

The PCLinuxOS magazine

Volume 160

May, 2020

*Short Topix: Zoombombing
Is A Crime, Not A Prank*

*GIMP Tutorial:
Photo Editing, Part 3*

*PCLinuxOS Magazine
Friends & Family - jzakiya*

*Champions
Of Regnum On PCLinuxOS*

EBCDIC Handling Library, Part 2

*PCLinuxOS Recipe Corner:
Lemon Pepper Chicken*

*ms_meme's Nook:
The Linux Bounce*

Wallpaper Roundup, Revisited

*Finally! ShotCut
Running On PCLinuxOS*

And more inside!



In This Issue...

- 3 *From The Chief Editor's Desk...*
- 5 *Staying "Safe" While You Stream:
DBD's Tips On Living DRM-Free During Quarantine*
- 6 *Screenshot Showcase*
- 7 *PCLinuxOS Recipe Corner: Lemon Pepper Chicken*
- 8 *Wallpaper Roundup, Revisited*
- 13 *Screenshot Showcase*
- 14 *ms_meme's Nook: I Want It That Way*
- 15 *Short Topix: Zoombombing Is A Crime, Not A Prank*
- 19 *Screenshot Showcase*
- 20 *GIMP Tutorial: Photo Editing, Part 3*
- 22 *Better than Zoom:
Try These Free Software Tools For Staying In Touch*
- 25 *PCLinuxOS Family Member Spotlight: jzakiya*
- 26 *Screenshot Showcase*
- 27 *Champions Of Regnum On PCLinuxOS*
- 32 *Screenshot Showcase*
- 33 *EBCDIC Handling Library, Part 2*
- 44 *PCLinuxOS Bonus Recipe Corner:
Mashed Potato Mac & Cheese Bake*
- 45 *Screenshot Showcase*
- 46 *Finally! ShotCut Running On PCLinuxOS!*
- 50 *ms_meme's Nook: The Linux Bounce*
- 51 *PCLinuxOS Puzzled Partitions*
- 55 *More Screenshot Showcase*

The PCLinuxOS magazine

The PCLinuxOS name, logo and colors are the trademark of Texstar.

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: Sproggy, Timeth, 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

Alessandro Ebersol

CgBoy

YouCanToo

Pete Kelly

phorneker

Khadis Thok

Smileeb

Contributors:

jzakiya

The PCLinuxOS Magazine is released under the Creative Commons Attribution-NonCommercial-Share-Alike 3.0 Unported license. Some rights are reserved.

Copyright © 2018.



From The Chief Editor's Desk ...

I think if I hear “in these uncertain times” or “in these difficult times” one more time, I’m going to S-C-R-E-A-M! Of course these are uncertain/difficult times. The world hasn’t had to deal with a pandemic on this scale in over 100 years. Anything that disrupts our daily routine, and thus life, makes things uncertain and/or difficult.

Humans, by their nature, are nothing at all if they are not creatures of habit. We tend to dislike anything that goes against the established “norm” and anything that changes our deeply rooted routines. Difficulty induces change. Change creates

uncertainty. Uncertainty breeds chaos. Chaos gives birth to adaptation. It’s the same merry-go-round we’ve been riding since before we evolved to walk upright. Lather. Rinse. Repeat.

Besides being creatures of habit, humans are also very adaptable. Just take a look around at how many climates we thrive in. Humans live and thrive in climates from the frozen extremes to the equatorial tropics ... and everything in between offered by our planet. The same can be said for economic systems, governmental systems, social systems, and just about every other type of “system” you can think of.

All of this contributes to one main point: humans are survivors. The gifts of logic, thought, ingenuity, adaptability, and many more attributes make humans able to survive a lot of variables that are thrown our way. We have survived floods,

earthquakes, tornadoes, fire, pestilence, oppression, aggression, and disease. On this latter variable, we have survived polio, smallpox, bubonic plague, measles, mumps, colds, influenza, and a whole host of other diseases that have attempted to thin our numbers out. Such will be the case with this latest assault on humanity by the coronavirus SARS-CoV-2.

Which brings me completely full circle, back to the beginning of this article. Saying “in these uncertain times” or “in these difficult times” does nothing to ease the stresses that most of the population has experienced as a result of the lockdown that most of the global citizenry has experienced through its response to the pandemic. Instead, it sounds and feels very disingenuous, dishonest and insincere. It’s whole goal is to make the person saying those trite phrases feel better. And frankly, I neither need nor want the false sympathies.



	Pattern	Strategy	Example
Fear of the unknown	Unknown risks attract more attention than do regular events	Provide repeated reminders after the initial shock fades	“We’ve been at it for a while, yet must be as vigilant as when it was all new.”
Personal embarrassment	Unintended personal lapses add to later self-blame or stigma	Acknowledge that this reaction is normal behaviour and use celebrity patients to lessen stigma	“This can happen to everybody. Tom Hanks acquired COVID-19 infection too.”
Neglect of competing risk	Prominent threats deflect attention from other risks	Stay mindful of mundane everyday hazards that can be overlooked	“This pandemic is not the only risk to your health that needs attention.”
Invisible diseases	Problems might be missed if objective data are absent	Guard against mental health complications	“Social distancing causes stress due to isolation. How are you coping?”
No clear feedback	Learning requires reliable follow-up	Avoid scrutinising rapidly fluctuating and unstable updates	“Focus on your own planned behaviour and not population statistics that change daily.”
Status quo bias	Strong desire to resist change	Emphasise potential future gains	“This crisis can help us to look at many things anew.”
Ingrained societal norms	Habits are difficult to change	Keep reminding and highlighting others who have changed behaviours	“Remember to avoid touching your face and politely correct those still doing it.”
Hindsight bias	Summary judgments are weighed by final outcomes	Avoid second guessing early attempts too harshly	“The pandemic was hard to predict and difficult to manage at the time.”

Table: Summary of pitfalls in judgment

What's more important going forward through this pandemic isn't the false sympathies and fake platitudes. It is how you handle yourself, and that you make good, sound decisions. Be cautious, because the longer the pandemic goes on, the greater the chance that you'll let your guard down. It's also likely that you might not make your usual sound decisions, because your normal feedback system (lack of contact with your usual group of friends and acquaintances) has been disrupted. Just as you might imagine, this has been studied.

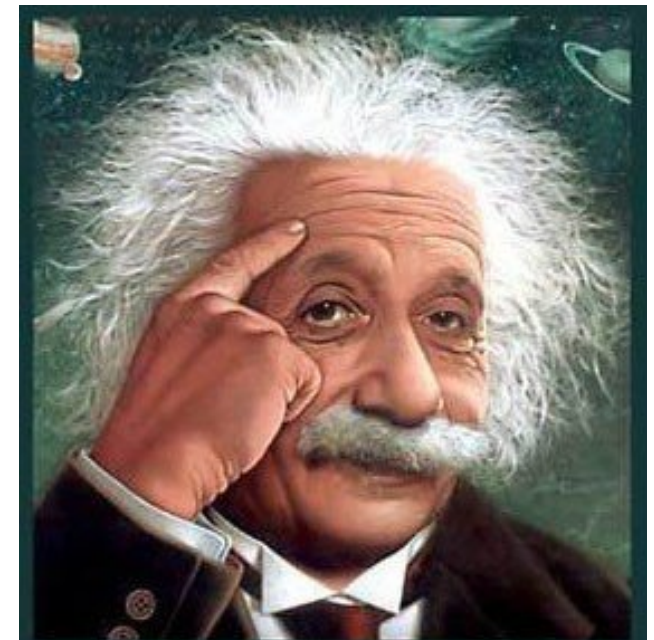
Physician/researcher Donald A. Redelmeier and behavioral scientist Eldar Shafir just published a [study](#) (PDF) in the Lancet medical journal addressing exactly these possible pitfalls (graphic on previous page). Since most countries around the world are looking at relaxing the lockdown orders, most people might assume that the worst of the pandemic is over. But that couldn't possibly be farther from the truth.

It's still important to safeguard yourself and your loved ones. Keep maintaining social distancing. Wear masks when out in public. Wash your hands frequently for at least 20 seconds. Use alcohol-based hand sanitizer when you cannot access soap and water for proper handwashing. Cover your cough and sneeze properly. If you're not feeling well, stay away from others. Avoid crowds and situations where proper social distancing cannot be maintained.

This pandemic is far from over. Don't. Let. Your. Guard. Down.

On a side note, this month's cover celebrates Space Day, which happens the first Friday of May. This year, that occurs on May 1. The cover was designed by Meemaw.

Until next month, I bid you peace, happiness, serenity, prosperity ... and continued good health! Stay vigilant!



It's easier than $E=mc^2$
 It's elemental
 It's light years ahead
 It's a wise choice
 It's Radically Simple
 It's ...

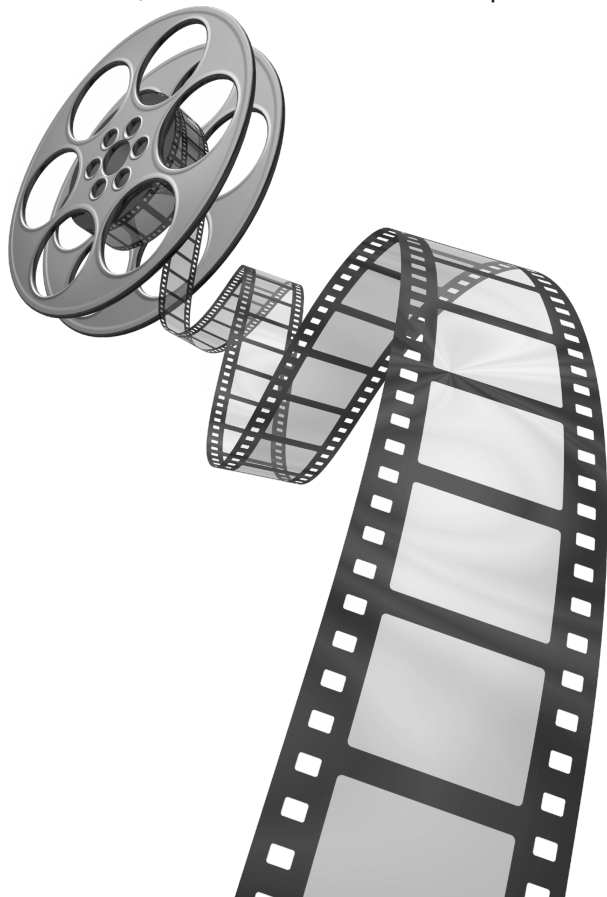


Staying "Safe" While You Stream: DBD's Tips On Living DRM-Free During Quarantine

by Greg Farough

[Defective by Design](#), April 7, 2020
Reprinted under Creative Commons
Attribution-No Derivative Works 4.0 license

As most of us are cooped up in our homes due to the ongoing COVID-19 pandemic, it's somewhat natural that we turn to online movies, music, and other media to help pass the time. For most people, this involves turning to [Internet streaming](#) for convenient, "all-in-one" services that promise an



endless array of recommendations to while away the hours. "Binging" is all well and good every once in a while, but we should remain careful that the ways we're getting our media don't come with compromises to our freedom. As we've mentioned [before](#), Netflix and other giant media providers are responsible for keeping the practice of DRM (Digital Restrictions Management) alive, and it's important not to provide them with the subscription fees they need to keep going. It's also important, even under less dire circumstances, to support businesses and Web sites that provide DRM-free media, and to promote them to our friends. So to help provide you with a plethora of DRM-free and often gratis places to stream from while keeping your rights, here's a few choice selections from our [Guide to DRM-free Living](#).

When it comes to finding good videos to watch during times of crisis, we'd be remiss if we didn't mention the [Internet Archive](#). This section of the digital library contains bona-fide cinematic masterpieces like [Nosferatu](#), as well as "classics" of a different sort like [Plan 9 from Outer Space](#). Many of these works have been [voluntarily uploaded](#) to the Archive by their creators, or, like [Night of the Living Dead](#), have fallen into the public domain due to some of the vagaries and finer points in United States copyright law.

[Bandcamp](#) remains a favorite when it comes to how to get your music. Not only is every artist, album, and track listed on it free from DRM, but it's a good way to support your favorite independent artists, as well as discover new ones. And while everyone's shipping might be a little delayed, many artists sell physical copies of their work on the site as well, meaning that those of us who prefer physical media don't have to be left in the lurch. Plus, it's worth mentioning that Bandcamp is one of the main places

musicians working in the [free culture](#) movement go to share their works first.



Of course, you can also avoid streaming services that are compromised by DRM by simply going "local," using standalone video and audio players like the ever popular [VLC media player](#) or [mpv](#) to play your local collection of media. For diving into free culture music, there are few better places than [Libre.fm](#). And if you're really ambitious, look into hosting your very own music stream for you and your friends using self-hosted tools like [Airsonic](#) or [Funkwhale](#). Take that, Spotify!

Time under quarantine is also the perfect opportunity to learn about new topics -- even the fight against DRM itself! The [\[LibrePlanet video library\]\[17\]](#) is an excellent place to find talks covering issues relating to the Defective by Design campaign, such as Cory

Staying "Safe" While You Stream: DBD's Tips On Living DRM-Free During Quarantine

Doctorow's keynote presentation on the "[software you can go to jail for talking about](#)", this 2019 session from the [Library Freedom Institute](#), and a talk given on the [Right to Repair](#) movement.

No matter what types of media you enjoy or what your favorite genres are, your friends at Defective by Design sincerely wish you the best in this difficult period. And if you've found the information we've listed above helpful, visit this link to learn how you can [support the campaign](#). In addition to our [Twitter](#) account, a platform we recommend only with [caveats](#), the Defective by Design campaign is now on [Mastodon](#) at @endDRM. To show your support of the campaign publicly, you can use the #drmfree or #defectivebydesign hashtags from your own favorite microblogging service.

Happy and healthy hacking!

Does your computer run slow?

Are you tired of all the "Blue Screens of Death" computer crashes?



Are viruses, adware, malware & spyware slowing you down?

Get your PC back to good health TODAY!

Get



Download your copy today! FREE!



secure
private
simple-to-use

PCLinuxOS-Cloud

Sign up TODAY! pclusers.com/services-signup.php

Screenshot Showcase

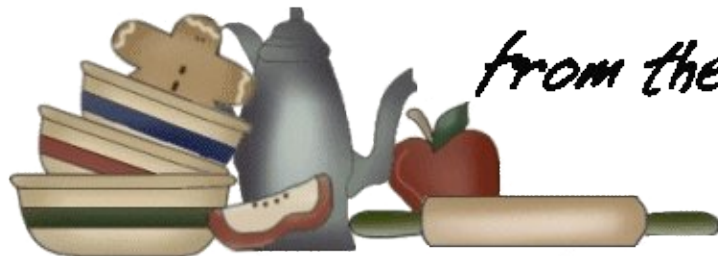
Core	Frequency	Temp	Usage
core1	2.17GHz	48 C	2 %
core2	2.17GHz	47 C	2 %
core3	1.29GHz	51 C	2 %
core4	0.50GHz	51 C	2 %

Component	Usage
RAM	1.87GiB/7.67GiB
HDD	13.5GiB/49.4GiB
DISK I/O	6.00KiB
NETWORK	0B
SYSTEM TEMP	46 C

Posted by Yankee, on April 1, 2020, running Mate.



PCLinuxOS Recipe Corner



*from the kitchen of
youcantoo*

Lemon Pepper Chicken Low Carbohydrate 3g

INGREDIENTS:

3 tablespoons butter
8 bone-in skin-on chicken thighs (2 1/2 to 3 lb total)
1 teaspoon lemon pepper
1/2 teaspoon salt
2 teaspoons finely chopped garlic
1 cup chicken broth (from 32-oz carton)
2 teaspoons grated lemon peel and 2 tablespoons
lemon juice (from 1 large lemon)
2 tablespoons cold water
2 tablespoons cornstarch

DIRECTIONS:

Spray 3 1/2- to 4-quart slow cooker with cooking spray.

In a 12-inch nonstick skillet, heat 1 tablespoon of the butter over medium-high heat. Season chicken with 1/2 teaspoon of the lemon pepper and the salt. Place half of the chicken thighs skin-side down in a skillet; cook 4 to 5 minutes or until skin is golden brown and chicken releases easily from the surface. Turn chicken over; cook for 2 minutes. Repeat for remaining chicken.

Layer chicken thighs, skin-side up, inside slow

cooker; sprinkle with garlic. In a 2-cup measuring cup, mix chicken broth, lemon peel, lemon juice and remaining 1/2 teaspoon lemon pepper; pour over chicken thighs. Cover and cook on Low heat setting 3 to 3 1/2 hours or until chicken is tender (at least 165 degrees F).

Remove chicken to a serving platter; cover and keep warm. In a small bowl, mix water and cornstarch; beat with whisk into cooking juices in a slow cooker. Cover and cook on High heat setting 20 to 30 minutes or until slightly thickened and bubbly around edges. Stir in remaining 2 tablespoons butter.

TIPS:

If desired, garnish with fresh slices of lemon or chopped Italian (flat-leaf) parsley.

Add a green vegetable and rice or noodles for a complete meal.



Wallpaper Roundup, Revisited

by Paul Arnote (parnote)

Looking through the Monthly Screenshots section of the PCLinuxOS forum, it's apparent that there are many individuals who know how to find great looking wallpapers for their desktops. But for others, finding high quality images for their desktops isn't so easy. Plus, with so many of us spending so much time at home, quarantined to help prevent the spread of coronavirus (or to help flatten the curve), it's inevitable that many will be spending an increasing amount of time on their computers. You might as well have some nice wallpaper to look at while spending all of that extra time in front of your computer.

Let me help you with that. There are several places on the web where you can find high quality images for your desktops ... that are free! So, let's take a look at some of them.

Before we start, though, let me give you one word of advice: be cautious! Collecting cool and unusual wallpapers can be a very addictive pursuit. It won't take long for you to wonder where all your hard drive space went!

Bing

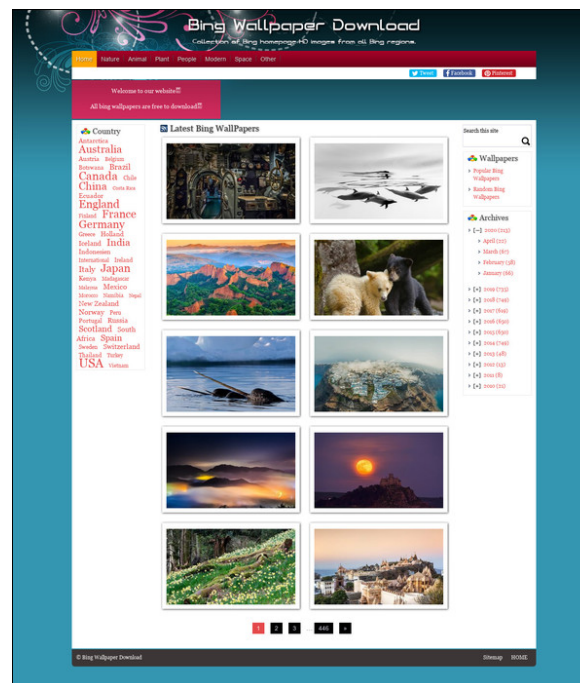
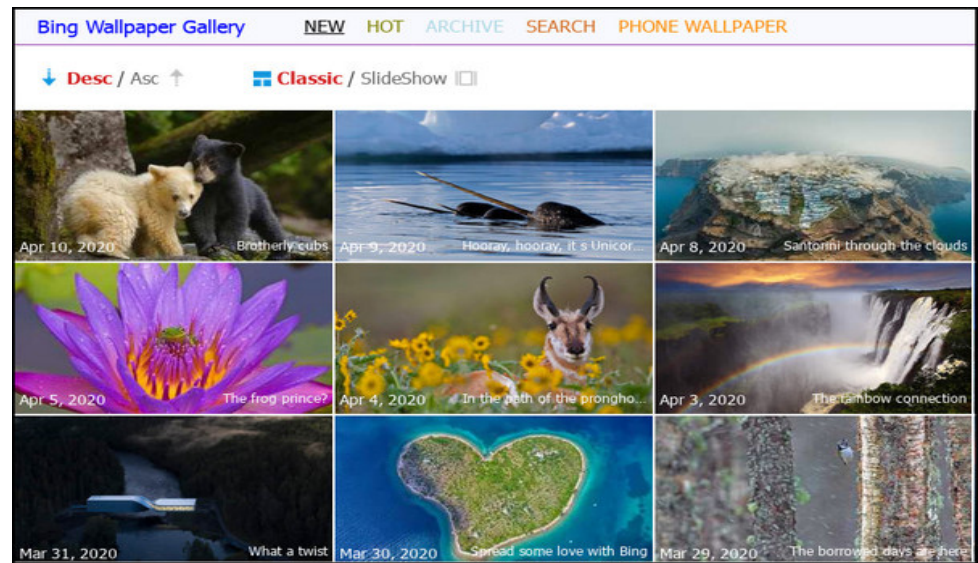
Think what you will about Microsoft's search engine. But it does have one really awesome feature that sets it apart from the crowd. Each and every day, it features a new, high quality image that it uses as its background image.

There are whole websites dedicated to collecting and sharing the various Bing images. With just these images alone, you will be able to create some stunning desktops.

One site, [Bing Wallpaper Gallery](#), is a great place to start. There are (on my laptop, anyway) 30 images per page ... and there are 28 pages filled with those high quality images.

[Bing Wallpaper Download](#) is another site that collects and "redistributes" the daily Bing images. There are 446 pages of images, with 10 images on each page.

One of the coolest, and probably most complete collections of Bing images, is from [Bing Wallpaper Archive](#). Each month's images are displayed as a slideshow.



Top: Bing Wallpaper Gallery

Left: Bing Wallpaper Download

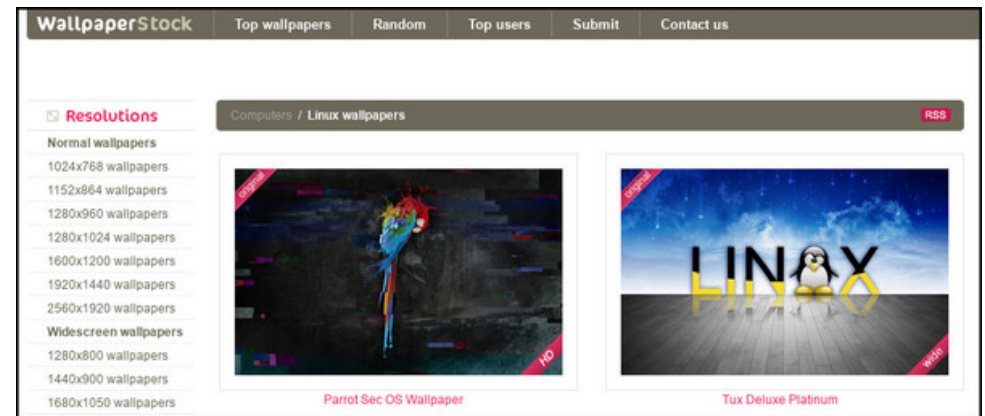


When the image you want flashes before you on your screen, click on the image. The selected image will open in a new tab in your browser, where you can right-click your mouse on the image to save the image file to your hard drive. The monthly collections go all the way back to May, 2009, making this collection of Bing images massive.

I have also created a bash script to download the daily images from Bing. I originally [wrote](#) about it in the October, 2013 issue of The PCLinuxOS magazine. Since then, I've done some minor upgrades to the script, due to the slight changes in the way that the images were presented by Bing. You can download my updated script [here](#).

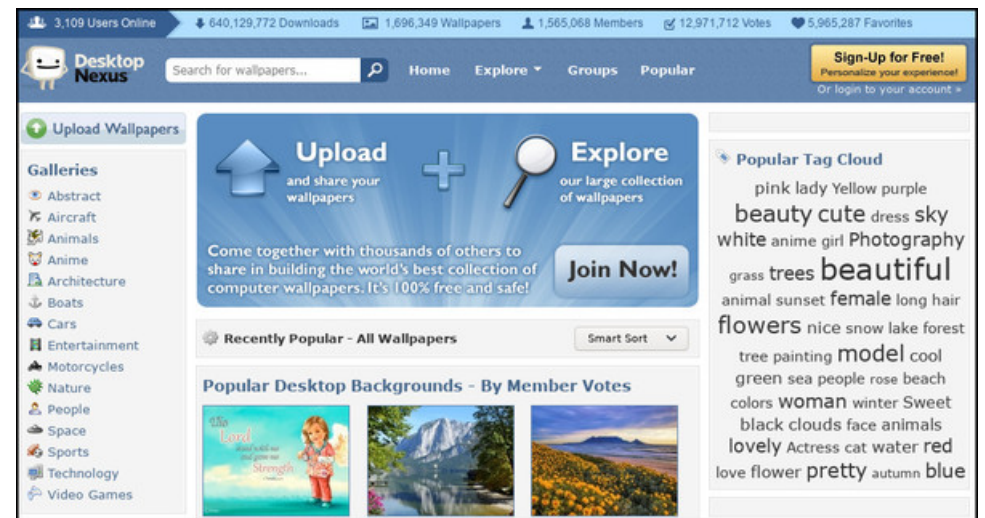
Download the file to some location in your path, change the filename from bing5.sh.txt to bing5.sh, make the filename executable, and then run from a command line prompt (or run it when your computer first starts by placing it in your desktop's "startup" utility that starts programs when your desktop first starts). I've annotated the script (open ONLY in a bona fide TXT editor, like Kate, Mousepad, Leafpad, Geany, etc.!) so you can make any changes that you might want (like how long it waits to download the image after the script is run). You can also set up the script to run "automagically" every day at the same time by assigning it to a crontab job.

WallpaperStock.com



WallpaperStock.com has a literal ton of free, high quality wallpaper images. They are grouped together in categories, such as the Linux category shown above. You can also select the desired screen resolution (left side of the page).

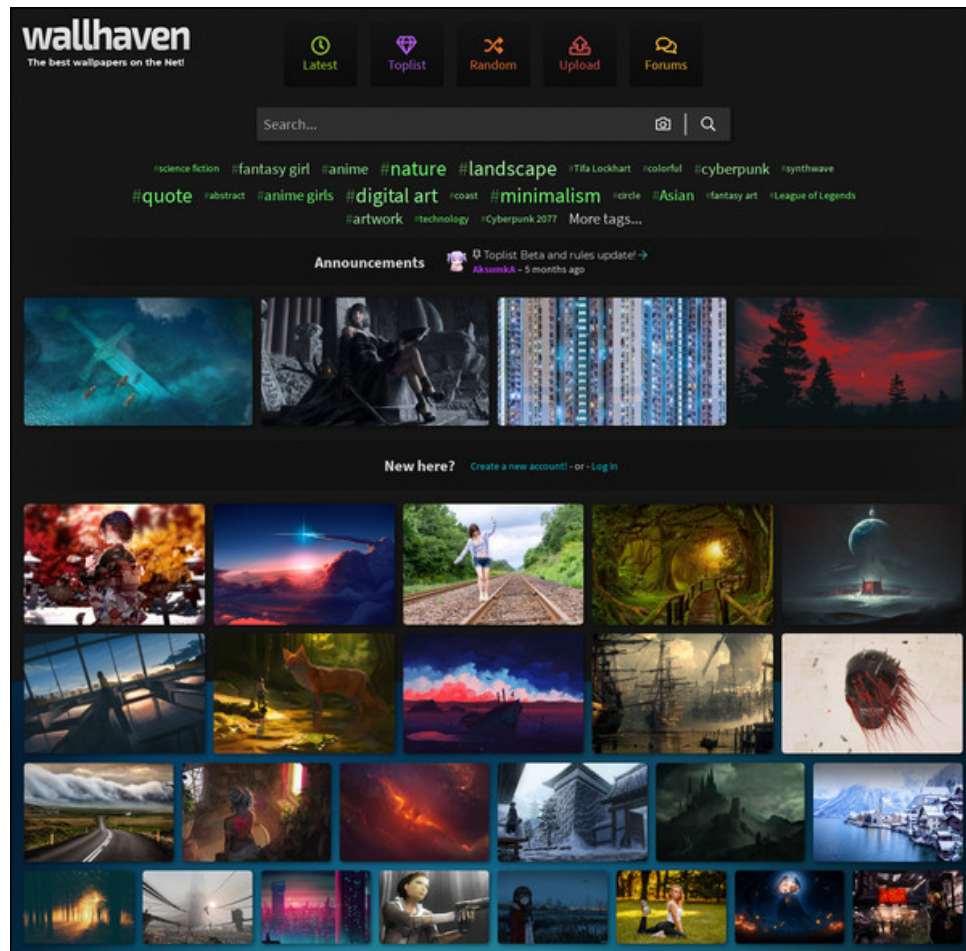
Desktop Nexus



Desktop Nexus is an often overlooked site ... except for its 1 million registered users, who have uploaded over 1.5 million high quality wallpaper image files! And no, you do not have to register to use the site.

All of the images are sorted into categories, which they call “Galleries.” Clicking any one of the galleries/categories opens up a whole slew of new subcategories. The images are sorted by “votes,” which makes it easier to find popular image files. You do have to be a member to vote on images, though.

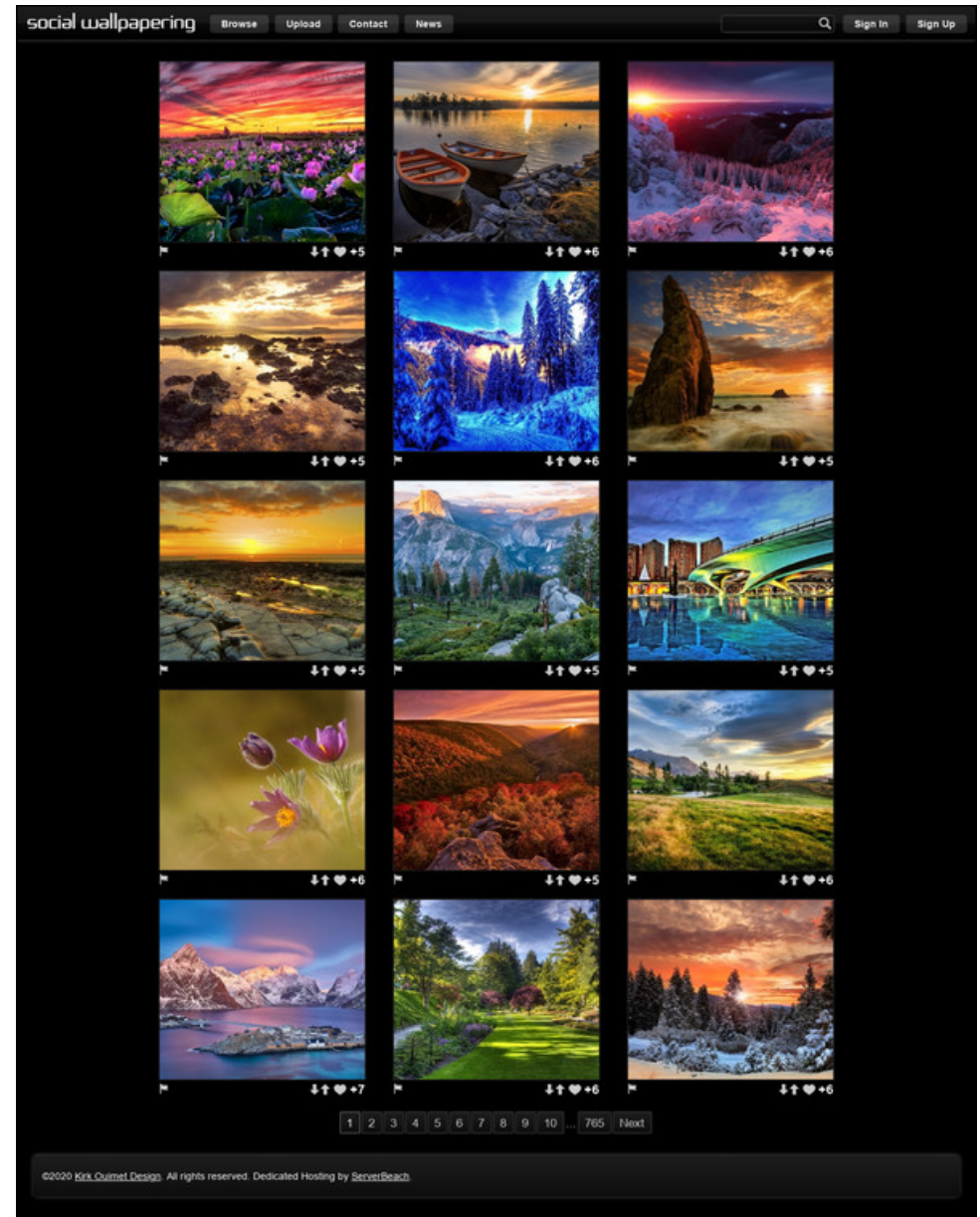
Wallhaven



Wallhaven has a collection of over 700,000 high quality wallpaper images for you to browse and download. The site originally was designed to replace the now-defunct Wallbase. Once you sign up for a free account, you can browse for images by tags or popularity, search for “safe for work” images (or not), choose your favorite image resolution, or just take your chances with a random selection.

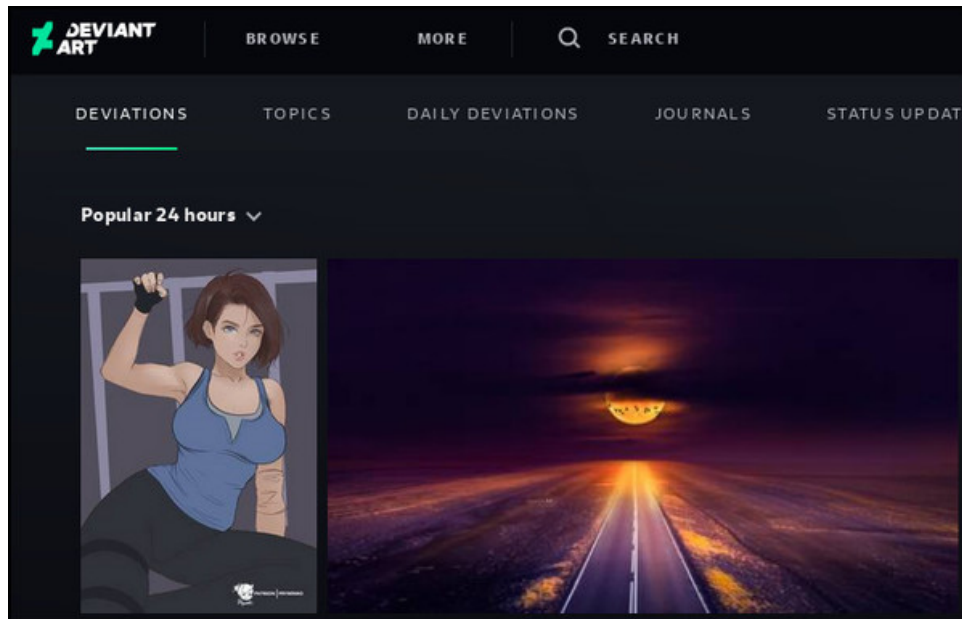
The site features infinite scroll, so you don't have to load multiple pages of images to find the images you are interested in.

Social Wallpapering




Social Wallpapering has been around for quite a while (since at least 2007). They have a quite large collection of high quality wallpaper images. Clicking on the “Browse” button will display some image categories to help you narrow your search to something you are interested in. You can also upload your own high quality images to the site, as well. Users can “up vote” or “down vote” images based on whether or not they like the images. Voting privileges are granted after signing up for a free account.

DeviantArt Wallpaper




If you're looking for something eclectic or unique, you could do no better than DeviantArt. The site is THE site for artists, and they have a very large following. The collection of wallpaper images includes photos, illustrations, abstract art, fantasy art, fan art, video game art, movie art, comics art, and much more. Here's a hint: even if it says to “purchase” the image, click on it. Most of the time you'll be shown a high resolution image of your selection, and saving it to your hard drive is as easy as right clicking on the image and selecting “Save Image As...” from the context menu in your browser.

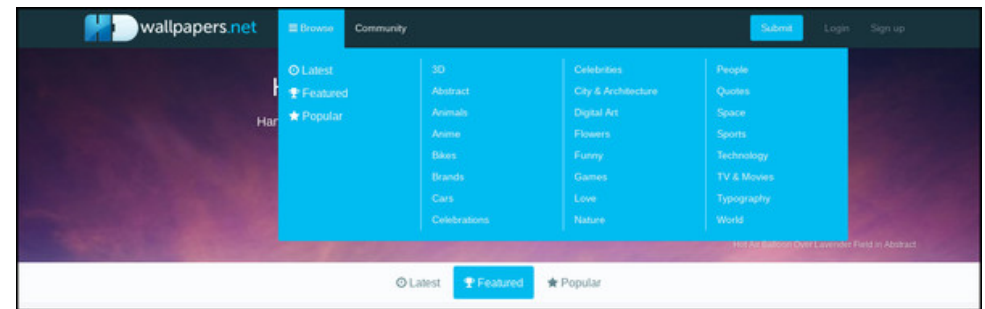


Help PCLinuxOS Thrive & Survive

DONATE TODAY

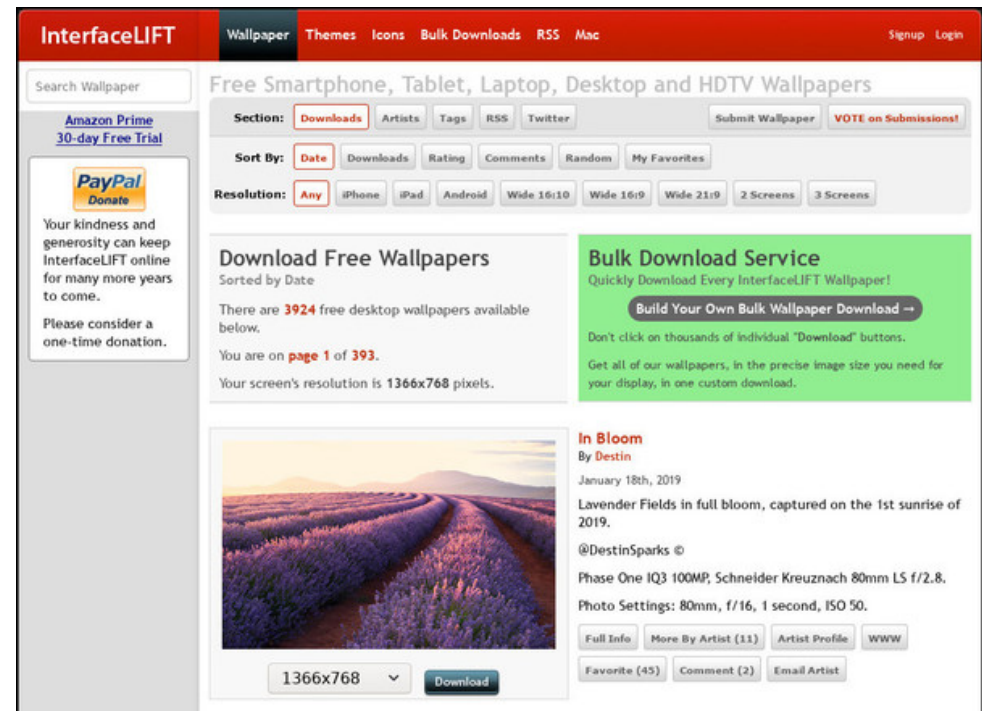


HDWallpapers.net



Updated daily, HDWallpapers.net is full of HD photos and illustrations just waiting to adorn your desktop. You can sort by featured images, popular images, the latest images, or browse based on category. Downloads can be chosen based on screen resolution, a specific mobile device, or a particular use (e.g., for use as a cover photo on social media platforms). No account is necessary to download images, but a free account is required to upload images and to save a list of your favorites.

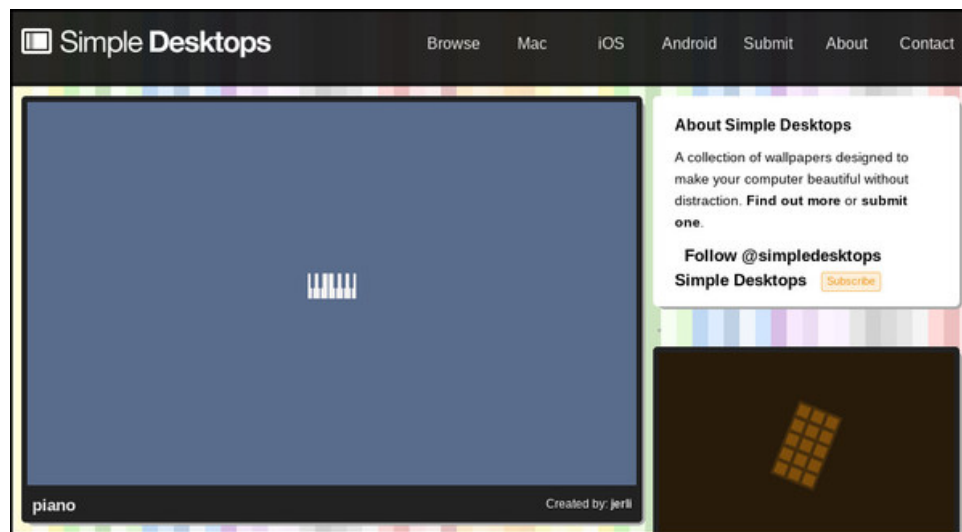
InterfaceLift



Interfacelift has been around for quite a long time now. Originally created in October, 1999, the site is a premier resource for gorgeous wallpapers. They have lots of natural scenes, photos, and more. You can also find icon packs and system themes on Interfacelift.

The site will automatically detect your screen resolution, and use that information to show you wallpapers that fit your screen. However, you can also sort wallpapers by screen resolution or device. One really nice and unique feature of Interfacelift is that you can see lots of additional information about the images, such as the camera used to shoot the image, who took them, and any comments that were added to the images.

Simple Desktops



Just as its name states, the wallpapers on Simple Desktops are simple. According to the “About” information on the site, Simple Desktops includes “a collection of wallpapers designed to make your computer beautiful without distraction.” Calling the wallpapers on Simple Desktops “minimalist” would be an understatement. They definitely are not distracting, at least in the normal sense of what we define as distracting.

Summary

There you have it. I've given you several sites to go look for wallpaper to adorn your desktop. There are many other sites out there. I eliminated some from my

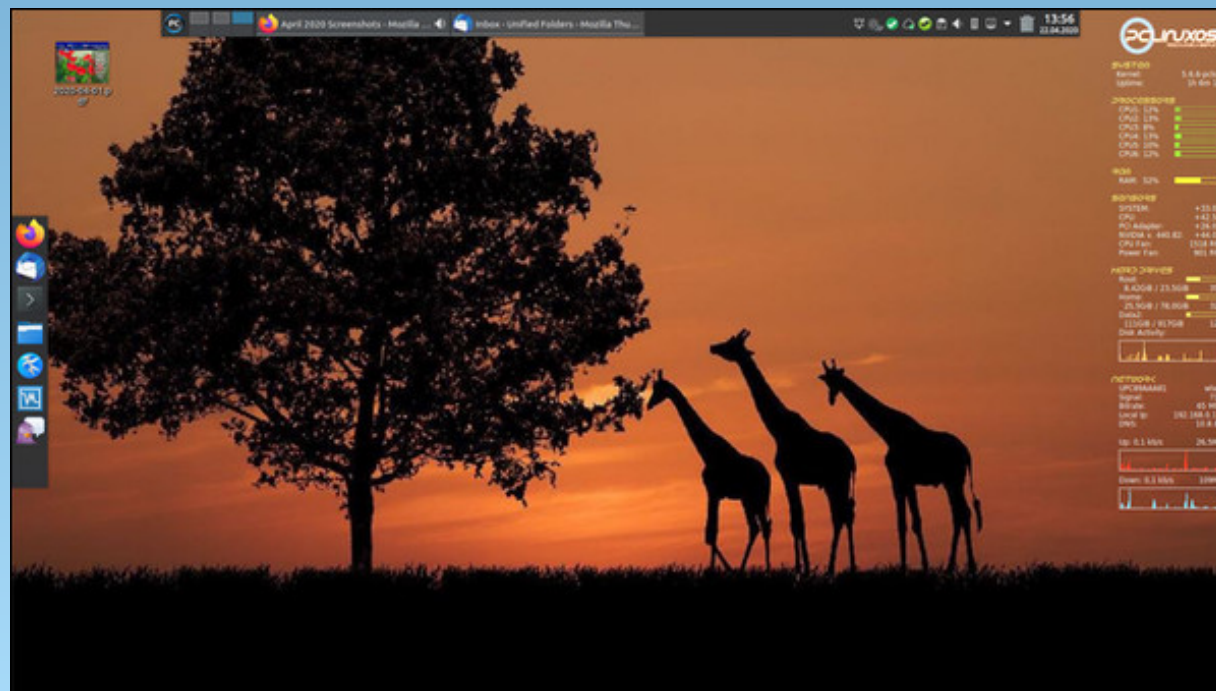
list, like Digital Blasphemy, because they charge either a membership fee, or they charge per image. There are plenty of other places on the internet to grab some free wallpapers, so there's little to no need to pay for them. A quick search for “free wallpaper images” will net you a literal ton of sites where you can download them freely.

So now, go out and dress up your desktops!





Screenshot Showcase



Posted by tbschommer, on April 22, 2020, running KDE.

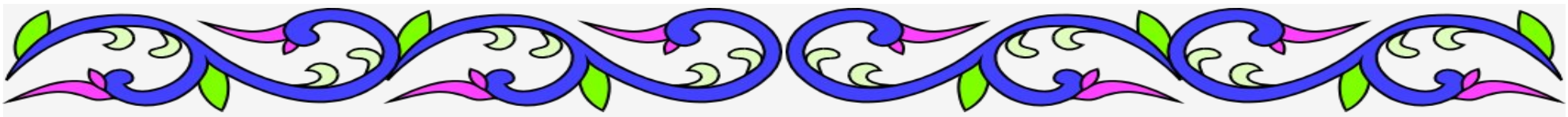
Support PCLinuxOS! Get Your Official

PCLinuxOS
Merchandise Today!

PCLinuxOS



ms_meme's Nook: I Want It That Way



PCLOS I admire
It is all I desire
Believe me when I say
I want it that way

An OS near my heart
With it never will I part
Believe me when I say
I want it that way

You ask why I have heartache
I tell you why Windows a mistake

That is why
Believe me when I say
With PCLOS I will stay


An OS full of fire
With it never will I tire
Believe me when I say
I want it that way

You ask why I have heartache
I tell you why Windows a mistake

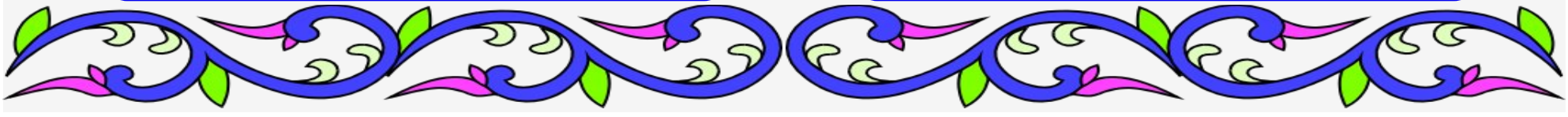
Believe me when I say
I want it that way

Now you can see with it
I never will part
Never will part
Love it with my heart

Never will part
Never will part
Love it with all my heart



MP3 **OGG**



Short Topix: Zoombombing Is A Crime, Not A Prank

by Paul Arnote (parnote)

Study Reveals Hidden Behaviors Of Mobile Apps



Fresh from a [report](#) (PDF) jointly published by authors from The Ohio State University, New York University, and CISPA Helmholtz Center for Information Security comes word that 12,706 apps surveyed with a new static analysis technique called InputScope had hidden backdoors, hidden master passwords, secret access keys, hidden blacklist words, and secret commands embedded within them. These vulnerabilities allow users to access admin-only functions, or attackers to gain access to user information and user accounts.

An [article](#) on ZDNet dug further into the report. The authors had surveyed 100,000 of the most popular

apps in the Google Play store (based on the number of installations), the top 20,000 apps hosted on third party app stores, and 30,000 apps that came preinstalled on Samsung handsets.

Overall, they found that nearly 6,900 apps from the Google Play store had hidden backdoors or functions. Nearly 1,100 apps from the third party app stores had hidden backdoors. Meanwhile, nearly 4,800 preinstalled apps from Samsung handsets (almost 16%) featured hidden backdoors.

More than 4,000 apps (total) featured hidden “bad word” filters to filter out curse words, racial slurs, political words (even the names of some political leaders), gambling, cult references, pornography, and drugs.

The authors of the report did not divulge the names of the apps where they found these security issues, in order to protect the users of those apps from malicious actors. The app developers were all notified of the findings, but not all of the app developers responded.

 **FREE SOFTWARE**
FOUNDATION

*Looking for an old article?
Can't find what you want? Try the*

**PCLinuxOS Magazine's
searchable index!**

The **PCLinuxOS** magazine

Out To Sea, Sailing About The World, They Never Heard About The Pandemic



Imagine quitting your job, buying a boat, and setting out to sail around the world. Sounds like a dream, huh? That's exactly what Elena Manighetti and Ryan Osborne of Manchester, England did in 2017, according to a [BBC story](#). They sailed about the Atlantic Ocean, sailing from one location to the next.

Except the dream turned sour, as dreams sometimes do.

They had asked their families to stay in touch. But, they had one ground rule: no bad news. And, the family members complied with that wish.

They first attempted to land on a small island that was a French territory. But, they found all the borders closed, and the island in the process of being locked down. So, they sailed on to Grenada.

Back in February, they heard a little bit of something about a virus in China. But, because there wasn't

Short Topix: Zoombombing Is A Crime, Not A Prank

much information available about it, they thought it would be all over after spending 25 days at sea.

Yes. Their families kept their word. They didn't tell them about the coronavirus pandemic. That was bad news. About as bad of news as you might expect. They didn't know that the entire world was infected.

Just off the coast of Grenada, they were able to get a good-enough 4G connection to allow them to find out what had been going on. They contacted a friend already on Saint Vincent, and were told that Elena would be refused entry, because she was an Italian citizen. Her home in Italy is in one of the hardest hit areas of the country. Except Elena hadn't been to her home country in months.

Fortunately, they were able to prove via their travel documents and their boat's GPS data that they had not been to Italy in months, and had actually spent the last 25 days sailing the ocean.

Elena's family is well, she found out while contacting family in Italy, but they know people who have succumbed to COVID-19. They described how horrible conditions are in the ancient country on the Mediterranean Sea.

For now, they are sitting tight on Saint Vincent, hopeful that they will soon be able to continue their exploration of the Caribbean isles. But they are worried, because they also want to avoid the hurricane season, which typically begins in June.



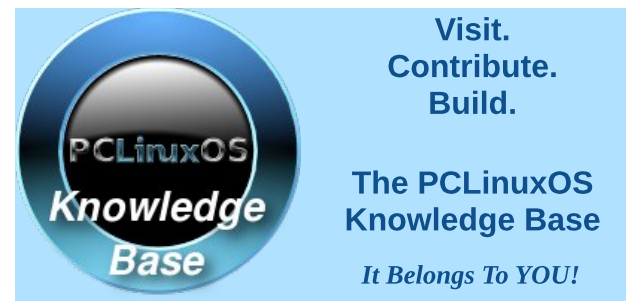
New Linux Patch Speeds Up FAT Transfer Times By 7.5X



Just days before Linus Torvalds closed the merge window and released the first release candidate for the Linux kernel 5.7, kernel developer Ogawa Hirofumi sent out a [patch](#) that speeds up FAT file transfers on Linux by 7.5 times.

Hirofumi's patch enhances the read-ahead performance of Linux's FAT file system code, according to an [article](#) on FOSSBytes. To validate the patch, Hirofumi tested the driver on a slow, USB connected 2TB hard drive. File transfer times went from 383.18 seconds to 51.03 seconds after application of the patch.

Even though most have moved to exFAT, the older FAT16/FAT32 file system is still in use in some digital cameras and EFI partitions.



Prosecutors: Zoombombing Still A Crime



With the near-global coronavirus lockdown and social distancing having taken a prominent role in our daily lives, Zoom, a video conferencing program, has gained a ton of recent popularity.

But, as with most anything that becomes popular, trolls and other users with malintent have to come along and ruin things. Sadly, they have taken to exposing themselves to children and yelling racial slurs – among other things – as they join Zoom meetings just to disrupt them. The idjits claim that it's just a prank.

But not so fast, say U.S. federal prosecutors, according to an [article](#) on ArsTechnica. They say it's a crime.

From a [statement](#) released by the U.S. Department of Justice, U.S. Attorney's Office of the Eastern District of Michigan:

Michigan's chief federal, state, and local law enforcement officials are joining together to warn anyone who hacks into a teleconference can be charged with state or federal crimes. Charges may include – to name just a few – disrupting a public meeting, computer intrusion, using a computer to commit a crime, hate crimes, fraud, or transmitting threatening communications. All of these charges are punishable by fines and imprisonment.

"You think Zoom bombing is funny? Let's see how funny it is after you get arrested," stated Matthew Schneider,

Short Topix: Zoombombing Is A Crime, Not A Prank

United States Attorney for Eastern Michigan. “If you interfere with a teleconference or public meeting in Michigan, you could have federal, state, or local law enforcement knocking at your door.”

“It is a shame that during a pandemic which is causing fear and anxiety across the globe that there are wrongdoers seeking to disrupt virtual environments which have become essential to communication, teleworking and online learning,” said Special Agent in Charge Steven M. D’Antuono. “While Michiganders are sheltering in place, it is important to practice good cyber hygiene. We encourage our communities to visit [fbi.gov](https://www.fbi.gov) or [ic3.gov](https://www.ic3.gov) to learn more about tips they can take to keep their devices secure.”

“We were alerted to this problem by a Michigan reporter who participated in a Zoom conference that was hijacked,” stated Michigan Attorney General Dana Nessel. “Since then we have learned of other incidents around the country. There are steps people can take to protect their cybersecurity and we encourage all users to follow the proper procedures to ensure their teleconferences are secure.”

The statement goes on to offer some advice to help avoid becoming a “zoombombing” victim.

* Do not make the meetings or classroom public. In Zoom, there are two options to make a meeting private: require a meeting password or use the waiting room feature and control the admittance of guests.

* Do not share a link to a teleconference or classroom on an unrestricted publicly available social media post. Provide the link directly to specific people.

* Manage screen sharing options in Zoom, change screen sharing to “Host Only.”

* Ensure users are using the updated version of remote access/meeting applications. In January, 2020, Zoom updated their software. In their security

update, the teleconference software provider added passwords by default for meetings and disabled the ability to randomly scan for meetings to join.

* Lastly, ensure that your organization's telework policy or guide addresses requirements for physical and information security.

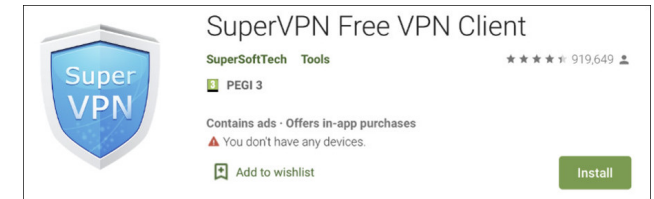
In related Zoom news, CEO and Zoom founder Eric Yuan says that he underestimated the threat of harassment on the Zoom platform, adding that he never gave it any serious thought, according to a [report](#) on NPR. Yuan is pleased that the FBI has gotten involved in tracking down “zoombombers,” and has cooperated with law enforcement officials every step of the way. His company has halted work on adding new features, instead focusing on privacy and security for the next 90 days. He's willing to make Zoom more secure, with better privacy, even if it makes it more difficult to use.

Some large school districts, companies and governments have banned the use of Zoom entirely, due to the security issues. Google has also banned its employees from installing it on their work computers, saying it doesn't meet security standards.

One recent change to happen to Zoom is that all meetings now require the use of a password. Expect more changes in the future as Yuan works to strengthen Zoom's security. He has recently [announced](#) the formation of a security-focused council and advisory board, and hired [Alex Stamos](#), Facebook's former chief security officer, as an outside security advisor to Zoom.



If You Have SuperVPN Free Installed On Your Mobile Device ... UNINSTALL IT IMMEDIATELY!



We've covered the benefits of using a VPN here in The PCLinuxOS Magazine before. You've heard about the benefits of using a VPN, I'm sure, from other sources on the internet. So, if you were duped into installing SuperVPN Free VPN Client on your mobile Android device, **uninstall it immediately!**

According to an [article](#) on Forbes, the app has been installed by **100 million** users. It has since been removed from the Google Play store. But, there are many, many users out there who may not realize that the app behaves in a malicious manner.

Specifically, and [according](#) to a blog post by VPNPro (who reported the issue to Google):

“... it has critical vulnerabilities that allow for man-in-the-middle (MITM) attacks that can easily allow hackers to intercept communications between the user and the provider, and even redirect users to a hacker's malicious server instead of the real VPN server.”

The SuperVPN Free VPN Client was reported to Google Play Security Reward Program, by VPNPro, and Google verified the security issues. Attempts to contact its developer, so he/she/they can patch the vulnerabilities, were unsuccessful. Even trying to track down the actual developer proved to be a monumental and circuitous task that often led to many dead ends.

The “paid” version of SuperVPN VPN Client is still available in the Google Play store. It definitely differs from the free version by not displaying any ads. However, it would probably be a wise idea to avoid

Short Topix: Zoombombing Is A Crime, Not A Prank

the paid version, as well, since it may have similar (if not the same) security vulnerabilities.

Even though the SuperVPN Free VPN Client has been removed from the Google Play store, it's likely that there are many, many users who may still have it installed. Those users may not be aware of the app's security issues, and may continue to use it, mistakenly thinking that they are protected as they would be with a bona fide VPN app.

Do You Think That Fingerprint Reader Is Secure?



Well, do you think that fingerprint reader is secure? According to researchers from [Talos Cisco Security Research](#), it might not be as secure as you think it is.

Yes, it's true that everyone has unique fingerprints. If you have a smartphone, you've probably used your fingerprint to unlock your phone. Some laptops have a fingerprint reader to enhance security of the data stored on the hard drive. Some USB flash drives use fingerprints to secure the data stored upon it.

However, you might be surprised by the answer. And, that answer is mostly NO, that the fingerprint reader can be fooled fairly easily, given enough time and the right materials. Also, all fingerprint readers are not created equal, either. So, the answer becomes "it depends."

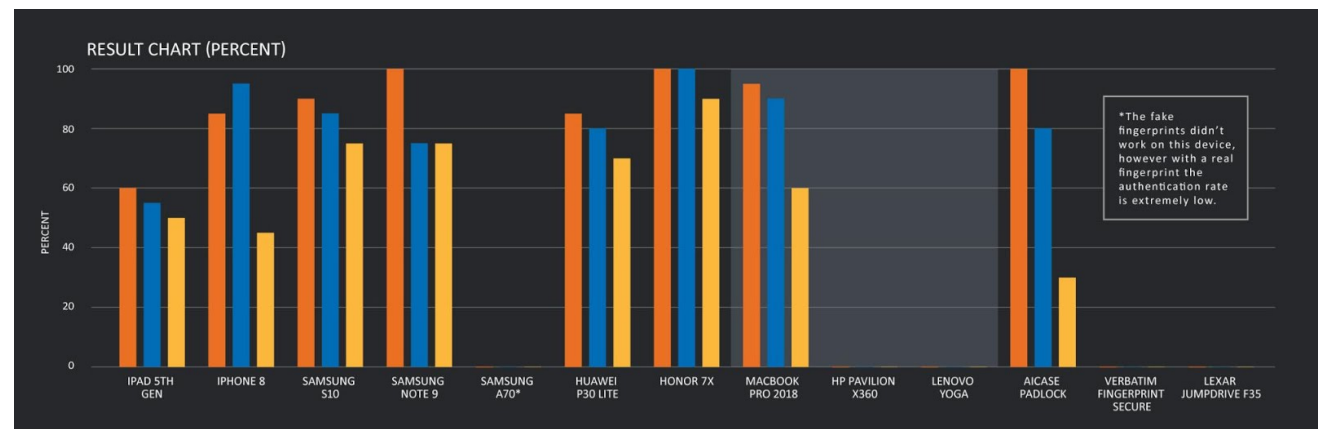
Using a 3D printer, they made a mold of Al Capone's publicly available fingerprints from the FBI's website. The mold comes out of the printer, and must be cured in a UV chamber before it can actually be used as a mold. When it comes out of the printer, it is too soft and too toxic to be of any use. The mold makes a "negative" of the fingerprint. It took the authors 50 attempts to come up with a usable mold, due to the 3D printed mold shrinking during the UV curing, depending on the time it spends in the curing chamber. They also used a direct collection method (where a cast of an actual fingerprint is made in softened Plastiline modeling material; this was the most successful method), and an optical scan method that scanned a photo of the fingerprint.

Next, you have to fill the mold with your material to make a "positive" from the "negative" (the mold). The best performing material they found was fabric glue. Fill in the mold with a thin layer of the fabric glue, wait for it to dry, and then carefully peel it up from the mold. Use that "sheet" to press down over the fingerprint reader.

Once you've made it this far, this is where the fun starts: seeing if you can fool the fingerprint reader. The researchers first tried a MacBook. Believe it or not, they were able to fool the MacBook fingerprint reader 95% of the time. The iPhone and iPad fared only slightly better than the MacBook at not granting access to an unauthorized user. The Samsung S10 and Samsung Note 9 were easily fooled, as was the Huawei P30 Lite and the Honor 7x. Curiously, the Samsung A70 kept the data secure, but the researchers attribute that to the fact that the fingerprint reader on that device barely works even when it's the "real thing."

The AICase Padlock was pretty much useless when they used the direct collection method, only slightly better when the image sensor method was used, and was only fooled about 30% of the time when using the 3D printed molds.

Amazingly, they were never able to fool the fingerprint reader on laptops running Windows. The researchers attributed this to two traits. First, you tend to "unlock" a laptop less frequently than a mobile device. Because of this, which leads to the second trait, is the fact that Windows samples more data points in the fingerprint. Also, the fingerprint reader code is part of the Windows OS, enabling it to work better across all Windows iterations.



Orange: Direct Collection Blue: Image Sensor Yellow: 3D Printed Molds

Short Topix: Zoombombing Is A Crime, Not A Prank

The researchers were also unable to fool the fingerprint reader on the Verbatim Fingerprint Secure USB flash drive, nor the Lexar Jumpdrive F35, regardless of the method they employed.

There was no mention of any tests involving Linux.

So, what were the researchers' conclusions? Well, not much has changed since fingerprint readers were largely introduced in 2013. The security offered by them is pretty much dependent on the method employed to read the fingerprint, as well as how many data points are compared to a saved set of data. The more data points used, the more secure it is, but also the more "finicky" it is, too. Overall, fingerprints are probably sufficient data protection for the more casual user, but can represent a real security hole for individuals and groups that need a higher level of security (2FA would sure seem to be warranted in these cases, I would think).

Windows Explorer File Manager Eases Reading Of Linux File Systems

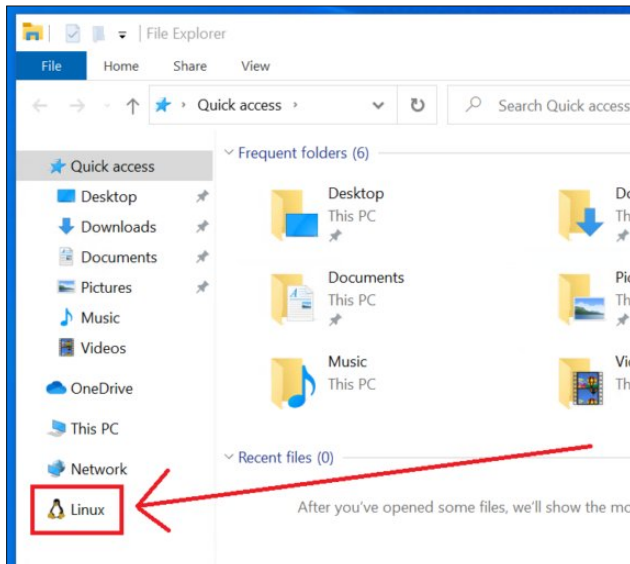


Image: Microsoft

Do you dual boot your computer with PCLinuxOS and Windows 10? If you do (and I know there are some of you out there), Microsoft has made a once extremely complicated (if not nearly impossible) task of reading data files on your Linux partitions as easy as a couple of clicks in Windows Explorer File Manager.

Now, in Windows 10 Build 19603, as long as you have the Windows Subsystem for Linux (WSL) installed, your Linux files are only a couple of clicks away.

From looking at the images (sorry, but I haven't run Windows since XP ... Vista drove me into the loving arms of Linux), it appears that Windows Explorer will

give you access to ALL your Linux files, including those whose permissions are usually reserved for the root user under Linux. So, exercise extreme caution if you use Windows Explorer to manipulate files on your Linux partition. You could render your Linux installation incapable of booting.

Still, it will be quite a timesaver to allow users to access files saved on their Linux partition(s) while working in Windows, instead of making the user log out from Windows, and then boot and sign in to Linux, copying the file to a shared folder or networked drive, and sign back out of Linux, and have to reboot Windows ... all before even doing anything with the data contained in the file. Phew! I get short of breath just typing all of that out!

Screenshot Showcase



Posted by Snubbi, on April 7, 2020, running Mate.

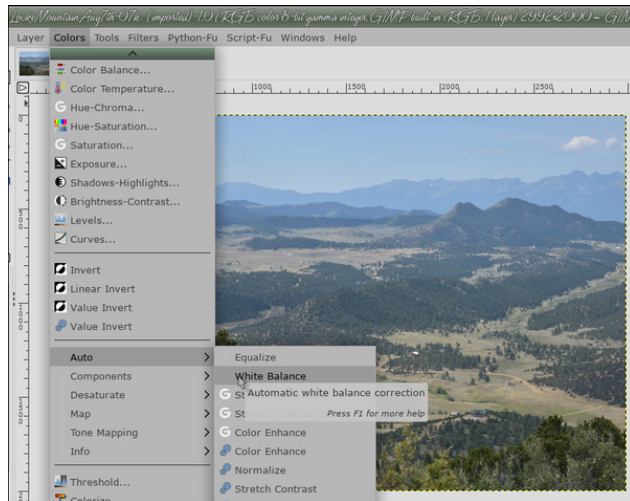
GIMP Tutorial: Photo Editing, Part 3

by Meemaw

In an ongoing effort to provide you with several ways to tweak your photos, I have found a few more tips that you can use in GIMP.

Correcting White Balance

Sometimes your camera will react strangely to the light conditions in the scene you want to photograph, and the photo may have a blue (or strange) hue to it, when the colors are obviously supposed to be different. In the photo below, the blue sky almost takes over the whole photo.

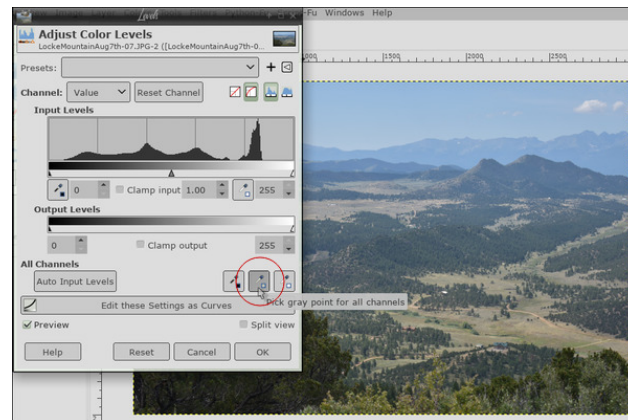


Choose **Colors > Auto > White Balance**, and it should be instantly corrected (center, top).

While it looks to me to be closer to the scene I remembered when I took the photo, I'll have to do some more later. Similarly, you may not like the results you get.



If you aren't happy with the automatic results, there's always another way to do things in GIMP. Choose **Colors > Levels**, and toward the bottom of the window that opens, click on the middle eyedropper icon. This will let you set a gray point in your image, an area of neutral color off which all the other colors will be based.



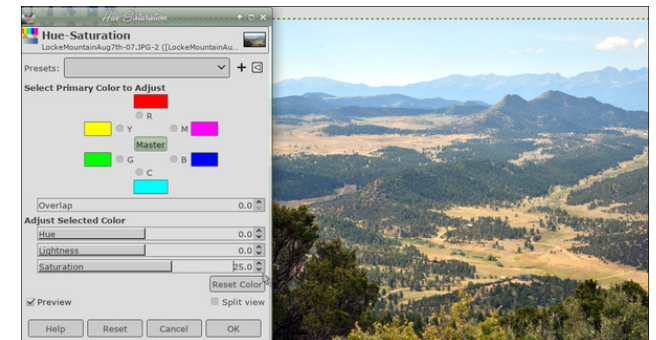
With the eyedropper selected, find an area of gray in the photo and click on it. The color of the whole photo will update. The good thing about this is that you can keep clicking different grays in different

parts of the picture until you find one that you're happy with.

Tweaking Photo Colors in GIMP

Tweaking the colors of your photos can make dramatic effects. Depending on what you do with your photos, you might want vivid colors or subdued colors.

Click on **Colors > Hue-Saturation**. The **Saturation** slider will boost your colors. Be careful because it's very easy to oversaturate your images. A good rule is to set the saturation to a level that looks okay, then just drop it back a little. Here, I set the saturation up.



You can adjust the red, magenta, blue, cyan, green, and yellow parts of your image separately by choosing the color and using the Lightness slider.

You can make a sky look bolder and bluer by focusing on the blue and cyan colors, and set the **Lightness** slider to a darker level. To make grass and foliage look greener and more vivid, increase the Lightness level for green. Here, I've set the lightness for green up a bit. It just increased the green in the foreground (next page, top left).



If you're left with harsh edges around the areas of color that you've adjusted, drag the **Overlap** slider to the right to help blend them better.

After editing a bit more, I came up with this result.

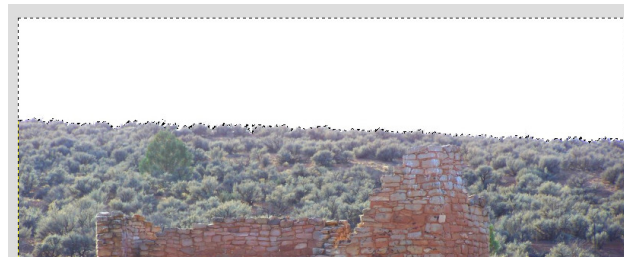


Removing the Background

Sometimes, you shoot what you think is a perfect shot, but the sky is one big blob of grey-blue. Let's remove the sky and replace it with something better. Fortunately, you can remove the background in GIMP, which enables you to replace the sky with something a lot more interesting. In the photo below, the sky is almost white with no color at all. I want to replace it with something more colorful (center, top).

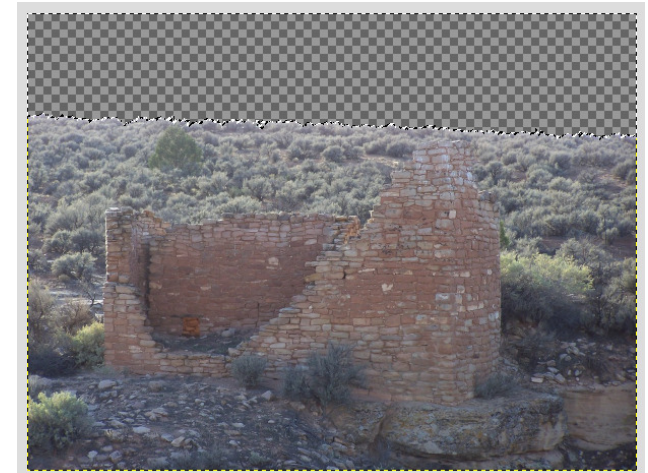


As you can see, the sky has almost no color at all, even after I used some of the above tweaks on it. We'll use one method of editing now. First, choose **Layer > Transparency > Add Alpha Channel**. Now, choose the **Fuzzy Select** tool, and click on the sky. You may have to play with the threshold setting to get only the sky, but you can click, then adjust and click again. My threshold was 35, and I got the following:



See the little dots across the tops of the trees? Those dots and the dotted lines over the top are moving, which means that's your selection. Now click on **Delete**. The sky will disappear (right, top).

Now the only thing left is to add a transparent layer and paste a different sky into it. Open your sky and resize it to the width of your photo. Copy and paste it on a newly created transparent layer, then move that



layer to the bottom of the layers. Export it to a new file.



Several other ways exist to remove a background from a photo. We'll soon explore others in upcoming articles.



Better Than Zoom: Try These Free Software Tools For Staying In Touch

by Greg Farough

[Free Software Foundation](#), April 3, 2020

Reprinted under Creative Commons

Attribution-No Derivative Works 3.0 license

The COVID-19 pandemic has caused an enormous amount of changes in how people work, play, and communicate. By now, many of us have settled into the routine of using remote communication or video conferencing tools to keep in touch with our friends and family. In the last few weeks we've also seen a number of lists and guides aiming to get people set up with the "right" tools for communicating in hard times, but in almost every case, these articles recommend that people make a difficult compromise: trading their freedom in order to communicate with the people they care about and work with.

In times like these it becomes all the more important to remember that tools like Zoom, Slack, and Facebook Messenger are not benign public services, and while the sentiment they've expressed to the global community in responding to the crisis may be sincere, it hasn't addressed the fundamental ethical issues with any piece of [proprietary software](#).

After taking the [LibrePlanet 2020](#) conference online, we received a number of requests asking us to document our streaming setup. As the pandemic grew worse, this gave way to more curiosity about how the Free Software Foundation (FSF) uses free tools and free communication platforms to conduct our everyday business. And while the stereotype of hackers hunched over a white on black terminal session applies to us in some ways, many of the tools we use are available in any environment, even for people who do not have a lot of technical experience. We've started documenting ethical

solutions on the [LibrePlanet wiki](#), in addition to starting a [remote communication mailing list](#) to help each other advocate for their use.

In the suggestions that follow, a few of the tools we will recommend depend upon some "self-reliance," that is, steering clear of proprietary network services by hosting free software solutions yourself, or asking a technical friend to do it for you. It's a difficult step, and the benefits may not be immediately obvious, but it's a key part of preserving your autonomy in an age of ubiquitous digital control.

To those who have the technical expertise and available infrastructure, we urge you to consider hosting instances of free communication platforms for your friends, family, and your community at large. For example, with a modest server and some GNU/Linux knowledge, you could help local students learn in freedom by volunteering to administer an instance of one of the programs we'll be recommending below.

The need to self-host can be an uncomfortable reminder of our dependence on the "cloud" -- the network of someone else's computers -- but acknowledging our current reliance on these providers is the first step in making new, dependable systems for ourselves. During dangerous and stressful times, it's tempting to sideline our ethical commitments for easier or more convenient ways to get things done, and software freedom is no exception. We hope these suggestions will inspire you to inform others about the importance of their freedom, privacy, and security.

Chat

When we can no longer communicate face-to-face, tools for voice and video calling often come to mind as the next best thing. But as evidenced by the size and success of the proprietary software companies that sponsor these tools, their development isn't easy. Promoting [real-time voice and video chat clients](#) remains a High Priority Project of ours. Though we may still be waiting for a truly perfect solution, there are some projects that are far enough along in their development that we can recommend them to others.



Audio calls

* **Mumble**: Mumble is a real-time, low latency program for hosting and joining audio conversations. Clients are available for every major operating system, and even large rooms tend not to put too much stress on the network. When it was time for us to go fully remote, the FSF staff turned to Mumble as a way to have that "in-office" feel, staying in touch in rooms dedicated to each of our teams and a general purpose "water cooler" room.



The PCLinuxOS Magazine

Created with Scribus

Better Than Zoom: Try These Free Software Tools For Staying In Touch

* **Asterisk/SIP:** When we give tours of the FSF office, people often think we're joking when we mention that even the FSF's conference phones run free software. But through Asterisk and our use of the SIP protocol, it's entirely true. Although it can be difficult to set up, it's worth mentioning that free software can manage your traditional phone lines. At the FSF, we transfer calls to digital extensions seamlessly with tools like [Jami](#) and [Linphone](#).



Video calls and presentations

* **Jitsi:** Jitsi was a key part of LibrePlanet 2020's success. Providing video and voice calls through the browser via WebRTC, it also allows for presenters to share their screen in a similar way to Zoom. And unlike Zoom, it doesn't come with serious [privacy violations](#) or threats to user freedom. The connection between callers is direct and intuitive, but a central server is still required to coordinate callers and rooms. Some of these, like the Jitsi project's own "Jitsi Meet" server, recommend proprietary browser extensions and document sharing tools. If you're able, hosting your own instance is the most free and reliable method.

* **Jami:** While it's used at the FSF primarily for its SIP support, Jami (previously GNU Ring) is a solid communication client in its own right, allowing for distributed video calls, text chat, and screen sharing.

* **OBS:** Another much-used software program this LibrePlanet was [OBS Studio](#). Illness, different time zones, or unforeseen travel were no match for the solutions that OBS Studio offered. It's a flexible tool for streaming video from multiple inputs to a Web source, whether that's combining your webcam with conference slides, or even your favorite free software game. At LibrePlanet, OBS allowed our remote speakers to record their presentations while speaking in one screen, and sharing audiovisual materials in a second window.

#irc

Text chat

* **XMPP:** If you've ever used "Jabber," older iterations of Google Talk or Facebook Messenger, then you've used XMPP. XMPP is a flexible and extensible instant messaging protocol that's lately seen a resurgence from clients like [Conversations.im](#) and encryption schema like [OMEMO](#). XMPP is the instant messaging method we prefer at the FSF when we need to discuss something privately, or in a secure group chat, as everything is sent through servers we control and encrypted against individual staff members' private key. Also, access to the FSF XMPP server is one of the many benefits of our [associate membership program](#).

* **IRC:** Messaging services have become all the rage in office atmospheres, but nothing about Messenger or Slack is new. In fact, Slack (and its counterpart for video games, Discord) takes more than a few cues from the venerable Internet Relay Chat (IRC). IRC remains an enduring way to have a text-based chat in real-time, and as evidenced by Web clients like [The Lounge](#), or desktop clients like [Pidgin](#), it can be as stripped down or feature-rich as you like. For a true hacker experience, you can also log into IRC using [Emacs](#).



Long-form discussion

* **Encrypted email:** While it's asynchronous and maybe the most "old school" item on our list, GPG-encrypted email is a core part of the FSF workflow, and helps guard against prying eyes, whether they're one room over or in an NSA compound across the country. The initial setup can sometimes be a challenge, which is why we provide the [Email Self-Defense Guide](#) to get you up and running.

* **Discourse:** [Discourse](#) is the message board software that powers the [FSF associate member forum](#), and we couldn't be happier to recommend it. While the concept may seem a little antiquated, message boards remain a good way to coordinate discussions on a particular topic. Discourse's moderation tools are intuitive and easy to use, and it even includes achievements for users to earn!

DESTINATION  LINUX
LINUX IS OUR PASSION

Better Than Zoom: Try These Free Software Tools For Staying In Touch



Document Sharing

If you're unused to working remotely, finding ways to collaborate with others on a document or presentation can be a challenge. At the FSF, [Etherpad](#) is the main tool that we use to keep live meeting notes and work together on other documents. It provides all the features you need for quick collaboration, including comments, revision tracking, and exports to a variety of formats. You can host your own instance, or you can select an instance [made available](#) by others and start sharing.



File Sharing

At the FSF office, we have a common server to store our files. Not everyone has the luxury of a setup like that, and especially not due to the fast changeover

from office to home. To avoid using proprietary "solutions" and disservices like Dropbox, you can turn to the widely popular [Nextcloud](#) to synchronize your text and email messages, share calendars with coworkers, and exchange files privately with your friends.

If you need something temporary, there's always [Up1](#). Up1 is a temporary, encrypted text and image sharing program you can host locally, making sure those files you need to exchange are only there for just as long as it takes for your friend to download them. And while we don't use it ourselves, we've heard good things about the [Riseup](#) network's [instance](#) of Up1, and will occasionally suggest it to those wanting a quick and easy way to share files while retaining their freedom.

Conclusion

This is just a small selection of the huge amount of free software out there, all ready to be used, shared, and improved by the community. For more suggestions on both local and Web-based programs, visit the FSF's [Free Software Directory](#), our volunteer-run wiki which aims to be a comprehensive list of the thousands of free programs available for everyday use.

As always, free software is a moving target. We reap as much as the community puts into it, and as more and more attention shifts to the crisis caused by the novel coronavirus, the tools themselves are likely to see an increased amount of development. Please collaborate with us on the [LibrePlanet](#) wiki's entry on [remote communication](#) to help people find ways of communicating that put user freedom as a priority.

Supporting the FSF's crucial work in campaigning for software freedom -- especially in times like these -- is one of the greatest things you can do to promote the creation of ethical tools for communication. Please consider [joining as an associate member](#) or [donating](#) today.

International Community PCLinuxOS Sites



PCLinuxOS Family Member Spotlight: jzakiya

What is your name/username?

Jabari Zakiya/jzakiya

How old are you?

64

Are you married, single?

Single

How about Kids, Grandkids (names and ages)?

None

Do you have pets, what is your favorite?

None

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

Not formally working, but do stuff.

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

Washington, DC. Climate change is making it warmer year round.



Our Nation's Capitol

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

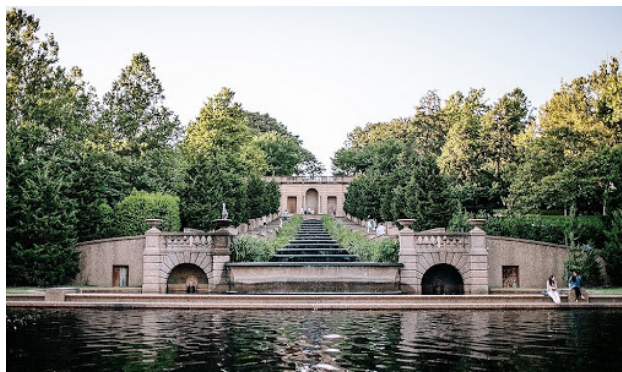
Cornell, BSEE; Georgia Tech, MSEE



ChinaTown (DC Gate)



Row Houses



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

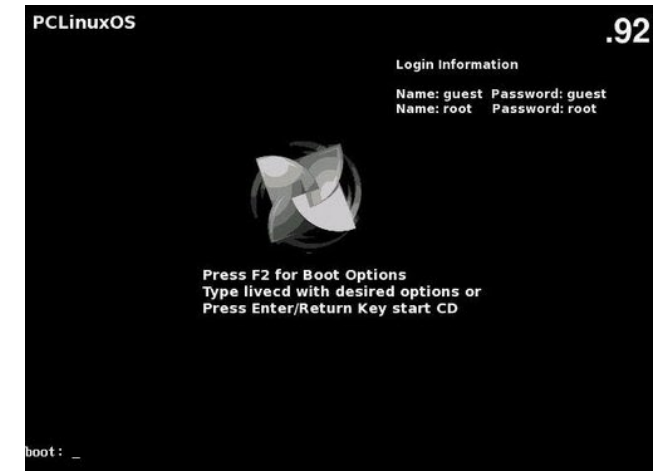
Reading (nonfiction, sci-fi), following sports, math/programming, walking, bicycling.

Why and when did you start using Linux?

So long ago, it must be around 0.92 on my AMD Athlon desktop.



PCLinuxOS Swirl



PCLinuxOS0.92



What specific equipment do currently use with PCLinuxOS?

2016 System76, Gazelle laptop, i7 cpu, 2.6 - 3.5 GHz, 16GB, 240 GB SSD, KDE5

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

None really, except people who I've converted from Windoze to PCLinuxOS.

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

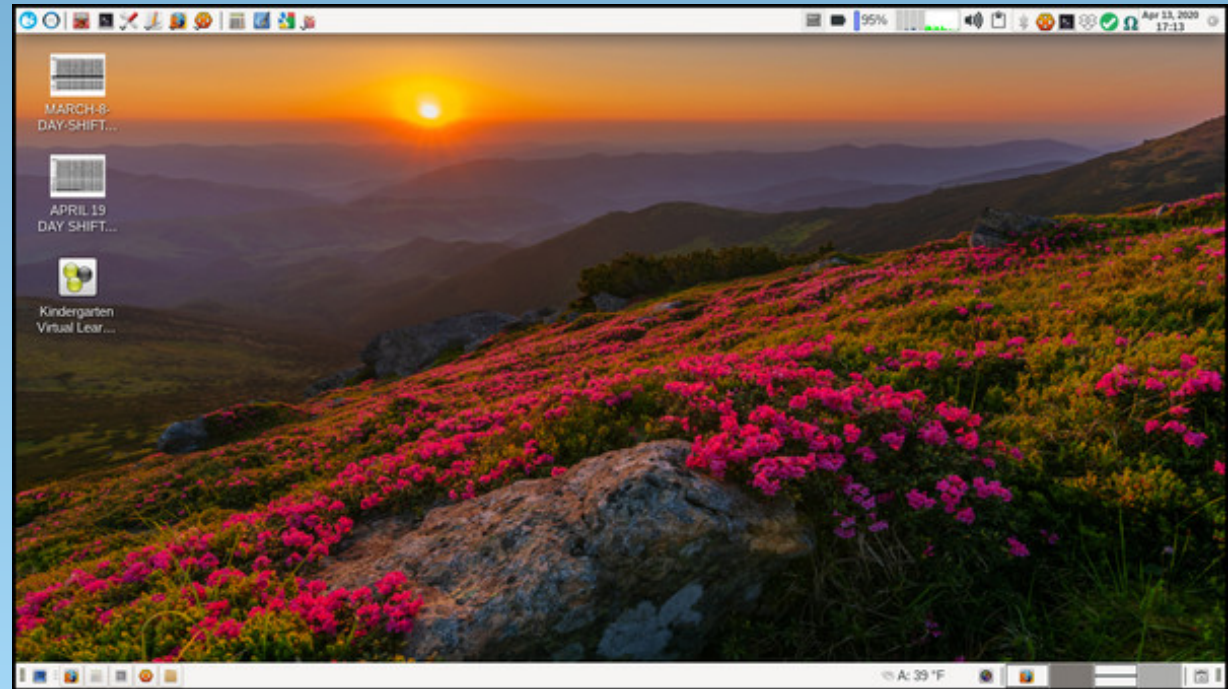
To keep current with new hardware/software. The PCLinuxOS Magazine is great. For Tex to keep as healthy as possible (I lost my partner to cancer 2017). For the community to remain/become more cohesive and tolerant (lots of past rancor about systemd, and dropping 32-bits). Appreciate the time we have, and use it wisely and productively.

PCLinuxOS Family Member Spotlight is an exclusive, monthly column by YouCanToo, featuring PCLinuxOS forum members. 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.



Screenshot Showcase



Posted by parnote, on April 13, 2020, running Xfce.



Champions Of Regnum On PCLinuxOS

by Alessandro Ebersol



Champions of Regnum (Regnum online previously) is a multiplayer 3D medieval fantasy online RPG video game, produced in Argentina by NGD Studios (currently NGE), for free to anyone, with the option to pay for premium content.

It is available in Spanish, Portuguese, German, English and French. The game has 3 servers and an experimental one (for testing), which are "Ra" (international server) "Haven" (international server, mainly in English) "Valhalla" (Germany) and the experimental "Amon". The word "Regnum" comes from Latin and means kingdom.

The game focuses on the conflict between three kingdoms, with gameplay revolving around realm versus realm combat. Players fight in groups against players from opposing factions and capture forts and castles. In addition, the usual character development, typical in other games of the genre, is present, as well as battles between players and monsters.

The Story

Three kingdoms face off to collect 6 gems. Each kingdom has 2 gems, gems that, when fully collected, will open the great portal, allowing access to a new and mystical place. This place has secret rewards that represent the popular will of the kingdom. Once inside this portal, a dragon will appear, which, through a list, will give the wish that most decide. Something like DragonBall.

The 3 Kingdoms of Champions of Regnum

Alsius

In the north of the world, there is a cold and hard to live region, characterized by its snowy and mountainous landscape. This region is especially characterized by the strength, determination and courage of its warriors.

Dwarves came from far and wide in search of new land. The encounter with the Norse was not peaceful, and the two races sparked a bloody war. However, they found that they had similar elements and desires and established a lasting alliance. The arrival of the utghars led to the creation of the Alsius Empire. They decided to build their main fortification in the city of Montsognir, to combat the threat from the elves inhabiting Syrtis and the dark settlers of Ignis. The war between Alsius and the elves stems from a confused episode that ended the life of the leader of that empire. Since then, Garm, the Emperor of Alsius, has summoned his people to guide them to conquer new lands, looking for minerals, valued by the forges for the construction of their weapons.

Races of Alsius:

- * Nordos (Human)
- * Uthgars
- * Dwarves
- * Lamai



Syrtis

To the southwest, the oldest civilization persists. Still beautiful, despite having passed its years of splendor, it is green and full of life, full of trees and lakes. The archers of the Republic of Syrtis are famous for being the most deadly of all.

Before the great exile, the inhabitants of the kingdom lived in harmony and peace. The arrival of the igneous and the war that they unleashed was the origin of the division of the elvish houses, because after the victory some took the weapons and spells of their enemies, studying and dominating them. The elves saw a threat to their society in this, so they exiled their countrymen. Fearing possible revenge, the natives allied themselves with the Alturians and the two races intermingled, giving rise to the semi-elves. The union of the two cultures gave rise to the cultural capital of the world, with its greatest exponent in the city of Fisgael. However, the unknown threat is still latent, and the arrival of the invaders from Alsius forced the elves to take up arms, intolerant of any attack on their beautiful lands.

Syrtis Races:

- * Elves from the forest
- * Alturians (Human)
- * Semi-elves
- * Lamai

Ignis

Located to the east, there is an arid, mountainous and desert area. Active volcanoes and imposing mountains give a special view to this sea of dunes. Here are the magicians who stand out above all others, due to their knowledge of forbidden magic.

Banished from their lands by an ancient enmity with Syrtis, the dark elves arrived in the desert



lands of Ignis. Exiled because of the dark magic practices they found useful, they hold a special grudge against those who rightfully took their homes and against the invaders of Alsius who threatened their rule. Necromancers allied to moloks and skelios to address the threat of both opponents (Syrtis and Alsius), founding the city of resistance, Altaruk.

Ignis Races:

- * Dark Elves
- * Skelios (Human)
- * Moloks
- * Lamai



The map of the kingdoms in Champions of Regnum

Classes

In Regnum Online, there are three classes and each has two subclasses or professions, which the player can choose to work in the best way he/she wants. Each of these classes differ widely from the others, providing great variety to the game.

Upon reaching level 10, the player gets a chance to choose one new class, product of the division of the one he/she is in.

Warriors are the front line in Regnum. Their presence keeps groups together and allows coordination, while protecting classes at a distance. They lead the charge and punish those who cannot escape quickly. The main attribute for warriors is strength. Gives them greater physical damage, focus on the spell and more space in the inventory. The constitution is also important, as it increases the health bar and offers resistance against hits / stunning. Upon reaching level 10, the player can choose between the Barbarian or Knight skill tree.

Barbarians are one of the most offensive subclasses of Champions of Regnum, with a focus on hand-to-hand combat. Warriors who choose the barbarian's path gain access to two-handed weaponry and two unique disciplines, Two-Handed weapons' fight and Battlecry. They are the strongest pure damage class in the game, capable of normal brutal attacks, which can make them deadly up close. Along with good damage, barbarians can also be one of the fastest classes in the game.

Knights are one of Champions of Regnum defensive subclasses, focusing on hand-to-hand combat. Warriors who choose to follow the knight subclass gain access to the heaviest armor, in addition to 2 unique disciplines, Vanguard and Shields. Their armor provides the highest basic protection of all classes, which, together with their powers, can make them more difficult to take down. Knights also specialize in using shields and, as a result, they also have a chance to block attacks.

Wizards are a class specializing in ranged combat, dealing damage and supporting allies. They use magic staves as weapons, allowing them to attack from a distance without using ammunition. Unlike the other classes, the wizard gains three additional discipline trees after choosing a subclass, in addition to gaining additional discipline and power points. Upon reaching level 10, the player can choose between the skill tree Warlock or Conjurer.

Warlocks are subclasses of the magician and are one of the most powerful damage dealers in the kingdoms of Regnum. In addition to being a capable area nuker, the wizard is also able to cast effective crowd control spells, cause

damage over time, and disturb the enemy using many powerful curses. Together, these skills make the wizard a dangerous and often targeted opponent.

Conjurers are a subclass of the Wizard. Although his standard role is as a healer and support line, taking one lightly is a big mistake. Like all mages, conjurers lack defense, evasion and health, but they have a wide range of crowd-control powers to help overcome these weaknesses. A skilled conjurer can play with his opponent, stunning and knocking him down at will. In addition to crowd control, the conjurer also has access to many damage reduction powers, healing magic and the ability to summon a creature or spirit to assist him/her in battle. Conjurers commanding ghosts, golems, liches and demons are a common sight in the kingdoms of Regnum.

Rangers focus on ranged combat using short and long bows. Rangers are faster than any other class and have a higher evasion rate. The ranger's main attribute is dexterity, giving greater damage to the bow, focusing on the spell and evasion rate. Rangers, without a specific secondary attribute, can choose a balance between concentration, intelligence and constitution. Upon reaching level 10, the player can choose between the Marksman or Hunter skill tree.

The **marksman** is a class that has good defense and attack, but lacks support. This combination makes them good at PVP, but they are also an essential part of any RVR battle. Their massive range and fast high damage allow them to finish off retreating or wounded enemies. Their debuffs are also quite effective, as they are unique and tend to confuse the enemy. Marksmen have the same great evasion skills as the hunter, but they also have impressive damage-dealing skills. With expanded range and increased accuracy, they can mercilessly attack unwary opponents who think they are at a safe distance.

Hunters are a unique class. Depending on their disciplines, they can be great enemies in fair pvp or silent backstabbers who hit enemies in their moments of weakness. Rangers who choose this subclass give up Marksman's accuracy and increased damage, but gain the use of more interesting spells and abilities. Hunters can tame pets, but without their pets, they are weak compared to the other five subclasses, with no real power improvements. With that in mind, they need to use and sometimes abuse their stealth techniques to kill their enemies.

How to play

When starting the game, each player has the possibility to choose one of the three kingdoms of the game: Alsuis, Ignis or Syrtis. As these regions are in constant conflict, the users themselves will form part of the ranks of either kingdom. After the kingdom is chosen, the player will be able to create his character (up to three per account, with the possibility of expanding through

Champions Of Regnum On PCLinuxOS

Premium content, up to a total of six) and customize it by choosing race, gender, height, color hair etc.

After that, the game itself begins. Throughout it, the player must perform quests and interact with other players to develop and be able to take full advantage of the main feature provided by Champions of Regnum, which is group combat.



Battle in the forest

The character's evolution system is adjusted in such a way that it is necessary to advance to a medium/high level in order to participate in battles (approximately level 45, which is achieved with relative ease). From that level, the required experience curve increases considerably, which requires the player to play a considerable amount of time before reaching its maximum level, level 60. The game has a large number of quests of various types. An NPC can ask to kill several specific monsters, another to kill a character from another kingdom, deliver a package to another NPC or others who tell about the history of the world that surrounds this game.



The main objective of the game is to obtain the six gems, distributed equally among the three kingdoms that make up the game (Syrtis, Alsius and Ignis), conquering the defenses of the enemy kingdoms and, later, entering the enemy territory to steal the gems, in addition to defend your own kingdom and prevent them from stealing the gems mentioned.



Character creation screen

Premium Content

Despite being a completely free game, Regnum Online offers the possibility to obtain new content, paying in real money. However, NGD · Studios “guarantees” that Premium content does not affect the balance between paying and non-paying players. Which is questionable, as the accumulation of legendary, epic,



magical and magnanite items (an element for the manufacture of weapons and armor) exponentially increases the amount of damage and defense of the characters who use them. Premium content, which for international server accounts (created on the official page of Champions of Regnum) is paid via PayPal (international) and PagoFácil (Argentina) and, recently, the SMS payment method was introduced in Argentina, Spain, Brazil, Mexico, Chile and soon to other countries. Consists of buying mounts (horses and creatures for faster movement), character customization items (special haircuts, hair and clothing dyes, exotic hair dyes), experience multipliers, health and mana potions to increase reserves faster, scrolls to transport between points, scrolls to instantly rise to level 45 (of 60), repair hammers to keep the equipment in top condition, possibility to expand the maximum number of characters in the account (3) to 6 permanently, and is constantly expanding.

System requirements:

- * AMD Athlon 64 X2 5600+ 2.9 GHz or Intel Core2Duo E6600 2.4 GHz
- * 2 gigabytes of RAM
- * NVIDIA Geforce 8800 GT or ATI Radeon HD 9830

Game website: <http://championsofregnum.com>

There, you register, and download the client for the game, which has a 64-bit native Linux version.

Client download: <http://championsofregnum.com/index.php?l=1&sec=6>



The PCLinuxOS Magazine Special Editions!



Get Your Free Copies Today!

PCLinuxOS Users Don't

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

While Driving.

***Put Down Your
Phone & Arrive Alive.***



Screenshot Showcase



Posted by Meemaw, on April 5, 2020, running Xfce.

EBCDIC Handling Library, Part 2

by phorneker

Last month, I showed you how to display ASCII characters in Pascal and in Ruby. The basic ASCII character set has only 128 values, namely 0x00 to 0x7F (or 0 through 127 in decimal).

The basic EBCDIC character set has numeric values that cover **the entire range of numeric values** that can be accommodated in a single byte, i.e. values from 0x00 to 0xFF, or from 0 to 255 in decimal.

In a typical ASCII character set, the first 32 character codes make up the control code set (values from 0x00 to 0x1F), and the remaining 96 characters make up the printable character set. (There is a comprehensive table located at <https://ascii-code.com>, which includes an extended set of character codes that range from 128 to 255, and those codes are part of the ISO 8859-1, and that of the CP-1252 set used by W*****s. Ruby can use this set, but only by using some methods included in their encoding class, which I will discuss in a later article.)

EBCDIC consists of printable and non-printable character sets. But that is where the similarity of EBCDIC to ASCII ends. Where the character codes of non-printable ASCII characters range from 0x00 to 0x1f, the non-printable set of EBCDIC codes ranges from **0x00 to 0x3f**.

When it comes to the printable set of EBCDIC codes, there is an arrangement that is worlds apart from the ASCII arrangement of the same characters...and that is just for the basic set of EBCDIC characters.

Because of this, a **case** statement would be appropriate for implementing the ASCII to EBCDIC function in Ruby. But, what should we return if there is no valid EBCDIC code for a given ASCII character? After giving it some thought, I would suggest returning the NULL character (hex 0x00) as a NULL value in Ruby is considered to be false for **if/then** and **while** statements.

```
def asc2ebc(ascii_code)
# input parameter: ascii_code
# function returns: ebcdic_code

case ascii_code
```

```
# We will use this space to place when statements for each
# situation discussed.

else
ebcdic_code = 0x00

end # case statement using ascii_code for input

return ebcdic_code

end # asc2ebc function
```

Let's start with the numbers and letters.

The numbers "0" through "9" have ASCII codes from 0x30 to 0x39 (or decimal codes 48 through 57). In EBCDIC, these same digits are represented by character codes 0xF0 through 0xF9 (or 240 to 249 in decimal). Translation from ASCII to EBCDIC is accomplished by simply adding 0xC0 (or 192 in decimal) to the ASCII code.

Now we have our first **when** statement.

```
when 0x30..0x39
ebcdic_code = ascii_code + 0xC0
```

This tells Ruby to add 0xC0 (or decimal 192) to the ASCII value passed to the function to get the EBCDIC equivalent for the same character, in this case the digits "0" through "9".

The alphabet in EBCDIC is more complicated as it is split into six segments, namely three segments for the lower case letters, and three segments for the upper case letters. In ASCII, there are only two segments of the ASCII table covering the alphabet, one for lower case and one for upper case. This means, we need six **when** statements to cover the alphabet.

The translation of alphabetic characters from ASCII to EBCDIC is as follows (next page, top left):

Alphabet Segment	ASCII Codes	EBCDIC Codes
"A" through "I"	0x41..0x49	0xC1..0xC9
"J" through "R"	0x4A..0x52	0xD1..0xD9
"S" through "Z"	0x53..0x5A	0xE2..0xE9
"a" through "i"	0x61..0x69	0x81..0x89
"j" through "r"	0x6A..0x72	0x91..0x99
"s" through "z"	0x73..0x7A	0xA2..0xA9

This means we need to find the differentials for six sets of characters for ASCII to EBCDIC translation.

- For "A" through "I", the differential is 0x80 (or 128 in decimal)
- For "J" through "R", the differential is 0x87 (or 135 in decimal)
- For "S" through "Z" the differential is 0x8F (or 143 in decimal)
- For "a" through "i", the differential is 0x20 (or 32 in decimal)
- For "j" through "r", the differential is 0x27 (or 39 in decimal)
- For "s" through "z", the differential is 0x2F (or 47 in decimal)

Note: In EBCDIC, there is a **0x60** differential between lower case characters and their upper case equivalents. EBCDIC stands for **Extended Binary Coded Decimal Interchange Code**, and the first hexadecimal digit determines the type of character being encoded.

As there are 26 letters in the alphabet, it is natural that the alphabet had to be divided into three segments. To represent lower case letters in EBCDIC, the first hexadecimal digits were assigned to "8", "9" and "A" for lower case letters, and "C", "D", and "E" were assigned to the upper case letters.

The hexadecimal digit "F" was assigned to the numeric digits "0" through "9".

The hexadecimal digits "4" through "7" were assigned to the space bar and all special printable characters found on a 3270 keyboard.

Finally, the non-printable characters were given the first hexadecimal digits of "0" through "4".

This encoding is found in all variants of the EBCDIC character set. What is shown here is the basic configuration of the EBCDIC character set as defined by IBM.

As far as coding the translation between ASCII and EBCDIC in Ruby goes, we

still need six **when** statements to implement the IBM configuration of the EBCDIC character set. We can now extend the function to read as follows:

```
def asc2ebc(ascii_code)
  # input parameter: ascii_code
  # function returns: ebcdic_code

  case ascii_code

  when 0x30..0x39
    ebcdic_code = ascii_code + 0xC0 # Translate "0" to "9"
  when 0x41..0x49
    ebcdic_code = ascii_code + 0x80 # Translate "A" to "I"
  when 0x4A..0x52
    ebcdic_code = ascii_code + 0x87 # Translate "J" to "R"
  when 0x53..0x5A
    ebcdic_code = ascii_code + 0x8F # Translate "S" to "Z"
  when 0x61..0x69
    ebcdic_code = ascii_code + 0x20 # Translate "a" to "i"
  when 0x6A..0x72
    ebcdic_code = ascii_code + 0x27 # Translate "j" to "r"
  when 0x73..0x7A
    ebcdic_code = ascii_code + 0x2F # Translate "s" to "z"

  # We will use this space to place when statements for each
  # situation discussed.

  else
    ebcdic_code = 0x00 # Use NULL as default

  end # case statement using ascii_code for input

  return ebcdic_code

end # asc2ebc function
```

Handling Special Characters

When it comes to the printable special characters, the translation between ASCII and EBCDIC really comes with no rhyme or reason.

The table for these characters is in the previous article I have written contained in the last issue of this magazine.

Using that table, I have implemented the special characters as **when** statements

placed inside the **case** statement. So now we have:

```
# The following function translates ASCII to EBCDIC
# for alphabetic and numeric characters.

def asc2ebc(ascii_code)

# input parameter: ascii_code
# function returns: ebcdic_code

case ascii_code

when 0x30..0x39
ebcdic_code = ascii_code + 0xC0 # Translate "0" to "9"
when 0x41..0x49
ebcdic_code = ascii_code + 0x80 # Translate "A" to "I"
when 0x4A..0x52
ebcdic_code = ascii_code + 0x87 # Translate "J" to "R"
when 0x53..0x5A
ebcdic_code = ascii_code + 0x8F # Translate "S" to "Z"
when 0x61..0x69
ebcdic_code = ascii_code + 0x20 # Translate "a" to "i"
when 0x6A..0x72
ebcdic_code = ascii_code + 0x27 # Translate "j" to "r"
when 0x73..0x7A
ebcdic_code = ascii_code + 0x2F # Translate "s" to "z"

# Special characters in numerical order by ASCII code

when 0x20
ebcdic_code = 0x40 # space bar
when 0x21
ebcdic_code = 0x5A # Exclamation mark
when 0x22
ebcdic_code = 0x7F # Double quote
when 0x23
ebcdic_code = 0x7B # Pound or hashtag
when 0x24
ebcdic_code = 0x5B # Dollar sign
when 0x25
ebcdic_code = 0x6C # Percent sign
when 0x26
ebcdic_code = 0x50 # Ampersand
when 0x27
ebcdic_code = 0x7D # Single quote
when 0x28
ebcdic_code = 0x4D # left parentheses
when 0x29
ebcdic_code = 0x5D # Right parentheses
when 0x2A
```

```
ebcdic_code = 0x5C # Asterisk
when 0x2B
ebcdic_code = 0x4E # plus symbol
when 0x2C
ebcdic_code = 0x6B # Comma
when 0x2D
ebcdic_code = 0x60 # dash or minus sign
when 0x2E
ebcdic_code = 0x4B # dot or period
when 0x2F
ebcdic_code = 0x61 # forward slash
when 0x3A
ebcdic_code = 0x7A # Colon
when 0x3B
ebcdic_code = 0x5E # Semicolon
when 0x3C
ebcdic_code = 0x4C # less than symbol
when 0x3D
ebcdic_code = 0x7E # Equal sign
when 0x3E
ebcdic_code = 0x6E # Greater than symbol
when 0x3F
ebcdic_code = 0x6F # Question mark
when 0x40
ebcdic_code = 0x7C # About or At symbol
when 0x5B
ebcdic_code = 0xBA # Left bracket
when 0x5C
ebcdic_code = 0xE0 # backwsrd slash
when 0x5D
ebcdic_code = 0xBB # Right bracket
when 0x5E
ebcdic_code = 0xB0 # carat
when 0x5F
ebcdic_code = 0x6D # Underscore
when 0x60
ebcdic_code = 0x79 # grave accent
when 0x7B
ebcdic_code = 0xC0 # Left brace
when 0x7C
ebcdic_code = 0x4F # Logical OR
when 0x7D
ebcdic_code = 0xD0 # Right brace
when 0x7E
ebcdic_code = 0xA1 # Tilde
when 0xA2
ebcdic_code = 0x4A # cent sign
when 0xA6
ebcdic_code = 0x6A # Vertical EM
when 0xAC
ebcdic_code = 0x5F # Upper right hand corner
```

```

when 0xB1
ebcdic_code = 0x8F # Plus or minus combo

# Non printable characters in ASCII

when 0x04
ebcdic_code = 0x37 # End of Transmission (Control-D)
when 0x05
ebcdic_code = 0x2D # Enquiry
when 0x06
ebcdic_code = 0x2E # Acknowledge
when 0x07
ebcdic_code = 0x2F # Bell
when 0x08
ebcdic_code = 0x16 # Backspace
when 0x09
ebcdic_code = 0x05 # Horizontal Tab
when 0x0A
ebcdic_code = 0x25 # Line Feed (Control-J)
when 0x14
ebcdic_code = 0x3C # Control-T
when 0x15
ebcdic_code = 0x3D # Negative Acknowledgement
when 0x16
ebcdic_code = 0x32 # Control-V
when 0x17
ebcdic_code = 0x26 # End of Transmission Block
when 0x1A
ebcdic_code = 0x3F # Substitute (opposite of Insert)
when 0x1B
ebcdic_code = 0x27 # Escape
when 0x7F
ebcdic_code = 0x07 # Delete character
when 0x85
ebcdic_code = 0x15 # New Line (not the Return Key)

# EBCDIC and ASCII share special printable characters
# So no translation is needed.

when 0x00..0x03, 0x0B..0x13, 0x18, 0x19, 0x1C..0x1F, 0xFF
ebcdic_code = ascii_code

else
ebcdic_code = 0x00 # Return NULL as a default

end # case statement using ascii_code for input

return ebcdic_code

end # asc2ebc function

```

This completes the function to translate ASCII characters to their EBCDIC equivalents.

Non-printable Characters

Non-printable character codes are subsets of both ASCII and EBCDIC that are rudimentary commands to control devices rather than simply print or display text. I have included these characters in the above code.

Translating from ASCII to EBCDIC is one thing. Translating from EBCDIC to ASCII is another, and is not as straightforward. There are control characters in EBCDIC **that are not a part of the ASCII control character set**.

For starters, ASCII reserves the 32 codes for control characters (values ranging from hex 0x00 to 0x1F) whereas EBCDIC reserves 64 codes for control characters (values ranging from 0x00 to 0x3F).

To add confusion to the mix, the hexadecimal code 0xFF is considered to be both a control character **and** a printable character. IBM reserves this EBCDIC character code as a data filler containing **Eight Ones**, (or a binary value of **11111111**).

EBCDIC and ASCII share these control code values:

Control Character	Control Code
NULL	0x00
Start of Header (Control-A)	0x01
Start of Transmission (Control-B)	0x02
End of Transmission (Control-C)	0x03
Vertical Tab (Control-K)	0x0B
Form Feed/Eject Page (Control-L)	0x0C
Carriage Return (Control-M or Enter)	0x0D
Shift Out (Control-N)	0x0E
Shift In (Control-O)	0x0F
Control-P	0x10

Device Control 1 (Control-Q)	0x11
Device Control 2 (Control-R)	0x12
Device Control 3 (Control-S)	0x13
Cancel (Control-X)	0x18
Control-Y	0x19
Cancel (Control-X)	0x18
Control-Y	0x19
Field Separator	0x1C
Group Separator	0x1D
Record Separator	0x1E
Unit Separator	0x1F

This means there are a number of EBCDIC control characters that have no ASCII equivalents. These characters can be mapped to Unicode characters within the space that accompanies the 8-bit ASCII character set (i.e. UTF-8)

Hence, we could map these characters with **when** statements in Ruby, but the code returned **would not be compatible with the standard 7-bit ASCII code**. We can, however, accompany that in a wrapper function that returns valid character codes for all characters if we enable 8-bit ASCII.

Either way, the **asc2ebc** function will work as is whether we use a 7-bit ASCII code or an 8-bit ASCII code.

The following table contains the specific EBCDIC control characters and their Unicode equivalents. (There are three printable character codes that also fit this definition and are already marked with an asterisk in that table of printable characters.)

Symbol	EBCDIC	Unicode	Definition
SEL	0x04	0x9C	Device control character taking a single byte for a parameter.
RNL	0x06	0x86	New line character beginning at the start of the next line. All indentation <u>set is</u> cleared out. (Usually used with printers and 3270 displays)

GE	0x08	0x97	Graphic Escape (Changes interpretation of the next character, i.e. from letter to something else such as a mathematical symbol.)
SPS	0x09	008D	Superscript, similar to <sup> tag in HTML.
RPT	0x0A	0x8E	Repeat the contents of a print buffer (Usually used with printers or 3270 terminals)
RES/ENP	0x14	0x9D	Resume output after suppression of text by the EBCDIC 0x24 byte.
NL	0x15	0x85, 0x0A	New Line, similar to Control-J
POC	0x17	0x87	Program Operator Communication (this is accompanied by two bytes to identify specific functions on a function key)
UBS	0x1A	0x92	Partial backspace
CU1	0x1B	0x8F	Reserved for customer use (i.e. custom applications can reserve this for use by such applications. There are two such bytes available in EBCDIC for that purpose.)
<i>IUS/ITB</i>	<i>0x1F</i>	<i>0x1F</i>	Used to terminate a transmission block. This code has already been defined in the previous section of this article but is included here so you can see what <u>IUS/ITB</u> stands for.
DS	0x20	0x80	Digit Select. Used by IBM System/360.
SOS	0x21	0x81	Start of Significance. Used by IBM System/360.
FS	0x22	0x82	Field Separator (3270). <u>Used</u> by IBM System/360.
WUS	0x23	0x83	Word Underscore. Displays the preceding word with an underline on 3270 terminals.
BYP/INP	0x24	0x84	Suppress output of following text until EBCDIC byte 0x14 appears.
SA	0x28	0x88	Set Attribute (Marks the start of a fixed length device control sequence)

SFE	0x29	0x89	Set Field Extended (Marks the start of a variable length device control sequence)
SM/SW	0x2A	0x8A	Device specific control code
CSP	0x2B	0x8B	Marks the beginning of a specific device control sequence, followed by which category of control function to use, followed
			by a count for how many bytes in the sequence, followed by the type of control function, and finally the parameters of that function to be used.
MFA	0x2C	0x8C	Similar to SFE
(reserved)	0x30, 0x31, 0x3E	0x90, 0x91, 0x9E	These bytes are reserved by IBM for future use. Depending on the Ruby application this could be treated the same as bytes for Customer Use.
IR	0x33	0x93	Normally used as a End of Field marker on 3270 terminals, this could be used as an alternative to Return or New Line in Ruby applications, or used to delimit the end of a field in database applications.
PP	0x34	0x94	This positions the cursor on 3270 terminals to row and column (parameters) on displays, and is similar to the LOCATE command in GW-BASIC on DOS machines.
TRN	0x35	0x95	Move the cursor the number of bytes in the 3270 buffer indicated by the parameter, but do not read the data that is in the buffer when moving the cursor.
NBS	0x36	0x96	Numeric Backspace, backspace the width of one digit
SBS	0x38	0x98	Subscript, similar to the <sub> tag in HTML
IT	0x39	0x99	Indent subsequent lines in 3270 buffer from the current line position
RFF	0x3A	0x9A	Page break/Eject page resetting any line indentations in the 3270 buffer
CU3	0x3B	0x9B	Here is the other EBCDIC code reserved for customer use. Could be used with Ruby applications that need this byte reserved.

Implementing ASCII to EBCDIC translations on these codes is easier than it looks.

Now, should these codes be implemented as **when** statements? Yes and no. The case for **not** doing it is this: Unless we are implementing a 3270 emulator in Ruby, it is **really not necessary** to include these code translations in the ASCII to EBCDIC and EBCDIC to ASCII functions.

But then, we would have to do something about what happens when one of these codes is passed to either function.

By including the translations into the function, we can accommodate **most every possible ASCII and EBCDIC code** into the function, hence reducing the number of issues that have to be resolved, and hence keeping the implementation as simple as possible.

Having said that, we now have:

```
# The following function translates ASCII to EBCDIC
# for alphabetic and numeric characters.

def asc2ebc(ascii_code)

  # input parameter: ascii_code
  # function returns: ebcddic_code

  case ascii_code

  when 0x30..0x39
    ebcddic_code = ascii_code + 0xC0 # Translate "0" to "9"
  when 0x41..0x49
    ebcddic_code = ascii_code + 0x80 # Translate "A" to "I"
  when 0x4A..0x52
    ebcddic_code = ascii_code + 0x87 # Translate "J" to "R"
  when 0x53..0x5A
    ebcddic_code = ascii_code + 0x8F # Translate "S" to "Z"
  when 0x61..0x69
    ebcddic_code = ascii_code + 0x20 # Translate "a" to "i"
  when 0x6A..0x72
    ebcddic_code = ascii_code + 0x27 # Translate "j" to "r"
  when 0x73..0x7A
    ebcddic_code = ascii_code + 0x2F # Translate "s" to "z"

  # Special characters in numerical order by ASCII code

  when 0x20
    ebcddic_code = 0x40 # space bar
  when 0x21
```



```

ebcdic_code = 0x5A # Exclamation mark
when 0x22
ebcdic_code = 0x7F # Double quote
when 0x23
ebcdic_code = 0x7B # Pound or hashtag
when 0x24
ebcdic_code = 0x5B # Dollar sign
when 0x25
ebcdic_code = 0x6C # Percent sign
when 0x26
ebcdic_code = 0x50 # Ampersand
when 0x27
ebcdic_code = 0x7D # Single quote
when 0x28
ebcdic_code = 0x4D # left parentheses
when 0x29
ebcdic_code = 0x5D # Right parentheses
when 0x2A
ebcdic_code = 0x5C # Asteriak
when 0x2B
ebcdic_code = 0x4E # plus symbol
when 0x2C
ebcdic_code = 0x6B # Comma
when 0x2D
ebcdic_code = 0x60 # dash or minus sign
when 0x2E
ebcdic_code = 0x4B # dot or period
when 0x2F
ebcdic_code = 0x61 # forward slash
when 0x3A
ebcdic_code = 0x7A # Colon
when 0x3B
ebcdic_code = 0x5E # Semicolon
when 0x3C
ebcdic_code = 0x4C # less than symbol
when 0x3D
ebcdic_code = 0x7E # Equal sign
when 0x3E
ebcdic_code = 0x6E # Greater than symbol
when 0x3F
ebcdic_code = 0x6F # Question mark
when 0x40
ebcdic_code = 0x7C # About or At symbol
when 0x5B
ebcdic_code = 0xBA # Left bracket
when 0x5C
ebcdic_code = 0xE0 # backwsrd slash
when 0x5D
ebcdic_code = 0xBB # Right bracket
when 0x5E
ebcdic_code = 0xB0 # carat

```

```

when 0x5F
ebcdic_code = 0x6D # Underscore
when 0x60
ebcdic_code = 0x79 # grave accent
when 0x7B
ebcdic_code = 0xC0 # Left brace
when 0x7C
ebcdic_code = 0x4F # Logical OR
when 0x7D
ebcdic_code = 0xD0 # Right brace
when 0x7E
ebcdic_code = 0xA1 # Tilde
when 0xA2
ebcdic_code = 0x4A # cent sign
when 0xA6
ebcdic_code = 0x6A # Vertical EM
when 0xAC
ebcdic_code = 0x5F # Upper right hand corner
when 0xB1
ebcdic_code = 0x8F # Plus or minus combo

# Non printable characters in ASCII

when 0x04
ebcdic_code = 0x37 # End of Transmission (Control-D)
when 0x05
ebcdic_code = 0x2D # Enquiry
when 0x06
ebcdic_code = 0x2E # Acknowledge
when 0x07
ebcdic_code = 0x2F # Bell
when 0x08
ebcdic_code = 0x16 # Backspace
when 0x09
ebcdic_code = 0x05 # Horizontal Tab
when 0x0A
ebcdic_code = 0x25 # Line Feed (Control-J)
when 0x14
ebcdic_code = 0x3C # Control-T
when 0x15
ebcdic_code = 0x3D # Negative Acknowledgement
when 0x16
ebcdic_code = 0x32 # Control-V
when 0x17
ebcdic_code = 0x26 # End of Transmission Block
when 0x1A
ebcdic_code = 0x3F # Substitute (opposite of Insert)
when 0x1B
ebcdic_code = 0x27 # Escape
when 0x7F

```

```

ebcdic_code = 0x07 # Delete character
when 0x80
ebcdic_code = 0x20 # Digit Select on 3270 terminal
when 0x81
ebcdic_code = 0x21 # Start of Significance on 3270 terminal
when 0x82
ebcdic_code = 0x22 # Field Select on 3270 terminal
when 0x83
ebcdic_code = 0x23 # Word Underscore on 3270 terminal
when 0x84
ebcdic_code = 0x24 # Suppress output on 3270 terminal
when 0x85
ebcdic_code = 0x15 # New Line on 3270 terminal
when 0x86
ebcdic_code = 0x06 # New Line, no indents after on 3270
when 0x87
ebcdic_code = 0x17 # Program Operator Communication (+2 Bytes)
when 0x88
ebcdic_code = 0x28 # Set Attribute on 3270 terminal
when 0x89
ebcdic_code = 0x29 # Start Extended Field on 3270 terminal
when 0x8A
ebcdic_code = 0x2A # Set Mode (Control) on 3270 terminal
when 0x8B
ebcdic_code = 0x2B # Control Sequence Prefix on 3270 terminal
when 0x8C
ebcdic_code = 0x2C # Modify Field Attribute on 3270 terminal
when 0x8D
ebcdic_code = 0x09 # Superscript
when 0x8E
ebcdic_code = 0x0A # Repeat to print buffer on 3270
when 0x8F
ebcdic_code = 0x1B # Customer Use #1
when 0x90
ebcdic_code = 0x30 # Reserved by IBM
when 0x91
ebcdic_code = 0x31 # Reserved by IBM
when 0x92
ebcdic_code = 0x1A # Unit Backspace (partial backspace)
when 0x93
ebcdic_code = 0x33 # Index Return on 3270 terminal
when 0x94
ebcdic_code = 0x34 # Locate cursor on 3270 terminal (+2 bytes)
when 0x95
ebcdic_code = 0x35 # Transparent (no read) on 3270 terminal
when 0x96
ebcdic_code = 0x36 # Numeric Backspace on 3270 terminal
when 0x97
ebcdic_code = 0x08 # Graphic Escape
when 0x98
ebcdic_code = 0x38 # Subscript

```

```

when 0x99
ebcdic_code = 0x39 # Indent Tab on 3270 terminal
when 0x9A
ebcdic_code = 0x3A # Form feed, no Indent Tabs on 3270 terminal
when 0x9B
ebcdic_code = 0x3B # Customer Use #2
when 0x9C
ebcdic_code = 0x04 # Select on 3270 terminal
when 0x9D
ebcdic_code = 0x14 # Resume output (after suppression)
when 0x9E
ebcdic_code = 0x3E # Reserved by IBM

# EBCDIC and ASCII share special printable characters
# So no translation is needed.

when 0x00..0x03, 0x0B..0x13, 0x18, 0x19, 0x1C..0x1F, 0xFF
ebcdic_code = ascii_code

else
ebcdic_code = 0x00 # Return NULL as a default

end # case statement using ascii_code for input

return ebcdic_code

end # asc2ebc function

```

Some of the **when** statements could have been implemented as ranges with a simple calculation to get the EBCDIC code, but presenting the code this way makes it easier to read and identify what each ASCII or EBCDIC code means (by the comments contained in each of the **when** statements).

Now this is just the ASCII to EBCDIC translation function. So what about the reverse function?

The function shown here translates EBCDIC to 8-bit ASCII.

```

# The following function translates EBCDIC to ASCII
# for alphabetic and numeric characters.

def ebc2asc(ebcdic_code)

# input parameter: ebcdic_code
# function returns: ascii_code

case ebcdic_code

```



```

when 0xF0..0xF9
ascii_code = ebcdic_code - 0xC0 # Translate "0" to "9"
when 0xC1..0xC9
ascii_code = ebcdic_code - 0x80 # Translate "A" to "I"
when 0xD1..0xD9
ascii_code = ebcdic_code - 0x87 # Translate "J" to "R"
when 0xE2..0xE9
ascii_code = ebcdic_code - 0x8F # Translate "S" to "Z"
when 0x81..0x89
ascii_code = ebcdic_code - 0x20 # Translate "a" to "i"
when 0x91..0x99
ascii_code = ebcdic_code - 0x27 # Translate "j" to "r"
when 0xA2..0xA9
ascii_code = ebcdic_code - 0x2F # Translate "s" to "z"

```

Special characters in numerical order by ASCII code

```

when 0x40
ascii_code = 0x20 # space bar
when 0x4A
ascii_code = 0xA2 # cent sign
when 0x4B
ascii_code = 0x2E # dot or period
when 0x4C
ascii_code = 0x3C # less than symbol
when 0x4D
ascii_code = 0x28 # left parentheses
when 0x4E
ascii_code = 0x2B # plus symbol
when 0x4F
ascii_code = 0x7C # Logical OR
when 0x50
ascii_code = 0x26 # Ampersand
when 0x5A
ascii_code = 0x21 # Exclamation mark
when 0x5B
ascii_code = 0x24 # Dollar sign
when 0x5C
ascii_code = 0x2A # Asterisk
when 0x5D
ascii_code = 0x29 # Right parentheses
when 0x5E
ascii_code = 0x3B # Semicolon
when 0x5F
ascii_code = 0xAC # Upper right hand corner
when 0x60
ascii_code = 0x2D # dash or minus sign
when 0x61
ascii_code = 0x2F # forward slash
when 0x6A

```

```

ascii_code = 0xA6 # Vertical EM
when 0x6B
ascii_code = 0x2C # Comma
when 0x6C
ascii_code = 0x25 # Percent sign
when 0x6D
ascii_code = 0x5F # Underscore
when 0x6E
ascii_code = 0x3E # Greater than symbol
when 0x6F
ascii_code = 0x3F # Question mark
when 0x79
ascii_code = 0x60 # grave accent
when 0x7A
ascii_code = 0x3A # Colon
when 0x7B
ascii_code = 0x23 # Pound or hashtag
when 0x7C
ascii_code = 0x40 # About or At symbol
when 0x7D
ascii_code = 0x27 # Single quote
when 0x7E
ascii_code = 0x3D # Equal sign
when 0x7F
ascii_code = 0x22 # Double quote
when 0xA1
ascii_code = 0x7E # Tilde
when 0xB0
ascii_code = 0x5E # carat
when 0xBA
ascii_code = 0x5B # Left bracket
when 0xB1
ascii_code = 0xB1 # Plus or minus combo
when 0xBB
ascii_code = 0x5D # Right bracket
when 0xC0
ascii_code = 0x7B # Left brace
when 0xD0
ascii_code = 0x7D # Right brace
when 0xE0
ascii_code = 0x5C # backwsrd slash

```

Non printable characters in ASCII

```

when 0x04
ascii_code = 0x9C # Select on 3270 terminal
when 0x05
ascii_code = 0x09 # Horizontal Tab
when 0x06
ascii_code = 0x86 # New Line, no indents after on 3270

```

```

when 0x07
ascii_code = 0x7F # Delete character
when 0x08
ascii_code = 0x97 # Graphic Escape
when 0x09
ascii_code = 0x8D # Superscript
when 0x0A
ascii_code = 0x8E # Repeat to print buffer on 3270
when 0x14
ascii_code = 0x9D # Resume output (after suppression)
when 0x15
ascii_code = 0x85 # New Line on 3270 terminal
when 0x16
ascii_code = 0x08 # Backspace
when 0x17
ascii_code = 0x87 # Program Operator Communication (+2 Bytes)
when 0x1A
ascii_code = 0x92 # Unit Backspace (partial backspace)
when 0x1B
ascii_code = 0x8F # Customer Use #1
when 0x20
ascii_code = 0x80 # Digit Select on 3270 terminal
when 0x21
ascii_code = 0x81 # Start of Significance on 3270 terminal
when 0x22
ascii_code = 0x82 # Field Select on 3270 terminal
when 0x23
ascii_code = 0x83 # Word Underscore on 3270 terminal
when 0x24
ascii_code = 0x84 # Suppress output on 3270 terminal
when 0x25
ascii_code = 0x0A # Line Feed (Control-J)
when 0x26
ascii_code = 0x17 # End of Transmission Block
when 0x27
ascii_code = 0x1B # Escape
when 0x28
ascii_code = 0x88 # Set Attribute on 3270 terminal
when 0x29
ascii_code = 0x89 # Start Extended Field on 3270 terminal
when 0x2A
ascii_code = 0x8A # Set Mode (Control) on 3270 terminal
when 0x2B
ascii_code = 0x8B # Control Sequence Prefix on 3270 terminal
when 0x2C
ascii_code = 0x8C # Modify Field Attribute on 3270 terminal
when 0x2D
ascii_code = 0x05 # Enquiry
when 0x2E
ascii_code = 0x06 # Acknowledge
when 0x2F

```

```

ascii_code = 0x07 # Bell
when 0x30
ascii_code = 0x90 # Reserved by IBM
when 0x31
ascii_code = 0x91 # Reserved by IBM
when 0x32
ascii_code = 0x16 # Control-V
when 0x33
ascii_code = 0x93 # Index Return on 3270 terminal
when 0x34
ascii_code = 0x94 # Locate cursor on 3270 terminal (+2 bytes)
when 0x35
ascii_code = 0x95 # Transparent (no read) on 3270 terminal
when 0x36
ascii_code = 0x96 # Numeric Backspace on 3270 terminal
when 0x37
ascii_code = 0x04 # End of Transmission (Control-D)
when 0x38
ascii_code = 0x98 # Subscript
when 0x39
ascii_code = 0x99 # Indent Tab on 3270 terminal
when 0x3A
ascii_code = 0x9A # Form feed, no Indent Tabs on 3270 terminal
when 0x3B
ascii_code = 0x9B # Customer Use #2
when 0x3C
ascii_code = 0x14 # Control-T
when 0x3D
ascii_code = 0x15 # Negative Acknowledgement
when 0x3E
ascii_code = 0x9E # Reserved by IBM
when 0x3F
ascii_code = 0x1A # Substitute (opposite of Insert)

# EBCDIC and ASCII share special printable characters
# So no translation is needed.

when 0x00..0x03, 0x0B..0x13, 0x18, 0x19, 0x1C..0x1F, 0xFF
ascii_code = ebcddic_code

else
ascii_code = 0x00 # Return NULL as a default

end # case statement using ascii_code for input

return ascii_code

end # ebc2asc function

```

We now have the basics implemented for the ASCII to EBCDIC translation library. So far, we have only two functions that translate ASCII to EBCDIC and vice versa **character by character**.

We can program filter functions that translate EBCDIC to standard ASCII. Functions defined from hereout are **placed in the Ruby source file after the basic functions**.

```
def ebc2asc_std(ebcdic_code)
# This function returns a valid standard ASCII code from
# an EBCDIC character code.
#
# Standard ASCII codes range from 0x00 to 0x7F
#
# For this function, we need to assign a temporary variable
# to store the returned ASCII code and check it against
# the range of Standard ASCII values.

temp_asc = ebc2asc(ebcdic_code)
ascii_code = (temp_asc > 0x7F) ? 0x00: temp_asc

return ascii_code

end # ebc2asc_std function
```

The line containing `ascii_code` assigns the ASCII code returned by the `ebc2asc` function **if and only if** the ASCII value returned is within the range of the standard ASCII character code set, i.e. ASCII values from 0 to 127. Otherwise the default value of `0x00` is returned.

The next thing we will have to do is create a set of Ruby functions that handle printable characters, as well as how to handle invalid characters. That will be for next time.



The PCLinuxOS Magazine Special Editions!

Get Your Free Copies Today!

PCLinuxOS Recipe Corner Bonus



Mashed Potato Mac & Cheese Bake

Two great comfort foods in one....

INGREDIENTS:

2-3 cups leftover mashed potatoes
2 cups grated cheddar cheese
1 cup grated Parmesan cheese
1 tablespoon unsalted butter
8 oz elbow or shell noodles
1 cup cooked and crumbled bacon
¼ cup chopped chives or green onion, garnish
*Milk or half-and-half, as needed

DIRECTIONS:

Preheat the oven to 350F degrees and bring a pot of salted water to boil.

Cook noodles until just al dente, then drain and stir in 1 tablespoon of butter to prevent noodles from sticking together.

Cook bacon, drain on a paper towel and chop into smaller pieces.

Reheat mashed potatoes in a microwave safe dish. Transfer to a large bowl for mixing. Note: If potatoes are dry, add a little milk or half and half for a smoother texture.

Fold in Parmesan cheese, bacon, and 1 cup cheddar cheese and stir to combine.

Gently fold in noodles until just incorporated then

pour mixture into a greased 9 x 9 baking dish and top with remaining cheddar cheese.

Bake for 10-15 minutes or until cheesy topping is bubbling and golden brown. Remove from the oven and garnish with chopped chives or green onions sprinkled over the top.

TIP:

Add 1 cup chopped of your favorite seafood or meat.

For that smokey flavor add 1/2-1 teaspoon liquid smoke to mixture



Disclaimer

1. All the contents of The PCLinuxOS Magazine are only for general information and/or use. Such contents do not constitute advice and should not be relied upon in making (or refraining from making) any decision. Any specific advice or replies to queries in any part of the magazine is/are the person opinion of such experts/consultants/persons and are not subscribed to by The PCLinuxOS Magazine.
2. The information in The PCLinuxOS Magazine is provided on an "AS IS" basis, and all warranties, expressed or implied of any kind, regarding any matter pertaining to any information, advice or replies are disclaimed and excluded.
3. The PCLinuxOS Magazine and its associates shall not be liable, at any time, for damages (including, but not limited to, without limitation, damages of any kind) arising in contract, tort or otherwise, from the use of or inability to use the magazine, or any of its contents, or from any action taken (or refrained from being taken) as a result of using the magazine or any such contents or for any failure of performance, error, omission, interruption, deletion, defect, delay in operation or transmission, computer virus, communications line failure, theft or destruction or unauthorized access to, alteration of, or use of information contained on the magazine.
4. No representations, warranties or guarantees whatsoever are made as to the accuracy, adequacy, reliability, completeness, suitability, or applicability of the information to a particular situation. All trademarks are the property of their respective owners.
5. Certain links on the magazine lead to resources located on servers maintained by third parties over whom The PCLinuxOS Magazine has no control or connection, business or otherwise. These sites are external to The PCLinuxOS Magazine and by visiting these, you are doing so of your own accord and assume all responsibility and liability for such action.

Material Submitted by Users

A majority of sections in the magazine contain materials submitted by users. The PCLinuxOS Magazine accepts no responsibility for the content, accuracy, conformity to applicable laws of such material.

Entire Agreement

These terms constitute the entire agreement between the parties with respect to the subject matter hereof and supersedes and replaces all prior or contemporaneous understandings or agreements, written or oral, regarding such subject matter.



Help PCLinuxOS Thrive & Survive

**DONATE
TODAY**



Screenshot Showcase



Posted by Mr. Cranky Pants - YouCanToo, on April 1, 2020, running KDE.

Finally! ShotCut Running On PCLinuxOS

by Alessandro Ebersol (Agent Smith)



Shotcut is a non-linear video editor, which I always wanted to use. But first, I would like to disclose my background with audio-visual production.

I started making videos for YouTube, with PCLinuxOS, first with Openshot and all the tools that are available in PCLinuxOS repos: Audacity, Openshot, Rezsound, SSR and others.

Openshot was my choice because it has a direct interface and is super simple to operate. In fact, Openshot is simple, but very complete. It has features that are not accessible right from the start, having to be activated, either through different menus or video clip properties. But, it shows the intelligence of the programmer, who decided not to scare his would be users with an intimidating interface.

Then I started using VSDC, from the Windows platform, but thanks to Wine and Play-On_Linux, working perfectly on Linux, to add more effects and other capabilities with characters and fonts that Openshot doesn't have. VSDC also

has a very clear and straightforward interface, and its resources are accessible through MS Office ribbon-style menus (now a well spread paradigm among several applications).

What about KDenlive?

I confess: The KDenlive interface, which copies Adobe Premiere, scared me away. I was never able to understand that interface, and I think a user should not fight with an application, but work with it. So, I passed on KDenlive, and, I think Openshot, with its strengths and weaknesses, will be the standard by which I'll judge other video editing programs. Openshot really took a lot of inspiration from Windows Movie Maker. In a way, Openshot is a Windows Movie Maker that rocked the gym, and now has very well defined muscles and a lot of strength in its punches.

Shotcut: An excellent NLVE editor, but it took too long.

In the meantime, I tested other video editors: Flowblade, Pitivi, even Cinelerra. This I do not recommend to anyone who is starting, because the experience is for professionals, not well-intentioned amateurs.

I also tested Shotcut.

I was overwhelmed by the program: elegant, made with the Qt libraries, in C ++, the program was smooth as silk running. It did not crash, was stable and did not consume too many machine resources (Openshot, working, is a resource hog).

But, not everything was rosy: When it came to exporting projects, nothing happened. Shotcut did not work on PCLinuxOS, which prevented me from using it. There was even a [post](#) on the forum about this.

But in the latest versions, all problems have been resolved, and, Shotcut now works as it should. And what are my impressions? Next, I'll tell you...

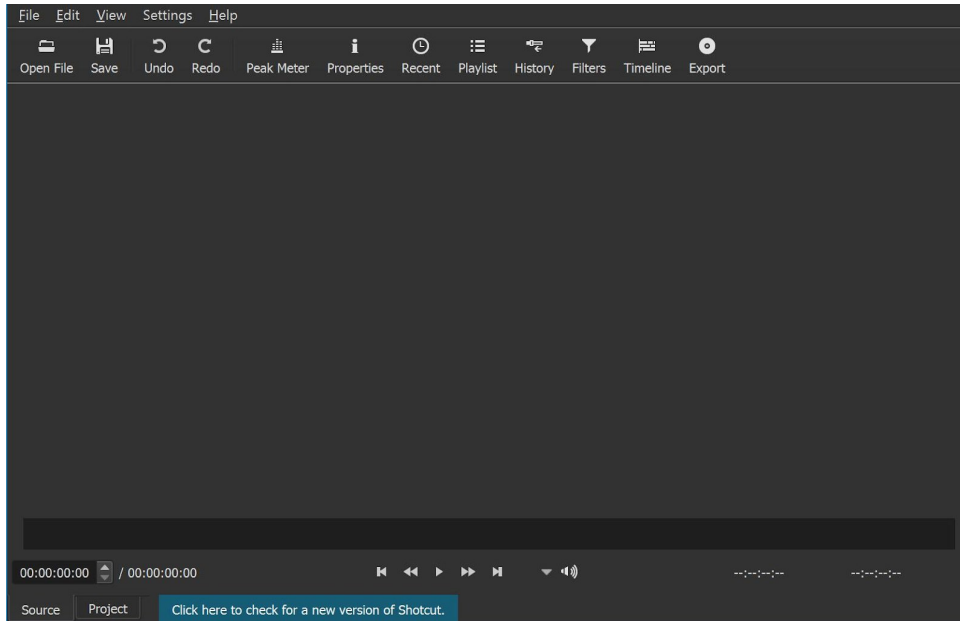


An advertisement for PCLOS-Talk Instant Messaging Server. It features a colorful speech bubble icon on the left, the text "PCLOS-Talk Instant Messaging Server" in blue and black, and a "Sign up TODAY!" call to action with the URL "http://pcclostalk.pcclosusers.com". On the right, there is a red speech bubble icon with the text "Instant Messages".

Shotcut: So good that it seems to be a paid program...

Well, the program is so polished that it doesn't look like free software, but a commercial program.

Let's look at the history of Shotcut now.



The main program interface

Shotcut was originally conceived in November 2004 by Charlie Yates, co-founder of MLT and original lead developer. The current version of Shotcut is a complete rewrite of Dan Dennedy, another MLT co-founder and current leader. Dennedy wanted to create an editor based on the MLT and chose to reuse the name Shotcut, as he liked it a lot. He wanted to create something to exercise the new multiplatform features of MLT, especially in conjunction with the WebVfx and Movit plugins.

Features

Shotcut supports video, audio and image formats via FFmpeg. It uses a timeline for non-linear video editing of multiple tracks that can be composed of several file formats. Scrubbing and transport control are assisted by OpenGL GPU-based processing and a number of video and audio filters are available.

- * Format support via FFmpeg
- * Precise frame search for many formats
- * Webcam and audio capture
- * Network stream playback (HTTP, HLS, RTMP, RTSP, MMS, UDP)
- * EDL export (CMX3600 editing decision list)
- * Written in C and C ++, in the Qt5 framework

Audio

- * audio Scopes
- * loudness
- * peak meter
- * waveform
- * spectrum analyzer
- * transportation synchronization JACK

Video effects

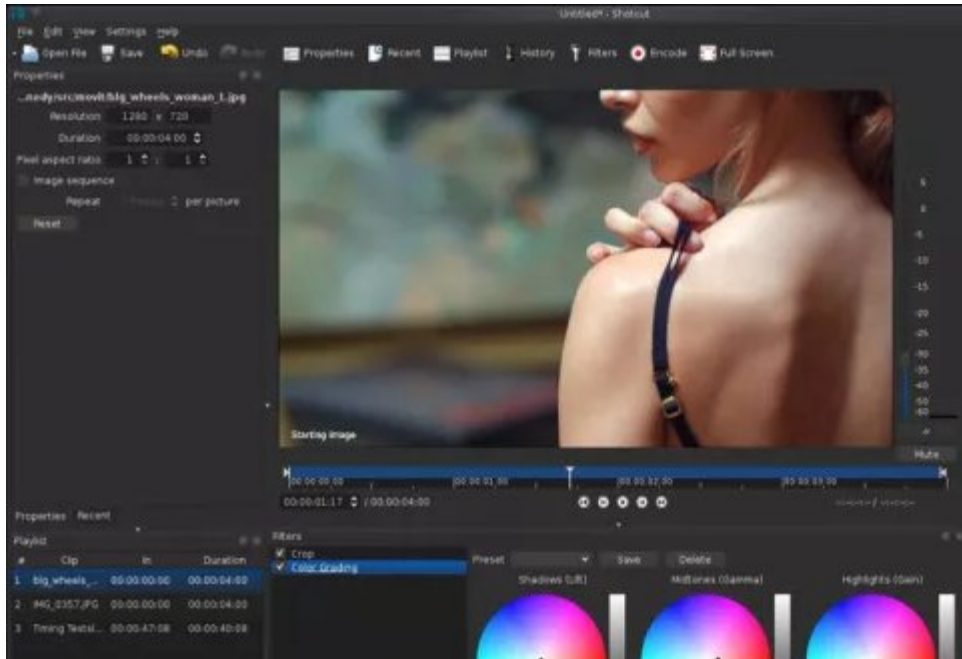
- * HTML5 as source and filters
- * Color grading tools
- * De-interlacing
- * Wipe transitions
- * Track compositing/blending modes
- * Speed and reverse effect for clips
- * Keyframes

Hardware

- * Blackmagic Design SDI and HDMI for input and preview monitoring

- * Leap Motion for jog/shuttle control
- * Webcam capture
- * Audio capture to system audio card
- * Capture (record) SDI, HDMI, webcam (V4L2), JACK audio, PulseAudio, IP stream, and Windows DirectShow devices
- * Multi-core parallel image processing (when not using GPU and frame-dropping is disabled)
- * DeckLink SDI keyer output
- * OpenGL GPU-based image processing with 16-bit floating point linear per color component

Another very important feature is the ability to work with color gradations. Yes, Shotcut can be a colorization tool, both for color correction and to give different effects to your clips.



Color correction in Shotcut

The Basics of Shotcut

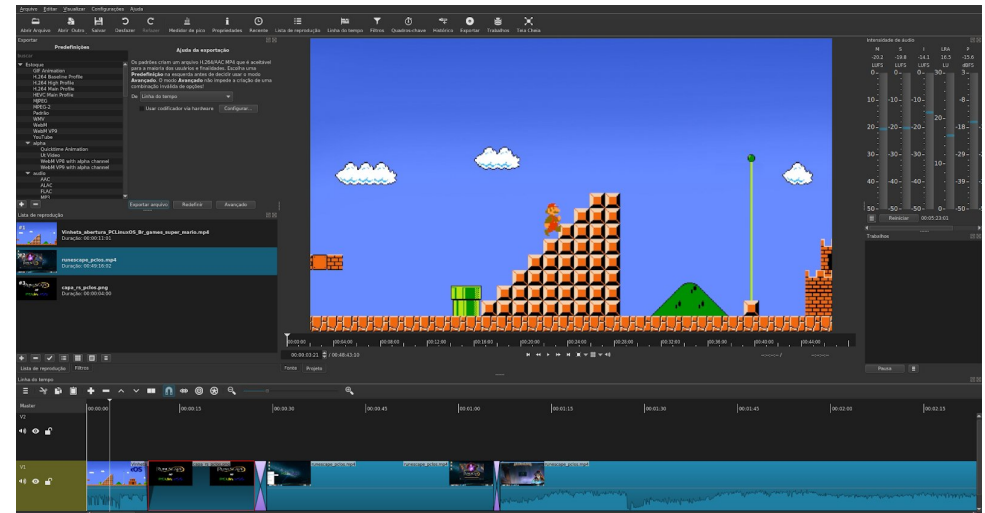
Well, as I wrote above, my experiences with video editing are based on Openshot. So, I will judge Shotcut by comparing it with Openshot.

The Interface

In terms of the interface, Shotcut presents itself in a more complicated way than Openshot, but it is not something that discourages the user, quite the opposite. It is a matter of adapting to the software and its paradigms: In Openshot, making a fade is super easy. In Shotcut, it is also, but, you should look elsewhere: Anything in Shotcut is a filter. Thus, even a fade is a filter. You must look in the Filters menu and add the Fade filter, both in and out, and then with sliders you can control the intensity and duration. Cross fades are super easy to do, just drag one video clip over the next, and Shotcut does the rest.

Getting Started with Shotcut

To start with Shotcut, let's analyze a screen of a video I was editing (in fact, I edited the video in Shotcut to write this article).



A video being edited in Shotcut

So, let's go to a brief how-to, to encourage you, the future videomaker/filmmaker to take your first steps on Shotcut.

- * To insert a video, you must press the Open File button.

- * Once opened, the file is played in the main player window, in the center of the screen.

- * For the video / audio / image file to be part of your project, after opening it, you must drag it to the Playlist box. Do this for each file that is part of your project.

- * Each file is assigned a number, which is the order in which the file was added (the first will be number 1 and so on).

- * The entire audiovisual file has the representation of the waveform of its audio, which facilitates when the editing of any video needs to be synchronized with what's happening on screen.

- * At the bottom of the screen, we have the timeline, where you will place the various files of the project. I made some edits, as in the picture above, and you can see some crossfade and fade in and out effects applied.

- * The timeline starts with a layer, but depending on the effects you want to give to your video, other layers can be added and then stacked on top of each other. And, an added layer will always be above the older layer.

- * On the upper right side there is an audio meter, which shows the intensity of the audio currently being played.

- * All menus and boxes with lists, whether filters or files, are dockable, that is, they can be moved and rearranged to the user's taste.

- * When you are satisfied with the result of your video, it is time to export the video.

- * For that, there is a box in the upper left corner of presets, where you can choose between the different export formats that the program supports. Once you have chosen the output format, click on export file, option from the timeline, and the program will begin exporting. The progress of the export is shown in the Jobs box on the right side, below the sound meter.

Conclusions

Well, I can only say that I was very positively impressed with Shotcut, and I will make a very direct analysis of its weaknesses and strengths.

Pros

- * Completely customizable interface, thanks to Qt5, any menu or option box can be rearranged.

- * Good final results, a 17-minute video took 20 minutes to render, in a Corei3, a performance, which, if not the best of video editors, is not far behind when compared to Openshot

- * Many effects, old film, sepia, and even color correction. In free open source software, they are not very common features.

- * Great capacity to work with fonts and letters, even with 3D text

- * Memory consumption is consistent, remains at a reasonable level and is not very high.

Cons

- * Its paradigm does not follow that of other video editing programs.

- * Its learning curve is greater than other programs, namely Openshot.

- * It does not have integration with other programs, as Openshot does (Blender and Inkscape).

- * Some slow motion effects are only possible with the help of external programs.

Verdict

ShotCut is an excellent video editor, which after the user gets used to it, is able to produce very good audiovisual pieces. Of course, it doesn't have all the effects, but it does have a lot of effects. It is based on MLT and FFMpeg, and it can be used in conjunction with Openshot (or another video editor), to achieve the effects it doesn't have. But, the interface is very good, very customizable, and there was no crash during the operation (for me to write this article). It has great stability, and, being written in C, C ++, under the Qt framework, makes it responsive and not too demanding in terms of memory and processor. Of course, the more cores your CPU has, the better.

I highly recommend ShotCut. It's really worth it! And, I hope you enjoy this great program, now working 100% in PCLinuxOS.

ms_meme's Nook: The Linux Bounce



MP3

They call it The Linux Bounce
PCLOS really counts
You'll find it always mounts
Whatever they say
A funny rhythm they play

Started with Texstar
Known near and far
Better than caviar a Linux lodestar

Texstar gave a few clicks
Added some new tricks
No OS makes it sound
The same as where it came from

If you want something hot
Download on the spot
Whether you're hep or not
The bounce will make you swing

OGG

PCLinuxOS Puzzled Partitions

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

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.

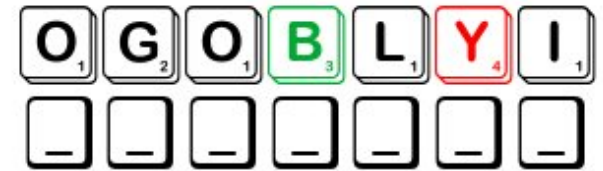
Each column must contain all of the numbers 1 through 9 and no two numbers in the same column of a Sudoku puzzle can be the same. Each row must contain all of the numbers 1 through 9 and no two numbers in the same row of a Sudoku puzzle can be the same.

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.

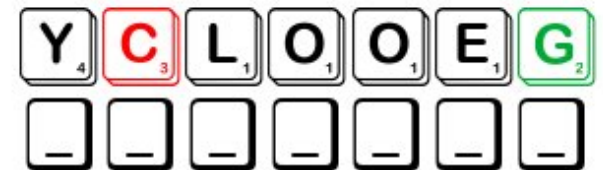


SCRAPPLER RULES:

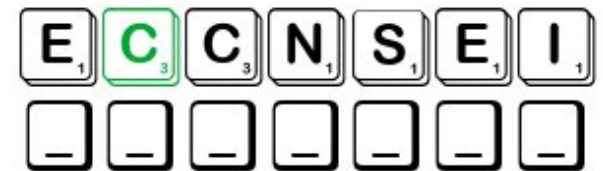
- Follow the rules of Scrabble®. You can view them [here](#). You have seven (7) letter tiles with which to make as long of a word as you possibly can. Words are based on the English language. Non-English language words are NOT allowed.
- Red letters are scored double points. Green letters are scored triple points.
- 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.
- 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.
- 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
- Optionally, a time limit of 60 minutes should apply to the game, averaging to 12 minutes per letter tile set.
- Have fun! It's only a game!



Double Word



Triple Word



Download Puzzle Solutions Here

Possible score 272, average score 190.



PCLinuxOS Word Find: May 2020

Agronomy

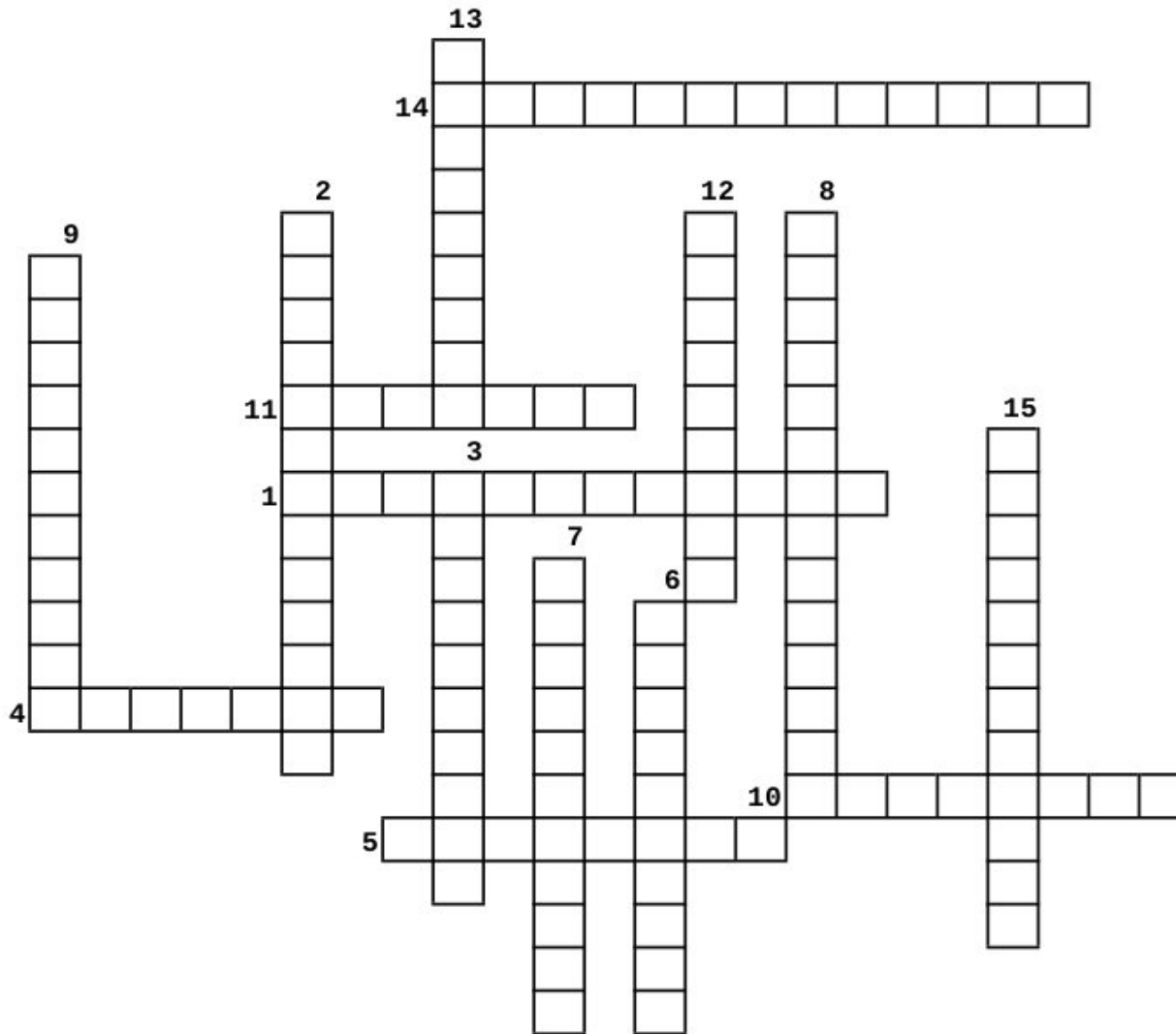
K P P H X W A M G I T C P E W G B Z S X V J Y W R D L B H B
 C C B T X X Q E Z K H T P O R C D L E I F X G S M I B I I O
 O D P N D R G S E C I M H F A R M I N G O T O J H K C F X D
 T K Y E F X Y E G D P Z G Z Y G E T O H T P L M N A G M S N
 S N S M W G D R N E T Y X D Y S N Z Y Y K C O Q O W E S K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

- | | |
|-----------------|----------------|
| Agriculture | Biology |
| Biotechnology | Breeding |
| Chemistry | Classification |
| Contour plowing | Crop grading |
| Crossbreeding | Deficiencies |
| Earth science | Ecology |
| Economics | Energy |
| Environment | Erosion |
| Farming | Field-crop |
| Genetics | History |
| Horticulture | Irrigation |
| Livestock | Meteorology |
| Organic | Permaculture |
| Physiology | Reclamation |
| Science | Soybean |
| Study | Sustainable |
| Toxicology | Vegetables |
- Wheat

[Download Puzzle Solutions Here](#)



Agronomy Crossword



1. The science or art of cultivating fruits, vegetables, flowers, or ornamental plants.
2. The manipulation of living organisms or their components to produce useful commercial products
3. That branch of medicine which treats of poisons and their antidotes, and of the effects of excessive doses of medicines.
4. The science of the relationships between organisms and their environments.
5. Application of the various soil and plant sciences to soil management and crop production; scientific agriculture.
6. The biological study of the functions of living organisms and their parts.
7. The science that deals with the phenomena of the atmosphere, especially weather and weather conditions.
8. The farming practice of plowing and/or planting across a slope following its elevation contour lines to prevent erosion.
9. The science, art, and business of cultivating soil, producing crops, and raising livestock.
10. The branch of biology that deals with heredity, and the variation of inherited characteristics among similar or related organisms.
11. The group of natural processes by which material is worn away from the earth's surface.
12. A science that deals with the composition, structure, and properties of substances and with the transformations that they undergo
13. The science that deals with the production, distribution, and consumption of goods and services and with the theory and management of economies or economic systems.
14. the act of mixing different species or varieties of animals or plants and thus to produce hybrids, generally to strengthen the species
15. Any system of sustainable agriculture that renews natural resources and enriches local ecosystems.

[Download Puzzle Solutions Here](#)

Mixed-Up-Meme Scrambler



"I can read that with my eyes

_____."

Vapor
LCOSDU _____ _____ _____

Comics
WOLCSN _____

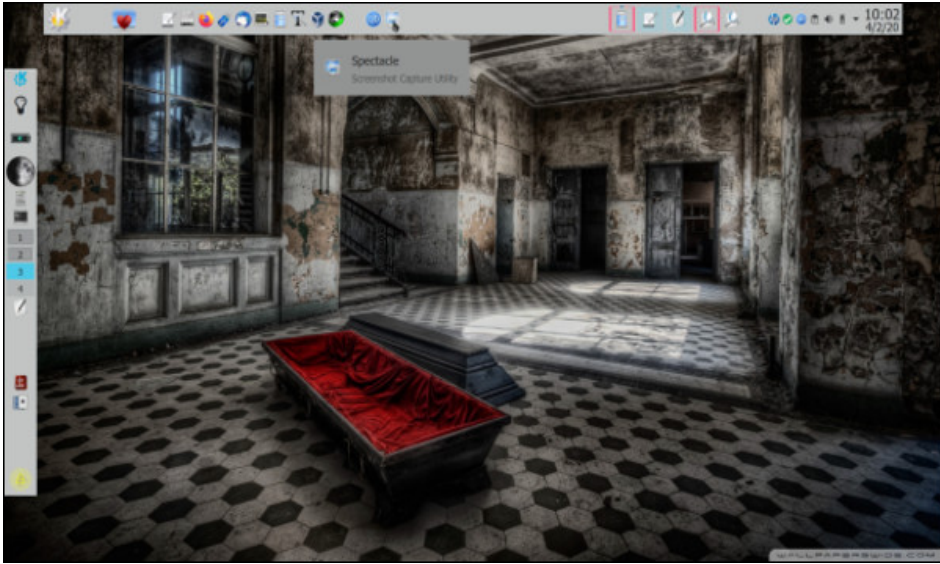
Spices
ESOVLC _____ _____

Doubles
LNCOSE _____ _____

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



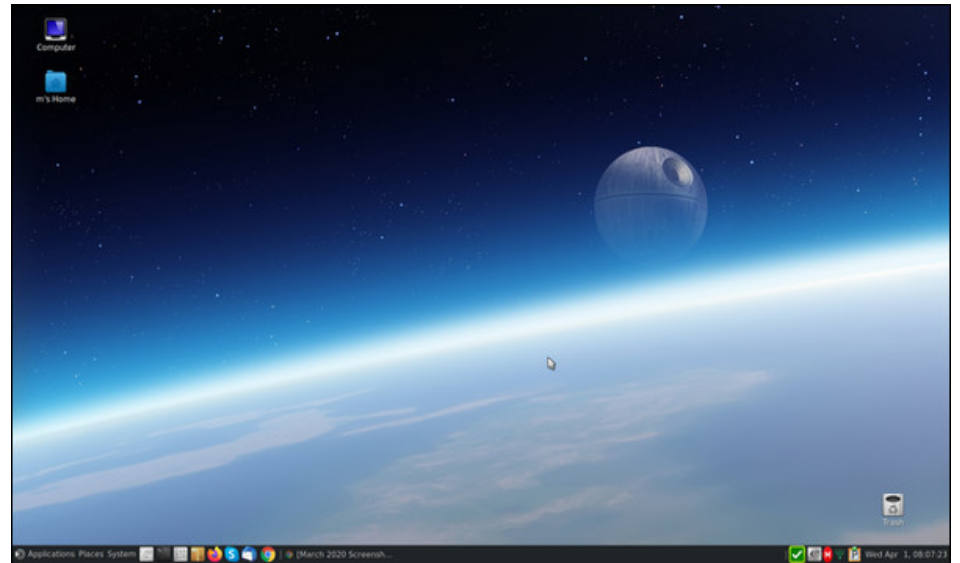
Posted by bliss, on April 2, 2020, running KDE.



Posted by francesco_bat, on April 2, 2020, running Trinity.



Posted by jake721, on April 13, 2020, running KDE.



Posted by martin, on April 1, 2020, running Mate.