

Computers and Networking

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Worlds Worst Software

/ MAR 14, 2022

Here at UVU they make us install a program called Identity Finder. The purpose is to locate all references to student's social security numbers and their credit card numbers.

We used to use SSN's for student IDs back in the early 2000's, but not since. Those are gone. I've deleted grading records because of this.

Ands they run it every week! And when it runs it automatically triggers BitDefender scans of every file!

So when it runs it's a four-hour 100% CPU task, and they install new software during the scan and want a reset so it will start the SSN scan all over again!

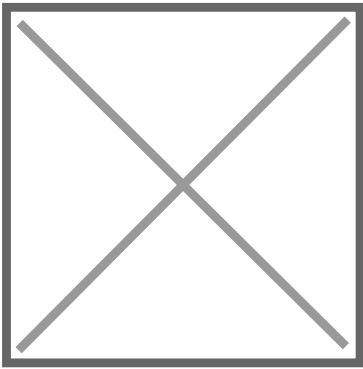
Crazy. I wonder how many campus megawatt-hours are spent on this pointless task each week?

NextCloud

/ JUL 31, 2022

Nextcloud is a server software suite designed to be a do-it-yourself privately-hosted replacement for. *Note: I'll strike out anything which turns out to be deficient in its claim.*

- Google Drive/Amazon Drive/Microsoft Teams file storage and syncing
- Signal/WhatsApp texting communications
- Life360 location tracker
- Microsoft teams/Skype voice and video chatting
- Google Calendar, tasks, keep and the small office apps
- Google/Microsoft documents



The idea is that this is all do-it-yourself, so few apps come configured; you set it up the way you want to use it.

Here are the ways you interact with Nextcloud, one the server is built and ready to go (see the technical section below for that information).

1. Web Browser: Just go to your web address. Mine is <https://cloud.kf7k.com>
2. Desktop: use the [Nextcloud Desktop client](#) to designate which folders you want to sync, and the app will keep your desktop directories and those on Nextcloud the same, for as many desktops as you wish.
3. Mobile apps come in two classes:
 1. Major apps:
 1. Nextcloud Files: this is where you view and upload files to the server, and set up sync for your photos folder
 2. Nextcloud Talk: for all communication.
 2. Minor apps:
 1. Nextcloud Deck: for your tasks list
 2. NextScan: scan documents using your phone camera
 3. Overland (iOS) or several other apps in Android for phone tracking.

4. KeePass for password storage (I don't trust the built-in password app, yet. You'll need to build your storage file using the KeePass app on your phone or desktop, then open or modify it in Nextcloud).
5. Password (Nextcloud password manager has an app and browser add-on, but I like KeePass because I can add a big work function to make opening it take a few seconds, making it less attractive to brute-force attacks).
6. Nextcloud Notes (Android) or Own notes (iOS) for notes and distraction-free writing.

But the fun is when you use Nextcloud together, to share, collaborate, communicate.

Here are the fun apps I have running on my install:

1. Dashboard: a welcome screen with the latest changes
2. Files; all your files, as well as a folder that everyone shares, which I've loaded up with audiobooks, old comics (Marvel mostly), old pulp magazines (all viewable in the web app), all my CD albums, the videos the kids took when they were young, stuff like that.
3. KeeWeb: a KeePass password manager (create your files on your phone or computer, then move them to Nextcloud to manage them there).
4. Talk: group texting, audio, and video calling.
5. Contacts: import .vcf to populate
6. Calendar: I'm still figuring out how to share a calendar; haven't played with it much.
7. Audio player, for playing audio files.
8. Analytics: if you have data, this app will draw it for you.
9. Cospend: a sharable budget and bills manager.
10. Deck: the task manager
11. Notes: like Google Keep.
12. Music: playing the albums
13. PhoneTrack: a Life360-like app to track locations. You need Overland GPS Tracker (iOS) or one of many Android apps to do this. It's really not as convenient as Life360, though. But it's private.
14. Forms: for making polls, private and public.
15. External links: I have links to my stuff, Ethan's website, and Lily's.
16. Maps: plots the locations of people (from your contacts' addresses) and where your photos were taken.
17. Cookbook: a private cookbook. You get links from recipe websites and this imports the recipes, lets you edit them, and organizes them.
18. Diary: simple, distraction-free daily writing/diary/journal/tracking.
19. Passwords: along with the Nextcloud Passwords app, lets you store your passwords on the server. I can't read them as an administrator, and they are protected by 256-bit encryption, but I don't trust them yet.
20. Tasks: not as fancy as Decks, but better integration with other Nextcloud apps, like the calendar.

Other things it will do that don't have a menu item at the top of the screen:

1. Libre-office document creation and editing.
2. Mind map creation and editing.
3. Will work with RAW camera images.
4. Keeps deleted files safe until they time out (30 days) or you delete them.
5. Keeps previous versions of a file if you need to go back.
6. Reads .EPUB books, .CBZ/.CBR comics, and .PDF files in-browser.
7. Lots of group sharing options.
8. Markdown editor for most text files and notes: markdown is the new simple standard for formatting, the way .rtf used to be.
9. View PhotoSphere files.
10. View DICOM medical image files.
11. Has a small CMS built in, which I have yet to configure, but you can build your own websites inside Nextcloud.
12. You can delete your own account when you want.

Other apps I can add if requested can be seen at the apps website, <https://apps.nextcloud.com/>. If you want to try one, let me know! They are easy to install and remove.

Technical information:

My Nextcloud is installed in a Ubuntu Server 22.04 hosted as a virtual machine (6-core) inside Hyper-V using a mirrored ReFS drive. I back up the file to a NAS each week, just in case.

To install Nextcloud I got the Ubuntu Server live .ISO and when I got to the preconfigured apps, added Nextcloud. It's in a Snap. I used [this](#) for the initial configuration. Skip the https part if you want http only.

I went through many iterations and installations before going back to this easy one. It's not perfect, as I can't install other things to help, like php-imagick or ffmpeg to help with media conversion tasks. And the Collabora server never worked for me, though I never tried hard.

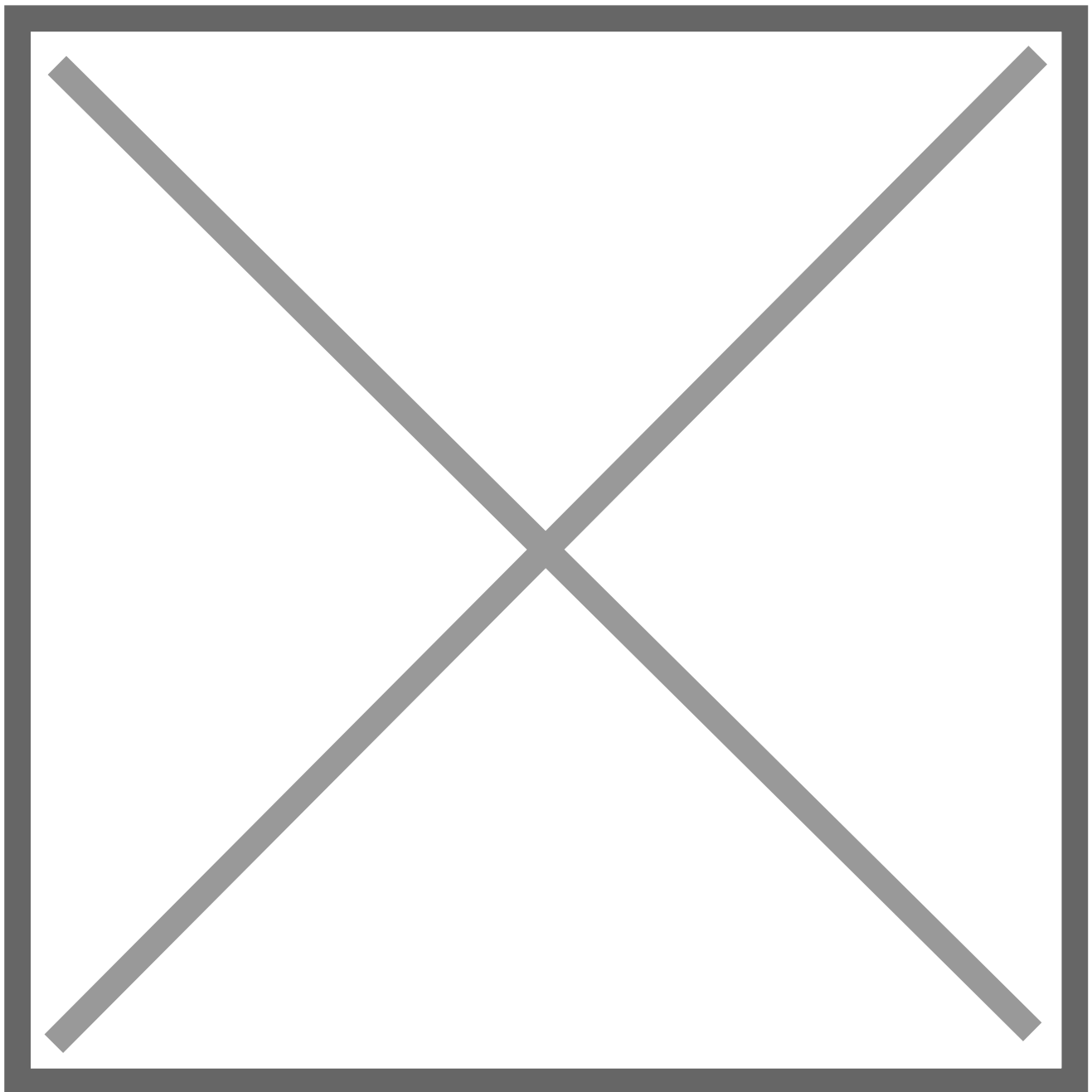
The best installation I has was the Nextcloudpi image for the RPi4. That worked really well, but it ran on slow hardware.

The hardest part was getting my domain name to point directly to ports 80 and 443 on the server without interrupting all my other web servers. Routers are no good at sorting hostnames to different boxes (why is this? It seems so easy to do), they can only redirect ports. I use Cloudflare, and they bailed me out with their tunneling access option to access my other servers so Nextcloud gets my 80 and 443 ports directly.

Things which should be cancelled 20: Google

/ OCT 17, 2022

A curious thing happened this weekend: my websites were listed by Google as being dangerous to visitors. A full red screen with warnings about my website, scaring all by the maniacs away.



I was able to recover from this by doing one thing then asking for a review. The one thing I did: get rid of the anti-bot code. I use Cloudflare as my DNS, and this site uses their proxy a service which

monitors a lot of activity as the data moves through their servers between my servers and you. One thing it does is add a small bit of code that runs on your computer to see if you are a person or a program, called Picasso. Google invented it. When a client appears to be a computer (a bot), Cloudflare stops returning data.

And Google took this to be an attempt to steal your data.

What they really did was force me to remove that code. Or my visitors could use another browser, but that's not likely as I can't communicate that to them, because of that big scary warning screen.

So now my websites are all available to bots like Google, and any other malefactor who is stealing my websites.

Google deserves to go.

UPDATE 28 NOV 2022: Google is doing it again, marking YunoHost login pages as dangerous. Idiots. Or very poor programmers who are clueless as to what the web is now, as if they haven't figured out that people log into web sites these days.

Schrödinger's Cat and the Problem of Quantum Computing

/ MAY 10, 2023

Quantum computing has a problem, and it's probably not solvable: reading out the answer. It's proven terrifically difficult getting the answer out of a computation.

Quantum computing operates as electromagnetic waves of very low intensity, high intensity waves requiring a lot of additional energy to sustain them, when makes the calculation impossible. To help keep these small waves intact, even thermal motion of the atoms must be eliminated, so these "computers" are actively cooled with evaporating liquid helium under a vacuum down to milliKelvin temperatures.

Now, how small are these waves? They are the same waves that exist when electrons "wave" around an atomic nucleus in molecules. The computer is set up in such a way what only one lowest-energy wave should exist out of the many that could exist at slightly-higher energies. That lowest-energy wave is the "answer" to the computation. Move one atom out of place, and you "compute" a different answer. This is tremendously difficult computing.

That you can build a system which will produce an answer isn't so alarming, and that's not the problem. The problem is reading the answer out. It can't be done. Here's why.

In 1935 there were two "interpretations" of quantum physics: matrix mechanics (also called the Copenhagen Interpretation) of Plank and Heisenberg, and wave mechanics of Edwin Schrödinger. [Full disclosure: I'm fully on Schrödinger's side of this argument.] Einstein was leaning hard into the Copenhagen Interpretation and he and Schrödinger had a back and forth on the subject. Einstein had just published a very famous article with Rosen and Podolsky, saying that one consequence of matrix mechanics results in a paradox, the EPR Paradox: when a process generates two identical but opposite particles, which move in opposite directions, one could be measured for momentum, and the other for position, and what you know about one you would know about the other since they are identical, so you could know both the momentum and the position precisely and violate the Heisenberg principle, which you can't do.

Schrödinger's Cat is a sort of rebuttal to Einstein saying that quantum effects are not part of observable reality, so that the EPR Paradox only applies to the quantum realm and not anything we can observe. Schrödinger's Cat is a quantum event that should exist in reality. The quantum event is the random disintegration of an unstable nucleus. Since the nucleus is so very small, it is governed by quantum "laws" and not reality. But what if a detector is included to sense whether the quantum event happened, and that detector triggered something in reality, like killing a cat? (Schrödinger used cyanide gas, Einstein used an explosive.)

So after enough time has elapsed to make the odds exactly 50/50 that the cat is alive or dead, what is the state of the cat before the device is opened and inspected? The Copenhagen Interpretation says the cat exists in an intermediate state of being both alive and dead at the same time. Wave Mechanics doesn't have that uncertainty/entanglement, just the probability; it is at that moment either alive or it is dead.

Back to quantum computing: when the inputs have all arrived via microwave or optical channels, and the organization of the "computer" instantly arrives at the correct set of bits that comprise the lowest-energy answer because the waves are interacting to find the combination that has the lowest energy, how do you get the answer out? There isn't enough energy in the answer to have the qbit itself provide enough voltage or a current to amplify into a stronger and certain signal. Maybe a high-energy (wrong) answer could do that, but never the lowest-energy correct answer.

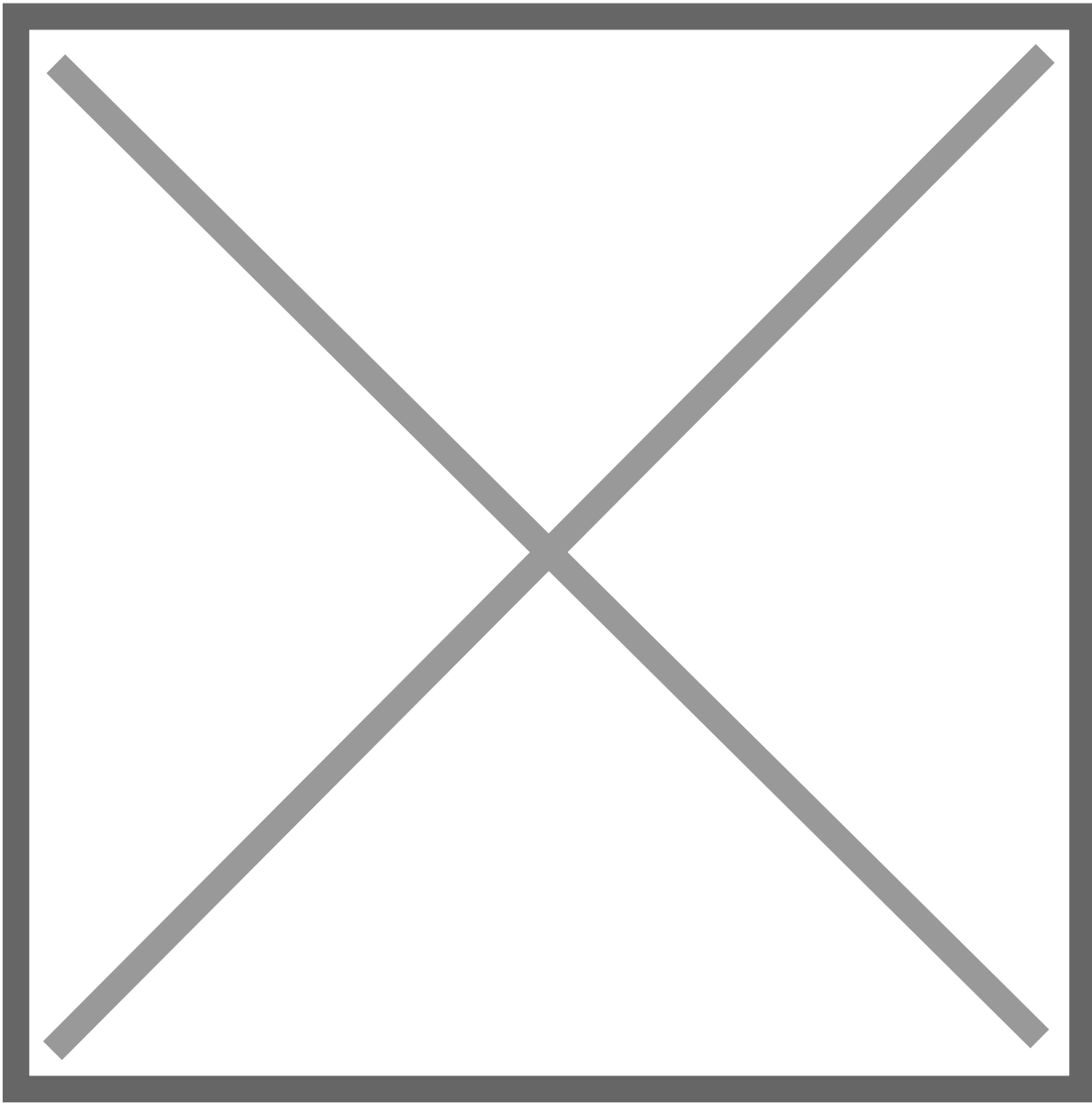
Quantum computationalists are in exactly Schrödinger's situation: they have a quantum event which is too small to show itself in reality, and they need to show it in reality. So can they build a sort of "qubit-operated Cat?" That answer seems to depend entirely on what you think happened to the cat. I think that the cat always existed in reality, and is either alive or dead, randomly chosen. Why do I say that reality was right, and not the Copenhagen Interpretation?

Wigner's Friend. Eugene Wigner in 1961, extended the thought experiment in an attempt to see what was in the box, and it's called Wigner's Friend. Wigner has a friend, and when Wigner sets up the Cat experiment, he leaves the room, and Wigner's Friend will look into the box, and will learn the state of the cat, alive or dead. But he will not tell Wigner what he saw. Wigner's Friend is now a part of the uncertainty experiment. So what would he say to the question, "Was the cat alive or dead, or was the cat in an intermediate state?" Wigner's friend will answer, every time, that the cat was alive or dead, and never that it was both. Nor would his memory of the cat suddenly change if Wigner himself looked into the box and resolved the mixed state into one or the other outcomes. The conclusion of Schrödinger's Cat and Wigner's Friend is that quantum effects are *not* a part of observable reality. Reality 1, quantum entanglement 0.

Quantum computing is exactly this situation, a quantum answer needs to show itself in reality, but like the cat, the answer comes out randomly.

The efforts in quantum computing, then, are to make a "quantum computer" that isn't really quantum. And it's not working out too well. Like confined fusion, it seems to be certain in a future which never arrives. A quantum computer that isn't a lowest-energy state isn't the right answer, and a correct answer at the lowest-energy state isn't readable.

I have no idea how long the charade will go, but using confined fusion as a guide, it's at least 60 years and trillions of dollars.



The IBM Q 20-bit Quantum Computer from 2019. They think it did a calculation, but they are still working to prove the answer was right.