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Ottawa PC Users' Group

October 2, 2024

OPCUG



Users helping users
for over 40 years



welcome

members and guests
to our **200th** Q&A session !!!



ideogram 2.0

ideogram.ai

~~Introduction~~

OPCUG



*Users helping users
for over 40 years*

This is intended for those who are slightly familiar with AI image generation, and are looking for more features further.

Special Presentation!!!
Immediately following tonight's Q&A

Ideogram is a significant advancement in AI image generation.

You can set up a free account at ideogram.ai



Security Camera Recommendations

- I am looking to install an indoor security camera
- I have Rogers Ignite TV/Internet and a Rogers Apple phone
- They seem to have a plan called *Self Protect*
- I have had a stand-alone security camera in the past, to monitor our window-frame-chewing dog, but the software may be out of date



Bea Alt

- We have a very old Honeywell (now Telus) security system, (landline-based) for fire, doors and windows, and sump water level
- All the sensors are old and need to be replaced
- Options based on current systems are: Honeywell, Rogers. or Geni (stand-alone)
- I don't like that they store information on the cloud! Am I paranoid?
- Does anyone have experience or a favorite system?
- How secure are they?





Internet Protocol (IP) cameras

- Getting electrical power to the camera can be a pain depending on the location of the nearest electrical outlet (drill through walls, etc.)
- Similarly, you may need to connect an Ethernet cable (especially for Power Over Ethernet, POE) to the camera if you are not using Wi-Fi
- You may want to have Uninterruptible Power Supplies (UPS) power the Wi-Fi, cameras, and/or the recorder
- If the electrical connection is easily accessible, the bad guys could disconnect the camera

- For exterior cameras, double check the temperature operating range as some do not work below -20C
- Check the International Protection (IP) rating, e.g. IP67 waterproof
- If you are using Wi-Fi and have a lot of cameras, you may need to upgrade to a mesh system (\$\$\$)
- Wi-Fi setup is easier for some brands than others
- Higher resolution (HD < 2K < 4K < 8K) provides better pictures but the recording gets larger
- Most IP camera will support event detection which tags the occurrence in the continuous recordings
- Cameras can upload recordings using File Transfer Protocol (FTP) to a computer, but you need to leave your computer on all the time

- Most IP cameras have a SD card slot so that you can save the recording in the camera with a protocol to erase recordings once the SD card gets close to full
- A phone or desktop app connects to the camera and downloads recordings
- Most recent IP cameras will be using H.264 or H.265 codec; however, some video apps do not support these codecs (I used HandBrake to change the codec)
- SD Cards can break. I had an IP camera looking at the backyard from about 10 feet above ground. It was a major pain to install and power the camera. After about 2 months, the SD card stopped working so I had to get the ladder out again to replace the SD card!

- With local recording, you have control and privacy, but the bad guys can break or steal it
- With cloud recording, you may not have full privacy but the bad guys can't delete it easily
- Local recording (aside from the cost of the SD cards) is free, while cloud recording will most likely have monthly fees or very low retention periods (3 days)



- The security cameras have recorded weird things:
 - A police car chasing and stopping a car, the driver getting out of the car, and surrendering with his hands up
 - A snowplow hitting ice, moving two feet to the left, and hitting a moving car
 - The neighbour's teenagers smoking dope in a snowbank at 11 pm
 - A hooded teen looking at the door and windows in the middle of the night
 - A getaway car, parked in front of my house, as thieves tried to steal my neighbour's truck

A

Share – Security Camera Setup

- Wyze Camera Physical Installation
 - Wyze Camera Setup
 - Wyze Camera App Features



https://opcug.ca/qa_recordings/20220420_PowerPoint.pdf

Wyze Cam V3



contents of box

A

Lorex 4K POE Cameras

- I have eight Lorex cameras around my house and property
- My system uses 4K POE (Power Over Ethernet) cameras
- They are easy to install and give good pictures
- They come with a DVR (digital video recorder) that can be secure inside your home (outside Ethernet is not required)
- However, when connected to your network, you can see the video on any device in the home, including your smart TV

<https://www.lorex.ca>



- None of your data leaves the home
- Lorex provides a free forwarding service that allows you to connect remotely direct to your DVR and cameras
- Nothing is stored in the cloud
- When gone from home, I check my cameras a couple times daily



Share



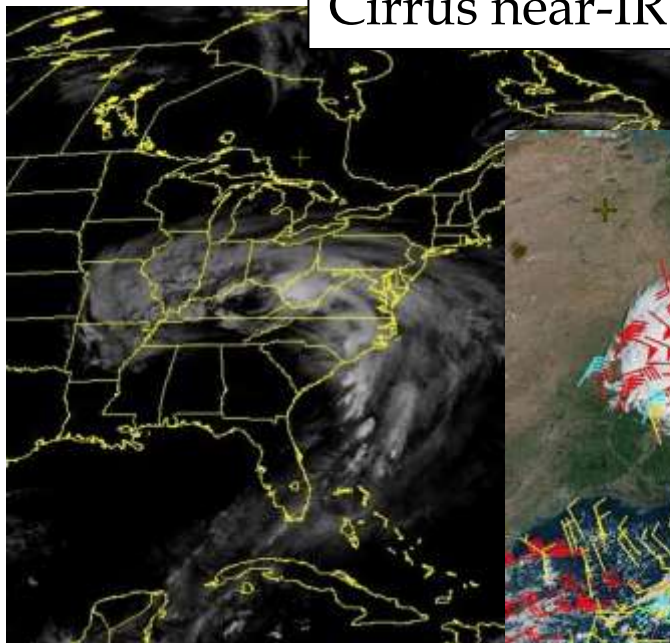
- Geostationary Operational Environmental Satellites
 - By U.S. National Oceanic and Atmospheric Administration
- 20 different images (spectrum bands/info)
 - full colour, lightning, IR, dust, wind, water vapour, more
 - various resolutions
 - 339 x 339 pixel JPG to
 - whopping 17,000x17,000 pixel TIFF
 - animation loops
- All images updated every 10 minutes

<https://www.star.nesdis.noaa.gov/GOES/fulldisk.php?sat=G16>

Share

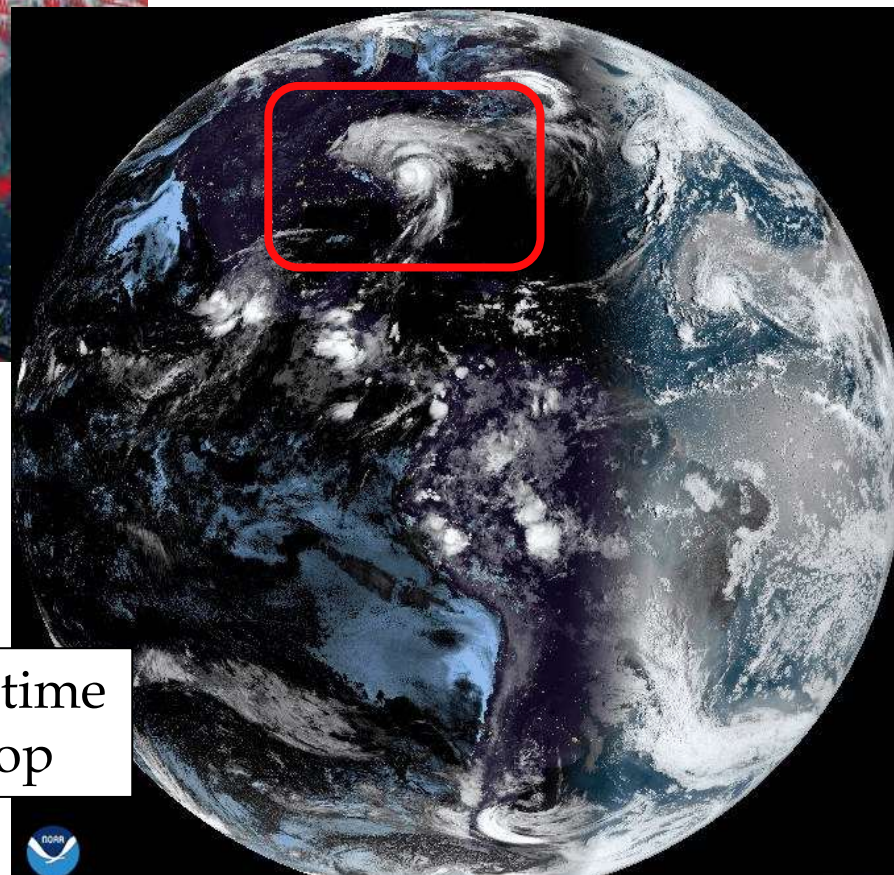
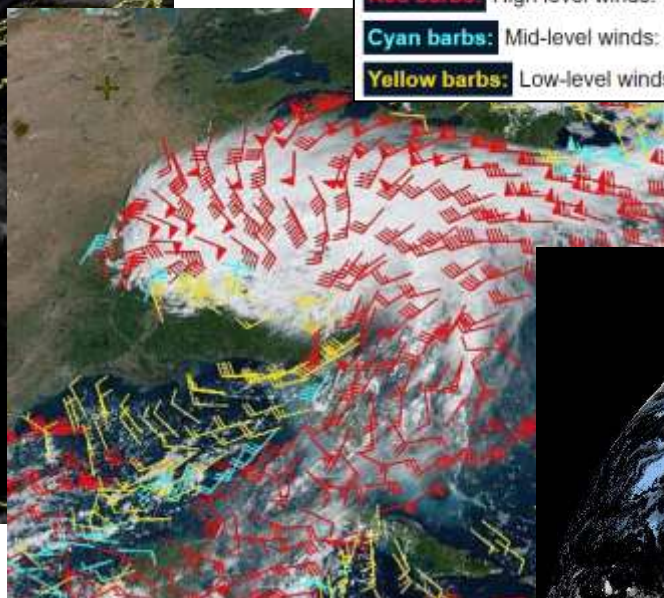
Remnants of Hurricane Helene

Cirrus near-IR



Derived Motion Winds key:

- Red barbs:** High level winds: 100 - 400mb, altitude approximately 23,000 - 46,000 ft. (7-14 km)
- Cyan barbs:** Mid-level winds: 400 - 700mb, altitude: approximately 10,000 - 23,000 ft. (3 - 7 km)
- Yellow barbs:** Low-level winds: > 700mb, altitude: approximately < 10,000 ft. (< 3 km)



True colour daytime
• animation loop



Share

North to Norway!



Lynda Buske

- Introduced September 18, 1992
 - developed by *Joint Photographic Experts Group* (formed in 1986)
 - create standard for compressing photos
 - efficient storage on devices & transmission over the internet
- Lossy compression
 - reduces file size
 - discards image data less perceivable to human eye
 - significant reductions in file size
 - minimal visible quality loss
- Most widely used image format globally
 - particularly in digital photography & web publishing

[https://www.pcworld.com/article/2466439/
this-is-why-jpg-is-dying-and-these-are-its-successors.html](https://www.pcworld.com/article/2466439/this-is-why-jpg-is-dying-and-these-are-its-successors.html)

Share

JPG lossy compression can lead to reduction in quality

- Pixelated or blocky areas in the image
 - personally, I find this only happens with extreme compression
- JPG supports 8 bits per colour channel
 - 256 colours per channel, 16.7 million colours total
 - insufficient for sophisticated color management systems
 - JPG compression will often sacrifice colours
 - example:
 - 200 pixels each having slightly different values
 - compression considers all 200 pixels as having the same value
 - result: banding in colours

1664x1306 pixels
514,405 byte file size



1664x1306 pixels
70,225 byte file size



Share

Four modern successors

Share

AVIF (AV1 Image File Format)

- One of the most promising formats
- Offers impressive compression performance
 - significantly reduces size of photos while maintaining quality
 - color depth of up to 12 bits per channel as well as transparency
- Can display animations
- Supported by
 - Chrome and Firefox since 2020
 - Edge since January 2024
 - other Chromium-based browsers likely have support for AVIF

Share

JPEG XL: the logical successor

- Designed as successor to the JPG format
- Highly compatible
- More efficient compression
 - can easily save 50 to 75 per cent of storage space
 - without compromising image quality
- Supports color depth up to 32 bits and huge resolutions
 - particularly attractive for professional applications
- Google removed JPEG XL support from Chromium-based browsers

Share

WebP: all-rounder for the web

- Developed by Google
 - seen widely on web
- Combines advantages of JPG and PNG
 - supports lossy & lossless compression and transparency
- particularly good for transparent-background images
- Already integrated into many web applications
 - e.g. WordPress and Twitter
- WebP has not yet achieved the same popularity as JPG

Share

HEIC/HEIF: from Apple

- HEIC (High Efficiency Image Coding)
- HEIF (High Efficiency Image Format)
- Primarily used on iPhones and some high-end cameras
- Offers better compression
 - with the same quality
 - supports transparency
 - color depth of up to 16 bits
- HEIC/HEIF could replace the JPG format in long term
 - has the disadvantage of license fees for encoding

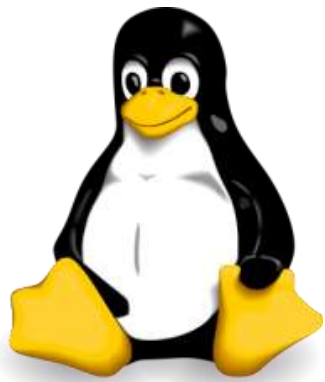
Which formats will prevail?

- AVIF, JPEG XL, WebP, and HEIC/HEIF
 - far more efficient compression
 - better image quality
 - technically more advanced
 - better suited to needs of photographers, designers, and web developers
- JPEG XL not likely a winner
 - Google removed it from the Chrome browser at the turn of 22/23
 - removed from all other Chromium-based browsers
 - reason given: alleged lack of interest
 - could seal the fate of JPEG XL before it has even had a chance to really catch on
 - global market share of Chromium browsers ~ 70-80 percent

Share

World is more than the web

- Every photo editor supports JPG
- Every program that can import images supports JPG
- AVIF, JPEG XL, WebP, and HEIC/HEIF
 - not so much!
- PowerPoint
 - only gained WebP support July 16, 2024
 - HEIC/HEIF images only supported if *HEIF Image Extensions* and *HEVC Video Extensions* are installed in Windows
 - AVIF images only supported if *AV1 Video Extension* installed in Windows
 - JPEG XL is not supported in PowerPoint
- What about the programs you use?



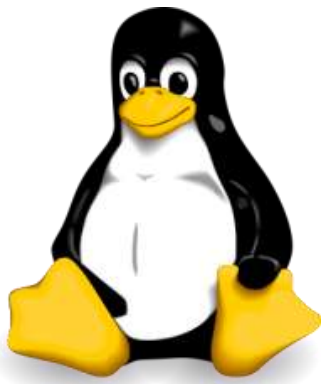
Trading up to Linux

- Windows 10 will reach end of life (EOL) on October 14, 2025
- Some users (me!) have no upgrade path to Windows 11

✕ This PC doesn't currently meet the minimum system requirements to run Windows 11

Get the details and see if there are things you can do in the PC Health Check app.

[Get PC Health Check](#)



Trading up to Linux

- Hardware requirements:
 - Intel 8th-generation Core
 - AMD Ryzen 2000
 - or better
 - Trusted Platform Module (TPM)
- Will your computer run Windows 11?
<https://support.microsoft.com/en-us/windows/how-to-use-the-pc-health-check-app-9c8abd9b-03ba-4e67-81ef-36f37caa7844>
- Currently, no indication that Microsoft is going to relax the hardware requirements

Now what?

- Don't panic! You have a whole year to decide
- Windows 10 will continue to receive security updates (Patch Tuesday, etc.) until next October
- Options in 2025:
 - Buy a new computer with Windows 11
 - Keep using Windows 10 with no security patches
 - Trade up to Linux

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(Dual-boot mode allows access to Windows 10 for use off-line to run Windows-specific software)

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- (Dual-boot mode allows access to Windows 10 for use off-line to run Windows-specific software)*



The Plan

Phase 1

- Download Linux Mint 22 (Wilma)
- Create a bootable USB drive
- Boot the computer into Linux from the USB
- Check the hardware compatibility
- Review the applications bundled in the distro

Phase 2

- Install Linux dual-booted with Windows
- Boot into Linux and Windows from the grub menu

More...



ideogram 2.0

ideogram.ai

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**Any other:
Questions
Comments
Shares?**

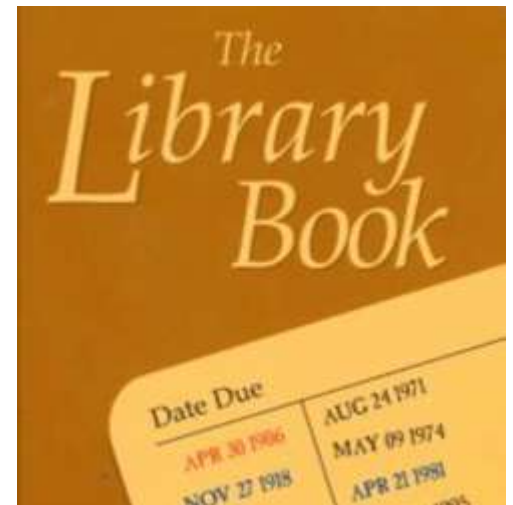
October Meeting



Everything you didn't know,
but wanted to know, about the
Ottawa Public Library

Carol Pearson (OPCUG)

October 9, 2024
7:30 pm





No Q&A on
October 9
(Monthly Meeting)



**Send your questions,
answers, and topics *
you wish to share to:**

SuggestionBox@opcug.ca

** Questions, comments, and shares can be anonymous if requested*