rubin developed a mobile platform with the Linux kernel. Google, then, marketed the platform to handset makers and carriers with the promise of providing a flexible and upgradeable system. Google had "aligned a number of hardware components providers and software partners and signaled operators that they were open to varying degrees of cooperation."

Android is the world's top selling operating system on smartphones since 2011 and tablets since 2013. As of May 2017, it has more than two billion monthly active users, the largest installed base of any operating system, and by December 2018, the Google Play Store has over 2.6 million apps, indicating the platform's undisputed success. Thanks to Android's "open" nature, many other operating systems have been based on it (FireOS, Indus OS, LeWa OS, LineageOS, MIUI, OmniROM, OxygenOS, Paranoid Android, Replicant, and others).

The danger lies in your pocket

I've already written a lot about how Google monitors users of its services, so I won't repeat it here. I will just be more specific on the Android subject. Yes, you can have an Android phone, but to have apps, you must have an account with Google. With a Google account, the company will be able to spy on you, know what your apps are, and especially, thanks to Google Play Services, know more about you than your own family.

Google Play Services, the heart of espionage

Google Play Services is the heart of any Android device. Google Play Services acts as the core infrastructure, which acts as a bridge between various applications and Android. Google Play Services acts as a spinal cord between OS and Apps. And, what's worse, it's not uninstallable.

The problem with G-Services is that they consume a lot of data and battery. Not only does the application consume data from the Internet, it also performs data mining on the user's personal data, taking up a large portion of the mobile storage space.

How can we start bypassing Google Play Services? It's not easy, due to the tight integration of Google's services with the internet's own infrastructure, but we'll try.



Micro-G, Google's free alternative

microG is an open source redeployment of Google Play Services. It allows applications that call Google's proprietary APIs to run on AOSP-based ROMs such as Replicant and LineageOS. Acting as a proprietary replacement for Google Apps (GAPPS), it is a powerful tool for regaining your privacy and freedom while enjoying the key features of Android.

Features

- Enable Google Services and Extend Application Support
- On / Offline Location Service
- Light on battery, memory and CPU
- No bloatware
- Works on real devices, test emulators and virtual mobile infrastructure
- Free (open source) (Apache 2.0 license)

System Requirements

Your Android system must support signature spoofing, so GmsCore(Micro-G) can fake the existence of official Google Play services for applications that call Google APIs.

GmsCore includes the Unified Network Location Provider (UnifiedNlp) module, which handles application calls to Google's network location provider. It is based on the location and address search backend, which must be installed separately. For more information about UnifiedNlp and its backend, see the module's wiki.

For a complete microG installation, consider installing a replacement PlayStore application as well as the Services Framework Proxy module (GsfProxy) to provide Google push messaging. UnifiedNlp, even if you are using GmsCore.

Unfortunately, it cannot be integrated with an existing Android installation, but it can be used with free Android ROMS (LineageOS, Replicant, etc...).



Free your Android with Free Software!

F-Droid Repository is an easily installable catalog of free and open source applications for Android. With F-Droid, it's easy to browse and install apps on your device and keep up with updates. You can also browse the repository with a web browser and download the application directly from there if you don't want to run the F-Droid client on your device (side loading).

All applications in the default repository must be free and open source software - for example, released under a GPL or Apache license. Every effort is made to verify that this is indeed the case, both by visual

inspection of the source and by creating the application from the published source.

Software that reports user activity without permission (e.g., via Google Analytics) or tracks user behavior (e.g., most advertising platforms) is specifically excluded from the F-Droid repository, as software with the main purpose of interacting with a non-free network service. Of course, you have the freedom to set up your own repository for such software - the server source is available and the client will allow you to add or remove repositories as you see fit.

F-Droid originated as a fork of Aptoide. F-Droid can be installed from its [website](#) or Aptoide, but it's not available for download from the Google Play Store (why isn't it?).

To install it, you must allow installation of third party packages in your security settings. In the F-Droid repository, you will find some apps to interact with the Google Play store, preserving your privacy.



Yalp Store

Yalp Store lets you download apps from Google Play Store as apk files. It can check for installed application updates and lets you search for other applications. Yalp saves downloaded applications to their default download folder. Other features include browsing categories, viewing and leaving comments, black / white listing apps for updates, free/paid filtering apps, and containing/not containing ads.

In addition to Google Play-related features, Yalp Store has common package manager features: listing, running, installing, and uninstalling local applications. If root is available, Yalp Store can update your apps in the background, install and uninstall system apps.

By default, Yalp Store connects to Google services using an internal account, so you don't have to have a Google account to use it. The only reason to use an active Google account is to access the paid apps you have. Or, you can use a fake account so that Google can't track the apps you download from the Yalp Store.

Unfortunately, this app has not been updated for more than one year, and due to changes that Google has applied to the Play Store, it is no longer operational.



Aurora Store

Aurora Store is an unofficial Google Play Store FOSS client with a sleek design. Aurora Store not only downloads, updates, and searches apps like the Play Store, it empowers the user with new features.

For those concerned about privacy, Aurora Store doesn't require Google's proprietary framework (spyware?) to work. It works perfectly with or without Google Play Services or MicroG. However, those who still depend on these services can also use the Aurora Store. Although the Aurora Store was originally based on Sergei Yeriomin's Yalp store, v3.0 is a clean and complete rewrite that follows Material Design and runs on all devices running Android 5.0 or higher.

Features

- Free Software/Open Source
Licensed GPLv3
- Beautiful design
Built on the latest material design guidelines

- Fake Accounts
You can sign in and download with fake accounts so you don't have to use your own account. Google revoked Aurora Store's internal accounts.
- Personal Accounts
You can download purchased apps or access your wishlist using your own Google account.
- Exodus integration
Instantly see trackers that an app may have hidden in its code.



Raccoon

Raccoon is a free, modern open source APK download application that lets you safely download any Android application available from the Google Play Store on your Linux, Windows or Mac desktop.

Raccoon's appeal is to allow users to install Android applications without sending any information to Google. It also works to store APK files locally (in your PC), uses a "Split APK" format, bypass app region restrictions and improve your phone's battery life.

Features

- Raccoon is free to use.
- Raccoon is 100% open source.
- Available on Linux, Windows and macOS desktop platforms.
- Comprehensive online manual.

- Respects privacy.
- Split APK Installer.
- Ignore region restrictions.
- Revert to previous version updates.
- Lets you store downloaded APK's on your computer.
- Allows you to install APK's from the Play Store on Android devices without the Google Play Store (Amazon Kindle and others).

So a great side loading tool, and you can use a fake account as Raccoon had the ability to access the Play Store with an internal account, but Google revoked Raccoon's internal accounts. It is available on PCLinuxOS repos.

There are also alternative APK stores such as Aptoide and the Amazon App Store, so I won't talk much more about that. Let's now look at alternative ROM options for existing Android devices.



Ubuntu Touch

Ubuntu Touch is a mobile version of the Ubuntu operating system. It is adapted to run naturally in a touch screen mobile environment, but is also capable of functioning as a desktop computer in "desktop mode". This aforementioned device to device convergence of environments is where the term "convergence" originates. Ubuntu Touch is created and maintained by the UBports Community, a group of volunteers and passionate people around the world, and is in no way endorsed or affiliated with Ubuntu or Canonical.

The operating system, being maintained by a community, is user-centric, not corporate-centric. Thus, the user experience will always be better in it. Below is the testimony of a happy Ubuntu Touch user on his mobile phone:

“Ubuntu touch is an absolutely beautiful alternative to Android, iOS, LOS(LineageOS), etc. It's focused on privacy, usability and security, with a wonderful community behind it. It's fully gesture-controlled, its fast settings are extremely agile, it supports Android apps, is available for many devices, and above all has convergence. You can connect your phone to an external monitor, pair a bluetooth mouse and keyboard, and have an entire desktop environment running on your phone. It is amazing! I tried to go back to LOS after using Ubuntu Touch for a week and just couldn't!”



LineageOS

A free and open source operating system for smartphones and tablets, based on the Android mobile platform. It is the successor to the popular custom CyanogenMod ROM, which was forked in December 2016, when Cyanogen Inc. announced it was stopping development and shut down the infrastructure behind the project. Because Cyanogen Inc. retained the rights to the Cyanogen name, the project changed its name to LineageOS.

LineageOS was officially released on December 24, 2016, with source code available on GitHub. Since then, LineageOS has been described as highly popular and enthusiastically developed; Within four months of the initial announcement, LineageOS development covered more than 160 phone models and more than one million users, doubling its user base from February to March 2017.

After vanilla Android, it is the most successful AOSP project.



Plasma Mobile

From the mission statement on its website:

“Plasma Mobile aims to become a complete mobile software system. It is designed to give privacy-conscious users complete control over their information and communications. Plasma Mobile takes a pragmatic approach and includes third party software, allowing the user to choose which applications and services to use. It provides a seamless experience across multiple devices. Plasma Mobile implements open standards and is developed in a transparent process, open to community participation.”

“PlasmaMobile turns your phone into a fully open hacker’s device such as a PC.”

Key Features:

- Libre Technologies
- Mobile Plasma (the Plasma desktop on mobile)
- Desktop KWIN / Wayland
- Phone Call / Ofono
- Telepathy
- Qt-based
- Plasma Apps
- Plasma Widgets
- Ubuntu Touch Apps
- Possibly Sailfish

- Apps Possibly Nemo Apps

However, there are no pre-made ROMs. The user must download all sources and compile the operating system for his mobile phone.



/ e / is a fork of LineageOS that aims to be completely free of all Google services. Created by Gaël Duval, one of the creators of the Mandrake distro.

/e/ uses MicroG as a free and open-source replacement for Google Play Services, and Mozilla Location Service for geolocation.

From its website, the / e /:mission statement:

/ e / is a non-profit project in the public interest. We create open source mobile operating systems that respect users' data privacy. We are an international team of experienced entrepreneurs, developers and designers and a growing community of contributors. Free yourself from data slavery! / E / 's first mission is to provide everyone with knowledge and best practices about personal data and privacy. And for those who care, / e / will also provide legal and credible alternatives, starting with mobile phone operating systems.

At the present time, there are three alternatives to install /e/: Buy a cell phone with it pre-installed, mail them your cell phone or download its source from Gitlab and compile for your device (which is a very laborious task).

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Paranoid Android

Paranoid Android is a custom ROM designed to extend the system, working to enhance the existing beauty of Android and following the same design philosophies that were presented by Google for Android Open Source Project.

Features

On All Devices

- On-Site Controls
- PA Camera
- Pocket Mode
- Battery Styles
- Advanced Reset
- Button Configuration
- Gestures
- Recent Application Lock
- Substrate Support
- Pixel Style Launcher
- Pixel Navbar
- Pie (7.0)
- Color Engine (7.0)
- Immersive Mode (7.0)
- OTA paranoid (7.0)

OnePlus

- Advanced Button
- Control Alert Slider Support
- Fingerprint
- Enhancements Camera Enhancements
- Advanced Gesture Control (7.0)



CopperheadOS

A mobile operating system focused on security and privacy compatible with Android applications.

Features

- * Zero-day protection
- * Prevents many vulnerabilities and makes exploits difficult
- * Standard library C and hardened toolchain
- * Captures memory corruption and integer overflows
- * Hardened core
- * High quality kernel and ASLR self-protection
- * Stronger sandbox and isolation for applications and services
- * Tighter SELinux policies , seccomp-bpf and more Backport
- * Security features and faster fixes

* Benefit from upstream changes much earlier than vanilla Android version

* Firewall and network protection

* Along with enhancements such as MAC randomization

* Open source and proprietary services

* Uses alternatives to Google apps / services like F-Droid

* Security-centric user experience changes

* Better standards, more refined permission control



Replicant

Replicant is a 100% free software Android distribution.

Replicant is a completely free Android distribution running on multiple devices, an open source mobile operating system that emphasizes freedom and privacy/security. It is based on LineageOS and replaces or avoids all proprietary system components such as user space programs and libraries, as well as firmware.

The replicant OS is intended to be an ethical system: it does not send or recommend the use of non-free software.

Many different devices are supported by Replicant to a specific extent for each device. Basic features like graphics, sound and telephony (if applicable) should work for each device (otherwise developers are confident that they will work soon).

The replicant is a community-led effort, currently conducted by few developers. Not all Replicant software should have full features and reliability, even if developers are doing their best.

Replicant was founded in 2010 as a way to bring together initiatives to release the system running on HTC Dream, the first publicly available Android device. The project was initiated by members of LibrePlanet Italia and Software Freedom Conservancy. The first usable version of Replicant was based on Android 1.5, released by the Android Open Source Project: after some work, the basic features of HTC Dream were working. Beginning with version 2.2, Replicant stopped using AOSP as its base and instead started using CyanogenMod, which contains support for more devices.

Most of Android is licensed for free under the Apache 2.0 License. The core of Linux is mainly Free Software under GPLv2. However, there are several components of the standard software stack on devices that are proprietary software. Most notably, almost any component that touches hardware directly is proprietary software. The replicant does not have location tracking (anti) features.

In the Replicant Wiki, you can find a list of open source applications that can be used to replace Google's proprietary applications (Market, Gmail, Maps, etc.). Most notably, it suggests using F-Droid instead of Google Market.

Well, here we end our article on how to have an Android not dependent on Google. Options exist, just choose the one that suits you best, and use your phone without fear.

Next month, we'll take a general look and talk about conclusions and alternatives to Google services.





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Screenshot Showcase

The screenshot shows a desktop environment with a glowing blue dog logo in the center. The system information panel on the right displays the following data:

SYSTEM	
Kernel:	5.3.12-pclos1
Uptime:	0h 1m 49s
PROCESSOR	
CPU:	4%
RAM	
RAM:	16%
SENSORS	
SYSTEM:	
CPU:	
PCI Adapter:	
CPU Fan:	
Power Fan:	
HARD DRIVES	
Root:	
7.39GIB / 12.2GIB	60%
Home:	
7.39GIB / 12.2GIB	60%
NETWORK	
Signal:	wlan0
Bitrate:	unk%
Local Ip:	No Address
DNS:	1.1.1.1
Up:	0B kb/s
Down:	0B kb/s

The desktop also features a 'Cestino' icon on the left and a taskbar at the bottom with various application icons and system tray icons. The time and date '14:00 sabato 23 novembre' are visible in the bottom right corner.

Posted by dxgiusti, November 23, 2019, running Openbox.

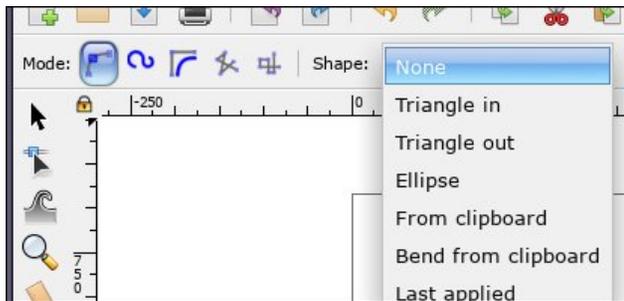


Inkscape Tutorial: Fun With The Bezier Tool

by Meemaw

One of the tools we use a lot is the Bezier tool. It draws lines, of course (that's how I make the word find answer sheet), but depending on the settings, it does tons more. This time we will just play with this tool a bit to see what it can do.

When you choose the Bezier tool , a settings bar appears at the top (just like with many of the other tools). From left to right, you have five Mode buttons (Regular Path, Spiro Path, BSpline, Series of straight lines and Paraxial lines) and the dropdown has your shape choices, from None to Last applied.

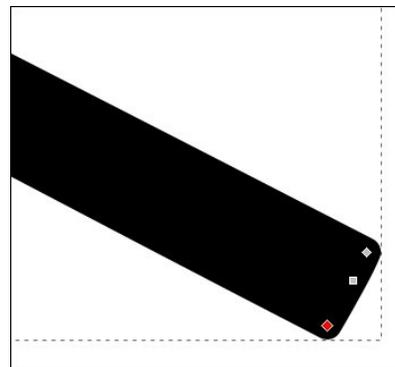


The **regular** path does just what it says it does: draws paths - straight lines. The difference is what shape you choose. In the image below, from top to bottom, the lines are drawn from left to right, and shapes are None, Triangle in, Triangle out and Ellipse. These are just lines drawn with one starting point and one ending point (center, top).

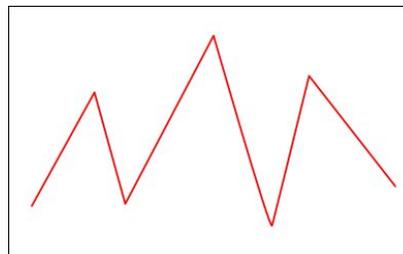
Notice that the top one is the same width throughout (Shape - None). The next one is wider at the left side than at the right (Triangle in), and the third is wider at the right end (Triangle out). Finally, the last is wider in the center (Ellipse). After you draw these,



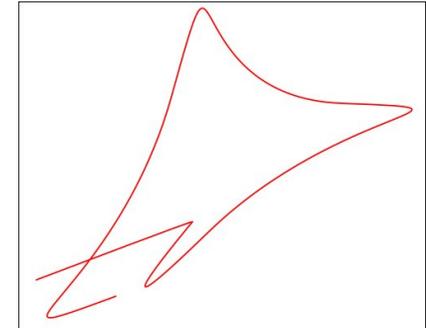
you can go to the **Path Editing** tool  and edit these paths, even widening the triangle end. Notice the handle on the corner of the end. When you hover over it, it will turn red. Grab it and pull perpendicular to the line and it will widen.



If you draw your lines with a click - move mouse - click - move mouse, you can make zig-zag patterns.



If you click - drag - click - drag, you will get curves.

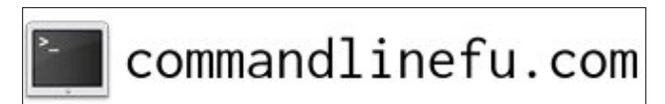


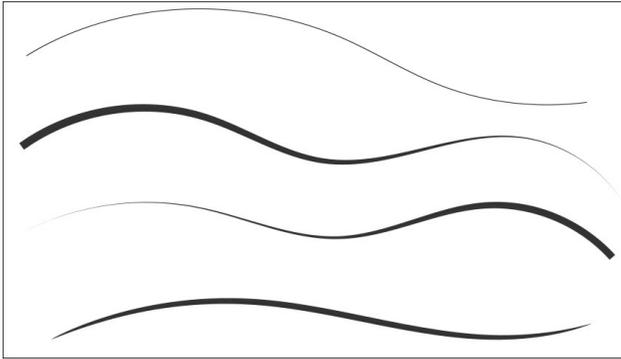
Remember, any curve you draw can be edited with the path editing tool. If you don't like the curve you drew, *before you end it*, you can backspace and delete one node at a time until you get back to where you want. If you start a line by mistake while you're trying to do something else, you can do the same thing. Also if you finish a line before you want to, you can click on the end and continue, or even click and draw another line that connects to the end of the one that wasn't finished.

If you are trying this stuff, you should now have several lines. Let's move on...

Instead of using the regular path mode, choose the **Spiro** tool.

Click - move mouse - click - move mouse... your line should curve by itself, and depending on the shape, be wider somewhere. Below you can see None, Triangle in, Triangle out and Ellipse. With a little practice, you can make a very nice swirl (next page, top left).



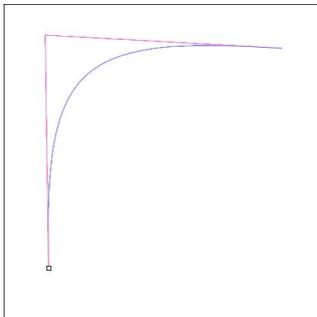


These lines can be used for all sorts of things, but I'm going to start a kind of flourish that could be used to decorate other artwork.

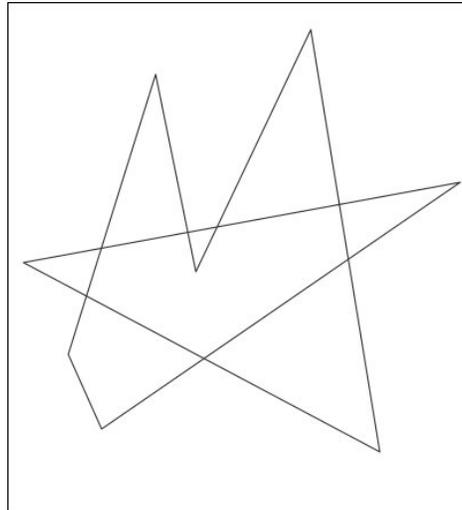


I'm also going to describe a few more things that can be done with this tool.

BSpline mode will do a different kind of curve. All you have to do is draw an angle with a couple of lines... click - move mouse - click - move mouse - click. The red path here is the path I drew, and the blue curve is what was made by the BSpline.

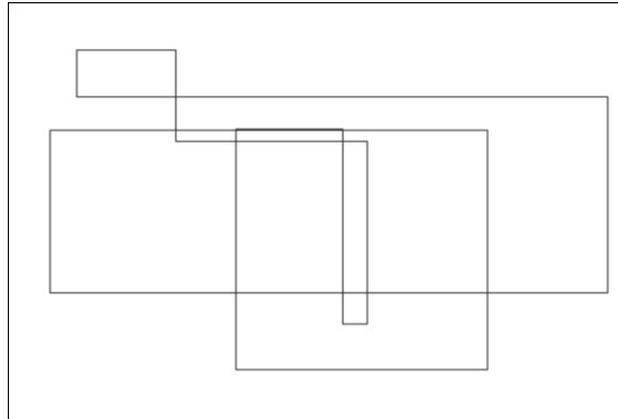


The next mode will draw a series of straight lines:



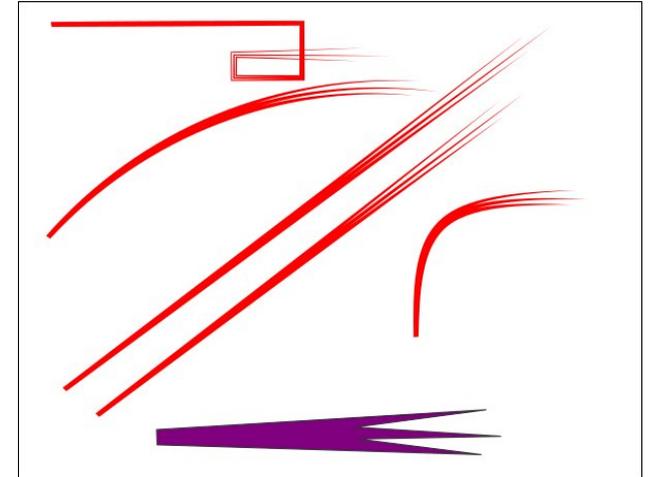
Amazingly enough, this mode can do something else as well. If you hold down the <CTRL> key and click ... click .. click ... you will end up with a series of dots (one for each click).

The last mode, called **Paraxial** lines, draws perpendicular lines no matter where your mouse goes:

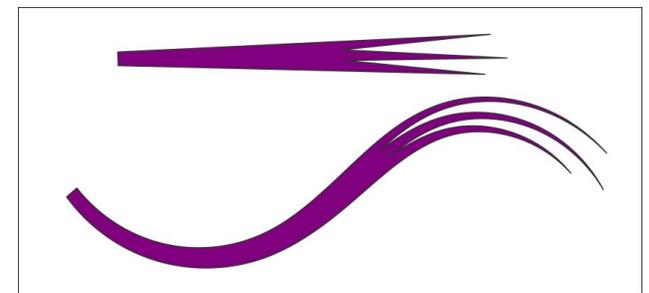


You've probably noticed that I haven't said anything about the next two shapes. They use objects that you create and copy to the clipboard. I made a kind

of fork, with the fill purple and the stroke black. Then I copied it to the clipboard. Choosing many of the modes, and choosing **From clipboard** as the shape, I am able to make designs using the "fork" shape I copied. Below, from top to bottom, are Paraxial, Spiro, two regular lines, and BSpline, plus the original "fork".



In a different example, **Bend from clipboard** uses the "fork" and actually makes it follow the curve I drew using Spiro.



Playing with all these tools and then editing and stacking the curves, I came up with the flourish above, and made another later. They are both on the next page.



I'm sure your holiday decorations will be even fancier now!

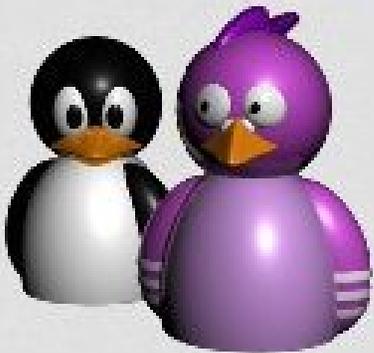


Screenshot Showcase



Posted by OnlyHuman, November 8, 2019, running e24.

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Casual Python, Part 11

by Peter Kelly (critter)

Error handling

As we write applications of increasing complexity we will, unfortunately, introduce more errors in the code. As our experience and expertise in coding increases to avoid the simple 'newby' type errors, we will tend to introduce errors that are more difficult to locate and eliminate.

The process of dealing with and eliminating these errors is known as error handling or, colloquially, 'bug squashing'. The term bug for a computer error is attributed to the computer pioneer and US naval officer Grace Hopper who traced a failure to a moth trapped in a relay. The actual moth was duly taped to a page in the computers handwritten paper log.

Programming errors can be split into two types:

- * **Syntax** errors which are the ones that new programmers make most often. These errors arise because the programmer has not followed the programming language's syntax and the interpreter/compiler rejects the code. These are the easiest to find and deal with.

- * **Semantic** errors are often much harder to find and may be incorrectly coded logic which produces incorrect data or incorrect use of the programming language's features often producing nothing meaningful. What is worse is that these errors generally only show up at runtime such as when the code enters a branch instruction or performs a test on some data.

If your code contains a syntax error the interpreter will complain when you try to run the code.

```
>>> for i in range(11):
...     print i
File "<stdin>", line 2
print i
^
SyntaxError: Missing parentheses in call to 'print'. Did you mean print(i)?
```

The error report is helpful here telling you what went wrong.

This code looks fine at first glance:

```
>>> x = 2
>>> def square():
...     return x * x
... 
```

But when I try to run it...

```
>>> square(x)
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
TypeError: square() takes 0 positional arguments but 1 was given
```

Although I passed the value 2 referenced by the variable x the function had no knowledge of it, as it needs a parameter in the parentheses to accept the value. Again, the error report contains some helpful text.

```
>>> def square(x):
...     return x * x
...
>>> square(x)
4
```

Now the interpreter is happy and correctly executes the code.

That one was easy to find, but others with more subtle errors can have you tearing out your hair. One of the most common errors is when the value that you expect to be in a variable is either the wrong value, or it is missing completely.

```
>>> for i in range(3):
...     if i == 3:
...         print('Found it!')
... 
```

Why didn't it print anything? Well the range function provides a sequence of values up to, but not including the terminating value 0, 1, 2. Therefore the variable i never did equal 3.

```
>>> for i in range(4): # 0, 1, 2, 3
...     if i == 3:
...         print('Found it!')
... 
```

Found it!

That's better. As every programmer experiences errors of this type Python provides some tools and methods to deal with them.

Assert

Python provides the assert statement to aid in checking the validity of data being processed. When testing code, it is important to know that the data being supplied to functions and methods are valid. A zero value passed as a divisor is an example of invalid data, and possibilities such as this must be caught.

The assert statement is designed to be used only at the testing stage, and should not be active during normal code operation. The assert statement takes a boolean expression and an optional expression which can be used as an error message. If the assert fails, then an AssertionError exception is raised. When rigorous testing results in no assertion errors, the data being supplied can be considered valid, and the assert statements can be removed/disabled as their output should not be visible to end users.

```
>>> def product(*args):
...     assert all(args), "0 is not allowed"
...     result = 1
...     for arg in args:
...         result *= arg
...     return result
...
>>> print(product(2, 3, 4))
24
>>> print(product(2, 0, 4))
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
File "<stdin>", line 2, in product
AssertionError: 0 is not allowed
```

In the code above a tuple of values are passed to the function product(). The tuple is unpacked by *args, and the assert statement checks that all arguments are True. The test comprises the Python builtin function all(), which returns True if all values in the iterable are True else False. (0 evaluates to False, all other integers, positive and negative are True). If the check passes, then the program continues. If it fails, then execution is halted and an AssertionError is output, along with the explanatory text we provided. The test may be anything you like that evaluates to True or False.

```
assert 3 > 4, "my test"
```

Would raise an AssertionError exception, as 3 is not greater than 4, and output 'My test'.

Exceptions

When an error is encountered during program execution, Python raises an exception. If unhandled, this exception will cause the program to cease execution at that point and to issue an explanatory message.

In this example, the int() function receives the string 'seven' from the input function. As this cannot be converted to an integer, a 'ValueError' exception is raised and the program halts.

```
>>> n = int(input("Please enter an integer number: "))
Please enter an integer number: seven
Traceback (most recent call last):
File "<stdin>", line 1, in <module>
ValueError: invalid literal for int() with base 10: 'seven'
```

To avoid this, the exception must be 'handled', and for this, Python provides the try and except statements.

Repeating the previous example, we first try to execute the int function and continue the program if successful. If we fail, then the except statement is passed the exception type, and executes any code that follows.

```
>>> while True:
...     try:
...         n = int(input("Please enter an integer number: "))
...         break
...     except ValueError:
...         print("That is not a valid integer! Please try again...")
...
Please enter an integer number: seven
That is not a valid integer! Please try again...
```

Multiple except statements may be applied to intercept various error conditions, but only one will be executed. If the type of error is unknown or unexpected, then an arbitrary except statement may be used. Here the sys.exc_info function is used to return what information is available about the exception. The raise statement raises the exception again, causing execution to halt. Multiple exceptions may also be passed to a single except clause as a tuple of exceptions. An else clause may also be included, and this is always executed if the try block ends normally, and not executed if an exception occurs.

```
import sys

try:
    f = open('integers.txt')
    s = f.readline()
    i = int(s.strip())
except IOError as e:
    errno, strerror = e.args
    print("I/O error({0}): {1}".format(errno, strerror))
except ValueError:
    print("No valid integer on line.")
except:
    print("Unexpected error:", sys.exc_info()[0])
    raise
else:
    print("The file contains the integer: ", i)
```

If the first exception is raised we get this:

```
I/O error(2): No such file or directory
```

The `ValueError` exception is raised if the line read from the file does not contain a valid integer.

```
No valid integer on line.
```

The third test is triggered on any other exception. Here, we do not have permission to read the file. As this is unexpected, then we should probably stop execution. As the exception has already been handled (by printing out the line below), then we need to raise the exception again, but this time not handle it and allow the program execution to be halted.

```
I/O error(13): Permission denied
```

Finally, if all tests pass then we continue to execute the remaining code.

```
The file contains the integer: 7
```

Raising exceptions

It may seem strange to actually want to raise an exception, but sometimes it can be very useful. In the following example, the exception is caught not in the main code, but in the function. Using `raise` can give you a much better picture of what has been happening.

```
def func():
    try:
        n = int(input("Please enter an integer number: "))
        val = n * 3
        return val
    except ValueError as e:
        print("exception caught in the function func() :-( ", e)
        raise
    try:
        n = func()
    except ValueError as e:
        print("Oops!", e)
        raise
    print("Got " + str(n))
```

```
Please enter an integer number: 7
```

```
Got 21
```

```
Please enter an integer number: seven
```

```
exception caught in the function func() :-( invalid literal for
int() with base 10: 'seven'
```

```
Traceback (most recent call last):
```

```
File "times_3.py", line 11, in <module>
```

```
n = func()
```

```
File "times_3.py", line 3, in func
```

```
n = int(input("Please enter an integer number: "))
```

```
ValueError: invalid literal for int() with base 10: 'seven'
```

Python comes with lots of useful exceptions built in (see [here](#) for details).

Try except finally

The `finally` clause is also known as the clean up clause. This section of code is always executed regardless of whether an exception was raised. Whenever you open a file you should close it before exiting the program. Here the `finally` statement does this for us.

```
import sys
```

```
try:
    f = open('integers.txt')
    s = f.readline()
    i = int(s.strip())
except IOError as e:
    errno, strerror = e.args
    print("I/O error({0}): {1}".format(errno, strerror))
except ValueError:
    print("No valid integer on line.")
except:
```

```
print("Unexpected error:", sys.exc_info()[0])
raise
else:
print("The file contains the integer: ", i)
finally:
if f is not None:
print('Closing the file.')
f.close()
```

No valid integer on line. # The file contains 'seven'
Closing the file.

The file contains the integer: 7 # ok

Closing the file.

As your experience grows syntax errors will become less common but you will find more of the second type of error, the semantic error.

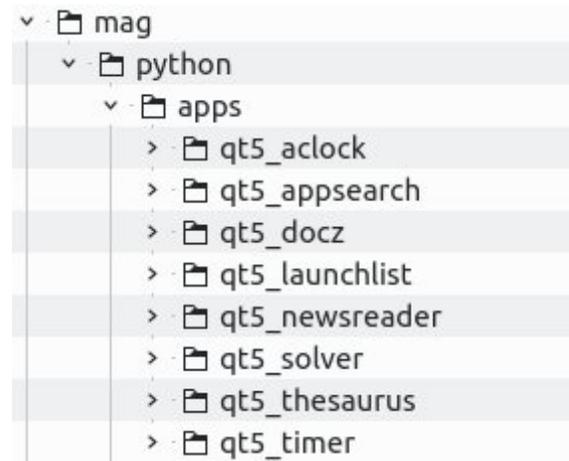
QListWidget, QListWidgetItem

The QT QListWidget is slightly unusual as it comes in two parts:

- * The QListWidget itself.
- * QListWidgetItems that are used to populate the QListWidget.

To demonstrate its use, I am going to build yet another application launcher, but it will be built without using QtDesigner, and it will consist of two Python files: the main Python application, and a Python module used to reduce clutter in the main file making it easier to follow the code. Actually, we have already been using modules, but these were the Python files that resulted from generating the user interface in Qt Designer, and the PyQt code that we imported at the beginning of each application. As I discussed in the last article, there is nothing mysterious about modules, they are (usually) simply Python files containing functions, classes and variables that we can import and use from our main code. Every Python file that we have written in this series could be considered a module.

To keep the code simple I am going to create a launcher for just a few of the programs we have written in these articles. I have a directory structure that looks like this (image top of next column):



The directory qt5_launchlist is the for the application I am going to create. For each of the applications to be launched, I will need an icon, the name and location of the application and a description to be displayed in the list. To hold this information I will use a dictionary.

Dictionaries are useful items as they can be used as a compound data structure which is what we need here. Each item in the list has a description, which is tied to a list of attributes, icon and application name. As a dictionary comprises items and values, we can use a string (description) for the item, and a list of attributes for the values. All of this is simply text that would make the main code rather crowded, so I am going to put this in a module and call out the details as I need them. Let's do this!

Create a directory somewhere on your system to hold the code, preferably among the directories that hold the other applications that will be launched. If you haven't created the applications from the earlier parts of this series, all code can be downloaded from the magazines [website](#).

This is the module, named apps_list .py

```
#!/usr/bin/env Python3
```

```
apps = {'Analogue clock': ['icons/aclock.png',
'qt5_aclock/qt5_aclock.py -nbt1 PCLinuxOS -x 3080 -y45'],
'Crossword solver': ['icons/xword.png',
'qt5_solver/solver.py'],
'Rss news reader': ['icons/newsreader.png',
'qt5_newsreader/newsreader.py'],
'Alarm/timer': ['icons/alarm.png',
'qt5_timer/qt_timer.py'],
```

```
'Fuzzy application finder': ['icons/appfinder.png',
'qt5_appsearch/qt5_appsearch.py'],
'Thesaurus': ['icons/Aiksaurus.png',
'qt5_thesaurus/thesaurus.py'],
'Document finder': ['icons/docz.png',
'qt5_docz/docz.py']}]
```

```
if __name__ == '__main__':
for item in sorted(apps.items()):
print(item)
```

The only thing that really needs to be in the file is the dictionary, but I have added the first line and the last three so that I can run it as a full program. This is often used for testing, but here I just print out the contents of the dictionary.

The main application will import the dictionary. Here it is in its collapsed form.

```
1  #!/usr/bin/env python3
2
3
4  import sys, os, subprocess
5  from PyQt5.QtGui import QIcon
6  from PyQt5.QtWidgets import QApplication, QDialog, QListWidgetItem, QListWidget
7  from PyQt5.QtCore import QRect
8  import apps_list
9
10
11  '''ensure files are called relative to this directory regardless of
12  where this application was called from'''
13  dir_path = os.path.dirname(os.path.realpath(__file__))
14  os.chdir(dir_path)
15
16  def main():
17
18
19
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35
36  def react(item):
37
38
39
40
41
42
43
44
45
46
47  def key_press event(e):
48
49
50
51  def exit application():
52
53
54
55  if __name__ == '__main__':
56  main()
57
```

Line 1 tells the system to use Python3 to interpret the script.

Line 4 imports some modules from the standard library, from which we will need some methods in the body of the program.

Lines 5-7 import just the parts of the PyQt framework that will be used.

Line 8 imports our module to give us access to the apps dictionary.

Lines 11-14 are new. The application may be installed anywhere in the system, but we need to know where we are and how to get to the applications we are trying to launch. These lines of code find out from where the application was launched, and then changes to that directory. After this, all execution calls are relative to this directory.

Line 16 starts the main function, which is called by line 55.

Line 36 defines the react function, called by main(), which reacts to a mouse click on the list of available applications.

The rest of the code is exactly the same as in previous applications, so need no further explanation.

The main function

This the entry point to the application, so let's expand it.

```
16  def main():
17  app = QApplication(sys.argv)
18  window = QDialog()
19  window.resize(250, 350)
20  window.setIcon(QIcon('icons/launch.png'))
21  window.setWindowTitle('Casual Python')
22  #window.setStyleSheet("background-color: #1B2224; color: #C5D5D7")
23  applist = QListWidget(window)
24  applist.setGeometry(QRect(10, 10, 230, 330))
25  #applist.setStyleSheet("background-color: #222B2E; color:white; border: 1px solid white")
26  for application in sorted(apps_list.apps):
27  text = application
28  item = QListWidgetItem(text)
29  icon = apps_list.apps.get(application)[0]
30  item.setIcon(QIcon(icon))
31  applist.addItem(item)
32  window.show()
33  applist.itemClicked.connect(react)
34  sys.exit(app.exec_())
35
```

Line 17 creates an instance of QApplication that accepts any arguments supplied by sys.argv(). In this case, it receives only the instance of the application that we decided to execute, i.e. this application.

Lines 18-21 tell the application to:

- * Use a QDialog type window (this is a very simple, low overhead window type).
- * Resize the window to 250 px wide by 350 px tall.

* Provide an icon and set that icon as the applications own icon.

Lines 22 and 25 are optional. I prefer to use a dark theme, and the color variables reflect my own personal preferences. These lines may safely be omitted, or the color values replaced by your own preferences.

Lines 23 and 24 add a QListWidget to the dialog window, and give it dimensions to leave a 10 pixel border all round (relative to line 19).

Lines 26-31:

- * Iterate through a sorted list of the dictionary imported from our module.
- * For each item in the dictionary get the text of the item.
- * Get the icon as the index[0] of the items value.
- * Set the QListWidgetItem icon to this icon.
- * Add the QListWidgetItem to the QListWidget.

Line 32: As all the items have now been read in and added to the QListWidget, show the window.

Line 33 If one of the listwidget items is clicked, connect to and execute the react function.

The react function

```

36 def react(item):
37     selected = item.text()
38     homedir = os.environ['HOME']
39     prefix = homedir + '/mag/python/apps/'
40     selected_app = apps_list.apps[selected][1]
41     if selected_app.find('qt5_aclock.py'):
42         subprocess.Popen(prefix + apps_list.apps[selected][1], shell=True)
43     else:
44         subprocess.Popen(prefix + apps_list.apps[selected][1])
45     exit_application()
46

```

This is how we react to an item in the list being clicked.

Line 36: the dictionary item is passed to this function, and stored in the parameter **item**.

Line 37: we get the text of the selected dictionary item, the description.

Line 38: uses the imported os module to get the user's home directory.

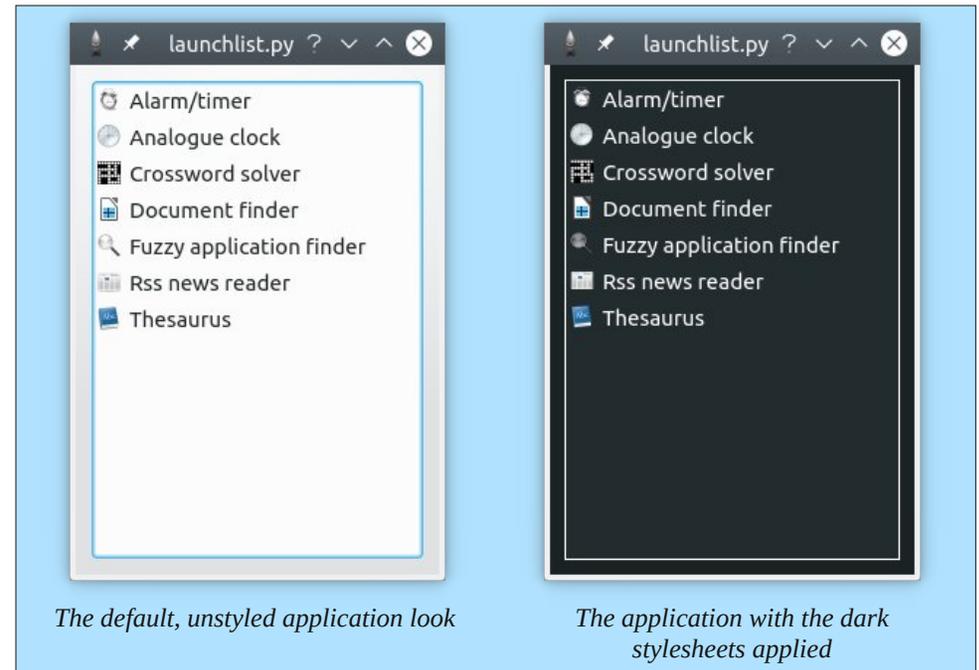
Line 39: here a text string is built that points to the directory holding all of the applications.

Line 40: puts the name of the selected application into the variable selected_app.

Lines 41-42: If the selected application is the analog clock, which expects additional parameters, then the shell is needed to interpret the command string so the Popen method needs the 'shell=True' flag to be able to read in the options and execute the command.

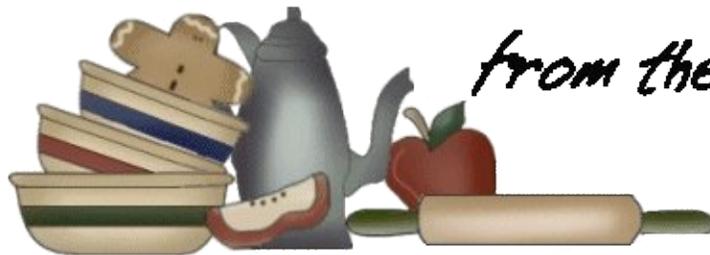
Lines 43 and 44 pass the application string for any other application to the Popen method for execution.

Line 45 All done, so exit.



Looking back on this code I can see many areas where it could be simplified, improved, optimized or made to be more professional, but it works for me. This is not high quality, distribute a million copies, impress your boss software. This is casual software written in casual Python. Job done!

PCLinuxOS Recipe Corner Bonus



*from the kitchen of
youcantoo*

Overnight Chicken Enchilada Bake

Ingredients:

- 1 lb. boneless skinless chicken breast halves, cut into thin bite-sized pieces
- 1(10 3/4-oz.) can condensed cream of chicken soup
- 1 (8-oz.) container sour cream
- 1 (4.5-oz.) can Chopped Green Chiles
- 2 (10-oz.) cans Enchilada Sauce
- 12 (6-inch) corn tortillas, quartered
- 8 oz. (2 cups) shredded Cheddar cheese
- 1/4 cup sliced green onions

Directions:

1. Spray 13x9-inch (3-quart) glass baking dish and 16x12-inch sheet of foil with nonstick cooking spray. Heat large nonstick skillet over medium-high heat until hot. Add chicken; cook 3 to 4 minutes or until chicken is no longer pink in center, stirring frequently. Remove from heat. Stir in soup, sour cream and chiles.
2. Spread 1/4 cup of the enchilada sauce in sprayed baking dish. Arrange half of the tortilla pieces over sauce, overlapping as necessary. Spoon and spread 1 cup enchilada sauce evenly over tortillas. Spread half of chicken mixture over sauce. Top with 1 cup of

the cheese. Repeat layers, starting with tortilla pieces. Cover tightly with sprayed foil. Refrigerate at least 8 hours or overnight.

3. Heat oven to 375F. Bake covered 30 minutes. Uncover baking dish; bake an additional 20 to 25

minutes or until sauce is bubbly and cheese begins to brown. Let stand 15 minutes before serving. Sprinkle with onions.

Expert Tips:

Overnight casseroles are prepared with ingredients that improve with a little extra mingling time. Don't be tempted to bake this casserole immediately; as corn tortillas need time to absorb the enchilada sauce and soften.

Serve this flavorful Mexican-style casserole with greens tossed with orange slices, diced avocado, jicama sticks and citrus vinaigrette. Serve fruit sherbet and sugar cookies for dessert.



ms_meme's Nook: PCLOS From Linux



Open source and free of course PCLOS from Linux is waiting
For you to boot and when you boot you'll go ahhh
Radical and practical Texstar's OS with easy updating
So when you boot each time you boot you'll go ahhh

Oh I was feeling so sadly
Windows made me feel so badly
Now using Linux so gladly
Each morn when I turn it on
All of my worries are gone



Smooth and smart and easy to start PCLOS so fascinating
For you to boot and when you boot you'll go ahhh

MP3

OGG

PCLinuxOS Puzzled Partitions

			1	9			
4						2	3
		9					
			2	6		7	
		6	7		3		1
	8				5		
	1			9	6		5
	6	5			2		8
9							7

SUDOKU RULES: There is only one valid solution to each Sudoku puzzle. The only way the puzzle can be considered solved correctly is when all 81 boxes contain numbers and the other Sudoku rules have been followed.

When you start a game of Sudoku, some blocks will be prefilled for you. You cannot change these numbers in the course of the game.

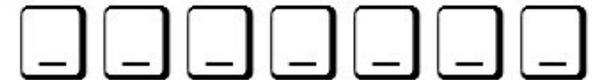
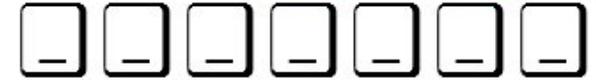
Each column must contain all of the numbers 1 through 9 and no two numbers in the same column of a Sudoku puzzle can be the same. Each row must contain all of the numbers 1 through 9 and no two numbers in the same row of a Sudoku puzzle can be the same.

Each block must contain all of the numbers 1 through 9 and no two numbers in the same block of a Sudoku puzzle can be the same.



SCRAPPLER RULES:

1. Follow the rules of Scrabble®. You can view them [here](#). You have seven (7) letter tiles with which to make as long of a word as you possibly can. Words are based on the English language. Non-English language words are NOT allowed.
2. Red letters are scored double points. Green letters are scored triple points.
3. Add up the score of all the letters that you used. Unused letters are not scored. For red or green letters, apply the multiplier when tallying up your score. Next, apply any additional scoring multipliers, such as double or triple word score.
4. An additional 50 points is added for using all seven (7) of your tiles in a set to make your word. You will not necessarily be able to use all seven (7) of the letters in your set to form a "legal" word.
5. In case you are having difficulty seeing the point value on the letter tiles, here is a list of how they are scored:
 - 0 points: 2 blank tiles
 - 1 point: E, A, I, O, N, R, T, L, S, U
 - 2 points: D, G
 - 3 points: B, C, M, P
 - 4 points: F, H, V, W, Y
 - 5 points: K
 - 8 points: J, X
 - 10 points: Q, Z
6. Optionally, a time limit of 60 minutes should apply to the game, averaging to 12 minutes per letter tile set.
7. Have fun! It's only a game!



Double Word



Triple Word



Possible score 291, average score 204.

Download Puzzle Solutions Here

PCLinuxOS Word Find: December 2019

Chocolate

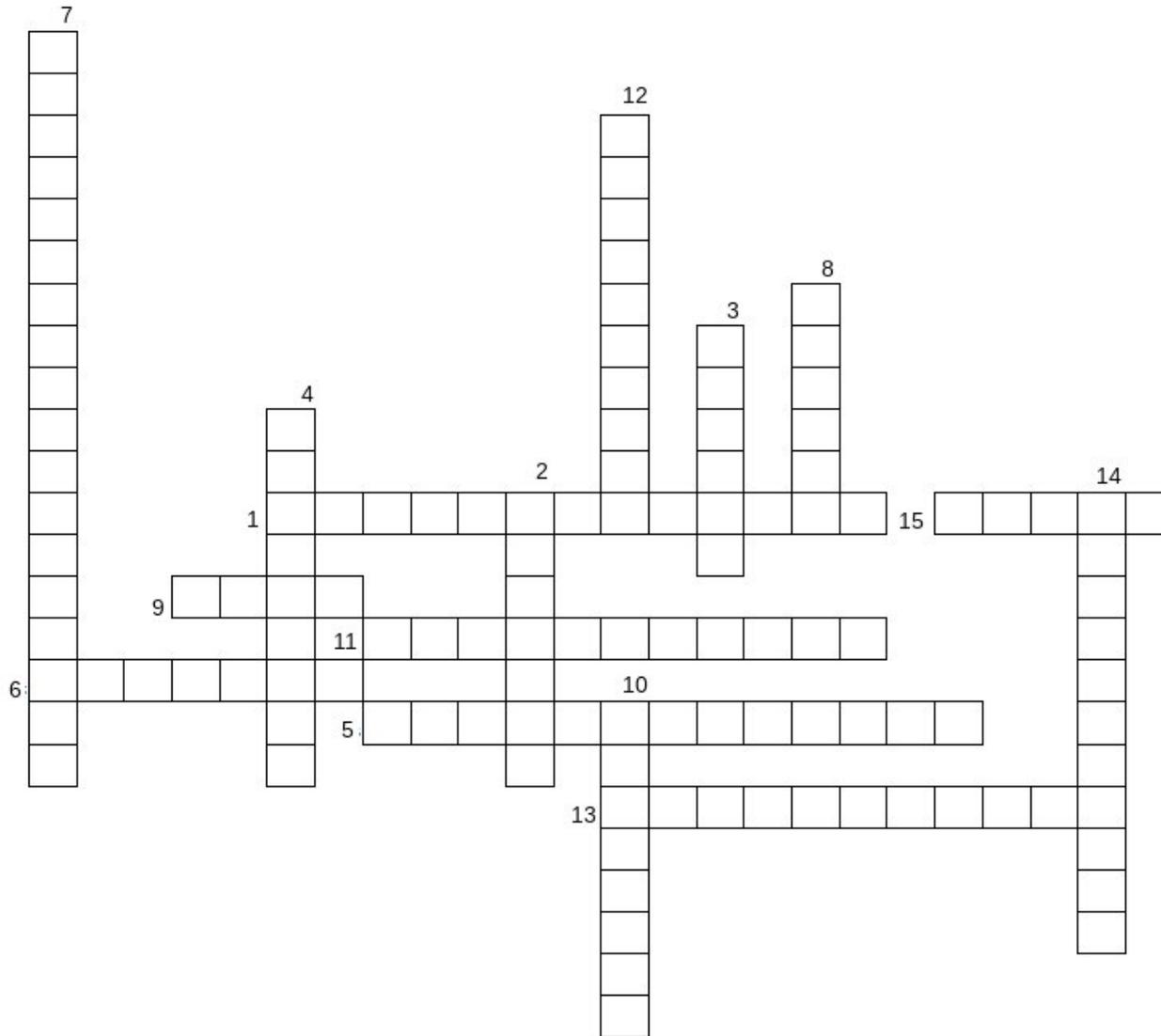
P V F L T O D Z I C X Z S Z X K P M P F F S F E L E S R O M
 R Q N Q I A O N E X O H B Y X M A I P F I T Z C K R A P W B
 W U B O Y K K S N U O W F W U A B S R O N O U N C A X E B D
 O X M Y E I I L D L N N E S T L E I M X D U F E X G D A F C
 L S K K T L A E P O E G K J W A V V U W U D D U M U E N B P
 L C R E A M Y M C T D L V H J V V V E E L G A L B S N U F H
 A Y Q I N A K A V H A N D M A D E C I M G U R F E S E T J X
 M R G W C U C R Y D S C R T S L N F X L E K K N A R T S D N
 H M B A Q A W A P Q H E R S H E Y W P S N V C I N E E T H I
 S O T L O Q K C L X O Q O E P U V T A Z C R H N S N E X K H
 R U Z N I A S A E P D W E L B A T C E L E D O A I O W L E P
 A T K U V I M E M L B I W X I F D E X E G J C Y Y I S D H R
 M H T T Z D I D Z A Y R I K R T K I E K C N O A R T N O J O
 Q W P S M E Y B I A M O X C F B N C W W N T L M D C U L M D
 C A S U E D A D H P J R I B R U I O A N S U A L B E A L I N
 H T R B R T E O L A P L A O Q E N C G L C R T L C F R E L E
 Y E E T O Y I Z M I O E X J H G O O T Q O O E Q W N G J K W
 R R Y F A V S R T H P X D C X H T N I V X R C T C O I Q C D
 E I N K D Y X L O N L O A P O C O U S A B X I O T C Q R H G
 D N R D L H D C M V A N V K J I R T N W S T Y E A I V E O Z
 E G B X Z I O T R H A D U E C R E A K A P K N M S T B X C W
 Z S H D B H S N C G P F I P Y D S O V E K M P O M I N O O R
 G I B L C E D E K T B D R X V W W W F I S Q F S U U I T L Z
 E V I T C I D D A T W E Y C O A E T L D N P U C S G Y I A N
 S P Z A X K E A I O Q B Q M C I X H K H Q G A A V W A C T Y
 G V A Q H A A C G U B N L F F H T U C B P L P D O D I T E Y
 Y T A H R M H E S S S E R T S I T N A E U R E D R H U S Z D
 J Q O W S N R D L R P S Z H T I B Z A H V J K S Y U A T S E
 F F Q U A T V V A U A U C Z N D F O J B L D Y M Y H C D O U
 E C X S E L F F U R T M Z R D K A S E D G S M C J L T Q M P

Addictive	Anti-stress
Antioxidant	Beans
Bittersweet	Cacao
Calories	Caramel
Chewy	Chocoholic
Cocoa	Coconut
Confectioners sugar	Craving
Creamy	Dark Chocolate
Decadent	Delectable
Dipped	Endorphin
Exotic	Favorite
Ganache	Handmade
Hershey	Indulgence
Mars	Marshmallow
Mayan influence	Milk chocolate
Morsel	Mouth-watering
Nestle	Nougat
Peanuts	Serotonin
Shape	Silky
Swiss	Syrup
Truffles	Unsweetened
Walnuts	Yummy

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Chocolate Crossword

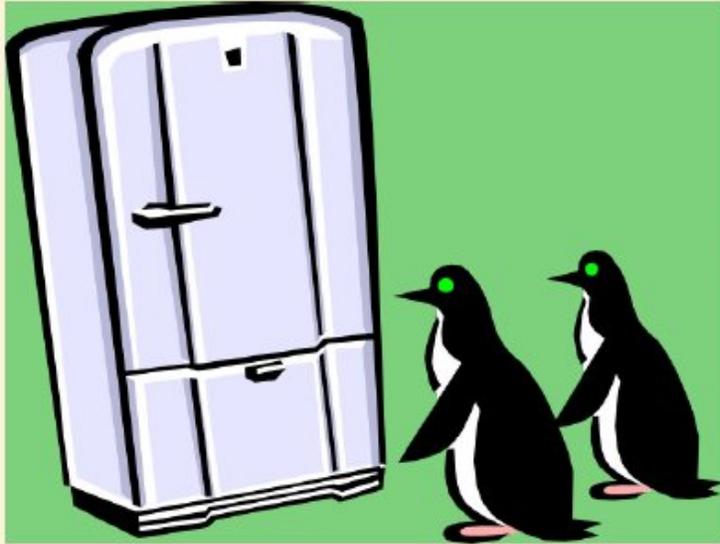


1. This type is said to be healthier for you
2. The company that makes Kisses
3. The company that makes cocoa and Krunch bars
4. a hormone that your body produces to ease pain and make you feel calm and happy
5. One "holiday" where candy is a predominant gift
6. A sweet creamy chocolate mixture used especially as a filling or frosting.
7. Sometimes sprinkled on a dessert as decoration.
8. a candy made from sugar or honey, nuts, and egg white
9. The company that makes M & M's
10. a soft candy made of a chocolate mixture typically flavored with rum and covered with cocoa.
11. Soft, chewy confection made from sugar & gelatin
12. Addicted to chocolate!
13. The type of chocolate that often starts a recipe.
14. A substance that fights disease-causing compounds in your body.
15. The bean from which chocolate is made.

[Download Puzzle Solutions Here](#)



Mixed-Up-Meme Scrambler



Complid
YBOEDE

Oil
RSGEAE

Foe
EMEYN

What's in there that's

with jealousy?

Use the clues to unmix the letters to make a new word. Remix the letters in the red boxes to solve the puzzle.

[Download Puzzle Solutions Here](#)

More Screenshot Showcase



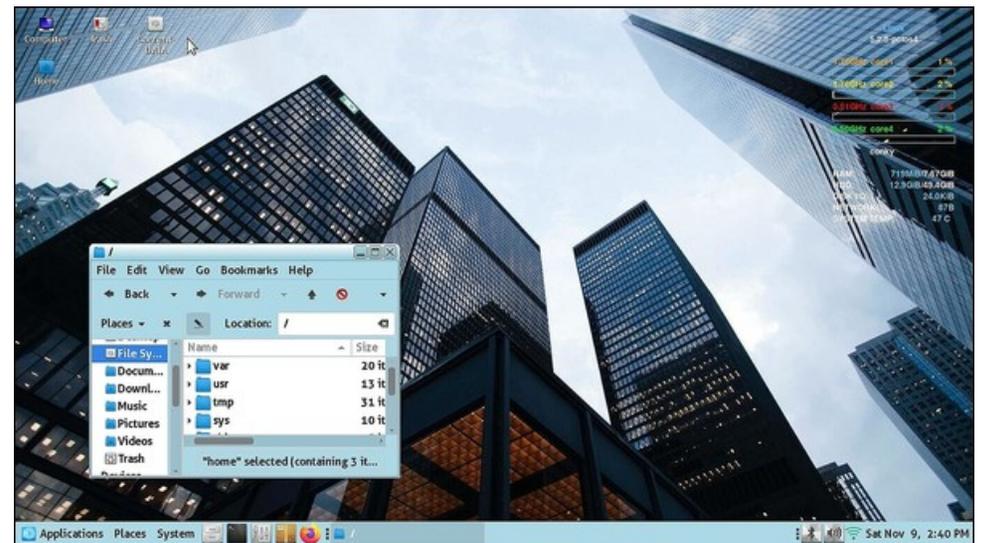
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