

Club Photo



ORLÉANS

Photo Club

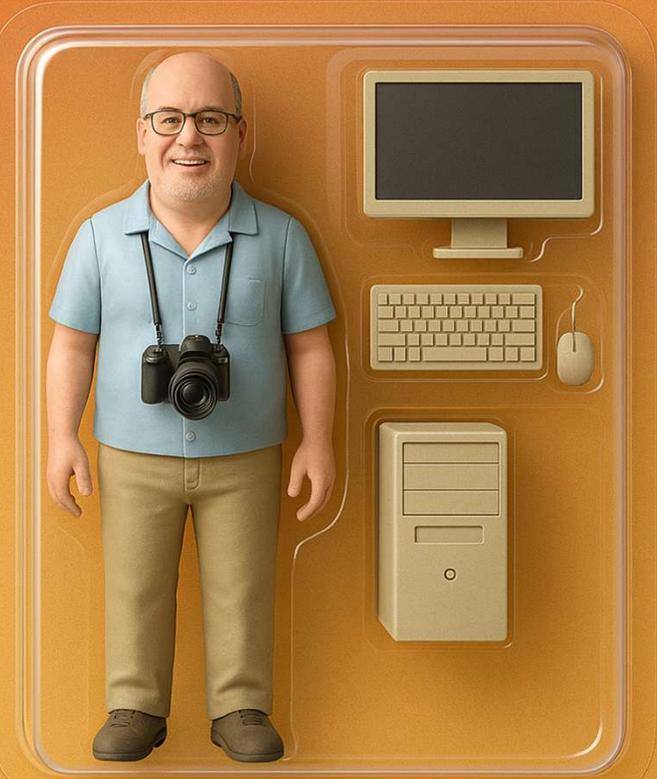
# Whoa, Backup!

Effective strategies  
for keeping your  
computer files safe

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**COMPUTER GEEK**

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# Agenda

- Why backup
  - Approaches
    - just data
      - manual vs. automated backup
      - realtime backup
      - file versioning
      - cloud backup
    - backing up everything
      - operating system, programs & data
  - Special considerations for photographers
  - Other considerations
    - offsite backup
    - how many backups
- 

# Axiom 1

There are two kinds of people...

...those who **have** lost data...

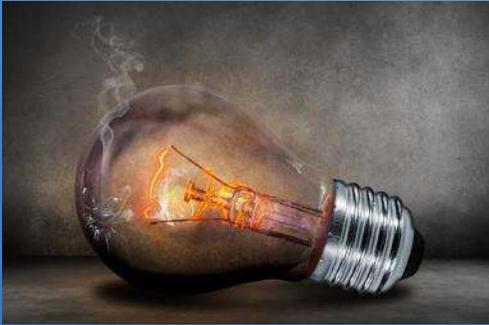
...and those who **will** lose data

## Axiom 2

Data in only one place...

...is at risk of loss

# Data loss can happen many ways



# Backup storage

Format	Typical sizes	Cost per GB (cents)
Internal hard drive	2 – 20 TB	3 – 4
SD card	32 GB – 1 TB	11 – 118
Flash drive	32 – 512 GB	12 – 29
External hard drive	1 – 20 TB	3 – 7



External hard drive

## Best

- large capacity and low cost per GB
- can separate from computer: provides protection from most disasters

# What's on your computer?

## Operating system

- Windows, MacOS, Linux



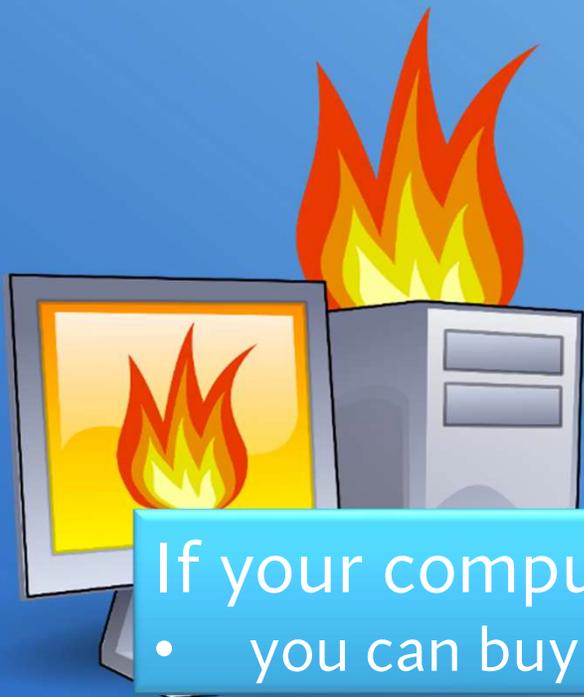
## Programs



## Data

- anything you create

# Why backup?



If your OS/programs are corrupted

- you can reinstall them



If your computer dies

- you can buy a new one



If your documents/pictures/videos are lost

- **nobody else has copies**

# Backing up just data

- Your data is what's critical
  - backups relatively small and run quickly
- Keep in mind this will not back up
  - operating system
  - programs
  - we will come back to this aspect

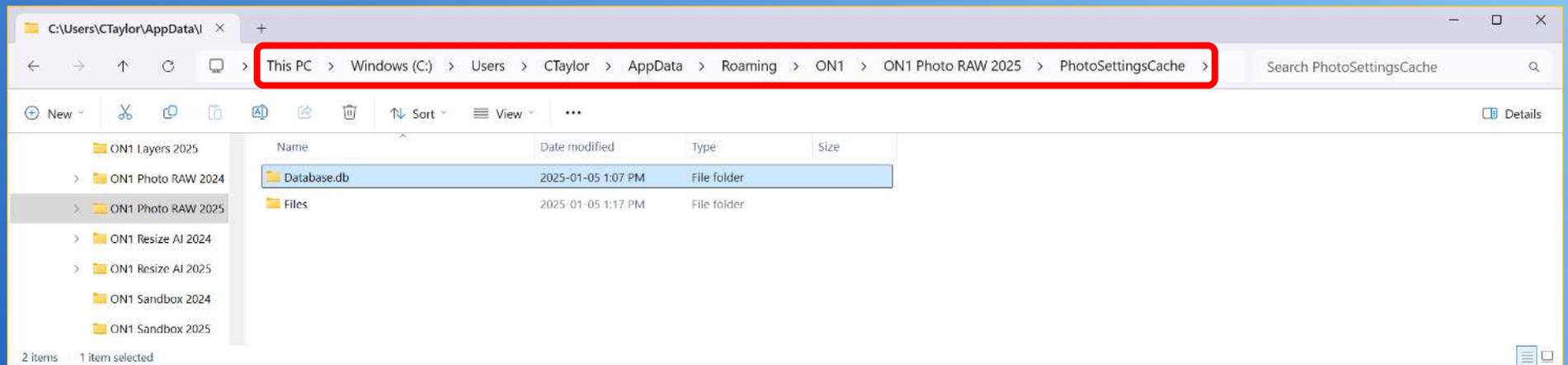
# Manual data backup

- Just copy all important files to
  - external hard drive
  - flash drive
  - cloud storage
- Tedious process
  - easy to forget to do
  - easy to miss some important files



# If you just back up data

Did you back up *all* your data?



This is where *ON1 Photo RAW* stores its catalogue

- with the edits for **all** my photos
  - ...sort of
  - ...more on this later

# Automated data backup

- Configure a program to do backups for you
  - computer remembers to do it
- Additional (potential) benefits to automating backups
  - realtime backup
    - files are backed up as they are created or modified
  - file versioning
    - when a data file is modified, previous version is saved & can be recovered



# Realtime backup



**Save**



Program monitors for new/changed files



**Computer**

**Automatically copied**

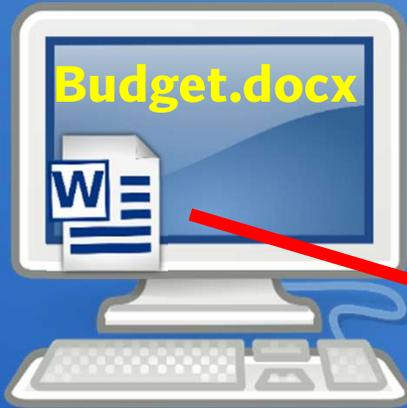


**Backup drive**

# File versioning

Every time a file is saved

- unique copy save
- can recover any old version



**Computer**



**Budget.docx 2024-01-05 13:01**

**Budget.docx 2024-03-23 09:15**

**Budget.docx 2024-05-29 18:33**



**Backup drive**

Club Photo



# Realtime backup and file versioning with *File History* in Windows

Inclusion here should not be taken as any sort of endorsement by Chris Taylor or the Orleans Photo Club

# *File History*

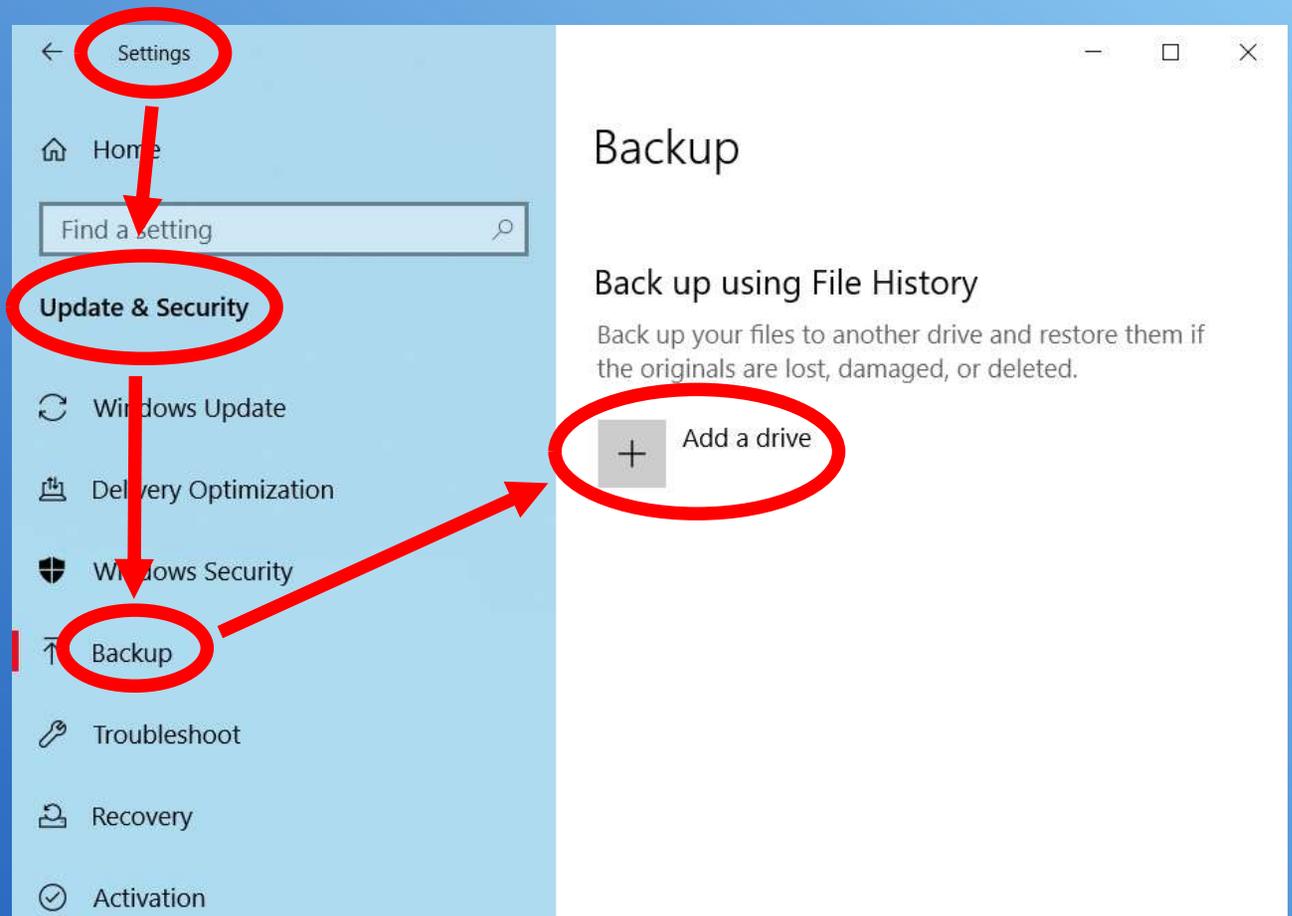
- Built into Windows 10 & 11
  - somewhat lobotomized in Windows 11
    - more about that later...
- Supports
  - almost realtime backup
    - as frequent as every 10 minutes
  - file versioning
- Folder-based
  - you specify folders to be backed up
  - all files within those folders are backed up

# File History: initial setup

Plug in an external disk drive for storing backups

## Run

- *Settings*
- *Update & Security*
- *Backup*
- *Add a drive*

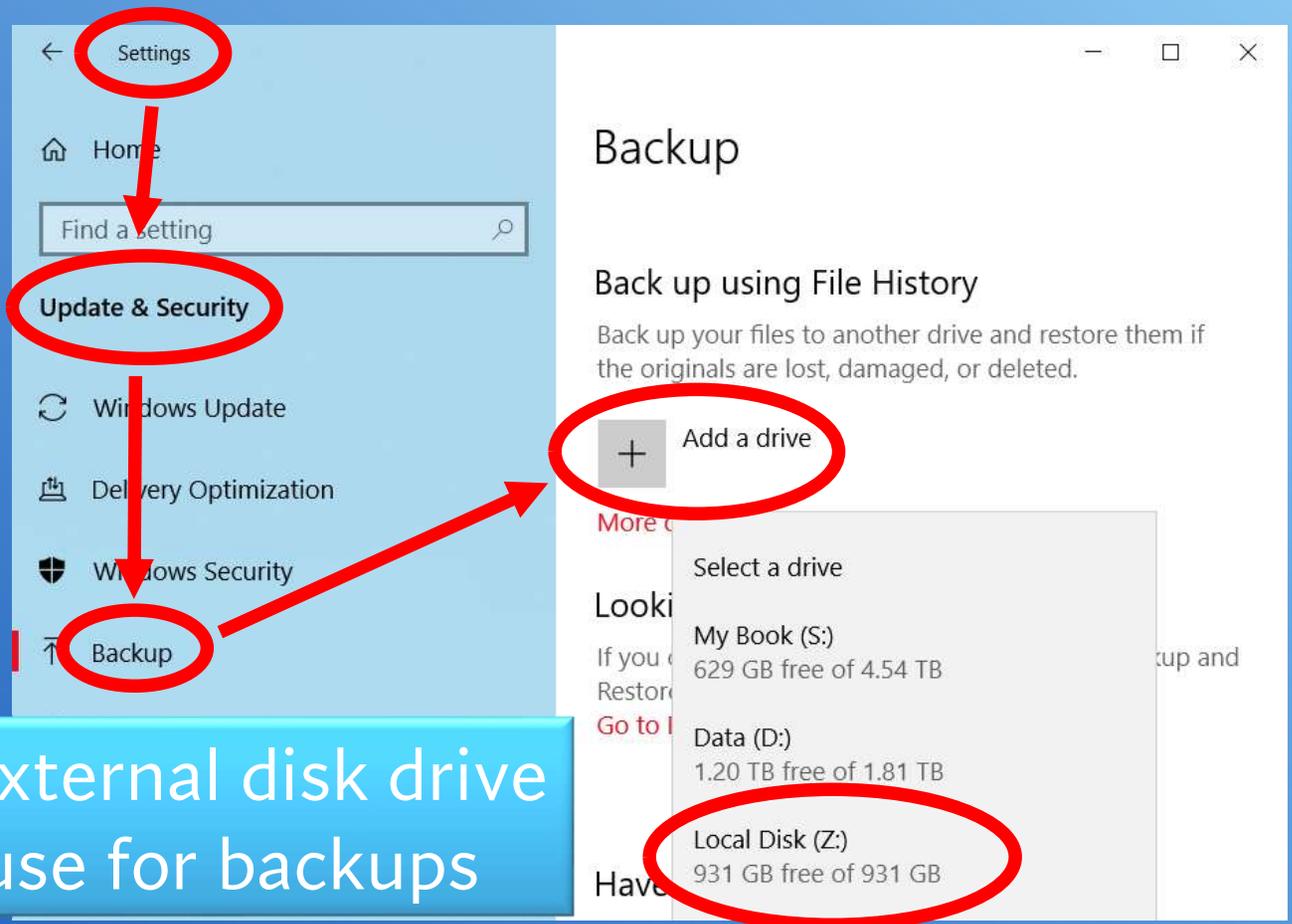


# File History: initial setup

Plug in an external disk drive for storing backups

Run

- *Settings*
- *Update & Security*
- *Backup*
- *Add a drive*



Choose the external disk drive you want to use for backups

← Settings

Home

Find a setting

Update & Security

Windows Update

Delivery Optimization

Windows Security

Backup

Troubleshoot

Recovery

Activation

# Backup

## Back up using File History

Back up your files to another drive and restore them if the originals are lost, damaged, or deleted.

Automatically back up my files

On

[More options](#)

Choose *More options* to configure

- frequency of backup
- how long to keep backups
- add/remove folders from being backed up

## Overview

Size of backup: 0 bytes

Total space on Local Disk (Z:) (Z:): 931 GB

Your data is not yet backed up.

Back up now

Back up my files

Every hour (default) ▾

Keep my backups

Forever (default) ▾

Back up these folders

+ Add a folder

Favorites  
C:\Users\CTaylor

Pictures  
C:\Users\CTaylor

Documents  
C:\Users\CTaylor\OneDrive

Documents  
C:\Users\CTaylor

Music  
C:\Users\CTaylor

Exclude these folders

+ Add a folder

Back up to a different drive

You'll need to stop using your current backup drive before you add a new one. This won't delete any files from your current backup drive.

Stop using drive

Related settings

[See advanced settings](#)

[Restore files from a current backup](#)

Have a question?

[Get help](#)

**Frequency of backup**

**How long to keep**

**Add a new folder**

**Remove a folder**

**Exclude a folder**

**If you want to stop using File History**

- Until space is needed
- 1 month
- 3 months
- 6 months
- 9 months
- 1 year
- 2 years
- Forever (default)

- Every 10 minutes
- Every 15 minutes
- Every 20 minutes
- Every 30 minutes
- Every hour (default)
- Every 3 hours
- Every 6 hours
- Every 12 hours
- Daily

Back up these folders

+ Add a folder

Saved Games  
C:\Users\CTaylor

Remove

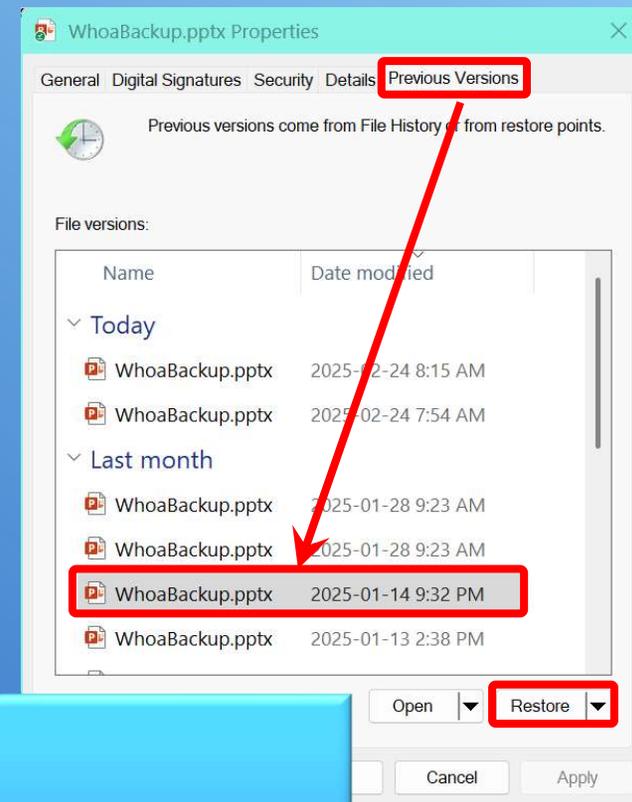
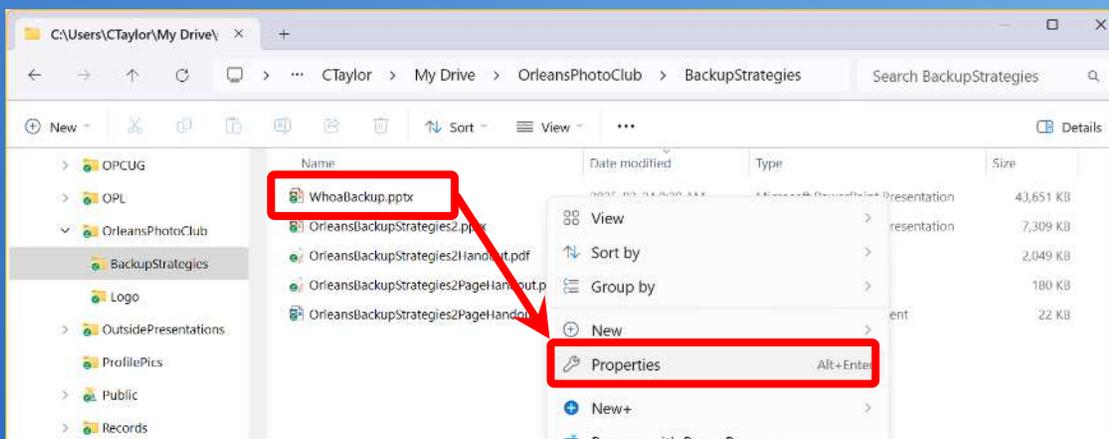
# Recover old versions of files

Right-click file

- choose *Properties*

On *Previous Versions* tab

- find version you want



Restore file

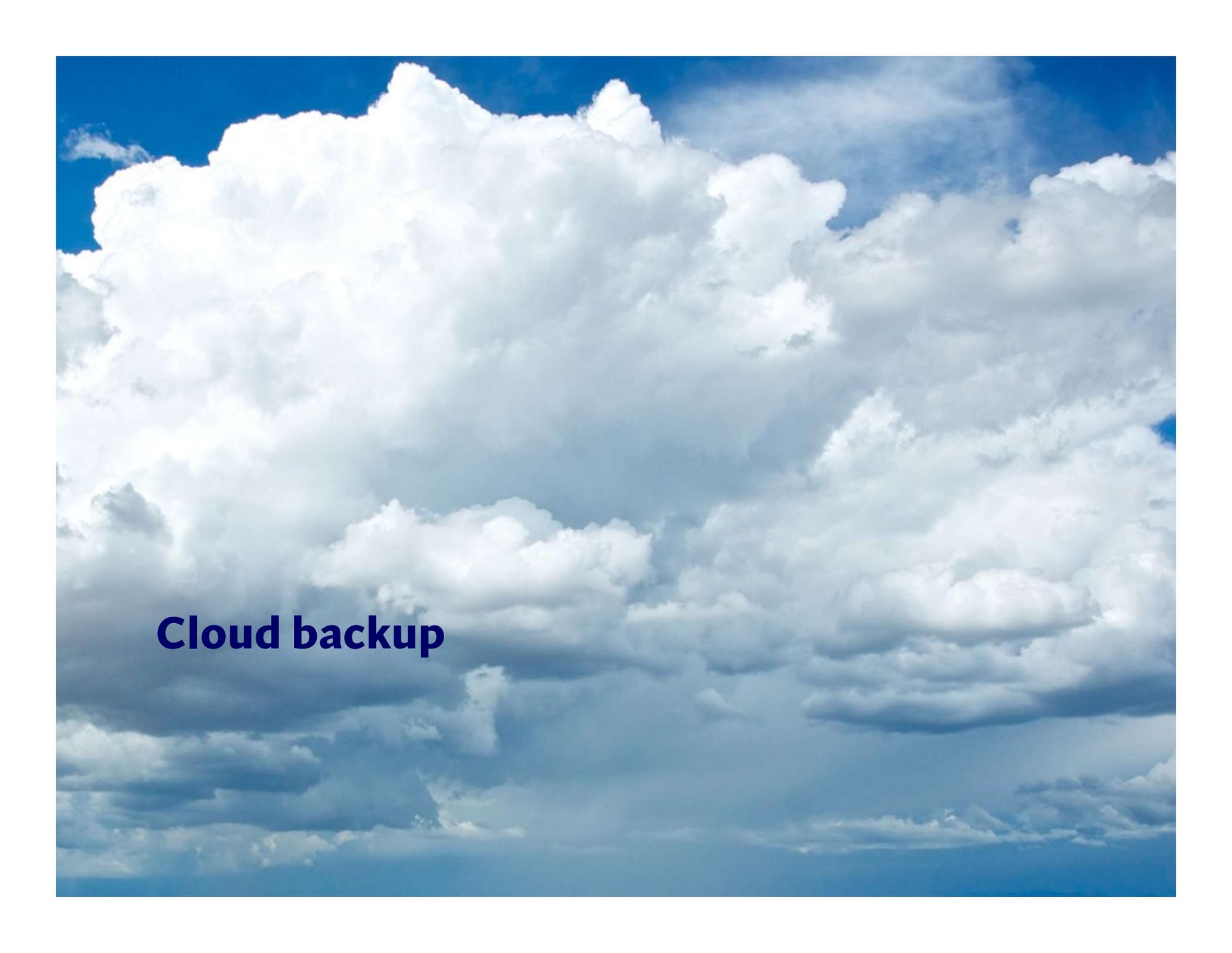
- can *Restore To* if you want to preserve current copy as well

# Additions in PDF of presentation

- File History
  - how to recover deleted files
  - how to clean up old versions

# *File History* in Windows 11

- Microsoft removed *File History* from *Settings*
- Only way to configure now is through *Control Panel*
- There are some additional problems (with work-arounds)
  - less flexible in terms of what gets backed up
  - more laborious to recover deleted files
  - *File History* **may** be deprecated in the future
- See the PDF of the presentation for details

A photograph of a bright blue sky filled with large, white, fluffy cumulus clouds. The clouds are dense and have a soft, puffy texture. The sky is a deep, clear blue, and the clouds are scattered across the frame, with some larger ones in the foreground and smaller ones in the distance. The overall scene is bright and clear.

**Cloud backup**

# Definition of *The Cloud*

Someone else's computer

# Cloud backup

- Cloud can be a backup solution
  - after all, it's your data is critical
  - if you have enough cloud storage for all important files
- But doesn't backup
  - operating system and programs
- Benefits of cloud backup
  - off-site (protection against fire, theft, etc.)
  - access backups from anywhere
  - synching between computers \*
  - can be a problem with corrupted files / file encrypting malware
  - realtime backup \*
  - sharing files with others \*

\* with some cloud backup solutions such as Google Drive, Dropbox, OneDrive

# Cloud backup works, but...

**GOING OUT OF  
Business**

**Mitigation:**

Nothing unique stored in cloud

# Cloud backup works, but...



February 2020

Hello,

We are writing to inform you of a technical issue that affected the Google 'Download your data' service for Google Photos between November 21, 2019 and November 25, 2019, when it was fixed:

Between November 21, 2019 and November 25, 2019, our records show you requested a Google 'Download your data' export, which included Google Photos content.

- Unfortunately, during this time, some videos in Google Photos were incorrectly exported to unrelated users' archives. One or more videos in your Google Photos account was affected by this issue.
- If you downloaded your data, it may be incomplete, and it may contain videos that are not yours.
- The underlying issue has been identified and resolved. We recommend you perform another export of your content and delete your prior export at this time.

We apologize for any inconvenience this may have caused. For further assistance, contact [Google Support](#). Please ensure you are signed in to the correct account when contacting support.

# HACKED

**Mitigation:**

Encrypt sensitive data

# Cloud backup works, but...



## Cable modem

- 5 mbps upload
- 30 mbps download
- 300 GB/month cap

## Mitigation:

- don't back up everything
- but what about the other files?



## Backup 1 TB

- 20 days



## Restore 1 TB

- 3½ days



## Monthly cap 300 GB

- \$\$\$\$\$

# Free Cloud backup



## Google Drive:

- 15 GB free
- I use 8 GB
- 200 GB – CAN\$48/yr for additional space

Many others...



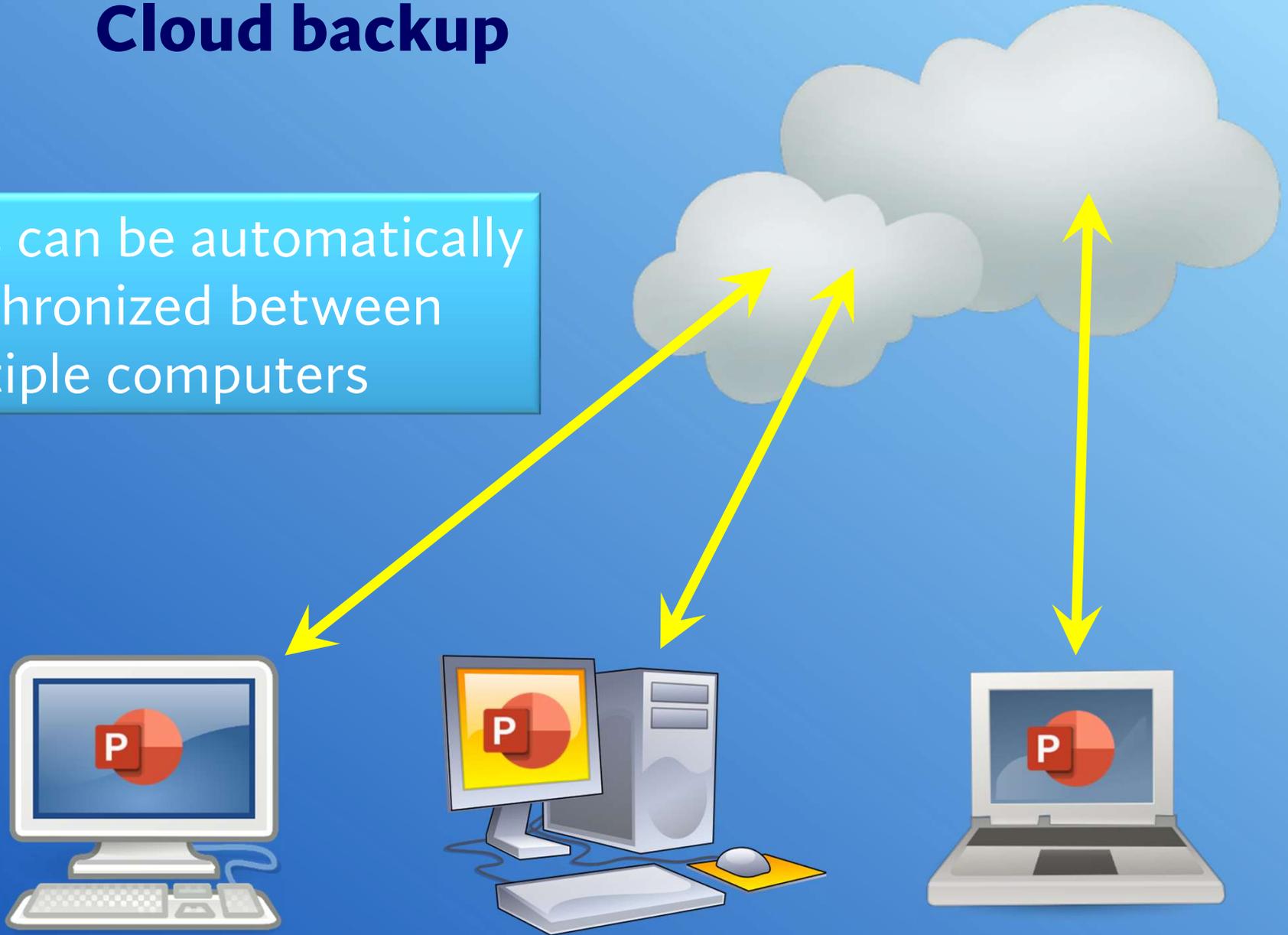
TeraBox



...and more

# Cloud backup

Files can be automatically synchronized between multiple computers



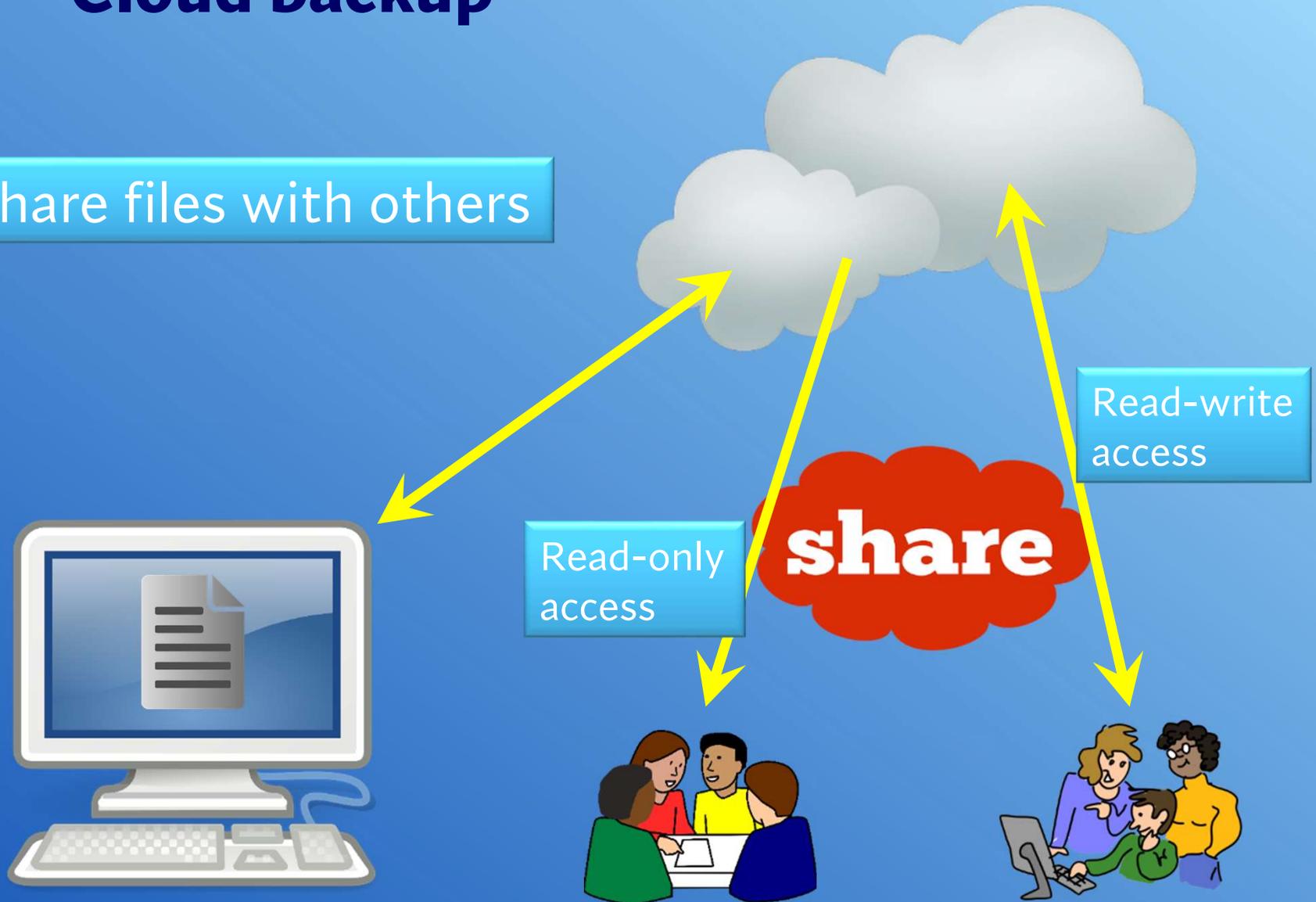
# Cloud backup

Can have important files available through a web browser on any Internet-connected computer



# Cloud backup

Can share files with others



# Commercial cloud backup

- Many different providers
  - Backblaze
  - Carbonite
  - Idrive
  - ...
- More than just raw storage
  - automatic backup
  - backup using a shipped drive
  - synchronize files across multiple devices
  - ...
- Expensive?
  - ~US\$70 / year



## Why not just back up data to

- internal/externals hard drives
- flash drives
- cloud



# If you just backup data



Disaster: hard drive failure

replace hard drive



reinstall Windows



reinstall all programs

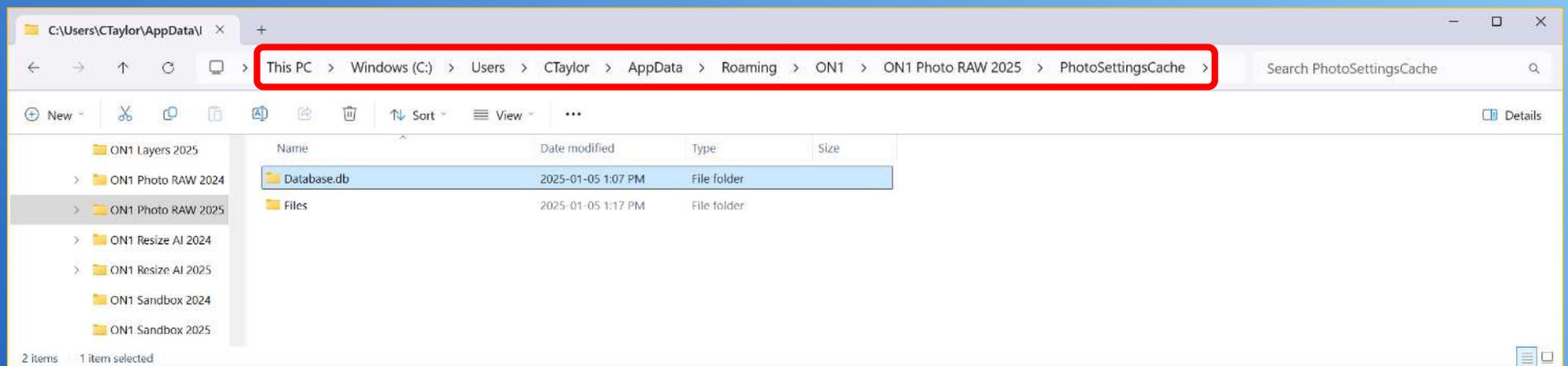
... and finally



recover data files from backup

# And don't forget...

Did you back up *all* your data?



This is where **ON1 Photo RAW** stores its catalogue

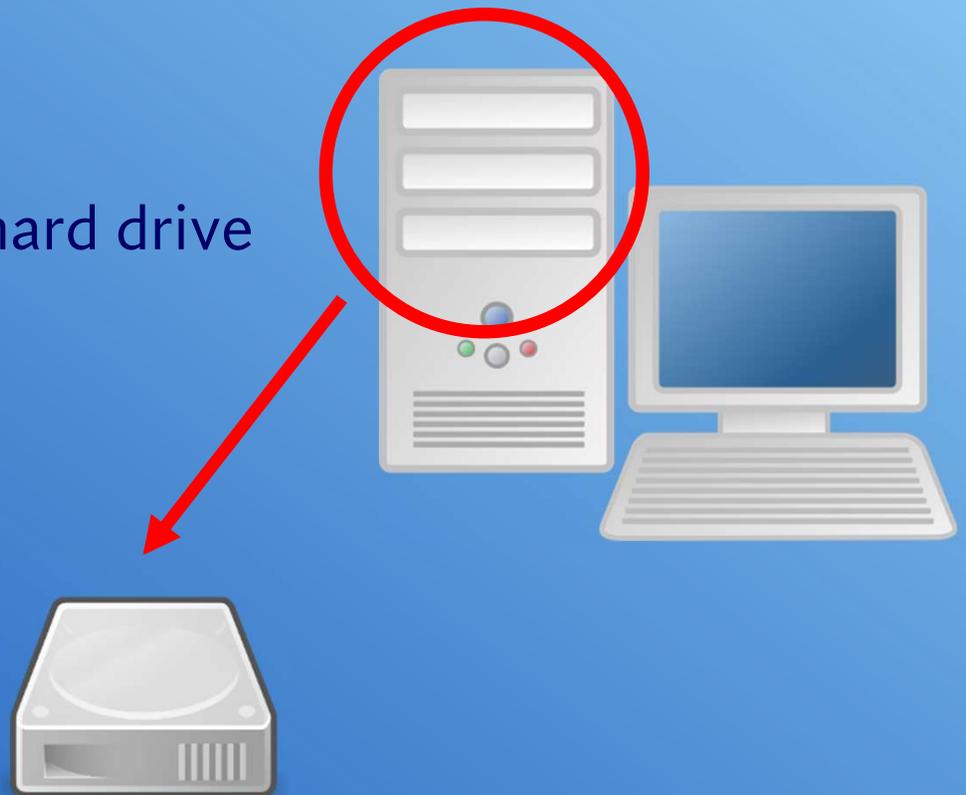
- *with the edits for all my photos*

# Backing up everything with imaging

**see also additional slides at the end for instructions on locking down external storage devices to a specific drive letter**

# Disk image

- Snapshot of everything on computer
  - operating system (Windows)
  - programs
  - data
- All copied to an external hard drive



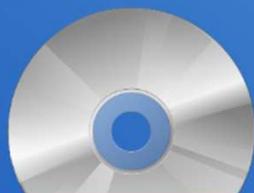
# Disaster recovery with imaging



Disaster: hard drive failure



Replace hard drive



Boot from DVD/flash drive

- run recovery program



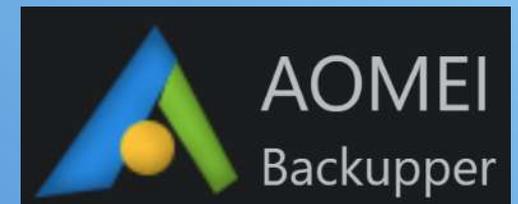
Couple of hours later

- everything restored

# Free options for imaging



The screenshot shows the website for the Ottawa PC Users' Group (OPCUG). The logo features a stylized computer monitor with the text "OPCUG" above it and "Users helping users" below it. The main heading is "Ottawa PC Users' Group". A navigation menu includes "Home" and "Reviews". The article title "Finding a Backup Program" is highlighted with a red box, and it is attributed to "by Chris Taylor". A search bar with "Google Custom Search" is visible. The beginning of the article text is partially visible: "I've been a long-time user of Acronis True Image. However, I have found the user interface has become a mess over the past few..."



Aomei Backupper



EaseUS Todo Backup



Paragon Backup & Recover

<https://opcug.ca/Reviews/BackupPrograms.htm>

# Imaging software

- Image entire computer
- Full & incremental backups
  - full - everything
  - incremental - changes since last backup
- Scheduling
- Disaster recovery (entire computer) with
  - bootable flash drive
  - DVD
- File / folder recovery

# Examples showing *EaseUS Todo Backup*

**Add Backup**

Not Logged in  
Log in EaseUS Account to connect cloud service

Add Backup  
+

**Click to rename backup job**

New Backup  
Next Backup: No Schedule

Select what you want to back up

Disk

File Disk

**Top-left checkmark to select all partitions on each drive you want to back up**

Hard disk 1 (1.053.87 GB, Basic, GPT)

Hard disk 0 (1.027 TB, ...)

Hard disk 2 (1.02 TB, Basic, GPT, USB)

SYSTEM %: (FAT32)

Windows C: (NTFS)

%: (Other)

%: (Other)

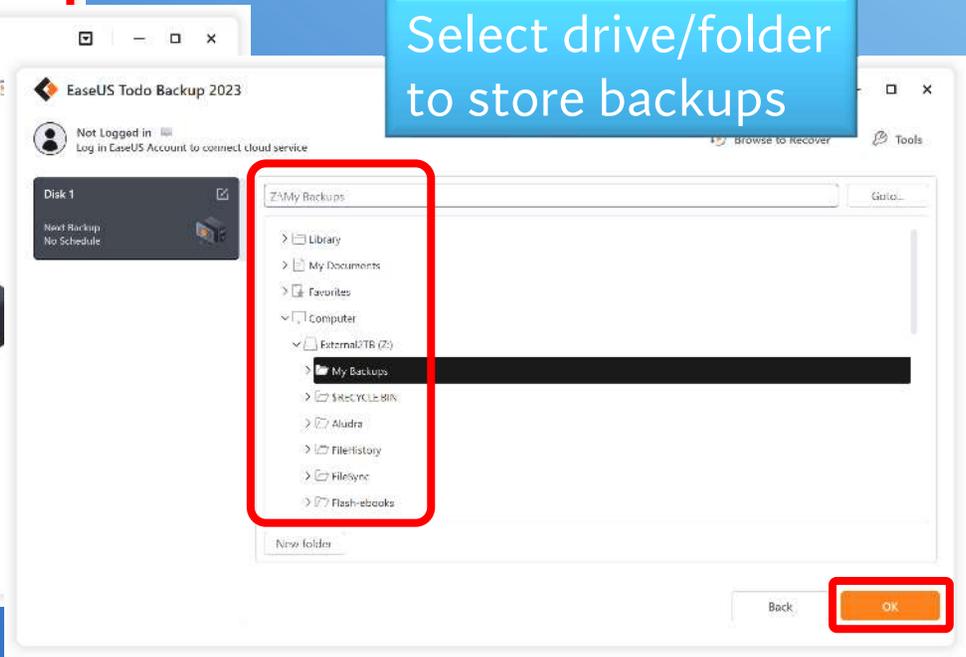
%: (Other)

Back OK

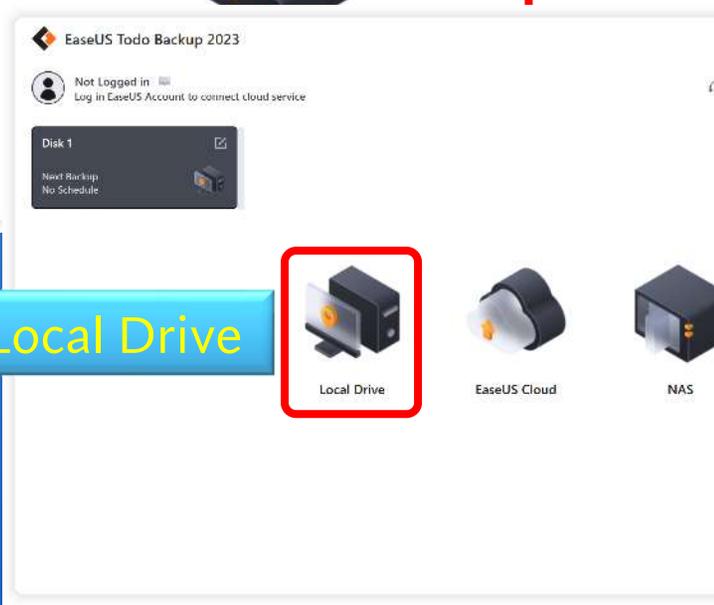
Click to select disk where backups will be stored



Select drive/folder to store backups



Click Local Drive



Lots of options to explore  
• defaults are pretty good

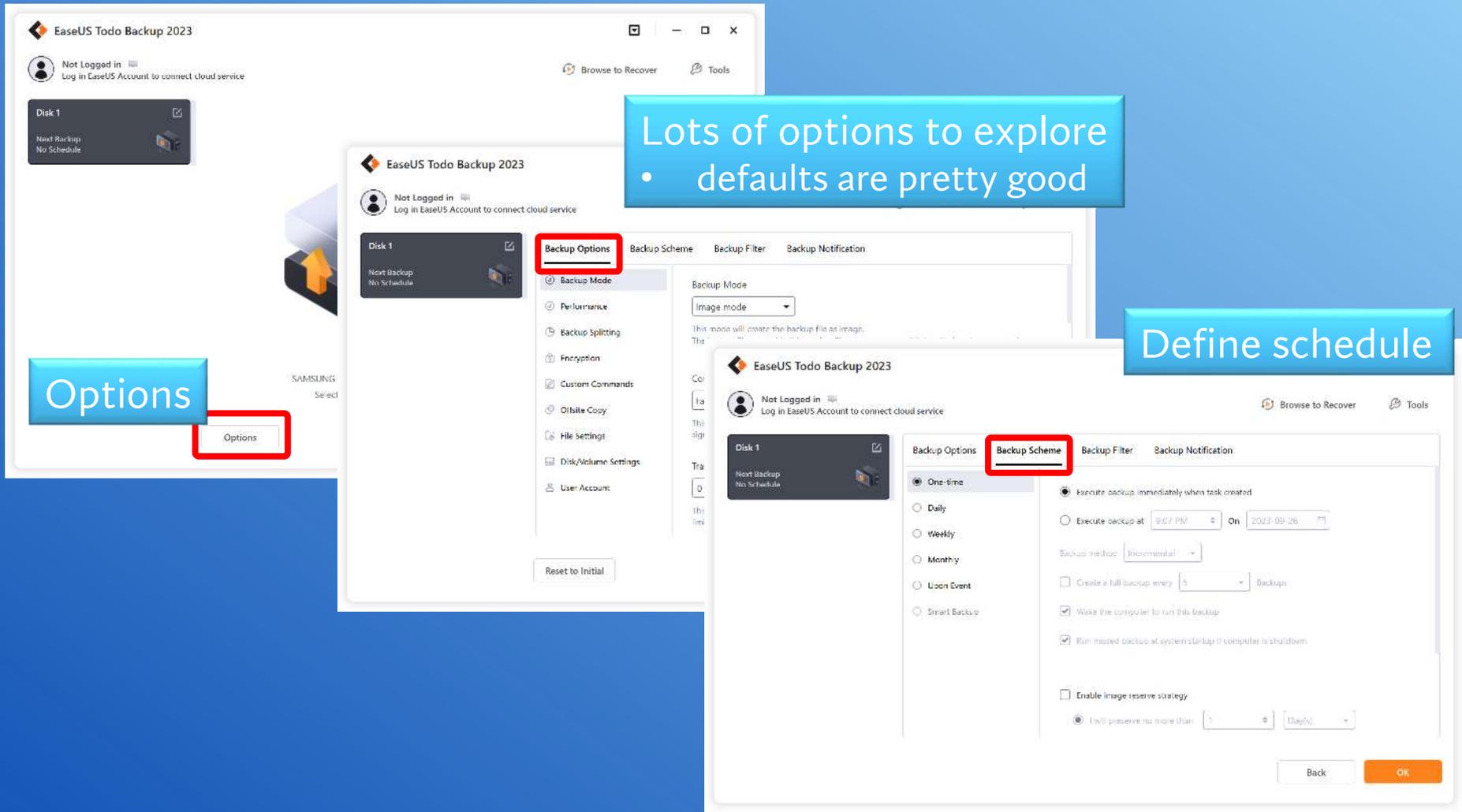
Define schedule

Options

Options

Backup Options

Backup Scheme



EaseUS Todo Backup 2023

Not Logged in  
Log in EaseUS Account to connect cloud service

Browse to Recover Tools

Disk 1  
Next Backup: No Schedule

My Disk

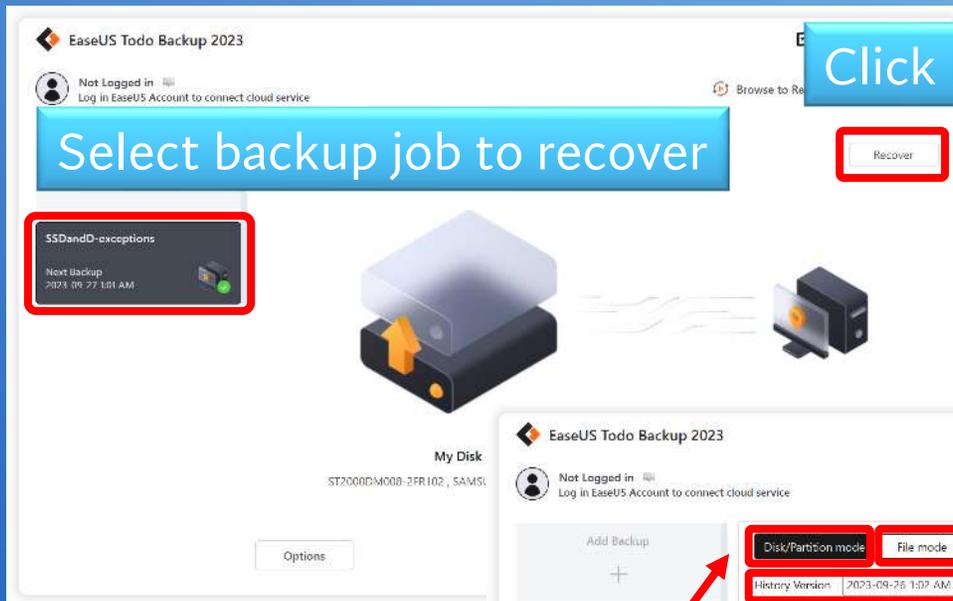
Z:\My Backups  
1.3 TB free of 1.8 TB

Start the backup

Options

Backup Now

# Recovery

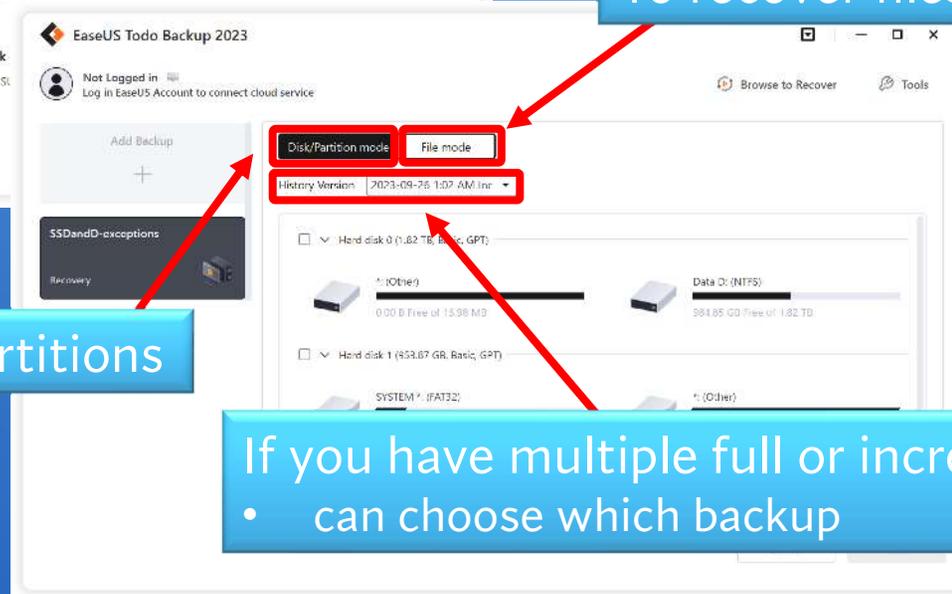


Click Recover

Select backup job to recover

Recover

To recover files/folders



To recover entire partitions

If you have multiple full or incremental backups

- can choose which backup

# Emergency Disk creation

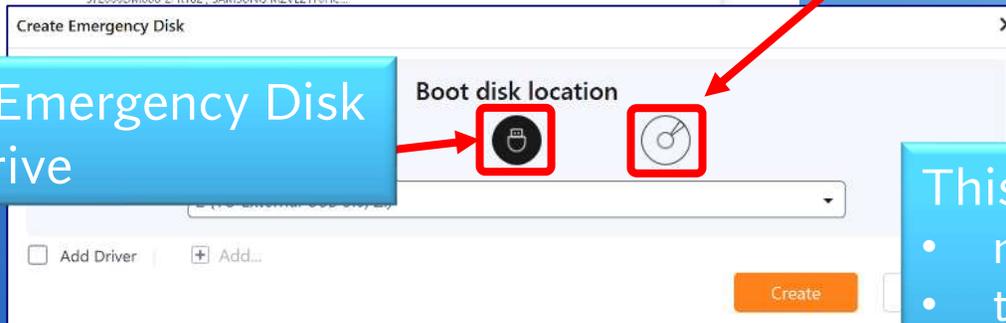
Emergency disk allows for disaster recovery

- hard disk failure
- replace hard disk
- computer has no operating system
- Emergency Disk has an operating system and recovery program



To create Emergency Disk on DVD

To create Emergency Disk on flash drive



This overview covers basics

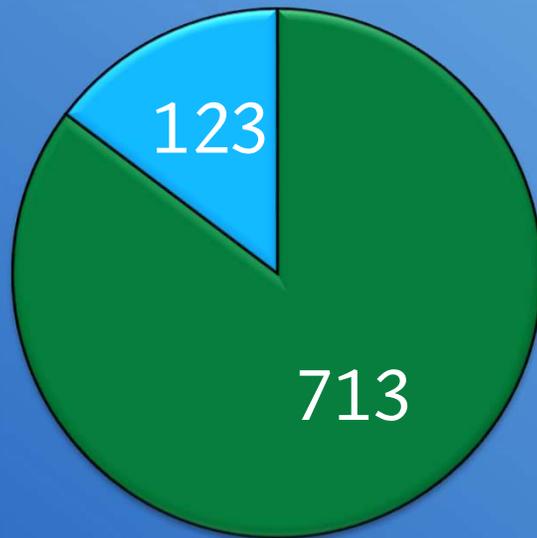
- much more can be configured
- to get most of the program
  - see the manual

Be careful creating flash drive emergency disk

- don't accidentally select another USB drive ... such as your backup disk!

# Problems with imaging

## Month of **my** backups in GB



### Mitigations:

- external hard drives inexpensive  
4TB=\$115
- incremental backups relatively small

■ Full backup    ■ 30 days of incrementals

836 GB of space on backup drive required for a month of backups

# Problems with imaging

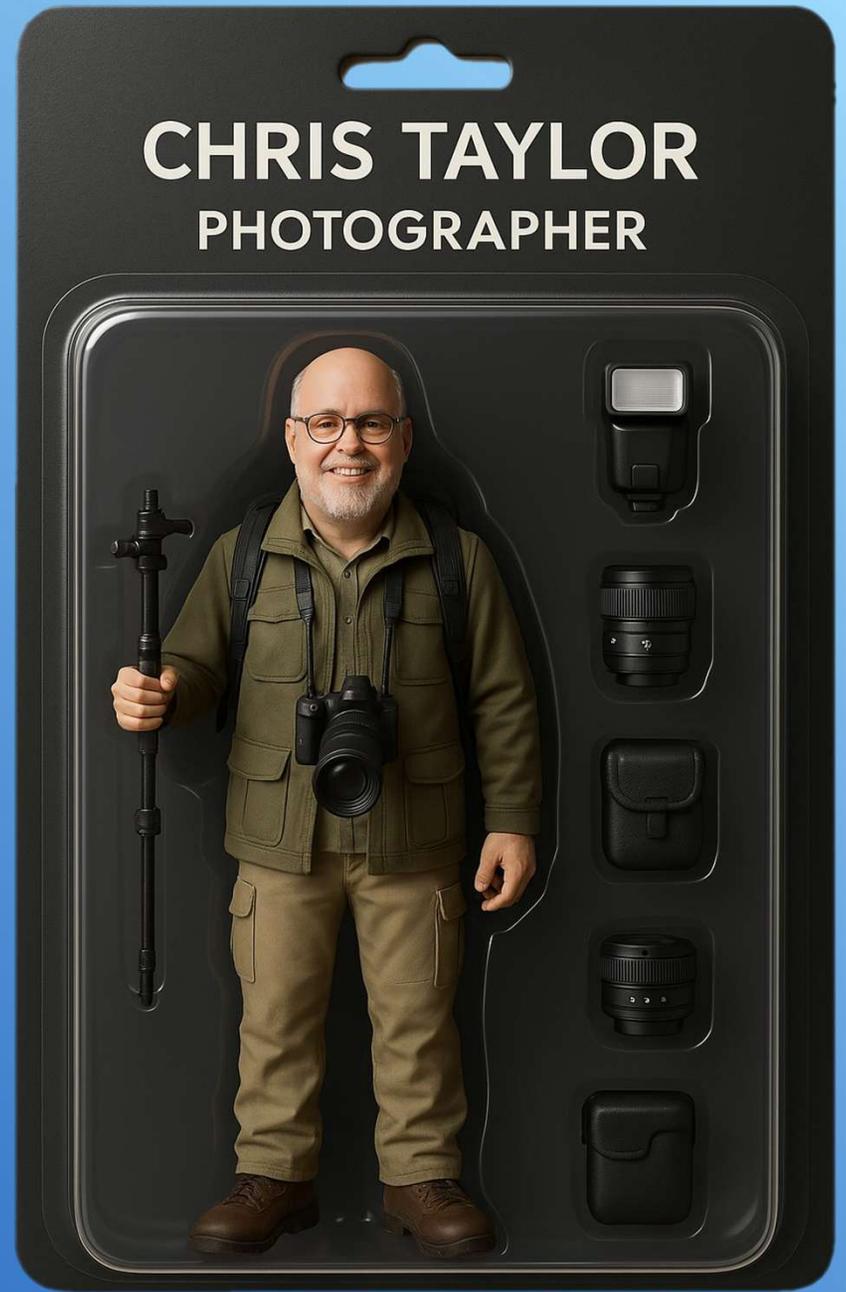
Full image backups can take hours



## Mitigations:

- incremental backups quickly
  - my daily incrementals run in under 5 minutes
- schedule backups to run unattended

# Special considerations for photographers



# Two types of photo editors

- Destructive photo editors
- Non-destructive photo editors

# Destructive photo editors

- Pixels in the image are modified directly
  - lightened, darkened, colour-shifted, cropped, etc.
- During editing
  - can undo to revert changes—but only in continuous, linear fashion
  - can't freely jump back and forth through multiple changes
- For example, you:
  - crop, then change contrast, then clone part of image, and then adjust colour temperature
  - you can't undo your crop without undoing the other changes
- Once you save the file
  - all changes are *baked-in* and can't be undone without starting over from original
- Backup considerations the same as any other data file on computer

# Non-destructive photo editors

- Edits are not applied directly to the pixels in image
- Kept as *instructions* on how to modify the image
- Can freely go back & adjust previous manipulations eg:
  - crop, then change contrast, then clone part of image, and then adjust colour temperature
  - decide the crop was too tight
  - adjust the crop so more of the image retained
  - does not affect edits to contrast, cloning, colour temperature
- Can exit editing program, come back the next day, and pick up where you left off
  - and still undo parts of the work done previous day

# Where are changes saved?

- When you exit the editing program, changes must be saved somewhere!
- Two choices
  - photo editor may choose one, the other, or allow both
- Catalogue or library
  - **all** instructions on how **all** your images were manipulated are stored in a **single** file (or collection of files) maintained by the photo editing software
- Sidecar file
  - **each** edited image has an associated file that contains the instructions for how that **single** image was modified

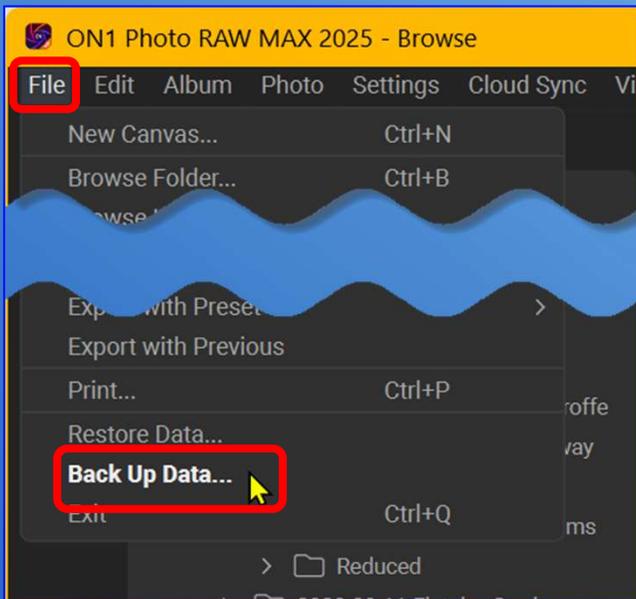
# Backup considerations

- When using sidecar files
  - no change to backup processes required
    - sidecar file is stored alongside original image
    - when you backup your images, you backup sidecar files
- When using catalogue or library
  - up to you to ensure it is backed up
- But how?
- Check with your editing software
  - may (probably) provide a function within the program to back up the catalogue/library
  - may let you know where the files are stored and expect you to back them up

# ON1 Photo RAW

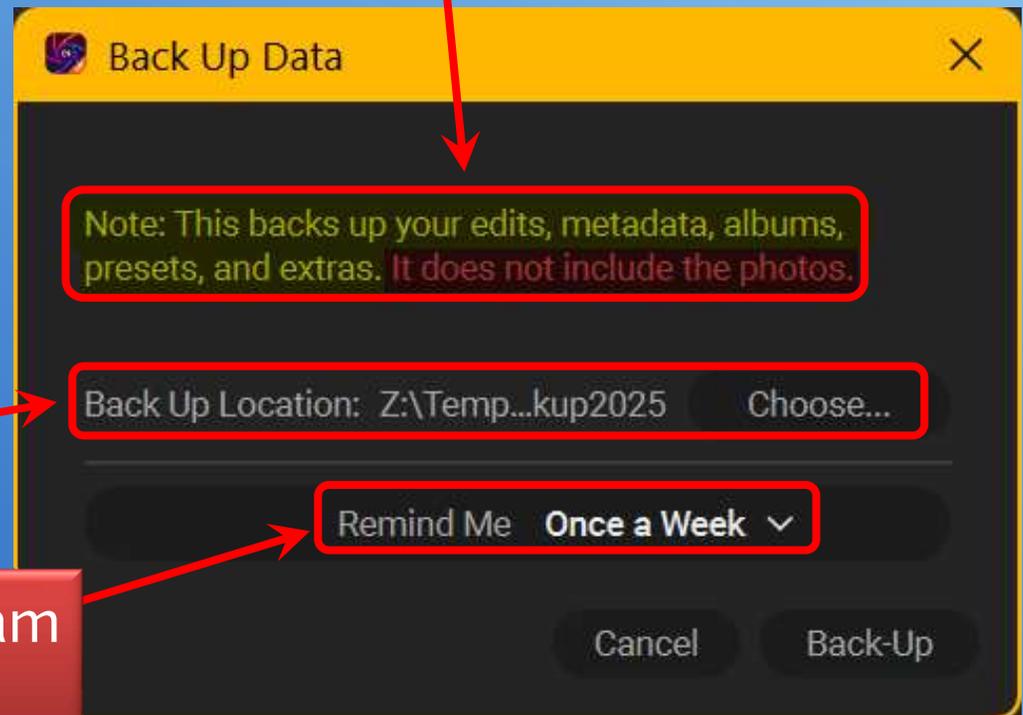
What is being backed up

- everything *except* your photos



Where it's backed up to

- ideally a different drive



Reminder when exiting program

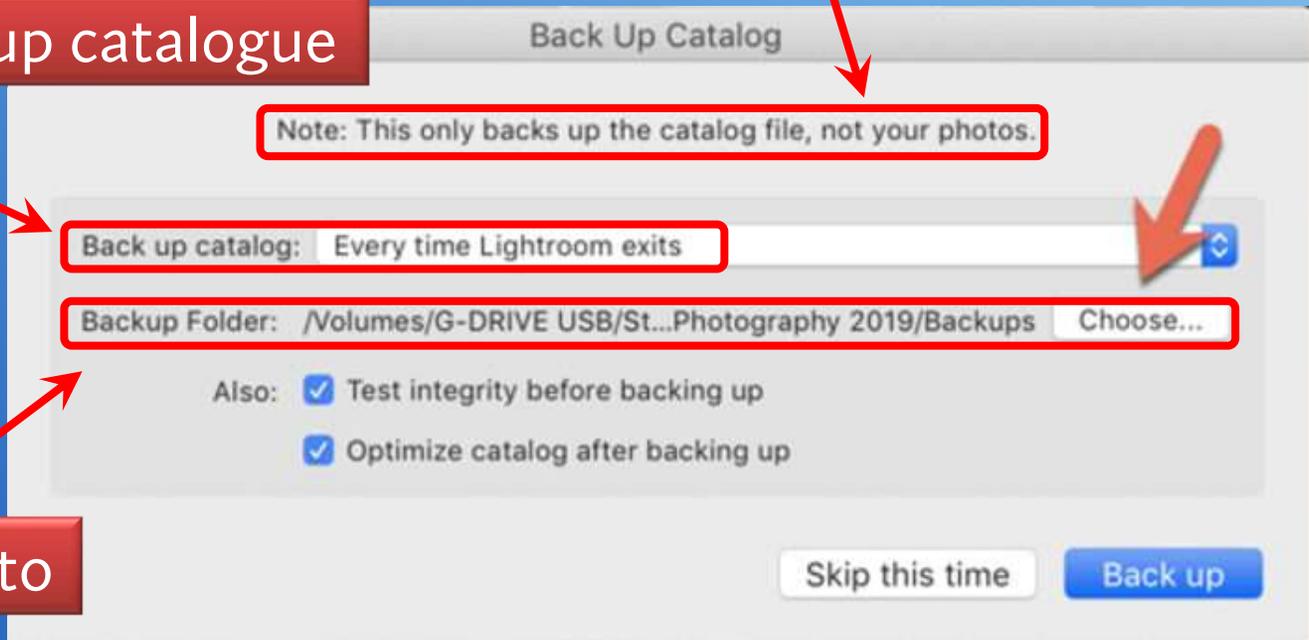
- daily, weekly, monthly, never

# Lightroom



Photos are **not** backed up

How often to back up catalogue



Where to back up to

# Another consideration

- Every non-destructive photo editor has proprietary format catalog/library and sidecar files
- Moving between programs may require
  - exporting all your images to save images with your edits
  - may not be a big deal:
    - select all edited images > export
    - do something else for...minutes, hours, days?
- Some non-Adobe editors can import from Lightroom catalogue
  - allowing you to move all edits to a new program
    - may not be precise in how they interpret *instructions* for edits
  - but not (likely) the reverse (moving *to* Adobe Lightroom)

# Some non-destructive photo editors



■ Adobe Lightroom



■ ON1 Photo RAW



■ Skylum Luminar



■ Capture One



■ DxO PhotoLab



■ Affinity Photo



■ Exposure X7

■ ...

Club Photo



**Back to your regularly scheduled program...**

# More than one solution for Backup

## ■ Backing up just data

- *File History (or FreeFileSync)*
  - near realtime backup as you make changes
  - versioning can give really long recovery periods
- cloud backup
  - access from any computer
  - sharing files
  - synchronizing computers \*
  - realtime backup \*

## ■ Backing up everything

- image backup
  - disaster recovery of entire computer
  - recovery of individual files / folders

\* From some cloud providers - (Google Drive, Dropbox, OneDrive ...)

# Apple MacOS users

- *Time Machine*
  - hourly for last 24 hours
  - daily for last month
  - weekly for all previous months
  - oldest deleted when space required
  - can start computer from *Time Machine* disk & restore
  - can rotate multiple external drives to provide off-site backup
- Cloud backup also a viable option for off-site
  - *keeping in mind all previous caveats about cloud backup*

# Offsite backup

- Mitigates rarer dangers
  - fire, theft, file encrypting malware
  - therefore can be less frequent
- Store backup disk
  - maybe desk drawer at work or friend's house
- Encrypt
  - more at risk for theft when stored elsewhere
  - some external drives include optional full-disk encryption
  - most imaging software includes optional encryption
- Note: *File History* does not easily allow off-site backup

# How many backups?

- Important data: *at least* three places
  - **your computer**
    - working files
  - **local backup** (*File History* & Image backups)
    - frequent backups
    - protection from deletion, disk failure, etc.
  - **offsite** (cloud & image backups)
    - protection from fire, theft, electrical surge, file encrypting malware, etc.

# Prepare

- Think about your needs
- Choose solution right for you
- Test backup processes
  - verify files can be recovered
- Image backup solutions
  - create emergency recovery disc / flash drive
  - test boot from recovery media
  - test accessing backups while booted from recovery media

# Three Important Strategies

1. Backup

2. Backup!

3. Backup!!

# Ottawa PC Users' Group

*Users helping users*

- Zoom meetings open to members & non-members
  - club meetings held 2<sup>nd</sup> Wednesday of the month, 7:30-9:30
  - weekly Q&A sessions (except 2<sup>nd</sup> Wed of month)
  - check out what's coming! <https://opcug.ca/#upcoming>
- Join the OPCUG - <https://opcug.ca/join-or-renew/>
  - why join? - <https://opcug.ca/why-join/>
- Ottawa Public Library presentations schedule
  - <https://opcug.ca/opl-presentations/>
  - register at the OPL website
    - <https://bibliottawalibrary.ca/en/program>

# OPCUG online

- Web Site
  - <http://opcug.ca>
- **Member only services**
  - discussion forum
  - one-on-one remote assistance
- Monthly newsletter
  - articles, reviews, notices, & more
- Archives
  - past presentations & Q&A
- Fraud Watch
  - stay safe online
- Digital photography “how-to”s



Volume 40, Number 7

September 2023

## ARTICLE

## Really, really, deleting files by Chris Taylor

**W**hen you delete a file in Windows, the actual on-disk data is not removed. The file is usually moved to the Recycle Bin where it can be easily recovered. Even if you empty the Recycle Bin or bypass the Recycle Bin by holding down the Shift key while deleting files, the data remains on disk. All that happens is the pointers to the file are removed, making the space available for new files.

### Recovering deleted files

Utilities to recover deleted files date back to *Unerase* in the first version of the Norton Utilities in 1982. They continue to this day with dozens of free and commercial programs available for Windows, macOS, Linux, Android, and iOS.

If you are in a high-security situation, please ignore this article. It is intended for the average home or business user whose adversaries are not about to use magnetic force microscope techniques to recover data. If you are likely to have CSIS looking for your deleted data, you need to go well beyond what I recommend here.

### Making data unrecoverable

When you want to dispose of a storage device, you should ensure all sensitive data is deleted and **unrecoverable**. This can be achieved by physical destruction of the storage device: hard disk drive (HDD), solid state drive (SSD), flash drive, etc. or—if you want the storage device to be reusable—by over-writing the data areas of the disk with random data, obliterating the original data.



Some secure deletion programs boast of capabilities such as the Gutmann algorithm, which overwrites all data with 35 passes. For the average computer user, I wouldn't worry beyond a single pass.

There are many programs available, both free and commercial, for secure data removal. The programs I list are not necessarily the best—they are simply programs that have been around quite a while (have stood the test of time), are free, and have been used successfully either by me or other members of OPCUG.

Be careful using secure deletion programs. By their very nature, there is no “undo” button! There are several levels of overwriting data: individual files, free space on the drive, and the entire disk.

### Individual files

If you just want to make a few files unrecoverable, there are programs that can target individual files or folders of files. One example is the free and open-source program File Shredder (<https://www.fileshredder.org/>). It is very simple and straightforward to use.

### Free space

Storage devices eventually end up with data in all locations on the device. The free space has data that was used for files that have since been deleted. You have no way of knowing what recoverable data might be there. Some programs can target free space and securely overwrite data there. File Shredder is one program that can wipe free space.

### Entire disks

If you want to securely delete all data on an entire storage device, HDDShredder (<https://www.miray-software.com/products/applications/hdshredder.html>) is available in free and commercial versions. The free version should be sufficient for the vast majority of users. The website details the additional capabilities in the commercial versions.

Another popular program for securely erasing all data on storage devices is the free and open-source DBAN

*(Continued on page 7)*

### Inside this issue:

<i>Next Meeting / Coming Up / Calendar</i>	2
<i>Really, really, deleting files</i>	1
<i>June 2023 PizzaQ / Q&amp;A celebration</i>	3
<i>Basic Programming using ChatGPT</i>	4
<i>OPCUG 2024 Board Nominations</i>	5
<i>Hi the Streets!</i>	6
<i>Contact Information</i>	8

Next Meeting: **WEDNESDAY, September 13<sup>th</sup>, 2023**



*That's all Folks!*

Chris.Taylor@opcug.ca

PDF version of this presentation will be available on the CPOPC website  
Additional material in download file:

- Locking an external drive to a single drive letter
- *File History*
  - recovering deleted files
  - cleaning up old versions
  - *File History* in Windows 11
    - workarounds for issues caused by Microsoft
- *FreeFileSync* as a replacement for *File History*

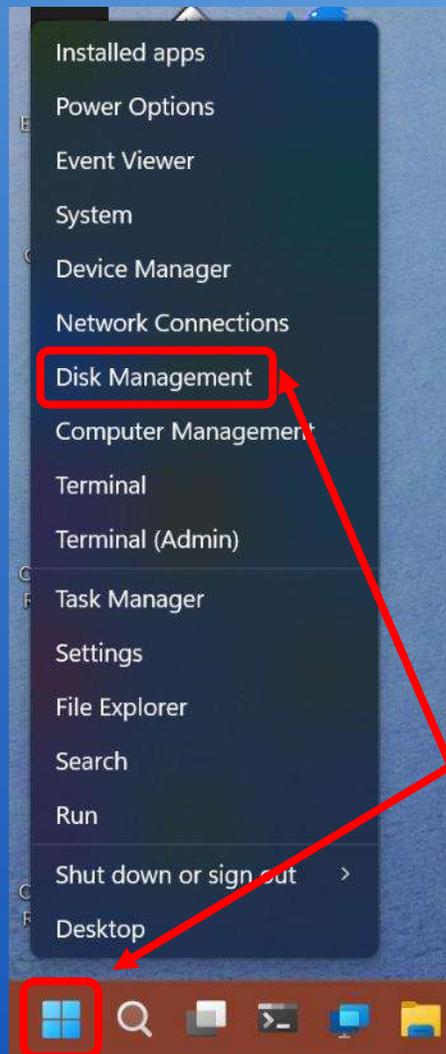
# Lock drive to a specific drive letter

## Problem:

- Windows automatically assigns drive letters from the top of the alphabet
- external drive can change drive letter when you plug it in—if drive letter in use by another device
- can cause operations such as backup processes to fail if they expect a different drive letter

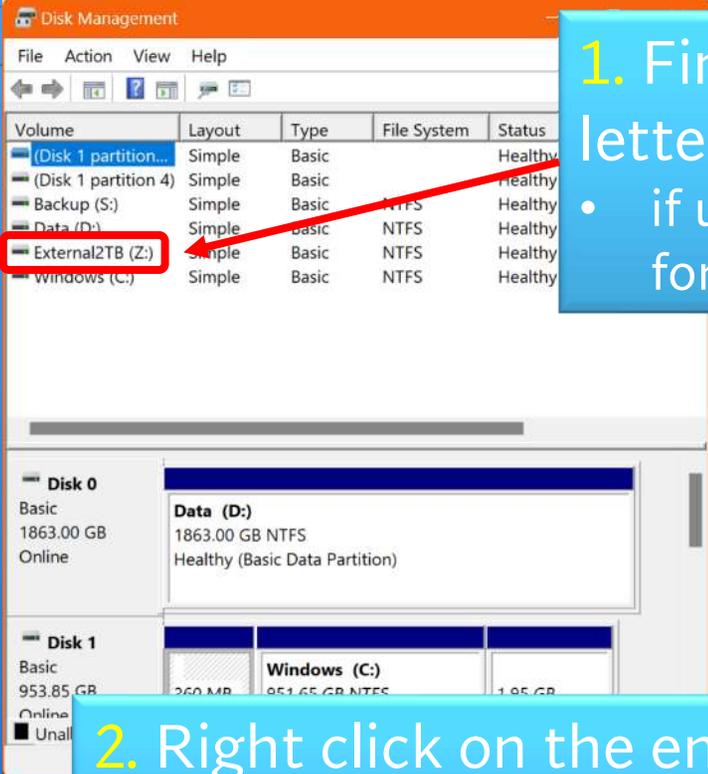
## Solution:

- lock drive to a specific letter
- choose a letter far down the alphabet so Windows won't try to use it automatically for another drive



1. Right-click **Start** button

2. Click **Disk Management**

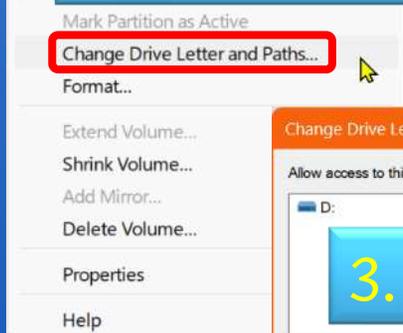


1. Find the drive you want to lock the drive letter for (drive used to store backups)

- if unsure, remove drive and plug it in and watch for the drive letter to appear

2. Right click on the entry (red box in example above)

- choose **Change Drive Letter and Paths...**

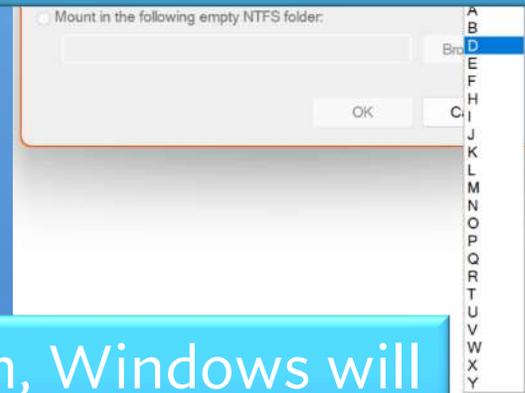


3. Click **Change**



4. Select a drive letter

- choose one far down the alphabet
- e.g. T through Z good candidates



5. From then on, Windows will use that drive letter for that device as long as it's available

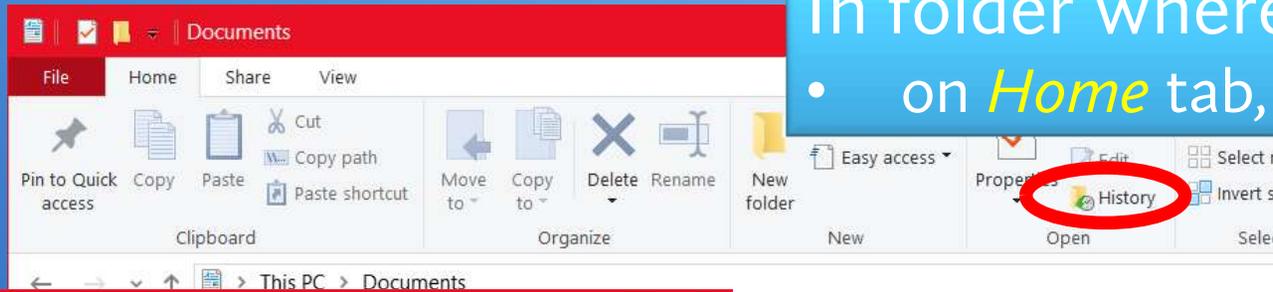
# File History: recover deleted files

File2BDeleted.txt accidentally deleted

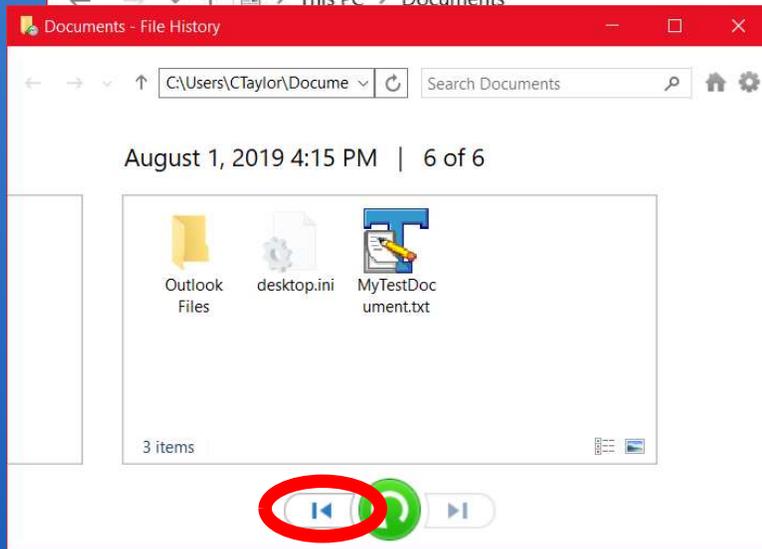
- no file to right-click

In folder where file used to be

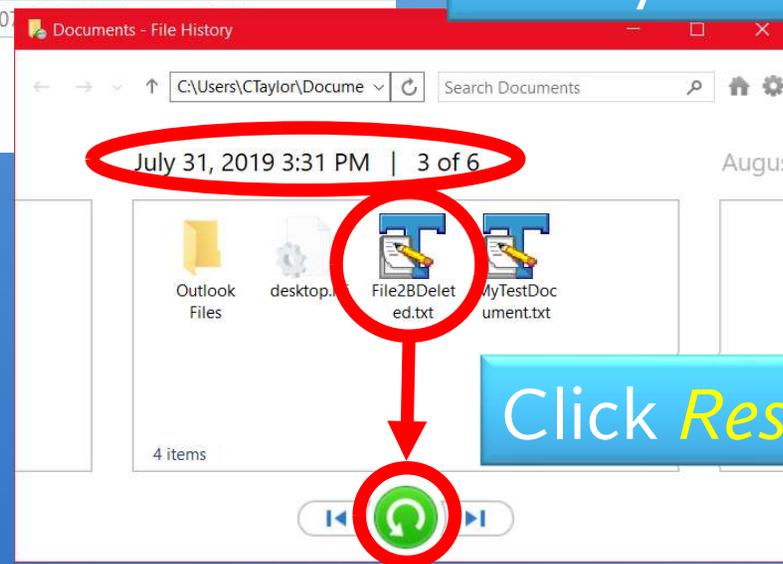
- on *Home* tab, click *History*



Find your file



Use rewind control



Click *Restore*

# File History: Clean up versions

Until space is needed

1 month

3 months

6 months

9 months

1 year

2 years

Forever (default)

How long to keep

If you choose to keep versions *Forever*

- eventually you will run out of room

## Overview

Size of backup: 0 bytes

Total space on Local Disk (Z:): 931 GB

Your data is not yet backed up.

Back up now

Back up my files

Every hour (default)

Keep my backups

Forever (default)

Back up these folders

+ Add a folder

Favorites  
C:\Users\CTaylor

Pictures  
C:\Users\CTaylor

Documents  
C:\Users\CTaylor\OneDrive

Documents  
C:\Users\CTaylor

Music  
C:\Users\CTaylor

Exclude these folders

+ Add a folder

Back up to a different drive

You'll need to stop using your current backup drive before you add a new one. This won't delete any files from your current backup drive.

ng drive

settings

ced settings

es from a current backup

Have a question?

Get help

# Clean up versions

Advanced Settings

Advanced settings

Choose how often you want to save copies of your files, and how many versions to keep saved versions.

Forever (default)

Save changes Cancel

File History Cleanup

Delete older versions of files and folders

The cleanup deletes versions of files and folders older than the selected age, except the most recent version of a file or folder. All other files and folders, such as versions that were excluded or removed from your libraries, are also deleted.

Delete files:

- Older than 1 year (default)
- All but the latest one
- Older than 1 month
- Older than 3 months
- Older than 6 months
- Older than 9 months
- Older than 1 year (default)
- Older than 2 years

*Clean up versions*

*Choose period*

*Advanced settings*

*Related settings*

## Overview

Size of backup: 0 bytes

Total space on Local Disk (Z:): 931 GB

Your data is not yet backed up.

Back up now

Back up my files

Every hour (default)

Keep my backups

Forever (default)

## Back up these folders

Add a folder

Favorites

C:\Users\CTaylor

Pictures

C:\Users\CTaylor

Documents

C:\Users\CTaylor\OneDrive

Documents

C:\Users\CTaylor

Music

C:\Users\CTaylor

Exclude these folders

Add a folder

## Back up to a different drive

You'll need to stop using your current backup drive before you add a new one.

Stop using

## Related settings

See advanced settings

Restore files from a current backup

Have a question?

Get help

# *File History* in Windows 11

- Microsoft removed *File History* from *Settings*
- Only way to configure now is through *Control Panel*
- There are some additional problems (with work-arounds)
  - less flexible in terms of what gets backed up
  - more laborious to recover deleted files
  - File History **may** be deprecated in the future

# File History in Windows 11

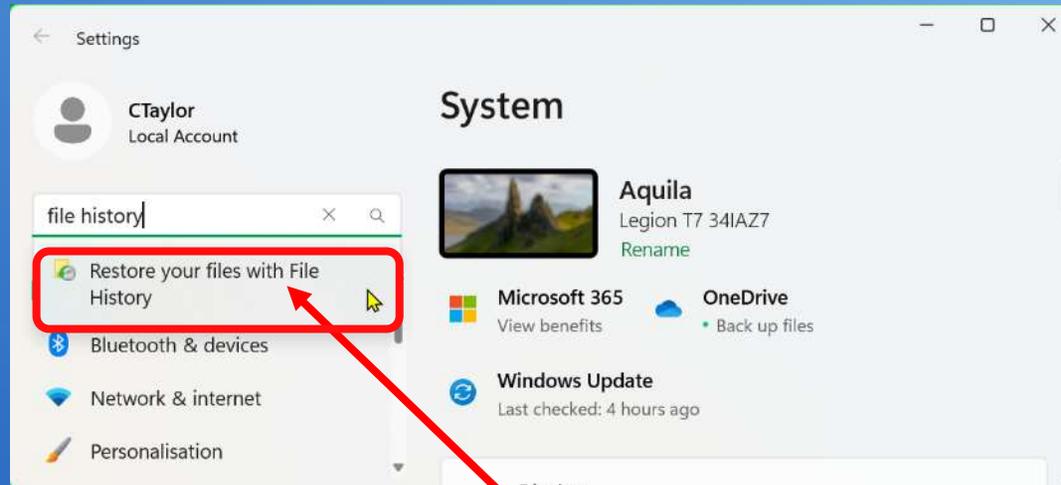
## Problem 1

- *File History* in *Control Panel* only backs up Desktop, Contacts, Favourites, and **Libraries**
  - default libraries are *Documents*, *Music*, *Pictures*, and *Videos*
- Can't add new folders
  - workaround: add folders to a library

# File History in Windows 11

## Problem 2

- Ribbon removed from File Explorer
- Ribbon required to access File History icon to recover deleted files
- Workaround: run *Settings*



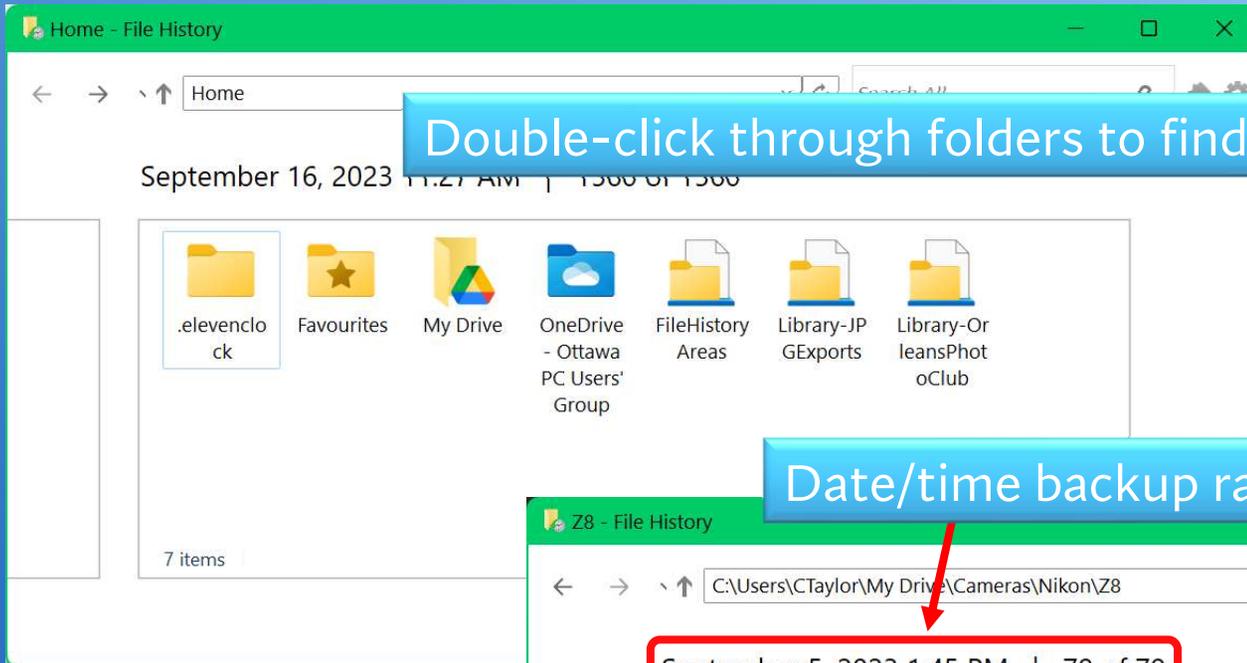
In search box, type

- *file history*

Click

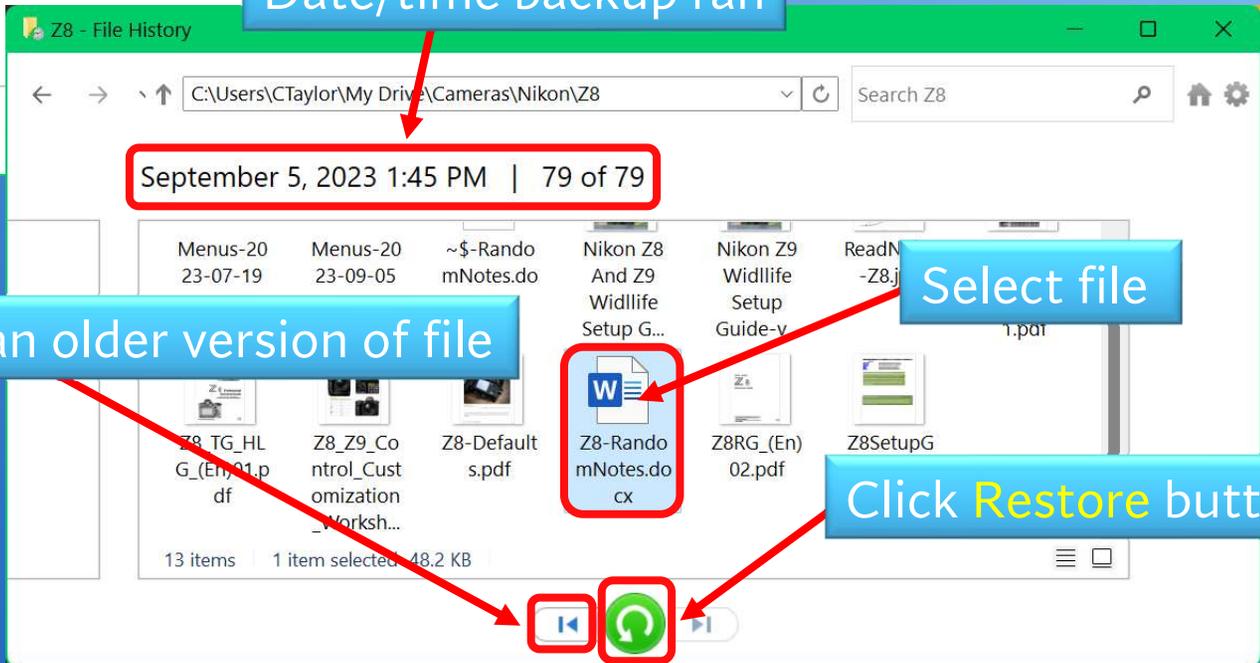
- *Restore your files with File History*

# File History opens



Double-click through folders to find file to be restored

Date/time backup ran



Use **Previous** to find an older version of file



# *File History* in Windows 11

## Problem 3

- The only reason I think Microsoft removed *File History* from *Settings*
  - they are planning to remove *File History* completely in the future
- I think the time has come to look for a replacement for *File History* to do realtime backups and file versioning
- The free and open-source *FreeFileSync* looks good
  - the slides later in this PDF file (white backgrounds) detail using *FreeFileSync* as a replacement for *File History*
  - <https://freefilesync.org/>



# CHRIS'S *File History* in Windows 11



- *Wonderful* backup utility
  - built into Windows 8, 10, & 11
- Provides
  - near real-time backup of new/changed data files
  - version history
    - easily recover old versions of data files from months or years ago
- Covered many times in newsletter and Q&A
- If unfamiliar with *File History*, start with
  - 2020-03 newsletter - File History
  - <https://opcug.ca/Articles/2003NEWS.pdf>

Microsoft is destroying *File History* in Windows 11





# Destroy File History: step 1

*Remove File History from Settings*





# Destroy File History: step 1

- *File History* is no longer in *Settings* in Windows 11
  - *Control Panel* only way to set up & configure *File History*
- Problem
  - *File History* in *Control Panel* can't **add** folders for monitoring for new/changed files
    - 2023-02-22 Q&A Chris's Rant - Windows 11 and File History
    - [https://opcug.ca/qa\\_recordings/20230222\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230222_PowerPoint.pdf)
  - *Control Panel* is being buried more and more in Windows
    - Microsoft pushes *Settings* more & more (rightfully so)
    - *Control Panel* is required for less & less
      - users less & less likely to find *Control Panel*

## Follow-up

# Libraries to the rescue

- File History backs up all libraries by default
- Libraries are simply pointers to one or more locations
  - default libraries: *Documents, Music, Pictures, & Videos*
  - a library can contain any number of folders located anywhere
- To back up additional folders using File History
  - add them to a library!
- Can add additional folders to existing libraries, *or...*
- *Why not create a brand new library?*
  - helps keep things organized
  - single library
    - only exists to allow File History to back up additional folders

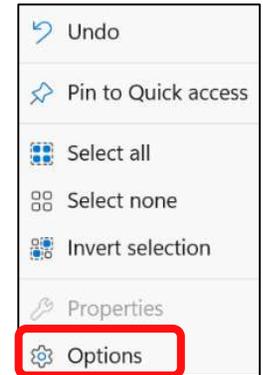
Follow-up

# Working with Libraries

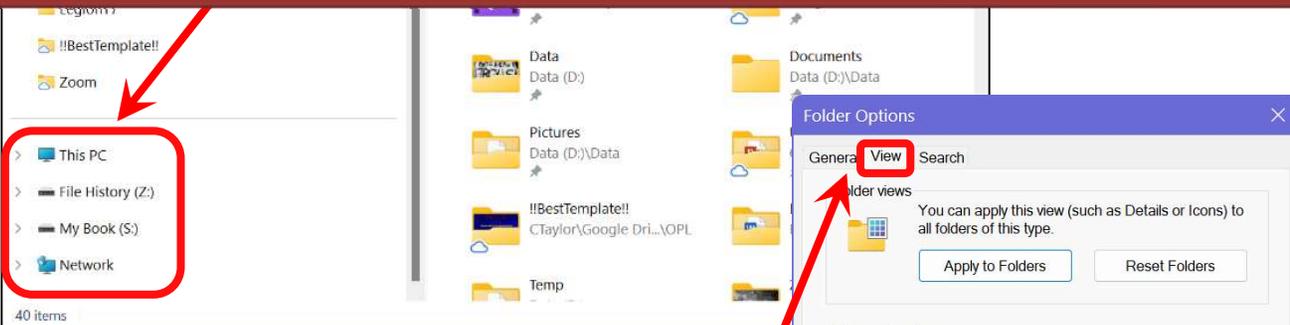
2-click  
ellipsis

1-*Libraries* exist near bottom of navigation pane

- not shown by default

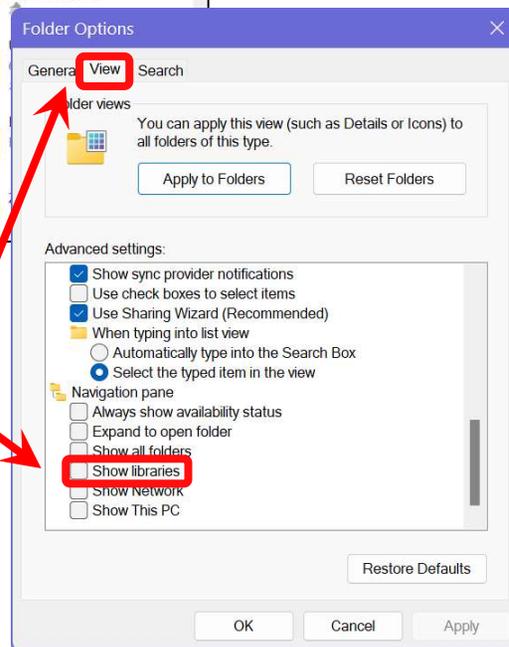


3-choose *Options*



4-on *View* tab

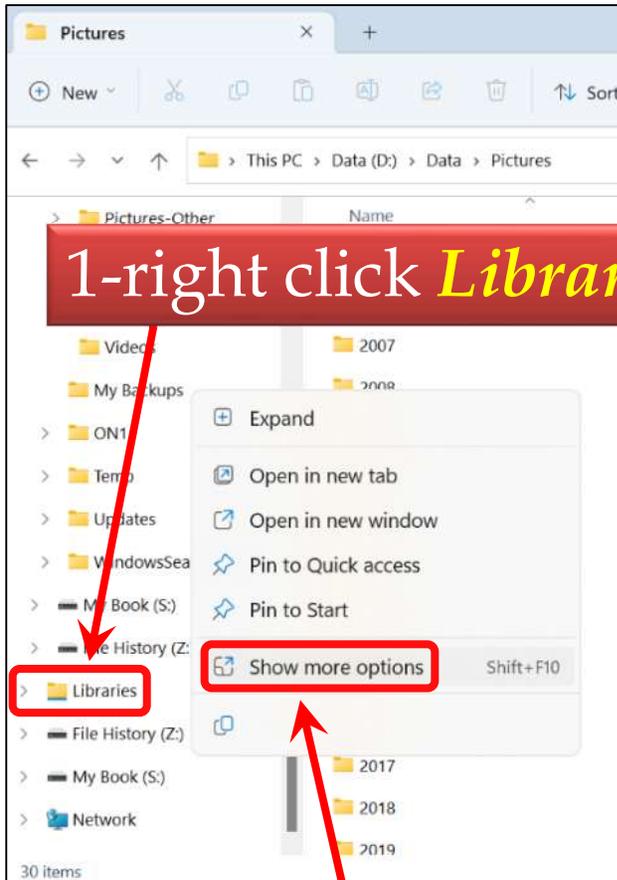
- check *Show libraries*



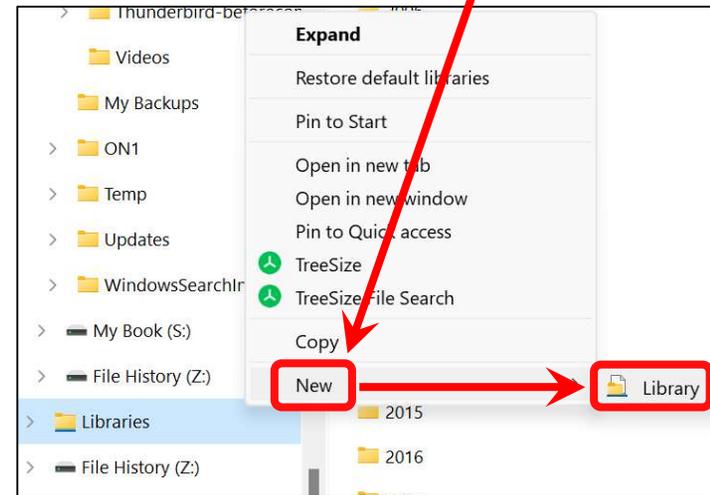
Follow-up

# Create a new library

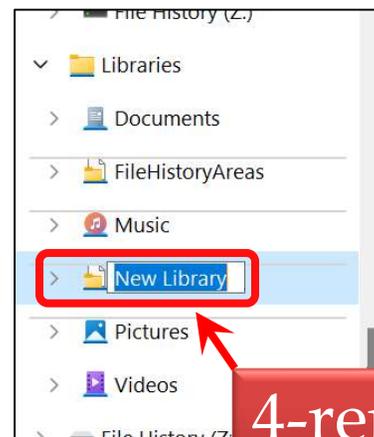
3-click *New* > *Library*



1-right click *Libraries*



2-click *show more options*



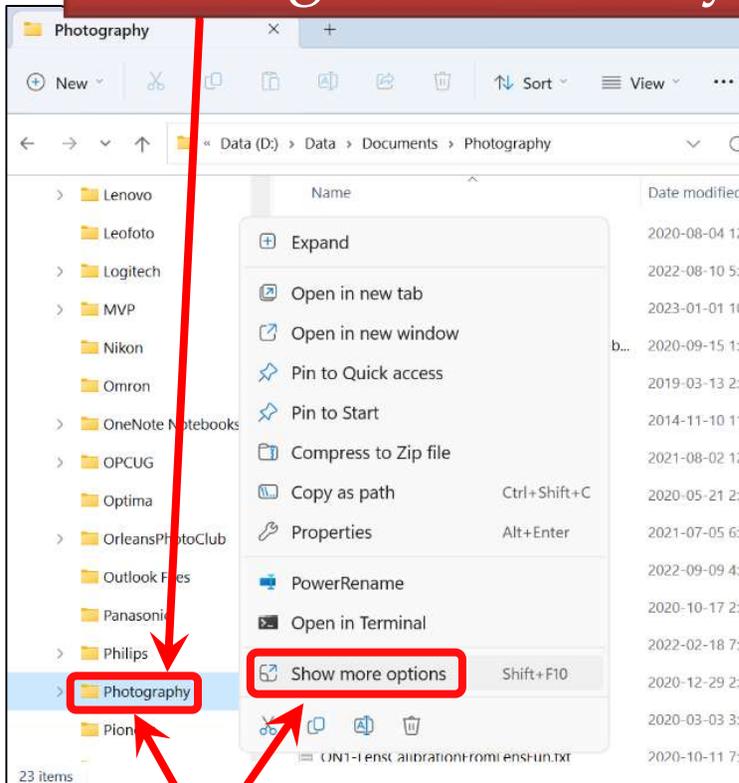
4-rename Library

- maybe *FileHistoryAreas*

Follow-up

# Adding folders to libraries

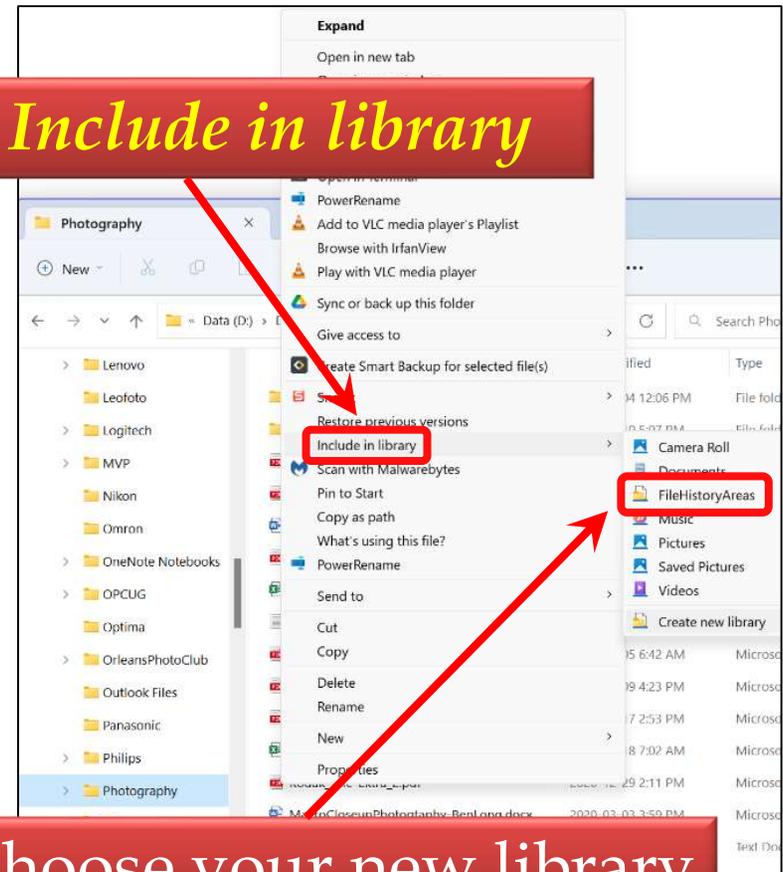
1-Navigate to folder you want File History to back up



2-Right-click folder

- choose *Show more options*

3-click *Include in library*



4-choose your new library



## Destroy File History: step 2

Remove ability to recover deleted files



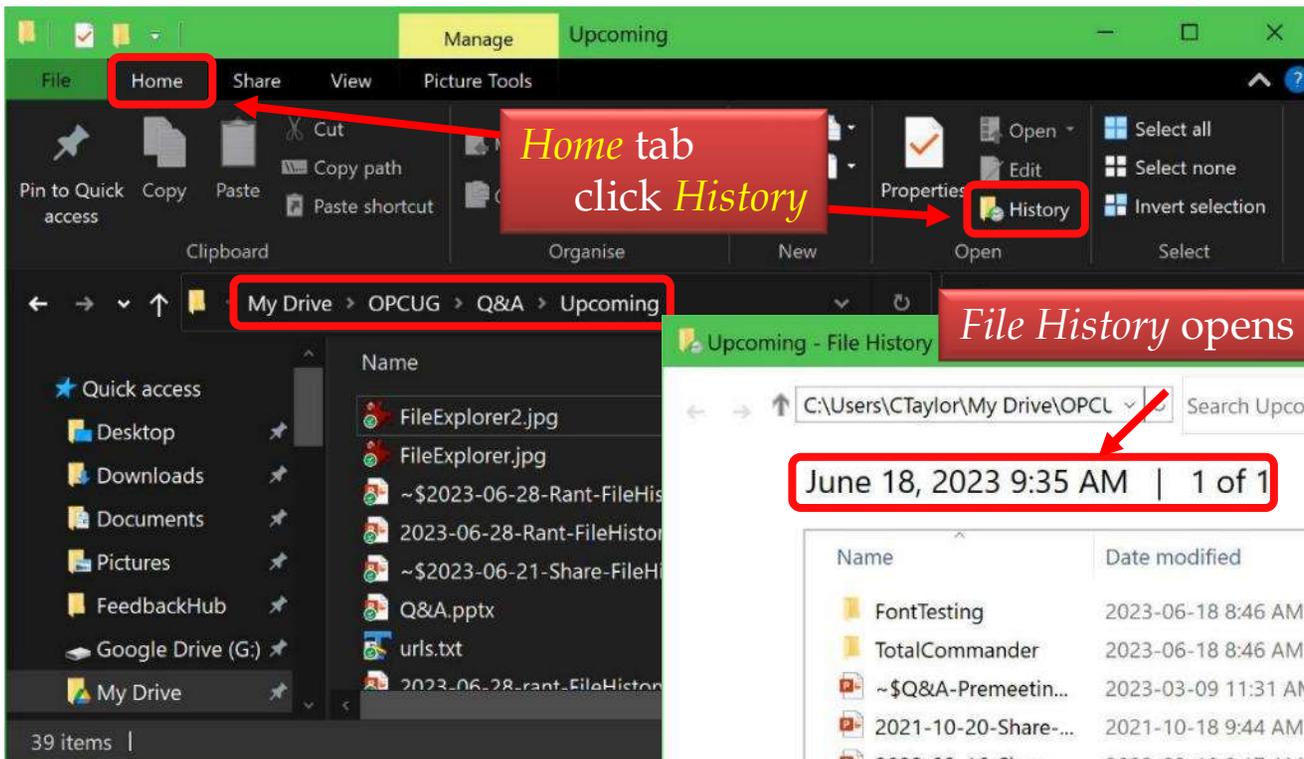


# Recovering a deleted file in Windows 10

Note: you can't use normal recovery

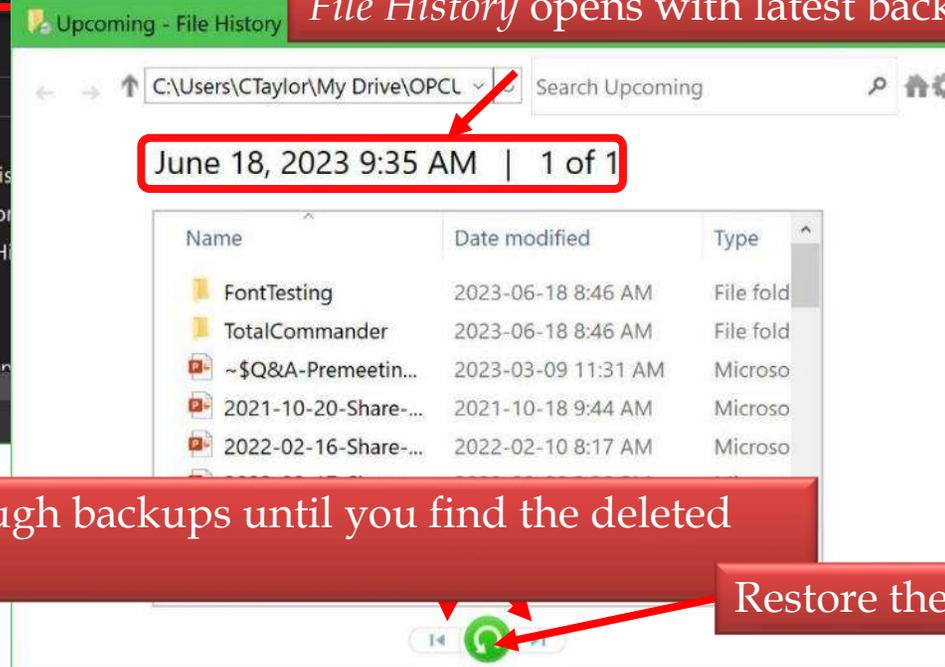
- right-click file in *File Explorer* choose *Restore previous versions*
- file was deleted – no file to right-click!

Navigate to folder where the file *used* to be



Home tab  
click *History*

*File History* opens with latest backup of folder

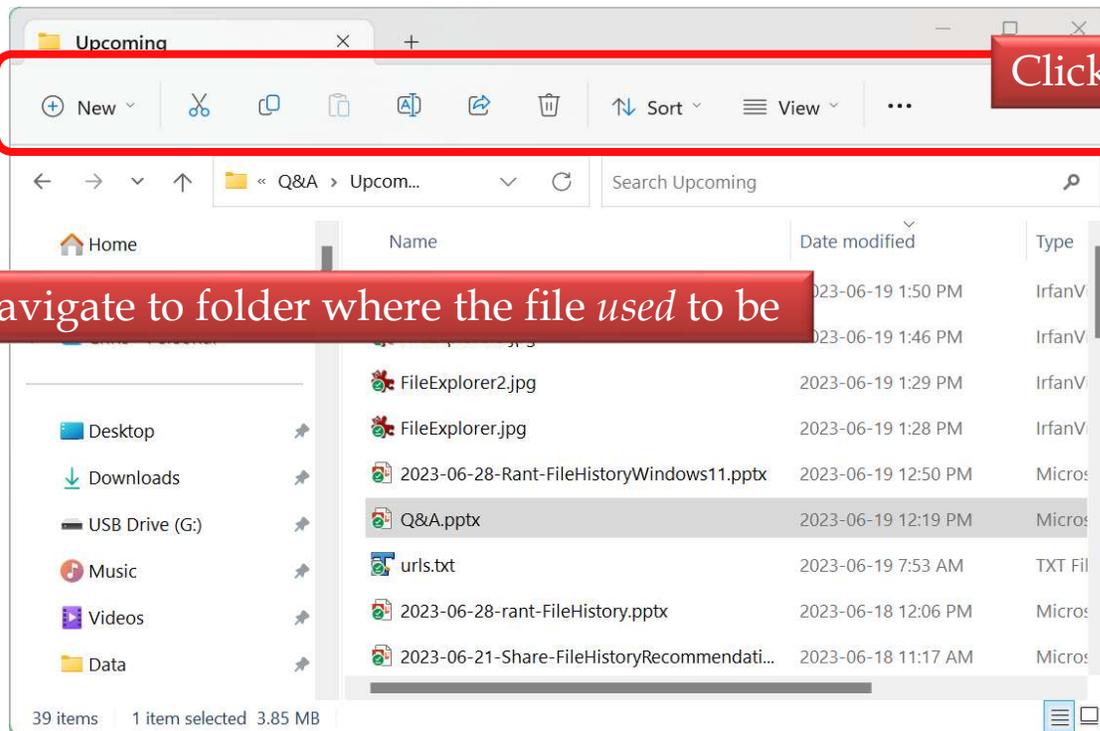


Navigate through backups until you find the deleted file

Restore the deleted file



# Recovering a deleted file in Windows 11



WTF ? ? ? ?

- what happened to the ribbon ?
- where's the *Home* tab ?
- where's *History* ?

Beginning Windows 11 22H2

- classic *File Explorer* ribbon removed
- <https://www.top-password.com/blog/fix-classic-file-explorer-ribbon-missing-in-windows-11/>

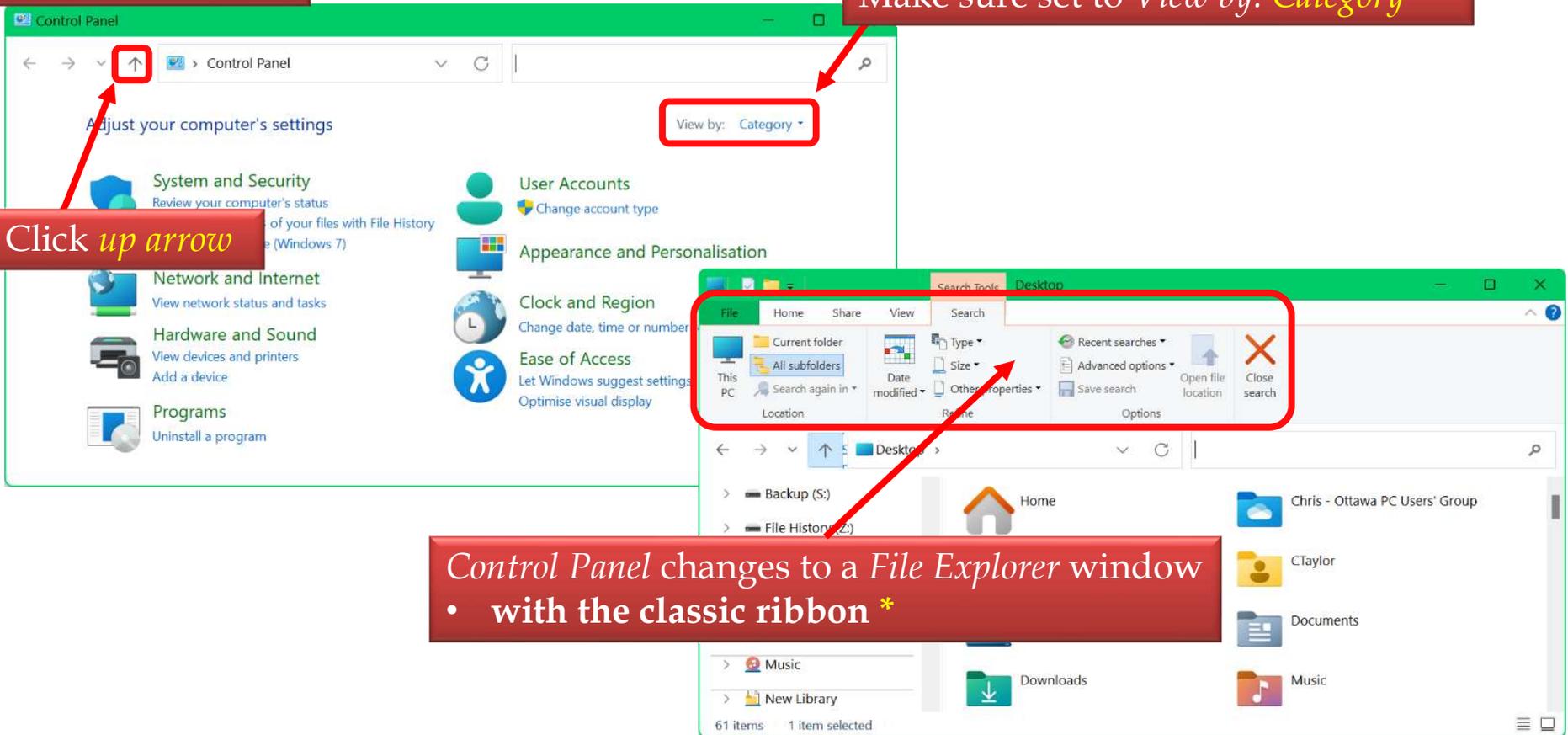


# Another work-around required

Run *Control Panel*

Make sure set to *View by: Category*

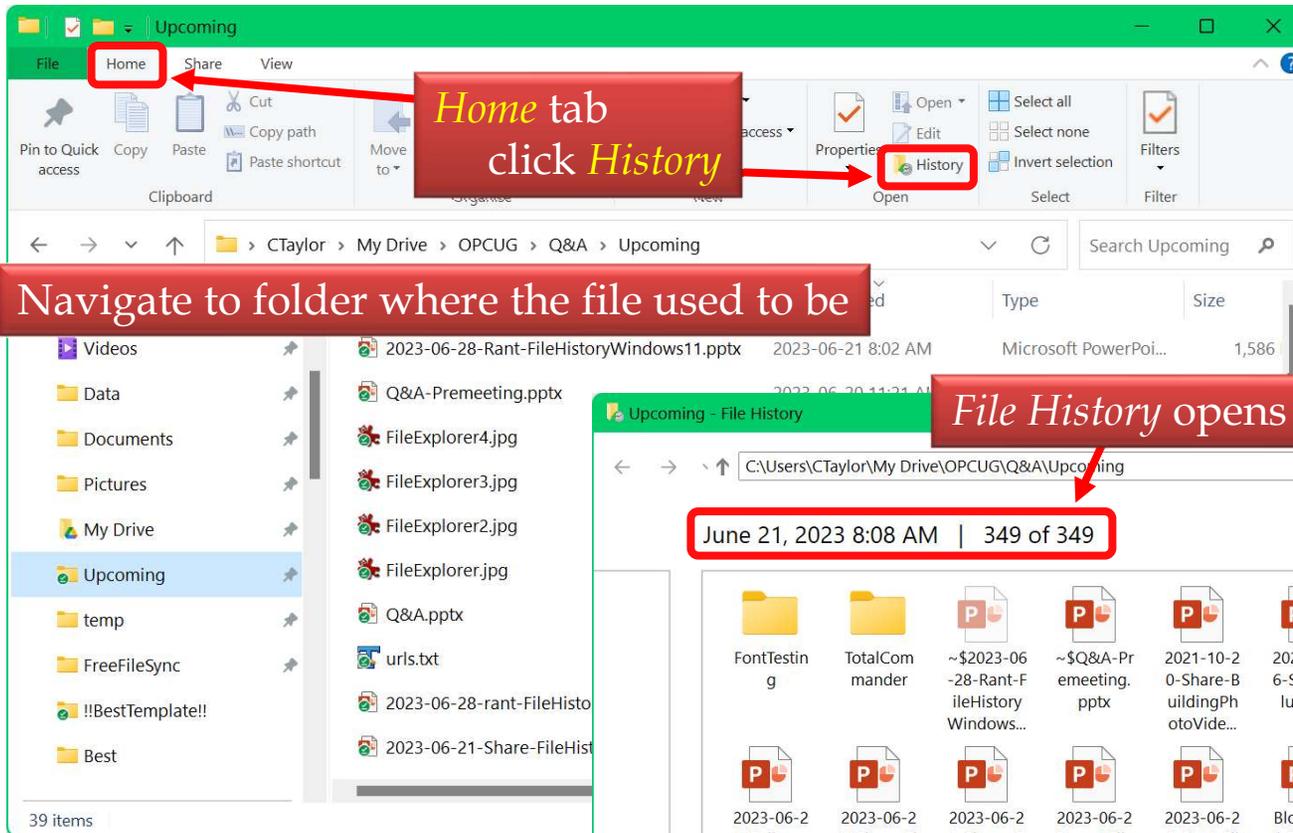
Click *up arrow*



\* Until Microsoft realizes they forgot to break this too!

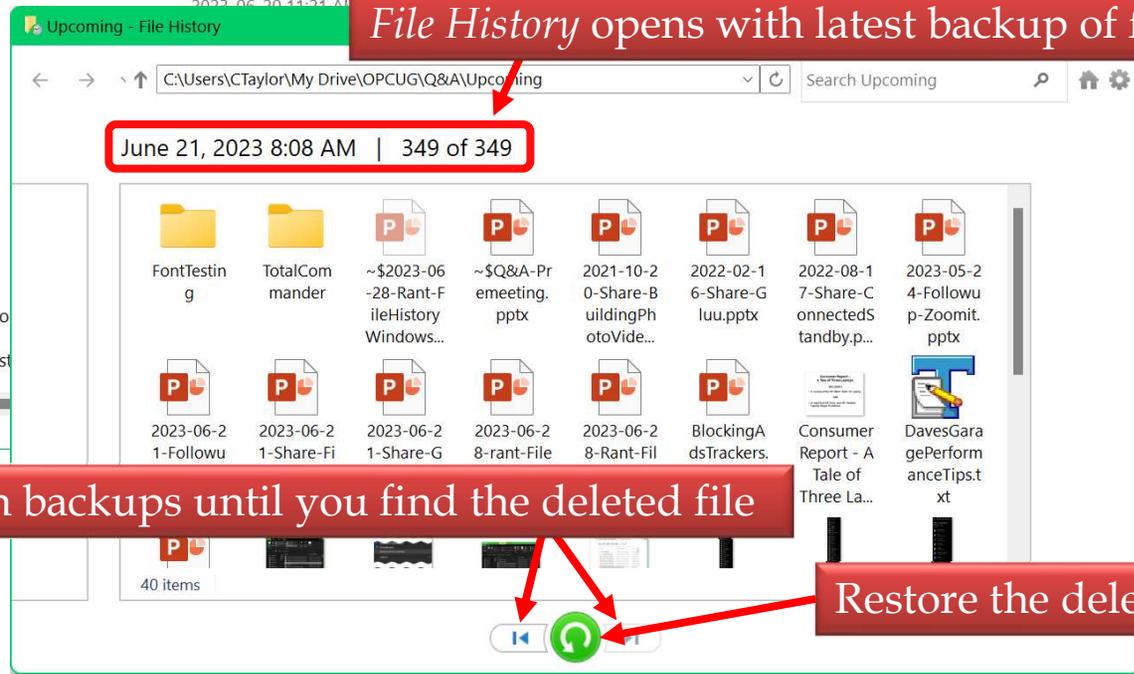


# Recover the deleted file



Navigate to folder where the file used to be

File History opens with latest backup of folder



Navigate through backups until you find the deleted file

Restore the deleted file



## Destroy File History: step 3

Completely disable *File History*





## Destroy File History: step 3

I can't find official word from Microsoft, but

- why remove a feature from *Settings* & leave it in *Control Panel*

*File History...will most likely be deprecated... even Microsoft indicate it would be best to use a 3rd party solution*

- <https://answers.microsoft.com/en-us/windows/forum/all/file-history-or-backup-and-restore-or-both-or-what/dc885e95-91c5-446e-8c8b-df44f7cae187>

*It's been on life support for a while now. it's time to move on to a third party solution, and honestly, really easy to use and smart linux-based solutions exist for NAS's now*

- [https://www.reddit.com/r/Windows11/comments/rvve0t/the\\_state\\_of\\_file\\_history\\_in\\_win11/](https://www.reddit.com/r/Windows11/comments/rvve0t/the_state_of_file_history_in_win11/)

*Microsoft considers Windows File History to be a legacy component and is gradually phasing it out in favor of something else such as OneDrive sync*

- <https://www.itprotoday.com/disaster-recovery-and-business-continuity/what-you-need-know-about-file-history-windows-11>



## Destroy File History: step 3

- My WAG (wild-assed guess)
  - Microsoft wants to make *File History* difficult to use effectively
  - users will stop using it and nobody will complain when it is finally removed
  - Microsoft wants you to use OneDrive for documents
- I don't want to use OneDrive
  - limited space
    - unless you pay Microsoft more money
  - less flexible versioning
    - parameters keeps changing
    - deleted files gone for good after 30 days

Booooo!





## Next steps

- Wait & see if Microsoft completely destroys *File History*
- In the meantime...
- Find replacement for *File History*
  - most promising so far (*thanks to Alan's research*)
    - *FreeFileSync*
      - backs up files/folders
      - very flexible in synchronization and version control
    - *RealTimeSync*
      - monitors folders for new/changed files & runs *FreeFileSync* to back up changes



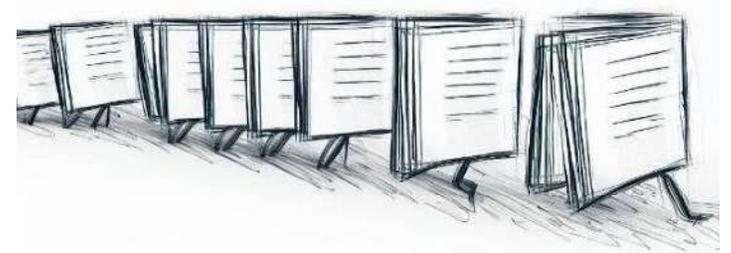
**MORE TO COME...**

Share

# FreeFileSync



- Very flexible program to back up files and folders
  - free & open source
  - 15-year long history
    - first released August 10, 2008
  - well maintained
    - updated 184 times
      - most recently June 20, 2023
  - available for Windows, Linux, and macOS
- Abilities that interested me *initially*
  - *this goes back a couple of years*
    - back up OPCUG's website over FTP
    - back up OPCUG's Shared Drive (a Google Drive)
    - only copying new or changed files
  - which are difficult to automate (for free)



Share

## New interest in FreeFileSync

- My 3-pronged backup strategy
  - daily image backups *entire computer*
  - monthly off-site image backups *entire computer*
  - *File History* backups for important data files that change
- *File History*
  - maintain near real-time backup of new/changed data files
    - if I screw up on a file, image backup is up to a day old
  - version history
    - easily recover old versions of data files from months or years ago
    - if I screw up on a file, my image backups only provide daily backups for about 4 months

Microsoft seems hell-bent on destroying *File History*

- [https://opcug.ca/qa\\_recordings/20230628\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230628_PowerPoint.pdf)

Share

# FreeFileSync

- Can *FreeFileSync* replace *File History*?
- **Yes!**
- Over the next few Q&A sessions
  - start with simple example
  - build to more complex situations

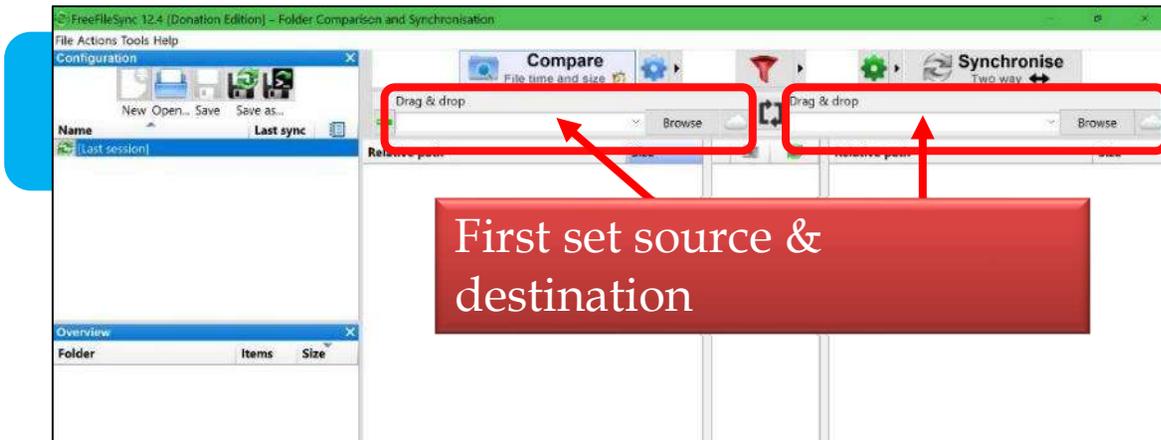
Download from <https://freefilesync.org>



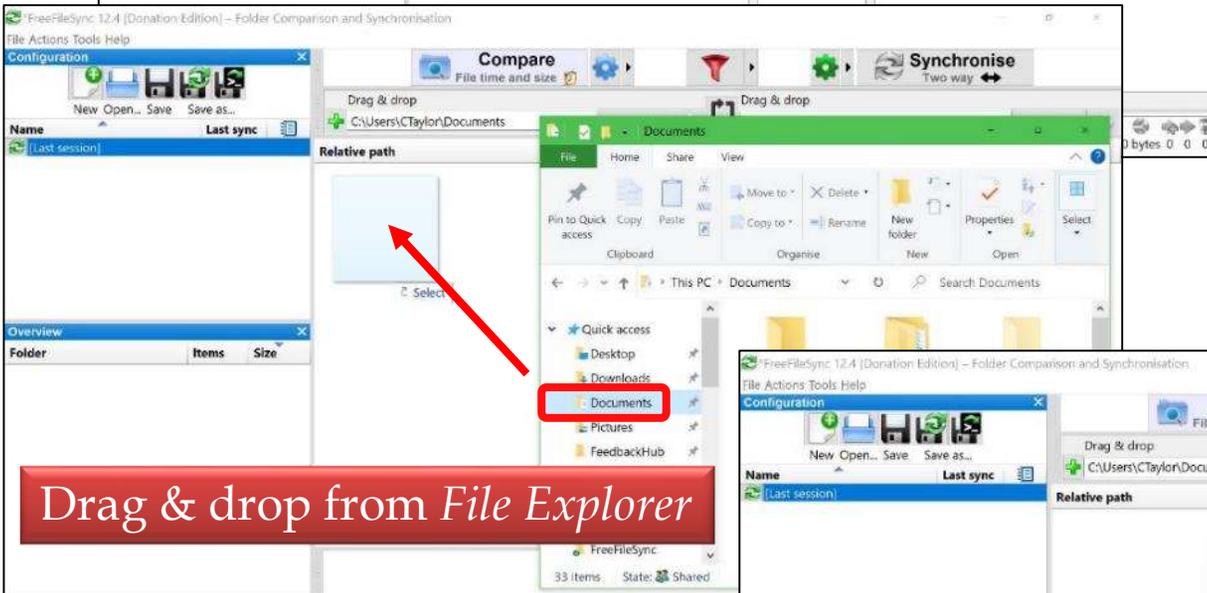
Share

# Back up single folder to external hard drive

- Scenario
  - folder contains documents
    - **C:\Users\CTaylor\Documents**
  - maintain copy on external hard drive
    - **E:\DocumentBackup**
  - make **E:\DocumentBackup** *identical* to **C:\Users\CTaylor\Documents**
    - if files get added/changed in **C:\Users\CTaylor\Documents**
      - add them to **E:\DocumentBackup**
    - if files get removed in **C:\Users\CTaylor\Documents**
      - delete the copy in **E:\DocumentBackup**
- In FreeFileSync parlance, this is a *Mirror*

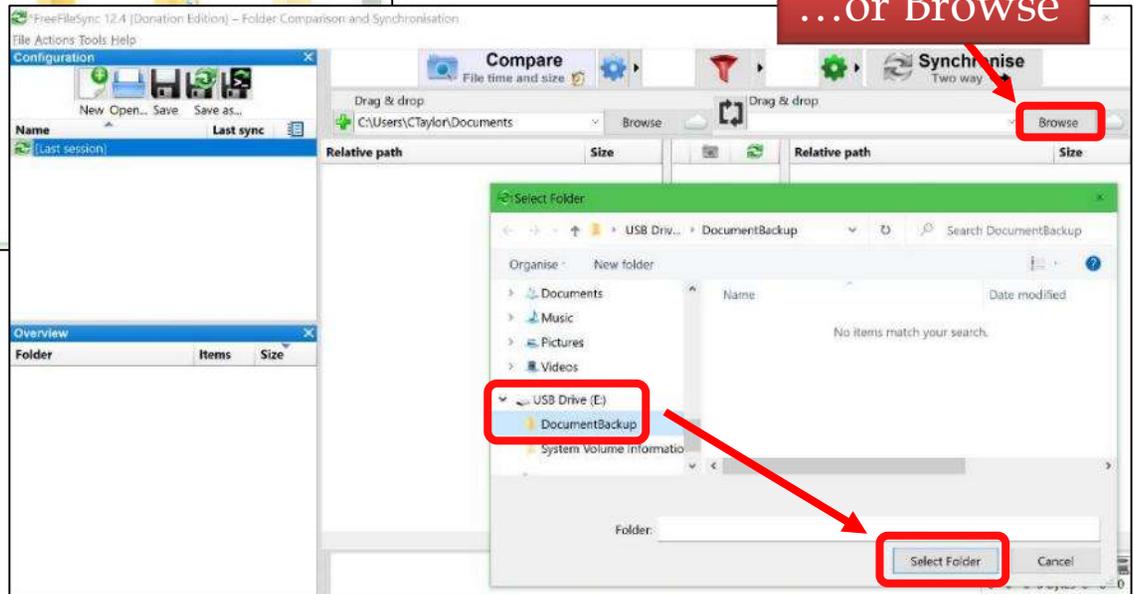


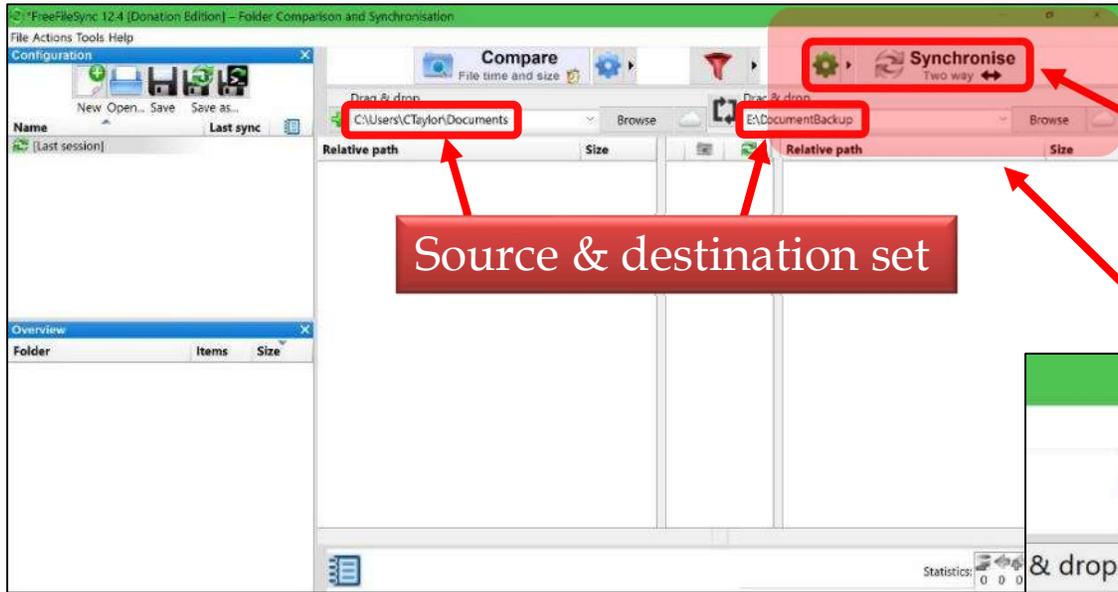
First set source & destination



Drag & drop from *File Explorer*

...or Browse





Source & destination set

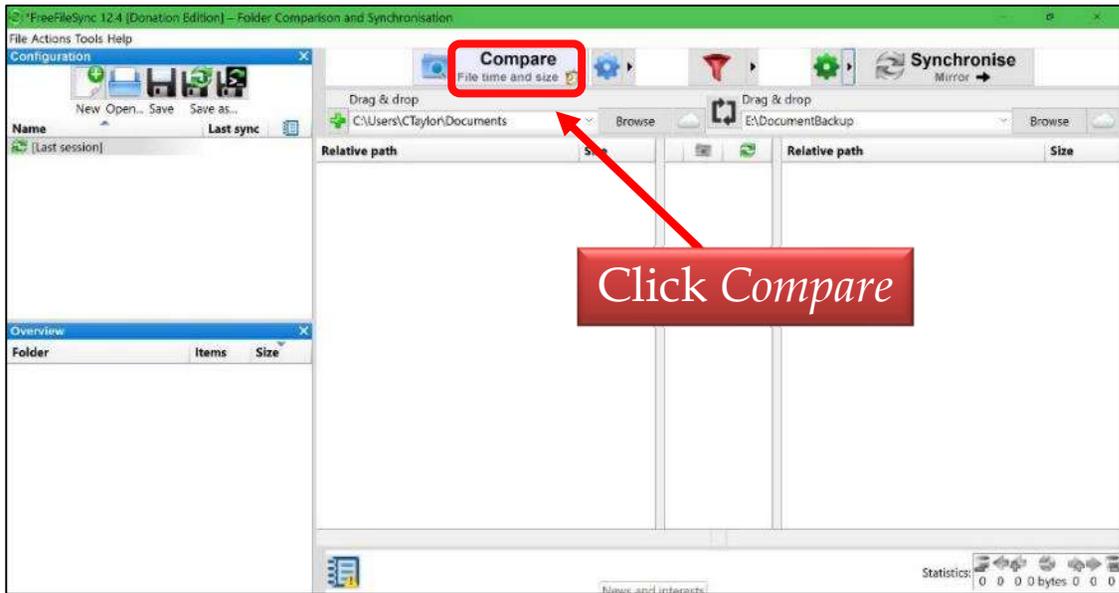
Default:

- Two way synchronisation
- we want one way - Mirror
  - we want destination to be made identical to source

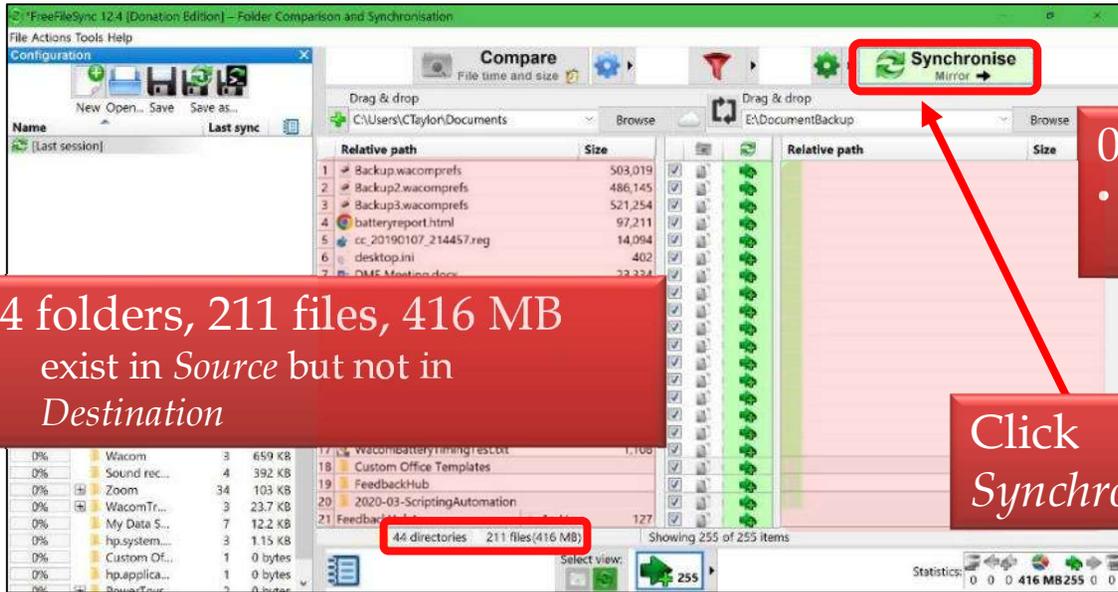


Click

Choose Mirror



Click Compare



0 folders, 0 files

- exist in *Destination* but not in *Source*

44 folders, 211 files, 416 MB

- exist in *Source* but not in *Destination*

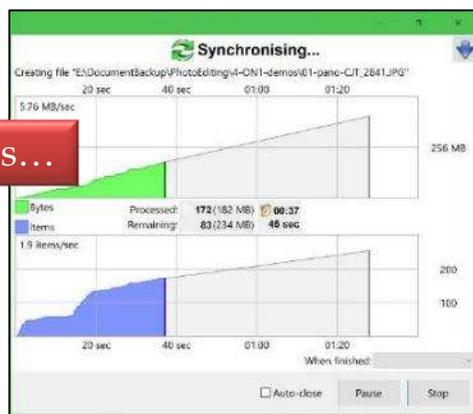
Click Synchronise

44 directories 211 files (416 MB)

Confirmation...

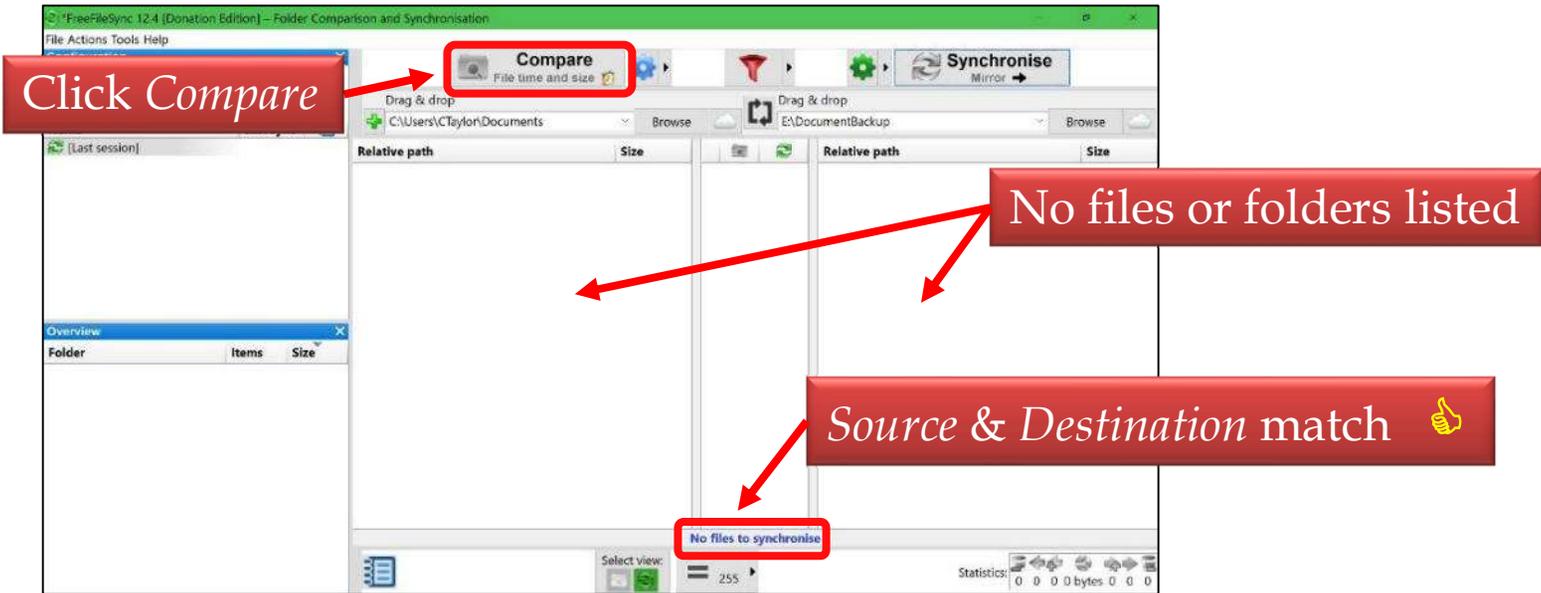


In progress...

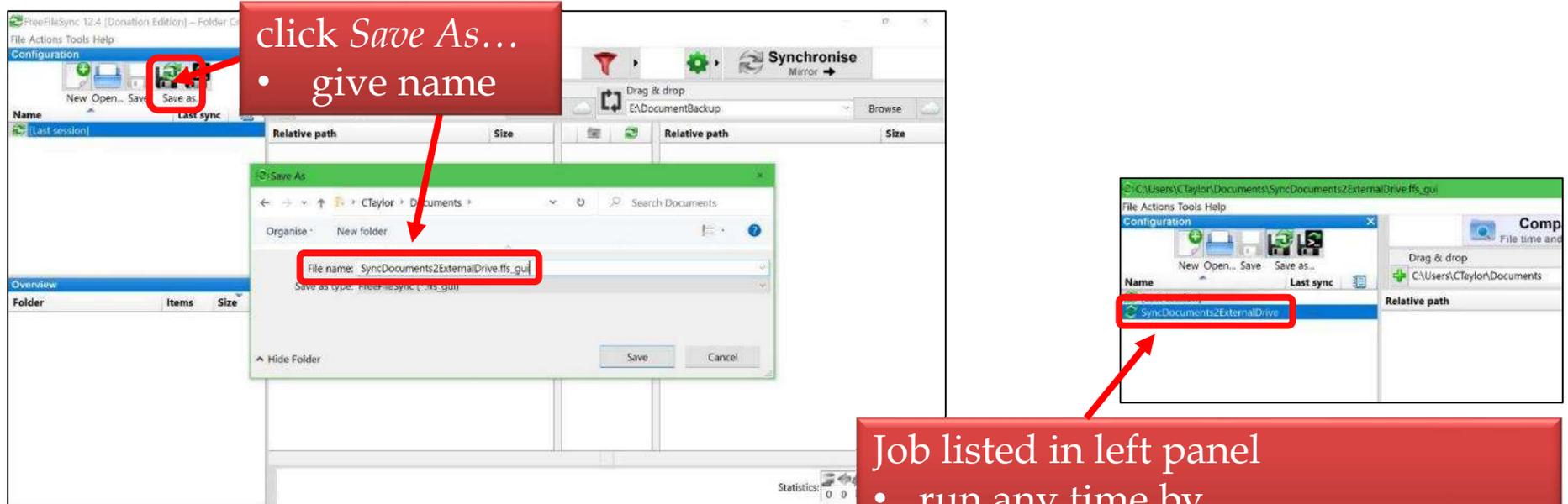


Completed





Want to run the same job in future



Job listed in left panel  
• run any time by selecting > compare > synchronize

Run FreeFileSync a week later

Click Compare

Relative path	Size	Relative path	Size
1		2023-06-28-Rant-FileHistoryWindows11.p...	1,872,826
2 FileExplorer2.jpg	51,560		
3 QA_Poster.pdf	987,837		
4 Restaurants.txt	509	Restaurants.txt	591
5 WindowsSandbox.pptx	338,464		

**FileExplorer2.jpg**  
QA\_Poster.pdf  
WindowsSandbox.pptx

- new to *Source*, not in *Destination*
- action > copy to destination

**Restaurants.txt**

- exists in both *Source* and *Destination*
- different file time or size
- action > copy from *Source* to *Destination*

**2023-06-28-Rant-FileHistoryWindows11.p...**

- new to *Destination*, not in *Source*
- action > delete from *Destination*

4 files (1.31 MB) | Showing 5 of 259 items | 2 files (1.79 MB)

Statistics: 0 0 0 1.31 MB 3 1 1

With Synchronisation mode set to *Mirror*

- *Destination* will always be made the same as *Source*

Share

## Does it replace File History?

- Not yet!
- So far
  - manual process
    - run FreeFileSync, compare, synchronize
  - what about *history* part of *File History*
    - removes old versions of documents from external hard drive
- To truly replace *File History*, we need to
  - automate the process to run frequently
    - at least every 10 minutes
  - preserve old versions of documents

**MORE TO COME...**

Share

## FreeFileSync – Part 2

Replacing  
Windows *File History*  
with  
*FreeFileSync*

Part 2 - automation

Share

## Our *FreeFileSync* journey

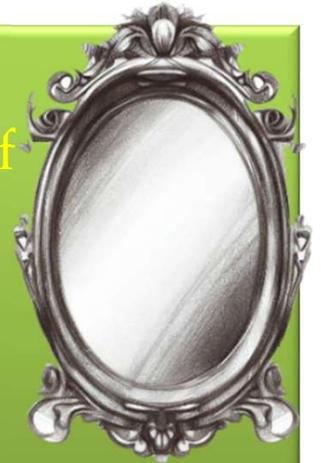
Want to replace *File History* with *FreeFileSync*

- Why? Microsoft is destroying *File History* in Windows 11  
[https://opcug.ca/qa\\_recordings/20230628\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230628_PowerPoint.pdf)

Q&A 2023-07-05

[https://opcug.ca/qa\\_recordings/20230705\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230705_PowerPoint.pdf)

- use FreeFileSync to mirror  
*C:\Users\CTaylor\Documents* to *E:\Backup\Documents*
  - *manual* process to synchronize
  - old versions of files *not saved*
  - *only Documents* folder backed up



This week

- *automate* the process



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# FreeFileSync batch job

Click *Save as...Batch job*

Select job created to *mirror* source & destination

Run minimized

- prevents window appearing when running

Auto-close

- skips summary dialogue box

Ignore errors

- good choice if *sometimes* the backup drive is not attached

Save as a Batch Job

Create a batch file for unattended synchronisation. To start, double-click this file or schedule in a task planner: FreeFileSync.exe <configuration file>.ffs\_batch

Progress dialogue:

- Run minimised
- Auto-close
- Ignore errors
- Show error message
- Cancel

When finished:

Save as...

Cancel

How can I schedule a batch job?

Save As

File name: SyncDocuments2ExternalDrive.ffs\_batch

Save as type: FreeFileSync batch (\*.ffs\_batch)

Save

Cancel

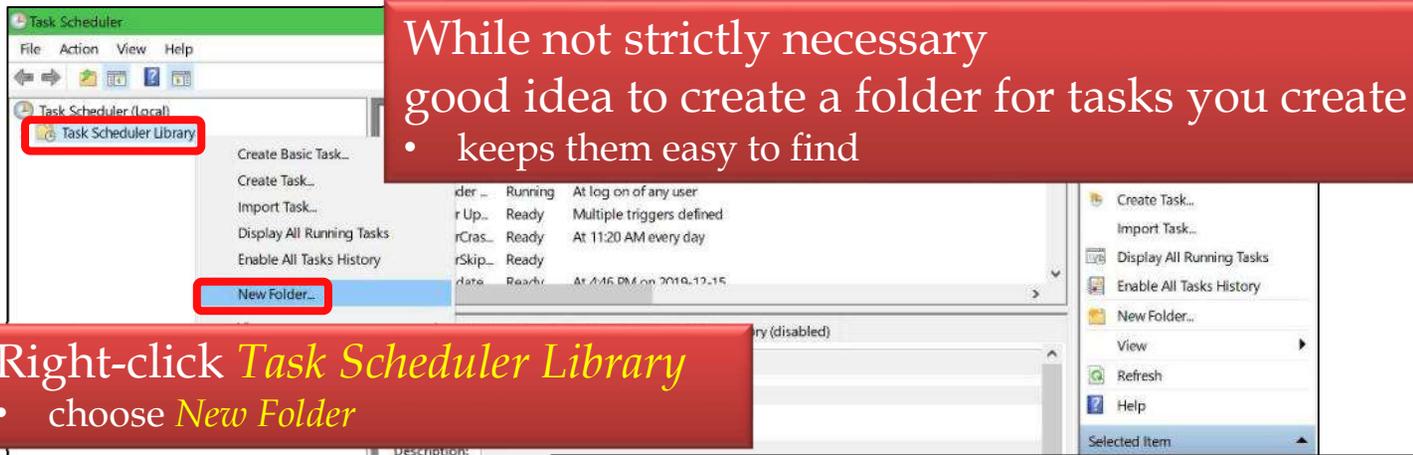
Name the *.ffs\_batch* file

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# Windows *Task Scheduler*

Click Windows *Start* button

- type *Task Scheduler*
- hit *Enter* when it appears at top under *Best match*

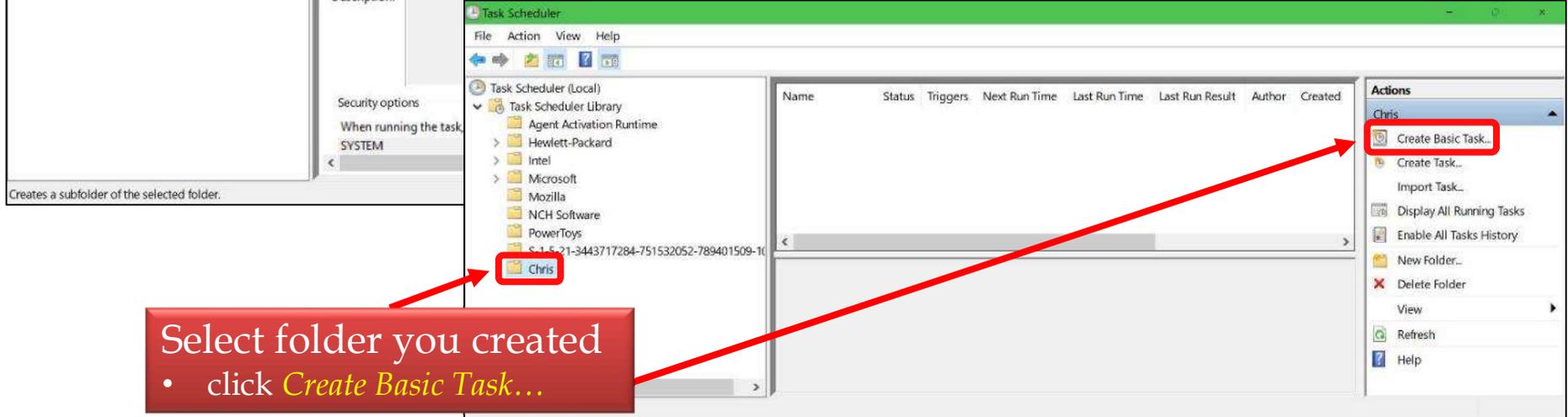


While not strictly necessary  
good idea to create a folder for tasks you create

- keeps them easy to find

Right-click *Task Scheduler Library*

- choose *New Folder*



Select folder you created

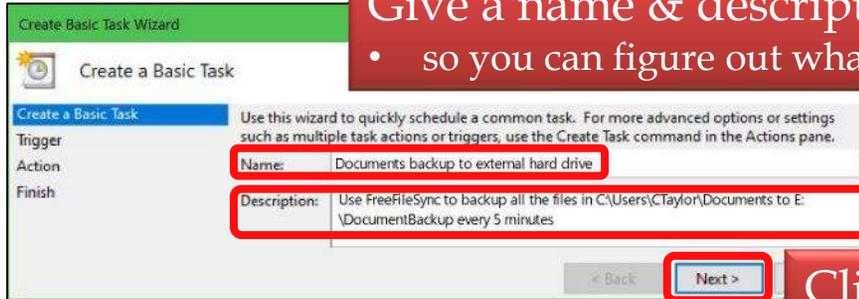
- click *Create Basic Task...*

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# Name & Trigger

Give a name & description

- so you can figure out what it is for a year from now

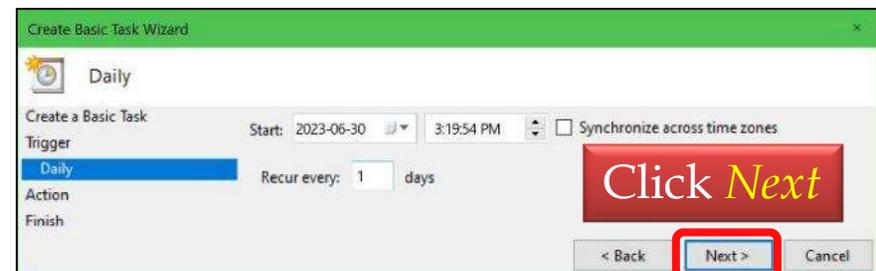


Click *Next*



Select *Daily*

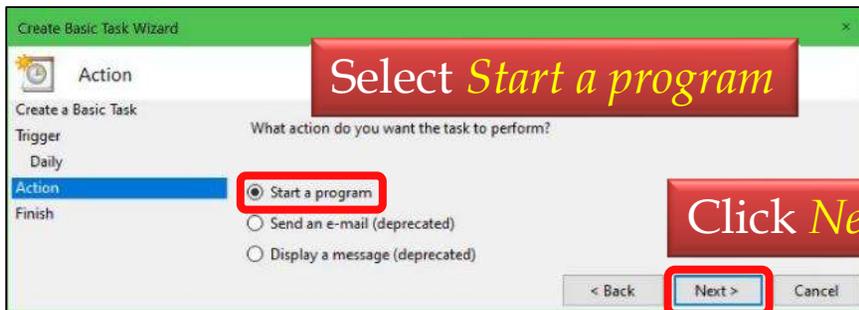
Click *Next*



Click *Next*

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# Action

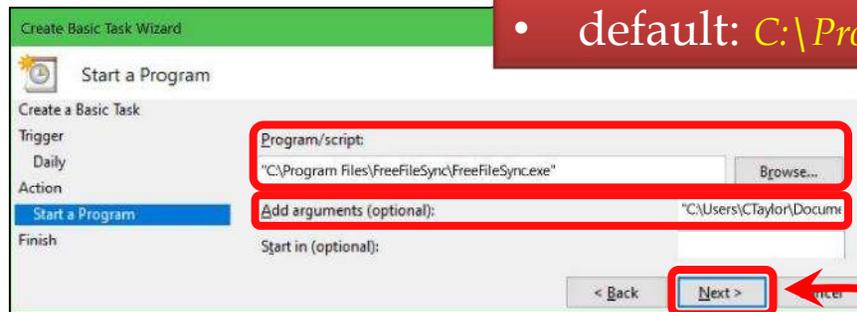


Select *Start a program*

Click *Next*

Click *Browse* to find program FreeFileSync

- default: *C:\Program Files\FreeFileSync\FreeFileSync.exe*



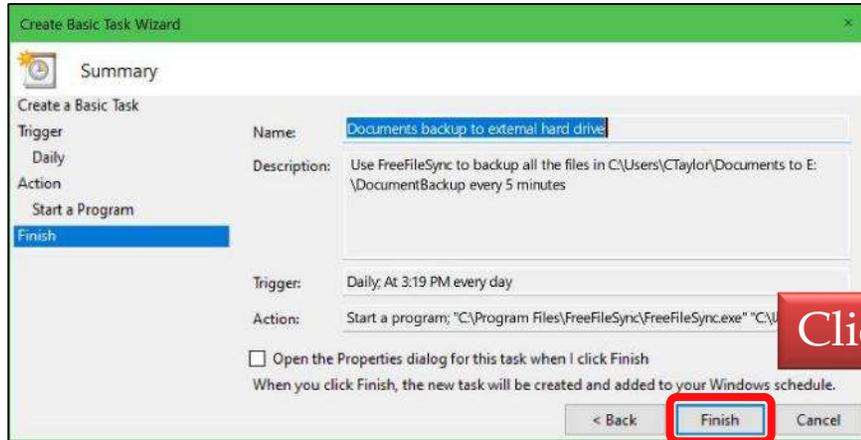
Add arguments:

- Enter complete path to your FreeFileSync batch job, e.g. *C:\Users\CTaylor\Documents\SyncDocuments2ExternalDrive.ffs\_batch*  
**Enclose entire line in quotes**

Click *Next*

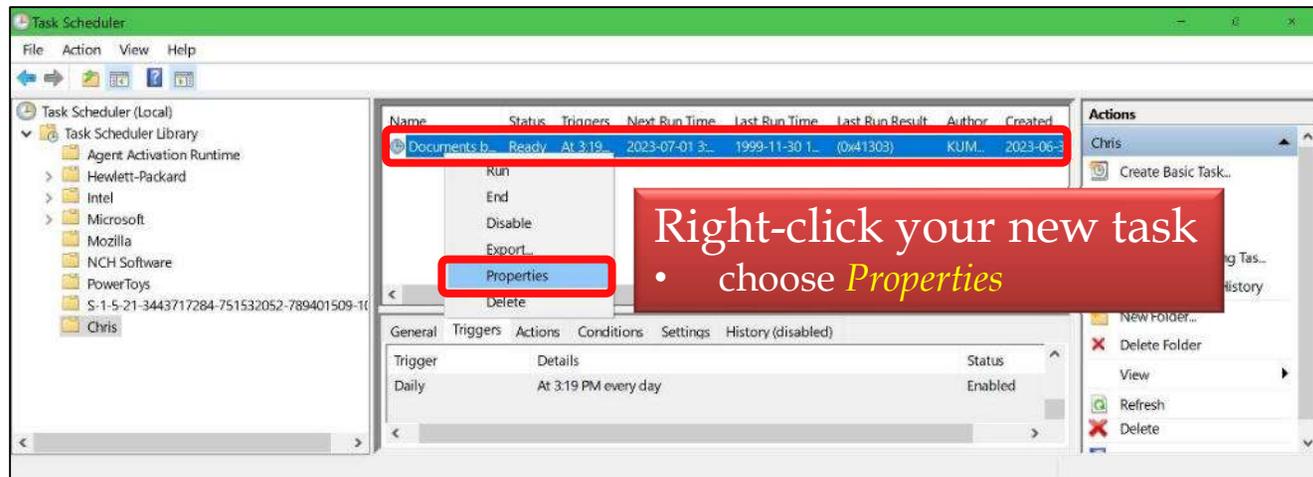
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# Finish



Click *Finish*

But not quite really finished



# Share

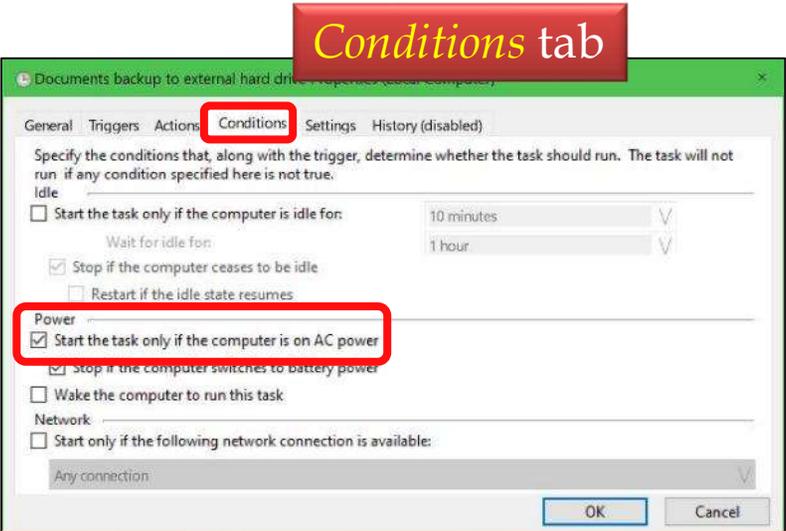
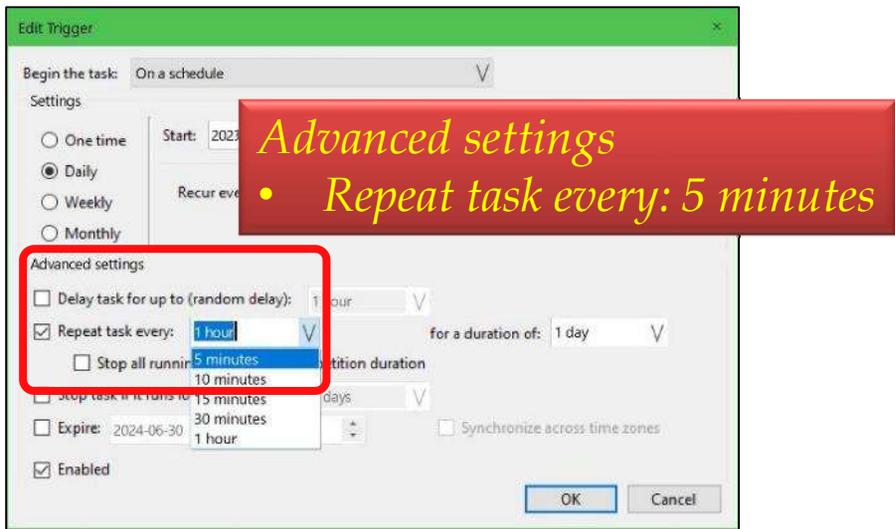
Task is set to run **once a day**

- we want it to run every 5 minutes



*If you have a laptop*

- default for tasks:
  - don't run if on battery



**Deselect**

- Start the task only if the computer is on AC power

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## Results

- **E:\Backup\Documents**  
will always have exactly the same files as  
**C:\Users\CTaylor\Documents**
- Checked every 5 minutes for changes
  - if signed into Windows
    - no point in running if not signed in: *no files changing*
  - as long as the external hard drive is plugged in
    - if not plugged in, the job silently fails: *that's okay*
- Are we done?
  - not quite...
  - currently, the job runs as a *mirror*
    - *backup folder on external hard drive will always contain copies of the files in the document folder on C drive*
      - what about old versions of files?
      - what about deleted files?
      - what if I want additional folders backed up?



MORE TO COME...

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## FreeFileSync – Part 3

Replacing  
Windows *File History*  
with  
*FreeFileSync*

Part 3: versioning

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# Our *FreeFileSync* journey

Want to replace *File History* with *FreeFileSync*

- Why? [https://opcug.ca/qa\\_recordings/20230628\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230628_PowerPoint.pdf)

Q&A 2023-07-05

[https://opcug.ca/qa\\_recordings/20230705\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230705_PowerPoint.pdf)

- use *FreeFileSync* to **mirror**  
*C:\Users\CTaylor\Documents* to *E:\Backup\Documents*

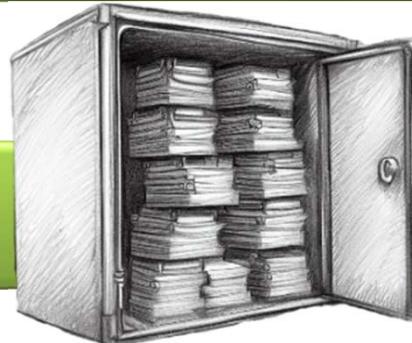
Q&A 2023-07-12

[https://opcug.ca/qa\\_recordings/20230712\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230712_PowerPoint.pdf)

- use Windows Task Scheduler to automate process

This week

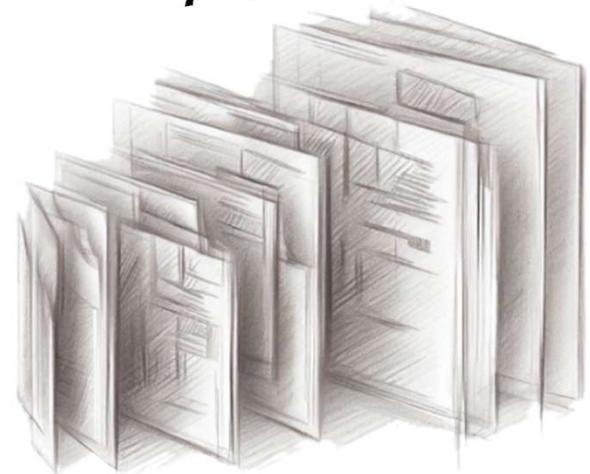
- preserve old versions of files

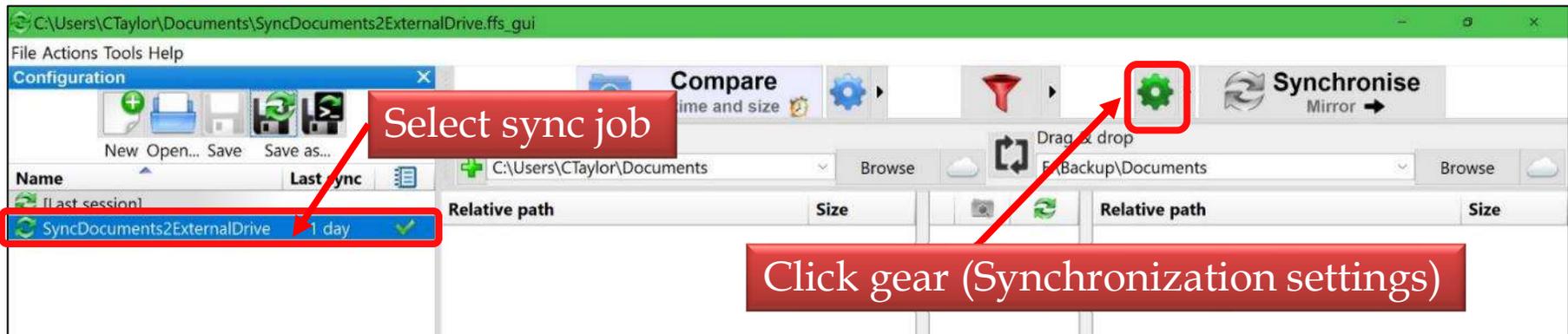


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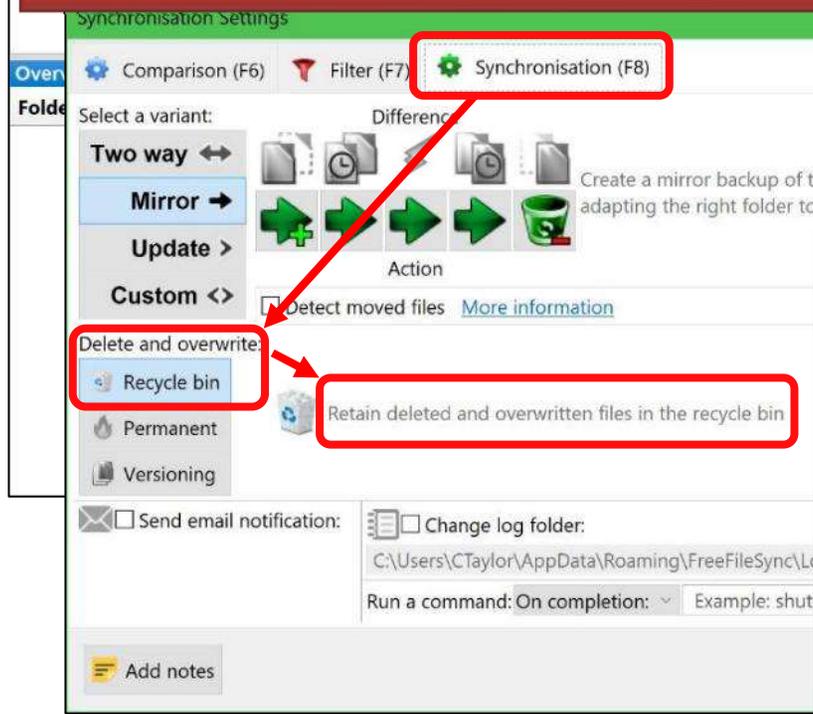
## *FreeFileSync Versioning*

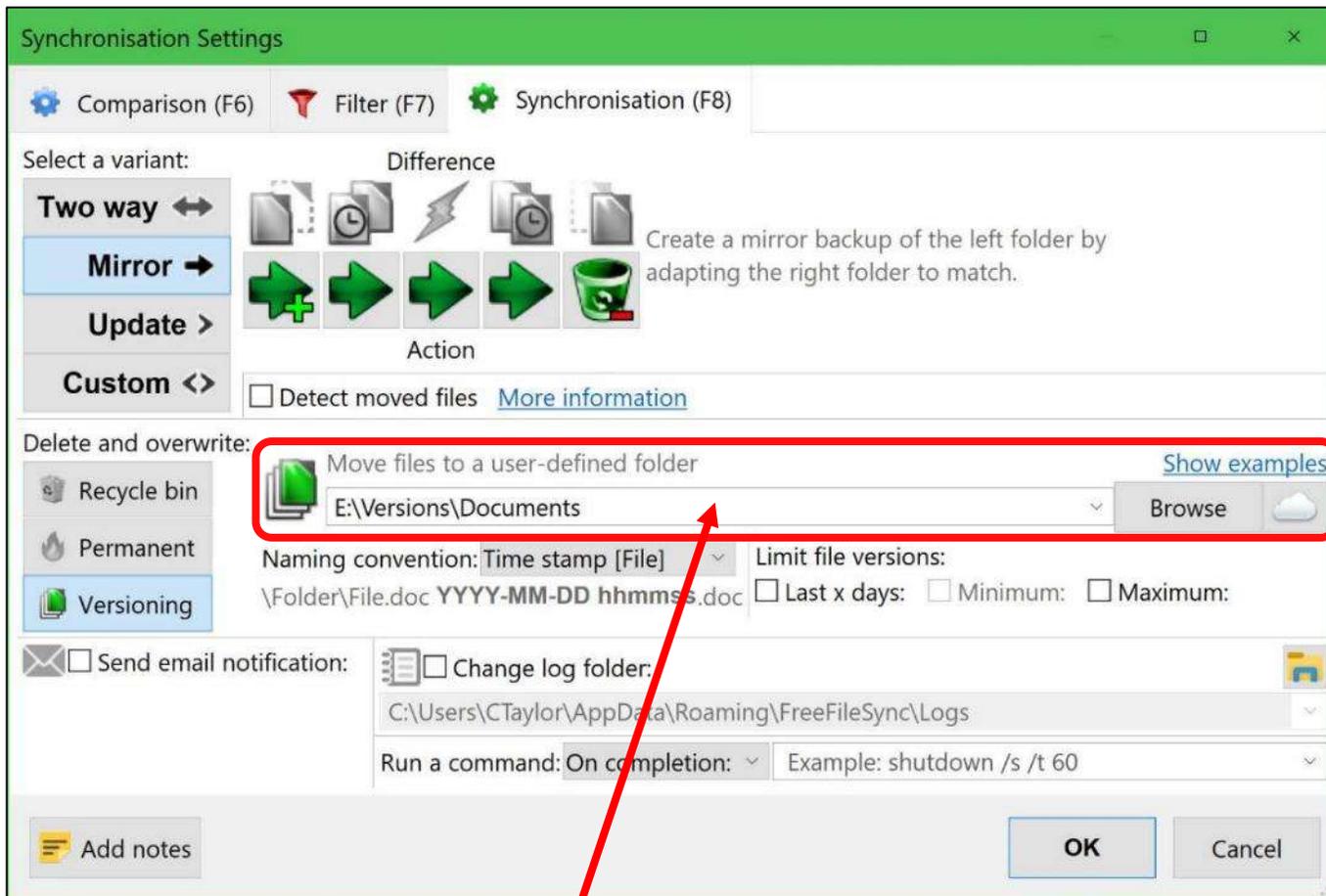
- When files are modified or deleted in *C:\Users\CTaylor\Documents*
- *FreeFileSync* overwrites or deletes copy in *E:\Backup\Documents*
- **Remember: we are doing a *Mirror sync***
  - **files on drive E will be exactly the same as files on drive C**
- Want to preserve the version in *E:\Backup\Documents*
  - then do normal *FreeFileSync* action (overwrite or delete)





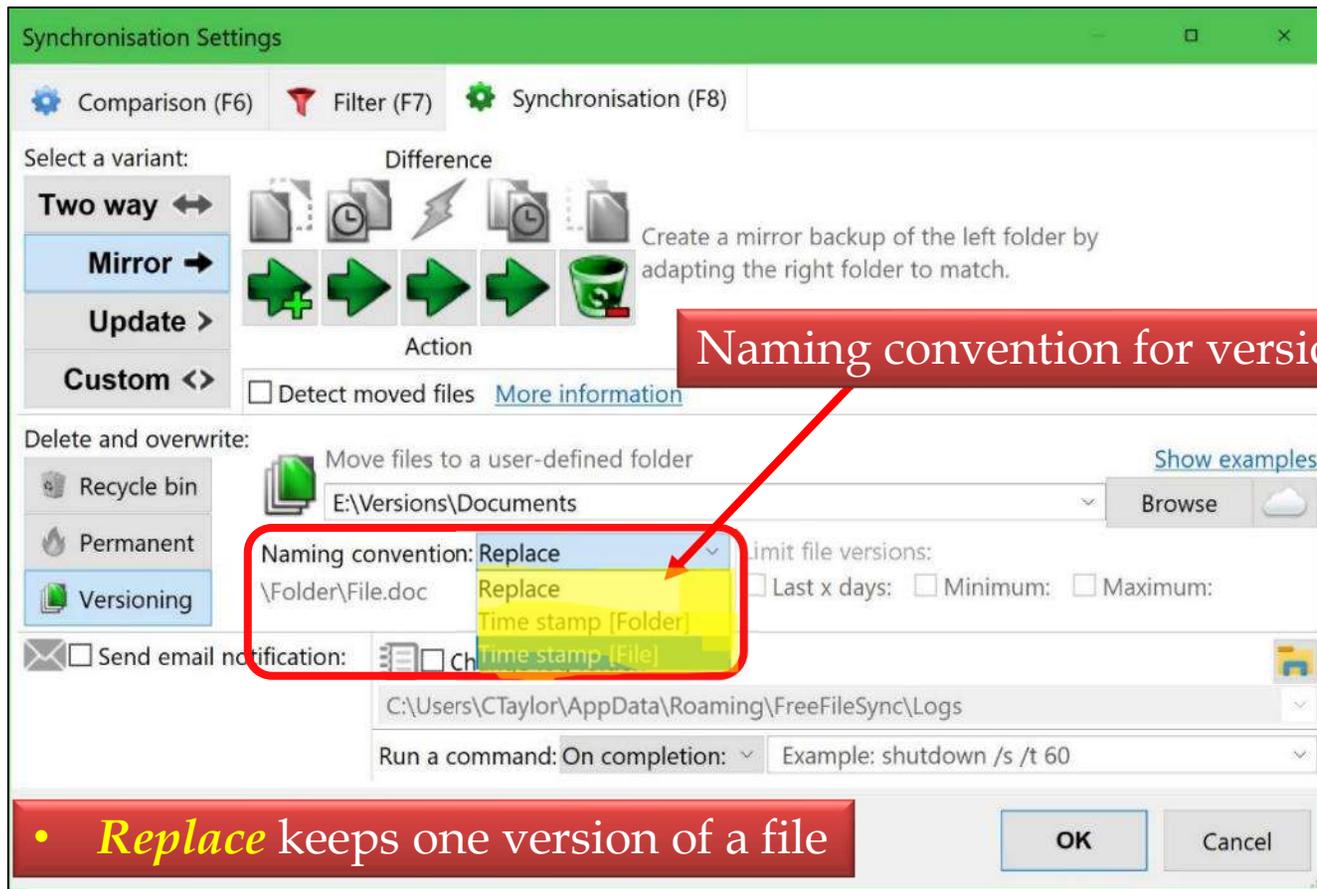
Default: send deleted/overwritten files to recycle bin





## Choose location for versions

- my backup location is *E:\Backup\Documents*
- version folder *E:\Versions\Documents*



Naming convention for versions

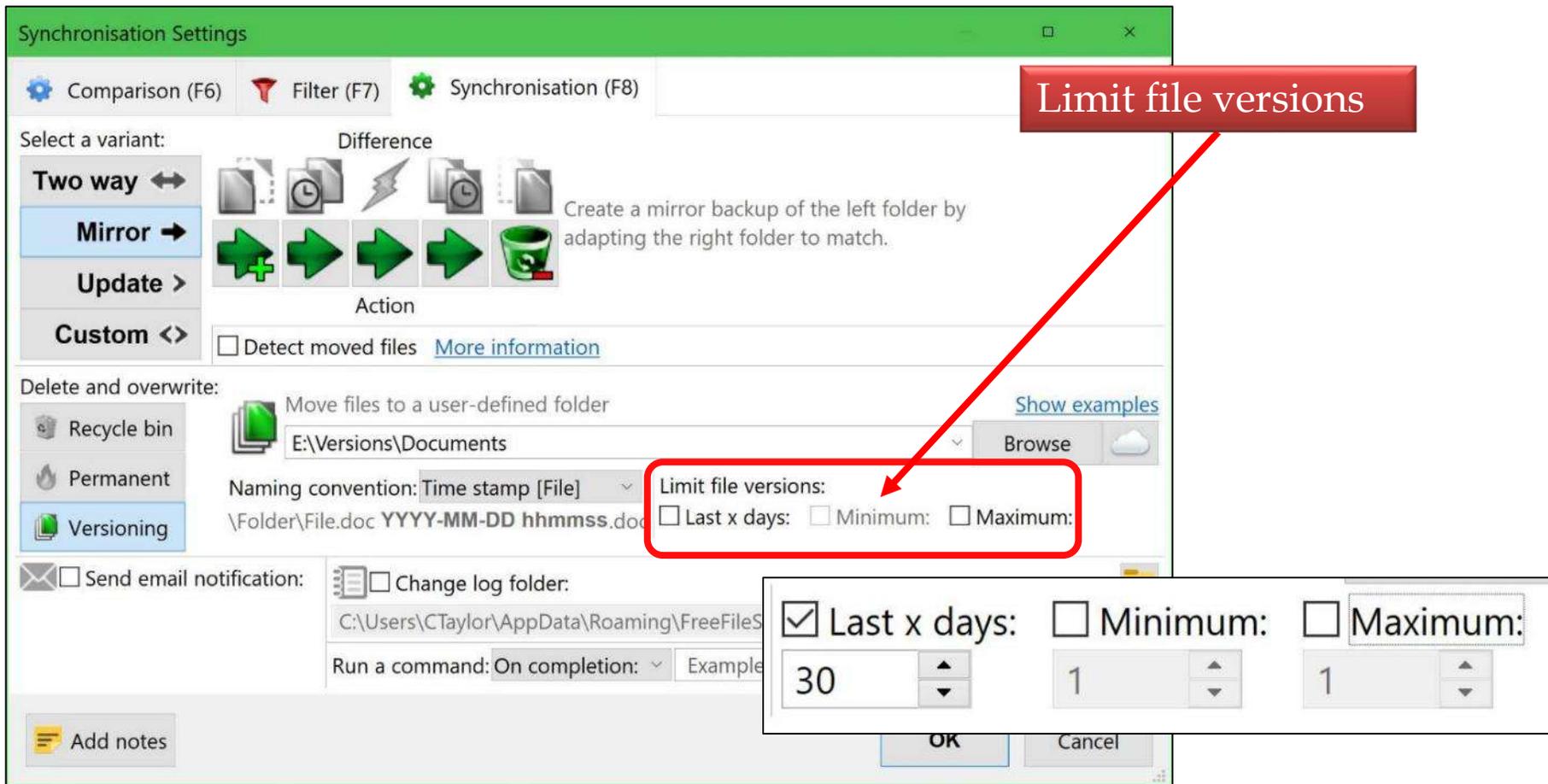
- **Replace** keeps one version of a file

- **Time stamp [Folder]** create folder with date/time stamp & put file in folder
  - can end up with a huge number of folders each with one file

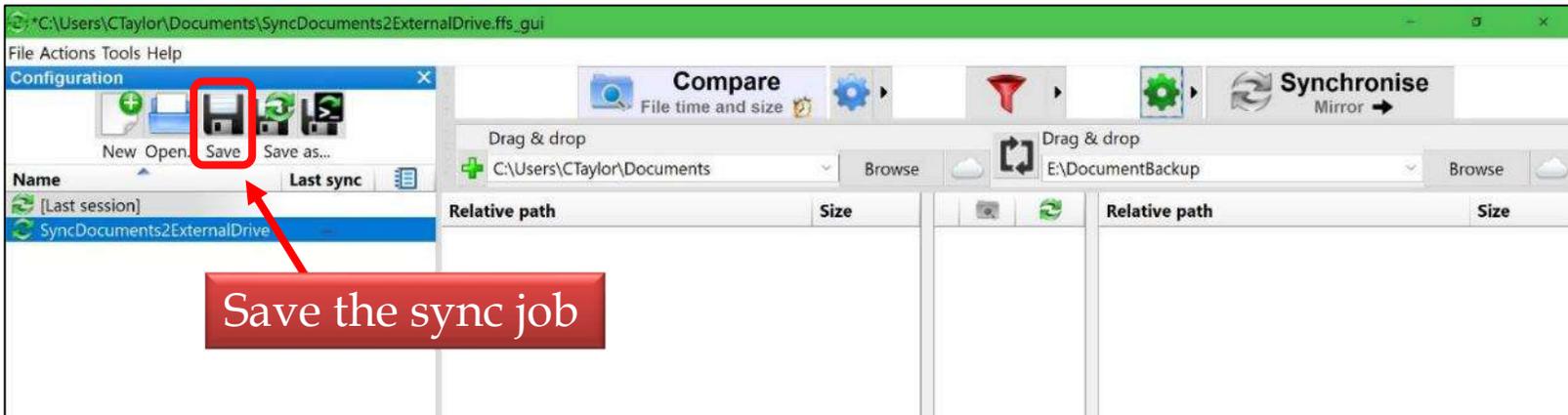
- **Time stamp [File]** add date/time stamp to file name for version
  - E:\Versions\Documents\FreeFileSync.pptx 2023-07-06 101552.pptx
  - E:\Versions\Documents\FreeFileSync.pptx 2023-07-06 101414.pptx
  - E:\Versions\Documents\FreeFileSync.pptx 2023-07-06 101332.pptx

Time stamp  
• 10:15:52

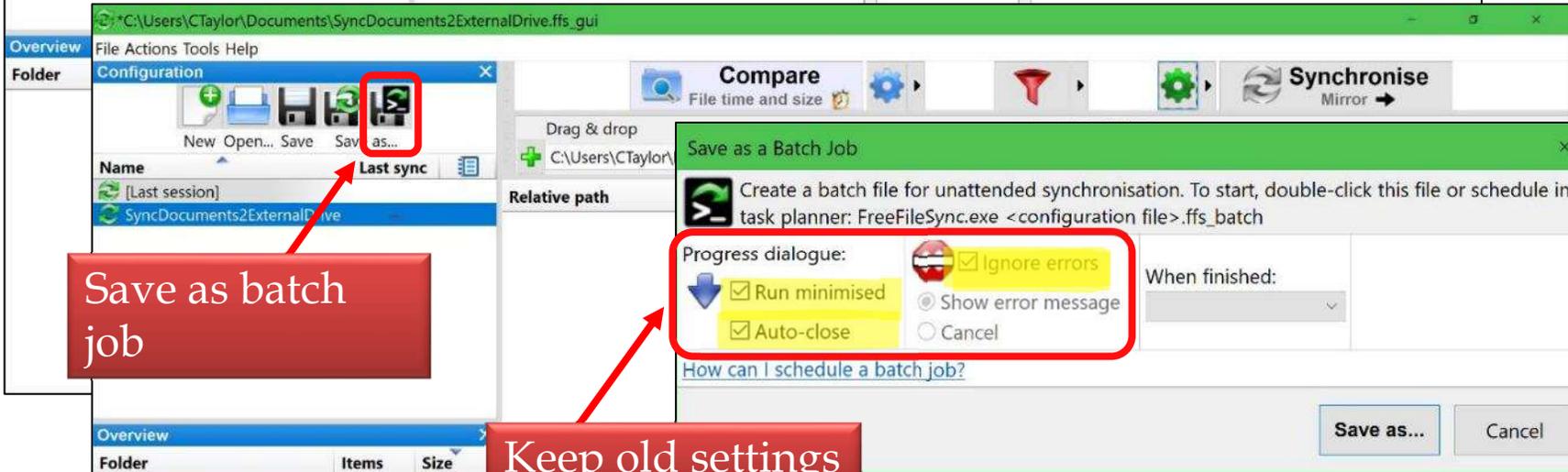
My preference is 3<sup>rd</sup> option: **Time stamp [File]**



- Many combinations possible
  - Just **Last x days**: keep every version less than **x** days old
  - Just **Maximum**: keep specific number of versions regardless of age
  - **Last x days** and **Maximum**: keep max number of versions but only last x days
  - **Last x days** and **Minimum**: at least the minimum number regardless of age
  - etc.



Save the sync job



Save as batch job

Keep old settings

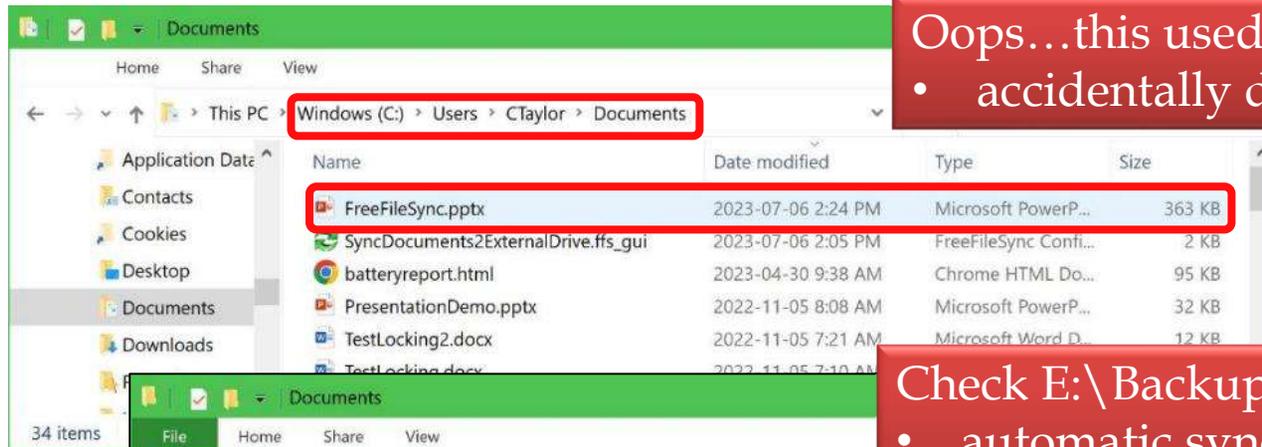


Keep same filename

- Windows Task Scheduler is set to run this specific job

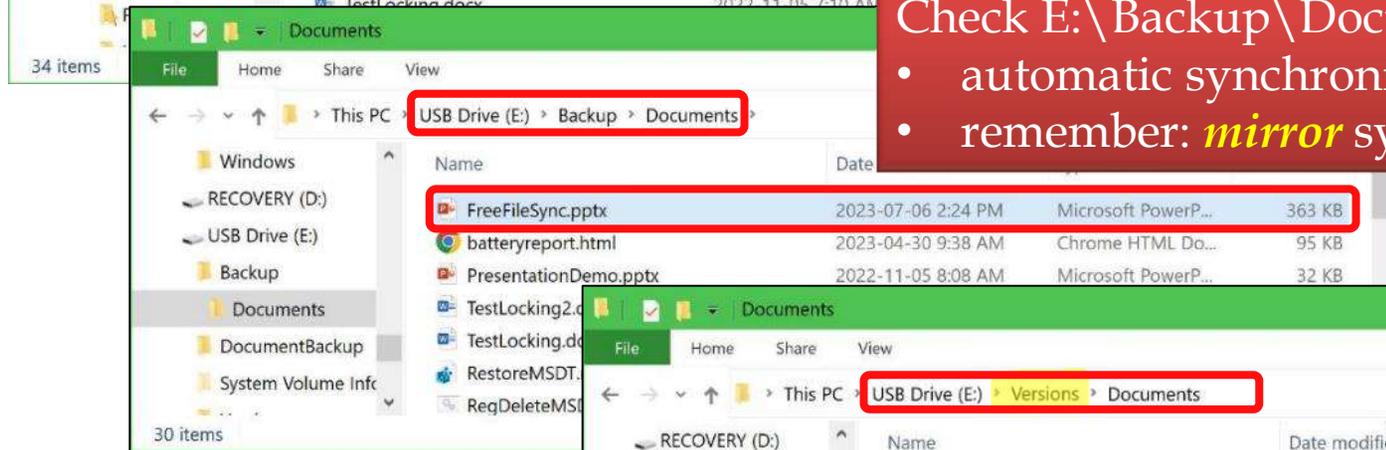
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# Recovering old versions



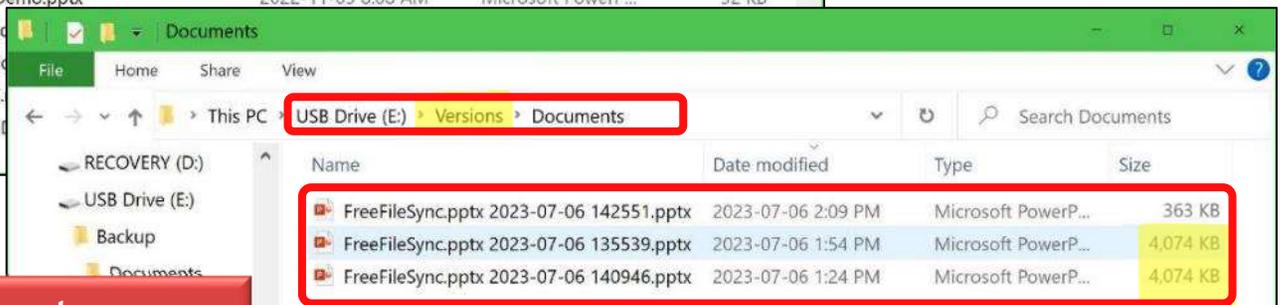
Oops...this used to be multi-megabytes

- accidentally deleted slides and saved!



Check E:\Backup\Documents

- automatic synchronization already ran
- remember: *mirror* synchronization



Check E:\Versions\Documents

- several old versions
- incl. the multi-megabyte versions before my mistake

*If I hadn't been using FreeFileSync*

- all versions of file created/modified same day
- nightly image backup would have nothing!

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## Results

- **E:\Backup\Documents**  
will always have exactly the same files as  
**C:\Users\CTaylor\Documents**
- checked every 5 minutes for changes
- **E:\Versions\Documents**  
has old versions of files
- Are we done?
  - not quite...
  - what if I want additional folders backed up?



**MORE TO COME...**

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## FreeFileSync – Part 4

Replacing  
Windows *File History*  
with  
*FreeFileSync*

Part 4 – adding folders

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# Our *FreeFileSync* journey

Want to replace *File History* with *FreeFileSync*

- Why? [https://opcug.ca/qa\\_recordings/20230628\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230628_PowerPoint.pdf)

Q&A 2023-07-05

[https://opcug.ca/qa\\_recordings/20230705\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230705_PowerPoint.pdf)

- mirror `C:\Users\CTaylor\Documents` to `E:\Backup\Document`



Q&A 2023-07-12

[https://opcug.ca/qa\\_recordings/20230712\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230712_PowerPoint.pdf)

- automate the process



Q&A 2023-07-19

[https://opcug.ca/qa\\_recordings/20230719\\_PowerPoint.pdf](https://opcug.ca/qa_recordings/20230719_PowerPoint.pdf)

- preserve old versions of files



This week

- add more folders



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## Backup situation so far...

PART 1

- **E:\Backup\Documents**  
will always have exactly the same files as  
**C:\Users\CTaylor\Documents**

PART 2

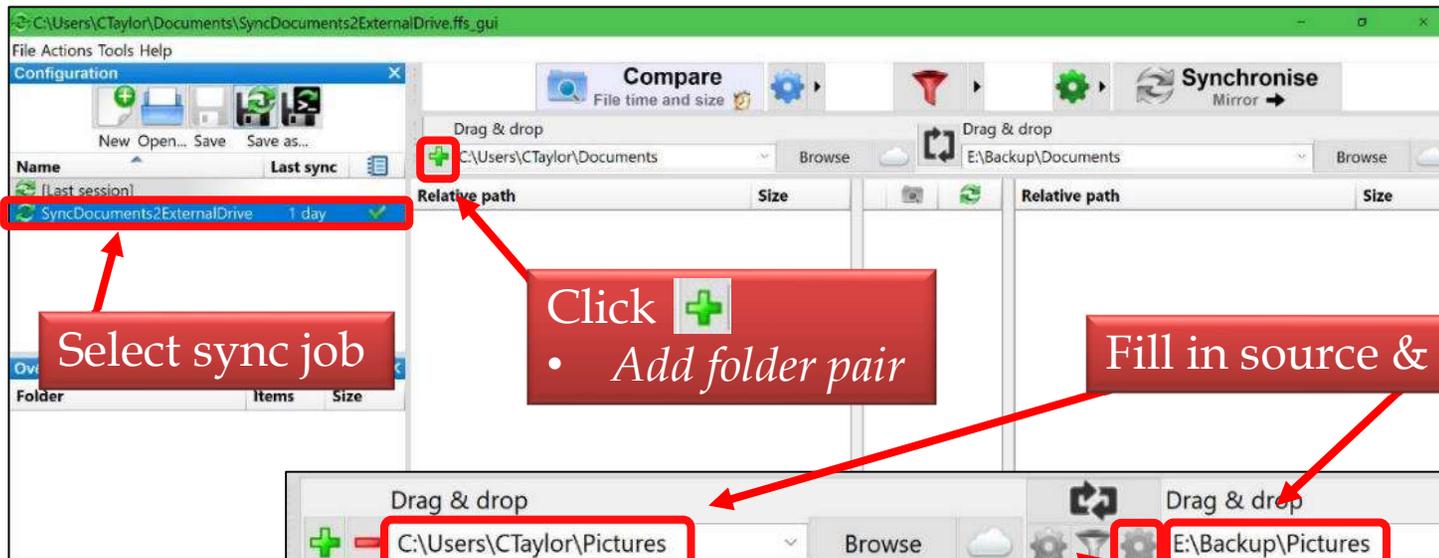
- Checked every 5 minutes for changes

PART 3

- **E:\Versions\Documents**
  - has old versions of files

Most people have more than one location with files they want to back up





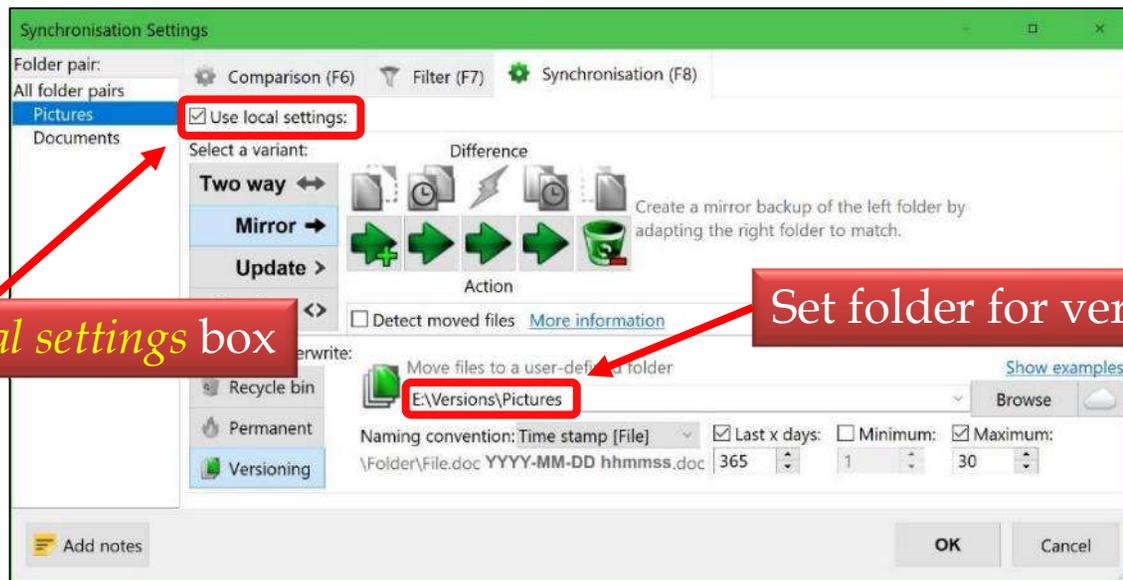
Select sync job

Click Add folder pair

Fill in source & destination

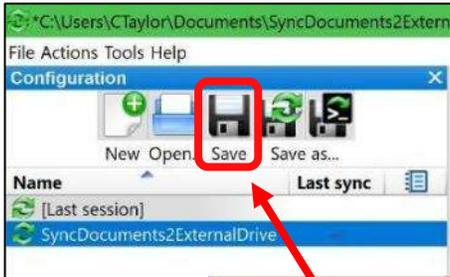


Click gear (*Local* Synchronization settings)  
 • allows each synchronization pair to have separate folder for versions

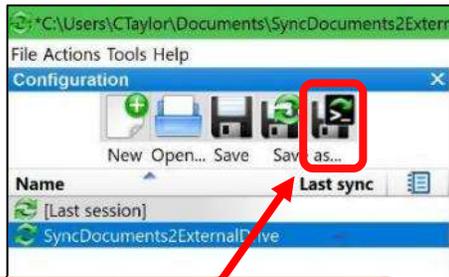


Check *Use local settings* box

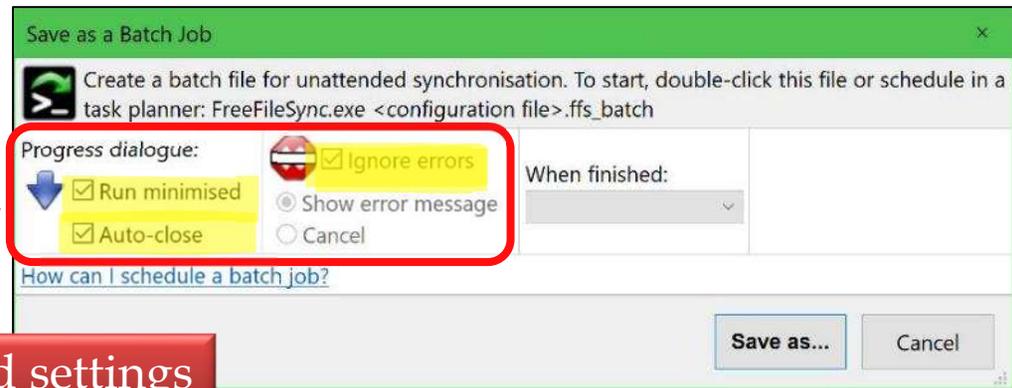
Set folder for versions



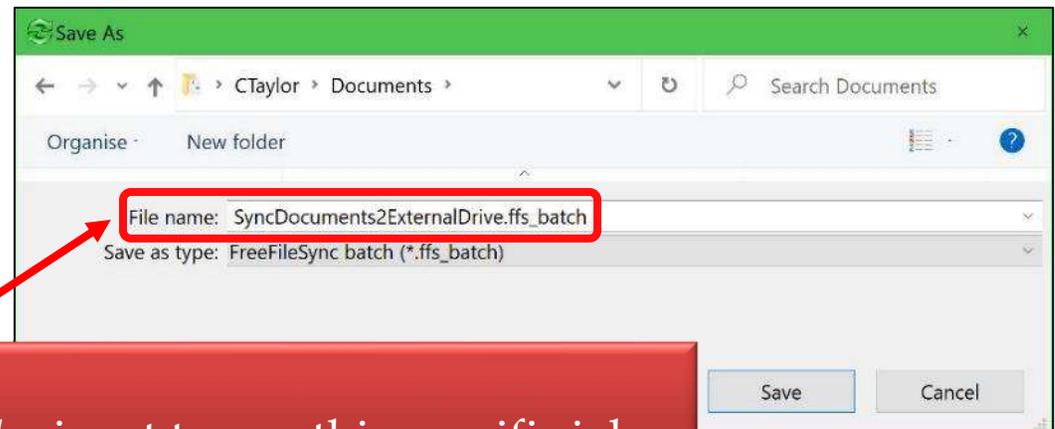
Save the sync job



Save as batch job



Keep old settings



Keep same filename

- Windows *Task Scheduler* is set to run this specific job

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## Results

- **E:\Backup\Documents**  
will have exactly the same files as  
**C:\Users\CTaylor\Documents**
- **E:\Backup\Pictures**  
will have exactly the same files as  
**C:\Users\CTaylor\Pictures**
- checked every 5 minutes for changes
- **E:\Versions\Documents**
- **E:\Versions\Pictures**
  - will have old versions of files

NEW



NEW



**AND WE'RE DONE!**