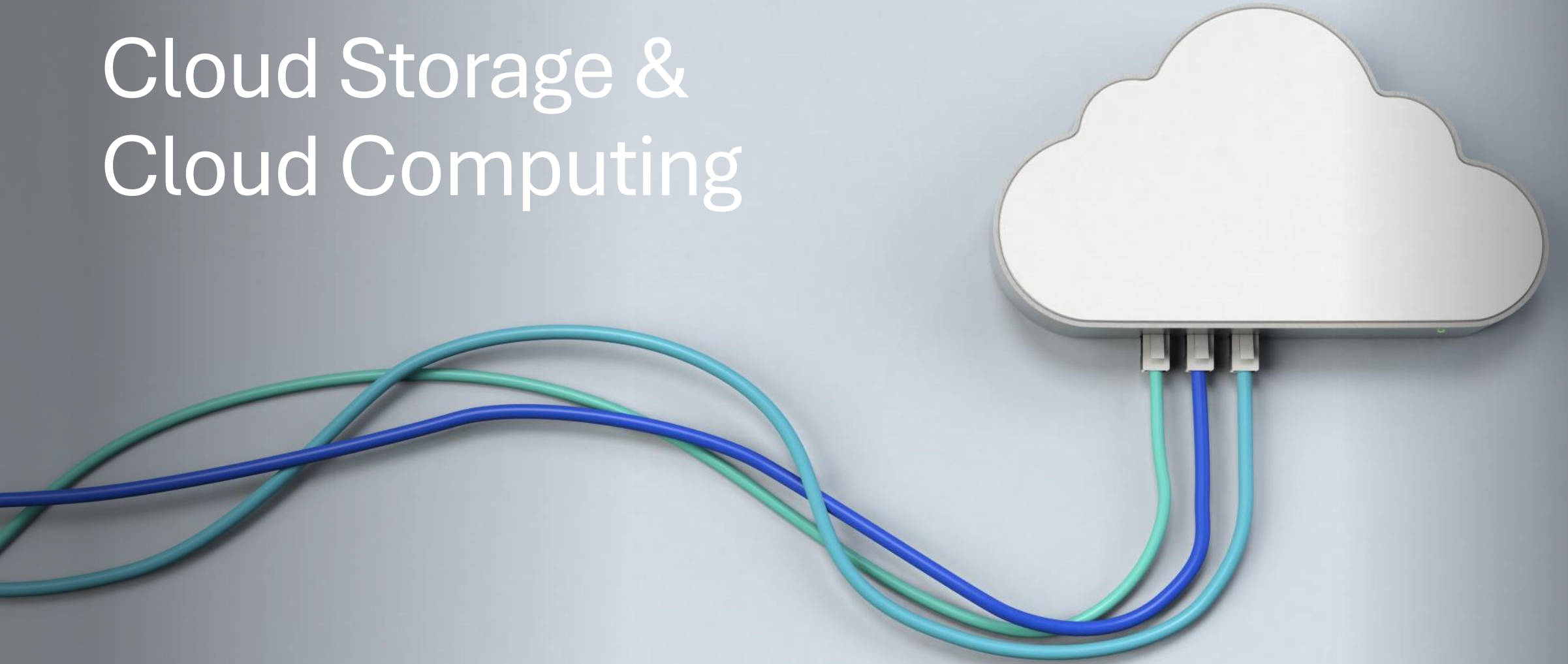


Cloud Storage & Cloud Computing



Topics we will cover today

- What is cloud computing? OneDrive is an example, but so is email!
- A review of storage sizes and why it's important to understand this
- Features of Windows 11, Microsoft 365, and OneDrive
- More details on OneDrive
 - Settings, Backup, and Sync
 - Use and benefits of AutoSave
 - Sharing files
- Copilot in Windows 11
- Reference material

Why “the Cloud” is Essential for Business, Government

- Employees have secure, shared access to the company’s confidential information.
- Customers use it to place orders, e.g. Amazon.
- People using their own PC’s have the same privacy and security in the Cloud.

Are you using Cloud Computing or Storage?

- If you use Gmail, you are using this service.
- Your emails are all in the Cloud.
- You compose email in the Cloud.
- If you use Google Docs you are working in the Cloud.
- Maybe you did not realize that it is already be part of your life.

Cloud Storage > OneDrive



OneDrive is Microsoft's cloud storage service. Business and Government find cloud storage to be essential and secure. OneDrive works seamlessly with Microsoft 365 to give a person the same benefits.

Refresher on Storage Capacity

Unit	Number of Bytes
Kilobyte (KB)	1,024 bytes
Megabyte (MB)	1,024 KB = 1,048,576 bytes
Gigabyte (GB)	1,024 MB = 1,073,741,824 bytes
Terabyte (TB)	1,024 GB = 1,099,511,627,776 bytes

Geeky: One Byte = 8 bits, one bit is simple binary switch: 0 or 1, Y or N

(Source: Copilot)

So, it has 256 pieces of information. $2^8 = 256$

It is enough for 1 letter, number, or special character.

Examples of Size

- Typical jpeg photo from digital camera 7 MB, 1000 photos => 7 GB
- Music file
 - Mp3 – 2.5 MB/min, 60 min => 150 MB
 - WAV – 10 MB/min, 60min => 600 MB
- Video file
 - 4K Ultra HD – 84 MB/min, 60 min => 5 GB
- A typical computer with 256 GB storage will have less than 150 GB of available storage for all files (documents, music, pictures, videos).

How much do you really need?

- If you need vast amounts of space to store images or videos (static content) maybe an external device with 4 or 8 TB is better
- If your work includes writing reports or documents that will be edited and changed frequently (dynamic content) then maybe using OneDrive's ability to store and access earlier versions is better, and 1 TB is sufficient
- Even laptops are available today with 1 TB of storage!

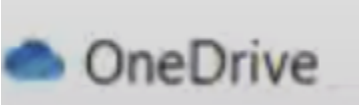
Windows 11 – Reminder

- Microsoft will no longer support Windows 10, Office 2016 or Office 2019 as of October 15, 2025
- Although there are workarounds to continue using Windows 10 (see <https://learn.microsoft.com/en-us/windows/whats-new/extended-security-updates>) you really need to consider moving to Windows 11
- Microsoft 365 is a subscription-based, fee-only add-on to Windows 11. It includes the familiar Office applications from previous Windows versions.

Why Microsoft 365?



- If I need to regularly exchange Word, Excel, PowerPoint docs with others, then 365 is the common tool.
- Google Docs has similar features, but then translation may be required each time
- Be sure to understand the various Microsoft 365 plans:
<https://www.microsoft.com/en-us/microsoft-365/buy/compare-all-microsoft-365-products-b>
Scroll down to see a comparison of features with “Office 2024” and all the Microsoft 365 plans

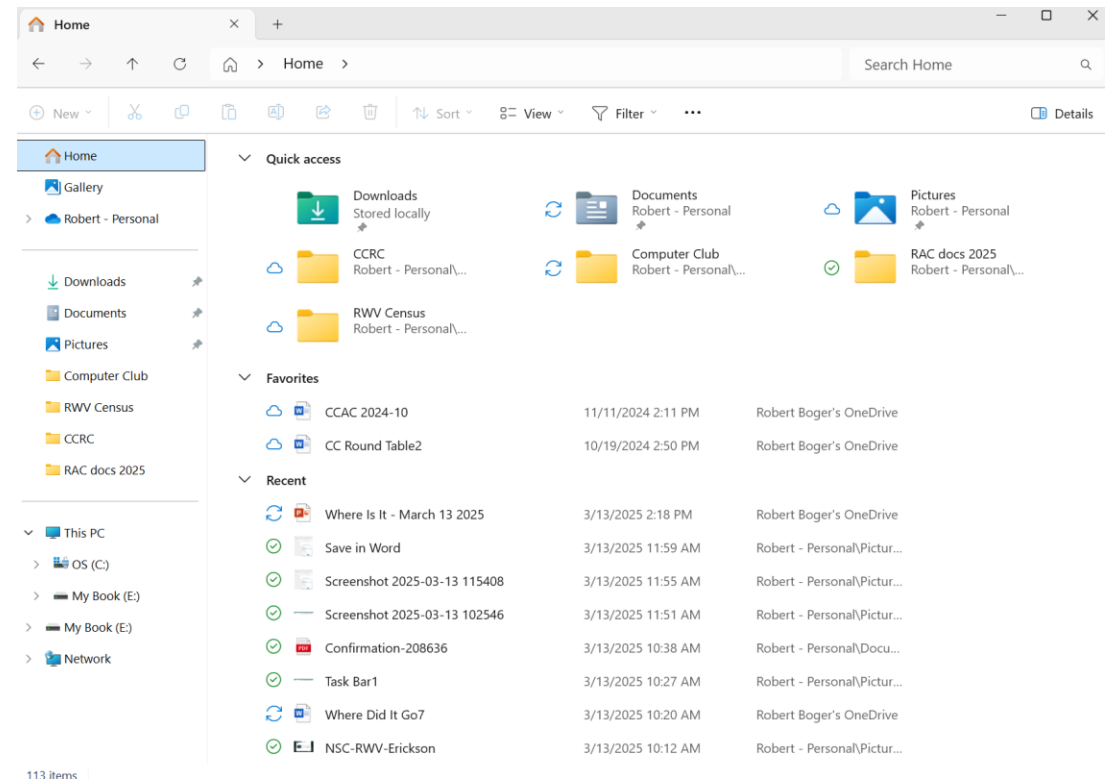
Another Disclaimer

During the six months that we were putting this course together, Microsoft changed the user interface to File Explorer several times. Among other things, “pinned” items became “Favorites,” *Quick Access* was removed from the Navigation pane, and  has been replaced by a folder with your username.

Individual users’ screens will almost certainly look different.

A Review: Windows Directory Structure in File Explorer

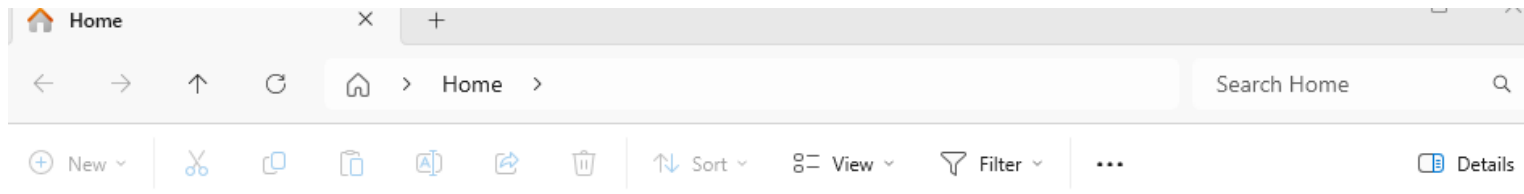
You can access File Explorer through the  icon on the taskbar or by pressing the Windows key  simultaneously with the letter **E** to take you to the **top level** of File Explorer, the **Home Screen**.



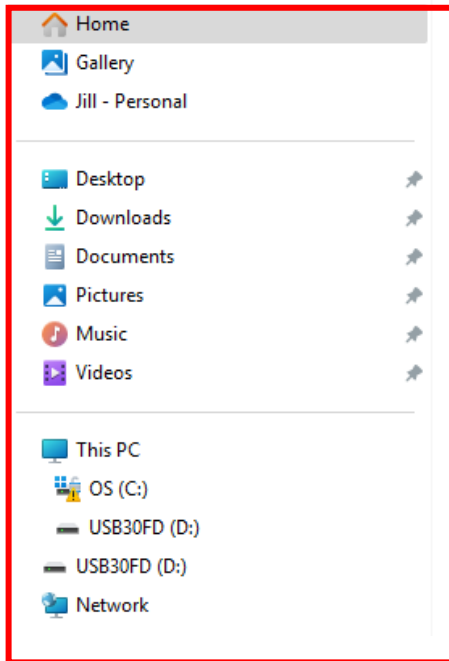
Review Continued: Directory Structure in Detail

In your directory structure on File Explorer, the high-level names are shown vertically, with your personal OneDrive appearing above the hard drive of your PC, followed by any removable drives. This represents a hierarchy of where your files can be stored. Where you put them is your choice!

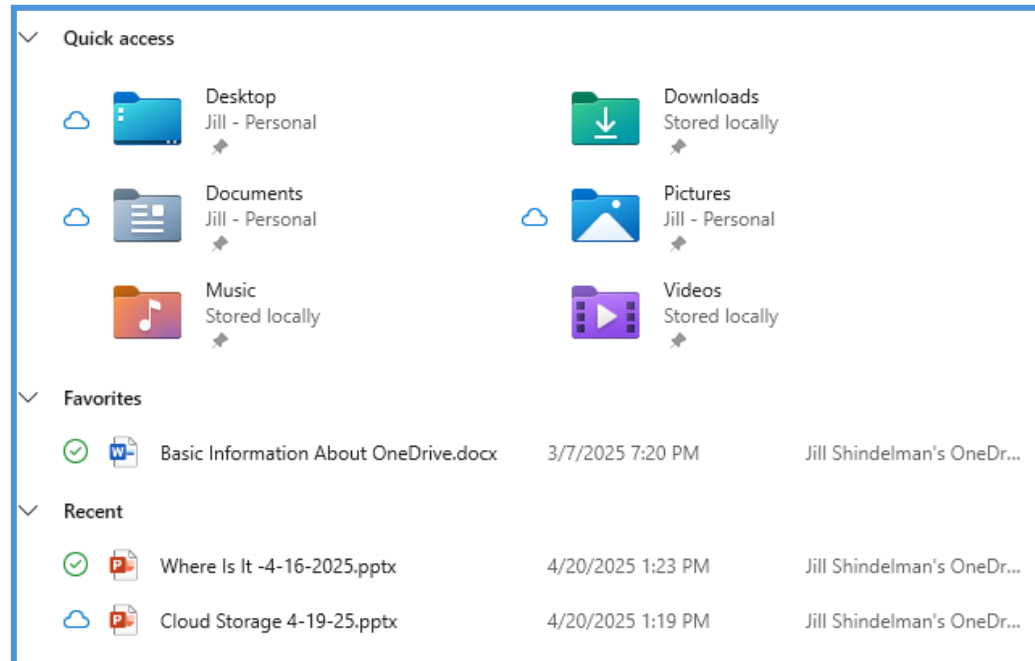
Ribbon →



Navigation Pane →



← Content Pane



Why this is important when upgrading to Windows 11

- During the process of installing Windows 11, you will be asked if you want to copy your files on OneDrive from your Windows 10 device to your new Windows 11 system
- If they are already there, the upgrade will be much easier
- If the files are on the **C:** drive of your old PC, you will need to work out some other way to migrate them

Should you use OneDrive?

- OneDrive has been part of Windows since Windows 7 in 2009 but is now included as a key component in Windows 11
- Are you a Microsoft 365 subscriber?
 - YES – You should use OneDrive (it's included with Microsoft 365)
 - NO – You should store your documents on **C:** drive and external drives
- The next slides will show you how to use OneDrive because Microsoft continues to emphasize it and has made it an integral part of Microsoft 365.
- Cloud storage is not free, except for a small amount like 15 GB. Microsoft 365 gives you 1 TB.

Why Use OneDrive?

- It is your insurance policy against losing all your files, docs, and personal data if your computer is lost, stolen, or fails.
- I can access my files on any device (smartphone, tablet, even a Kindle) connected to the internet.
 - Go to onedrive.com and sign in with your Microsoft username
 - A verification code will be sent to the email you used to register your account
 - Once verified, you can see all the files and folders on your OneDrive

Why Use OneDrive? Page 2

- If you get a new computer, all the files you have previously saved to OneDrive can be transferred to the new PC as one of the steps in device setup. Do you have a Win 10 computer that you need to replace?
- A “version history” can be reviewed for documents saved on OneDrive. This is helpful if you need to restore an earlier version or just see the details of previous updates. (In documents saved on your hard drive, once you click SAVE, you cannot go back to an earlier version.)
- Since your files are stored in “the cloud,” you can create links to these files to share them with other users

How to Activate OneDrive in **Windows 10**

1. Open OneDrive: Click on the Start button. In the Search box, type “OneDrive” and press enter.
2. Sign In: Sign in with your Microsoft account or create a new one.
3. Follow Setup Instructions: This will include selecting which folders you want to synchronize to OneDrive.
4. Sync Your Files: Once setup is complete, OneDrive will begin synchronizing your files. You can access your files from the OneDrive folder on your PC or online via the OneDrive app.

OneDrive in **Windows 11**



- During Windows 11 setup, you will be asked to select a version of Microsoft 365 (or none at all!)
- Be sure to review the various plans **before** you start installing Win11

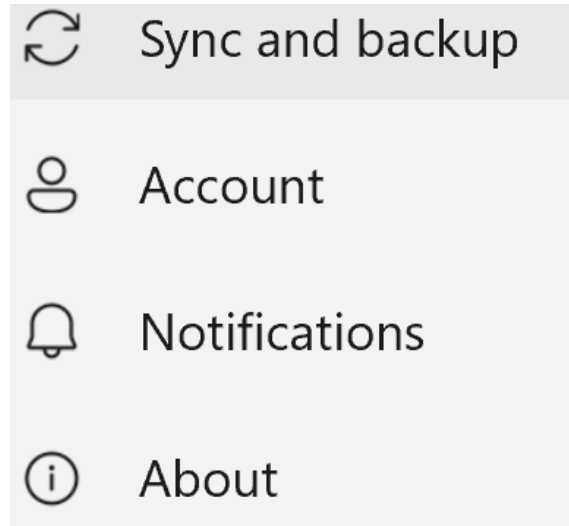
<https://www.microsoft.com/en-us/microsoft-365/buy/compare-all-microsoft-365-products-b>

Settings and OneDrive

- Like everything else in Windows, the individual values you set up as settings for OneDrive will customize its behavior
- There are two types of settings related to OneDrive
 - Settings in OneDrive, controlling how it behaves overall
 - Settings in Office applications, determining if files are saved on OneDrive
- Both categories of settings will be covered in the following slides

OneDrive in Windows 11

- To see or change your OneDrive settings, click the cloud icon on the taskbar 
- On the window that opens, click the **Settings** icon 
- The **Settings** window gives you four choices:



Select the categories to *back up* (**Documents, Pictures, Desktop, Music, and Videos**)

Choose the **individual folders** to be *included and synced* on OneDrive

Choose the events for which you want to be notified

See your version of OneDrive and sign up for previews

Sync and backup






Back up important PC folders to OneDrive
Back up your Desktop, Documents, and Pictures folders to OneDrive, so they're protected and available on other devices.
[Learn more](#)

Manag

Microsoft OneDrive

Back up folders on this PC

Files will be backed up, protected, and available anywhere in OneDrive - Personal, even if you lose this device.
[Learn more about folder backup](#)

	Documents	1.7 GB	Backed up	<input checked="" type="checkbox"/>
	Pictures	366 MB	Backed up	<input checked="" type="checkbox"/>
	Desktop	13 KB	Backed up	<input checked="" type="checkbox"/>
	Music	3.5 GB	Backed up	<input checked="" type="checkbox"/>
	Videos	0 KB	Backed up	<input checked="" type="checkbox"/>

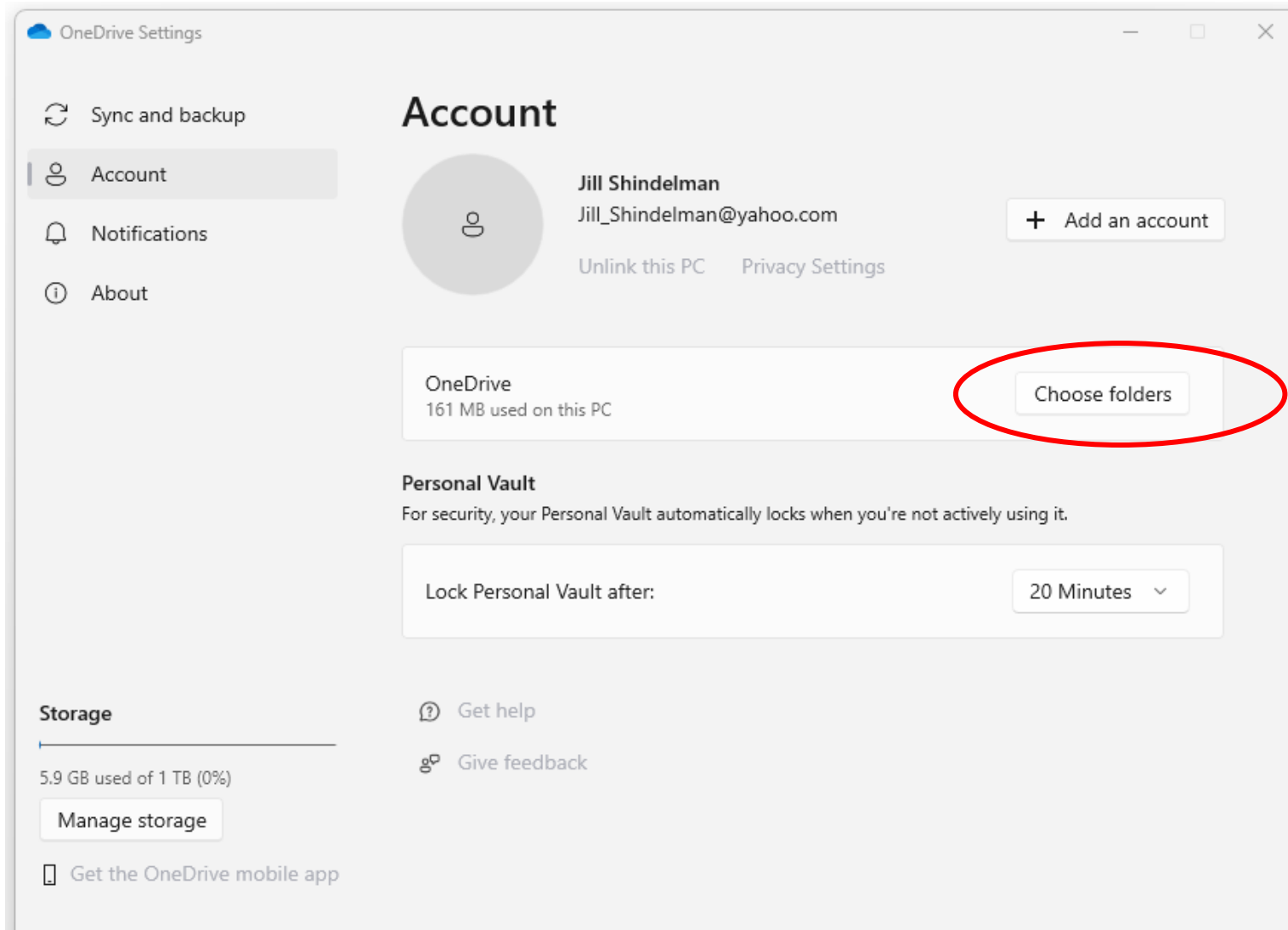
i 51.8 GB used of 1 TB
Sync more files with more storage

[My premium features](#)

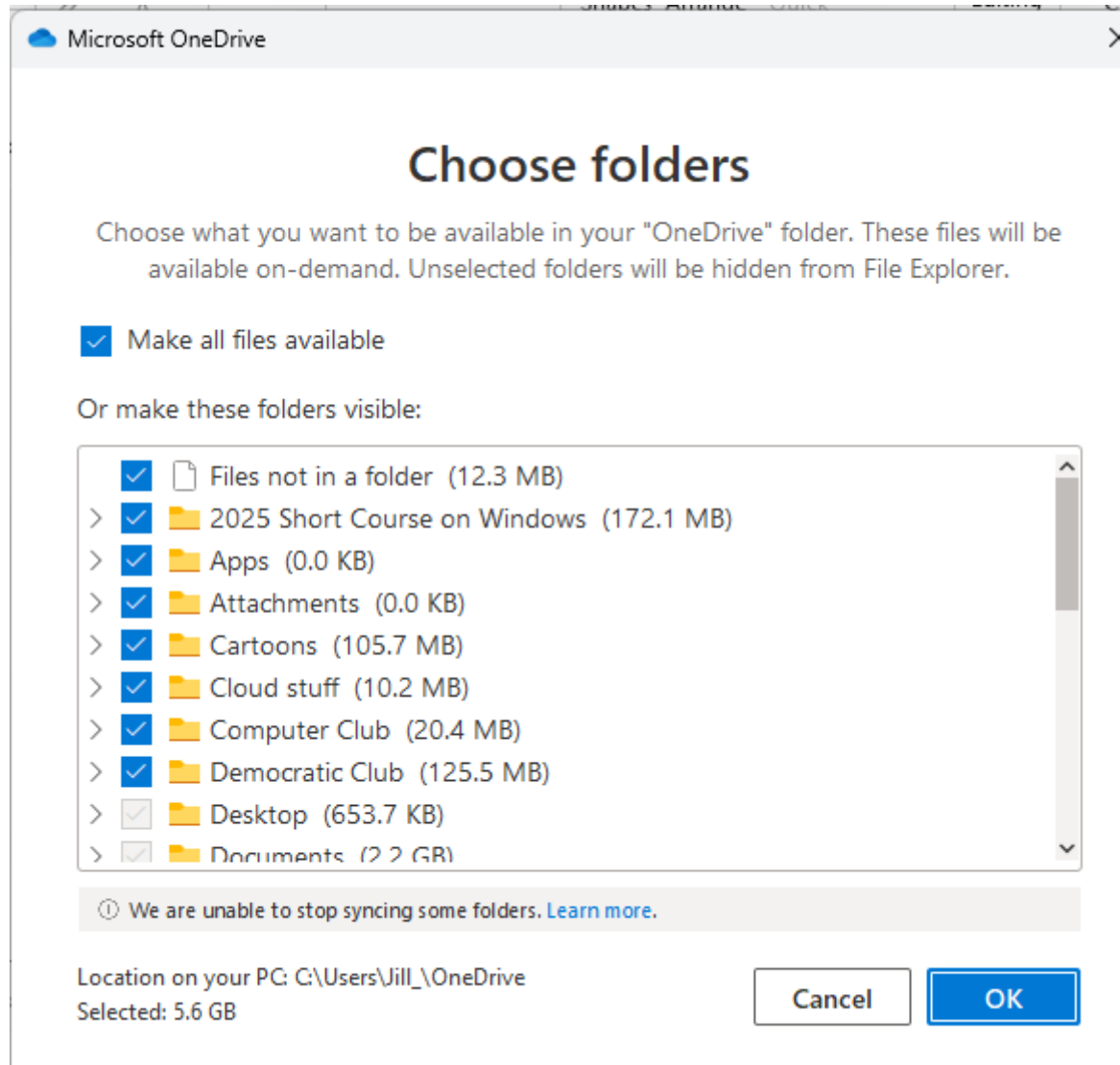
Close Save changes

Back Up PC

- You can only select entire groups of files, not individual files or folders
- This is your insurance.



On the Account screen, select individual folders to **Sync**



Here is where you select the folders to **Sync**

Note: Folders saved to your PC

- Note what appears under Account:
 - Folders you choose will be available on this PC.
 - Be careful!
- I may not want all of my OneDrive folders on my C: drive!
 - I have many photos. They would take up too much space on my C: drive.
 - If I have videos, they take up much more space than fits on my C: drive.
 - OneDrive can hold my photos and some videos.
 - But if I make videos or collect old movies, OneDrive is not large enough.
 - I need an external drive of several terabyte capacity.

“Sync” vs. “Backup” on OneDrive

Purpose and Features of “Sync”

- Provides real-time updates across all devices that can access a given OneDrive (multiple users can read and modify the files)
- Requires one-time setup via the **Account** option in OneDrive **Settings**
- Is performed automatically and in real time (not just when a file is saved)
- Synced files are mirrored between the cloud and the local device (identical latest version available online and locally)
- If a file is deleted, it goes away forever in both the local PC and OneDrive versions

Purpose and Features of “Backup”

- Provides file protection and recovery
- Requires one-time setup via **Sync and Backup** in OneDrive **Settings**
- Can only be done wholesale with all the files in *Desktop, Documents, Pictures, Music, and Videos* (no customized selections possible)
- Occurs at defined intervals or by manual intervention
- The file stored in the cloud is a copy
- If a file is deleted, it stays in the “cloud”

*Any given folder can be **both** backed up and “synced”*

How “Syncing” Works

Your files on OneDrive (“in the cloud”)...



... are “synced” with this folder on your hard drive:



The folder **name** is the one you used when setting up OneDrive

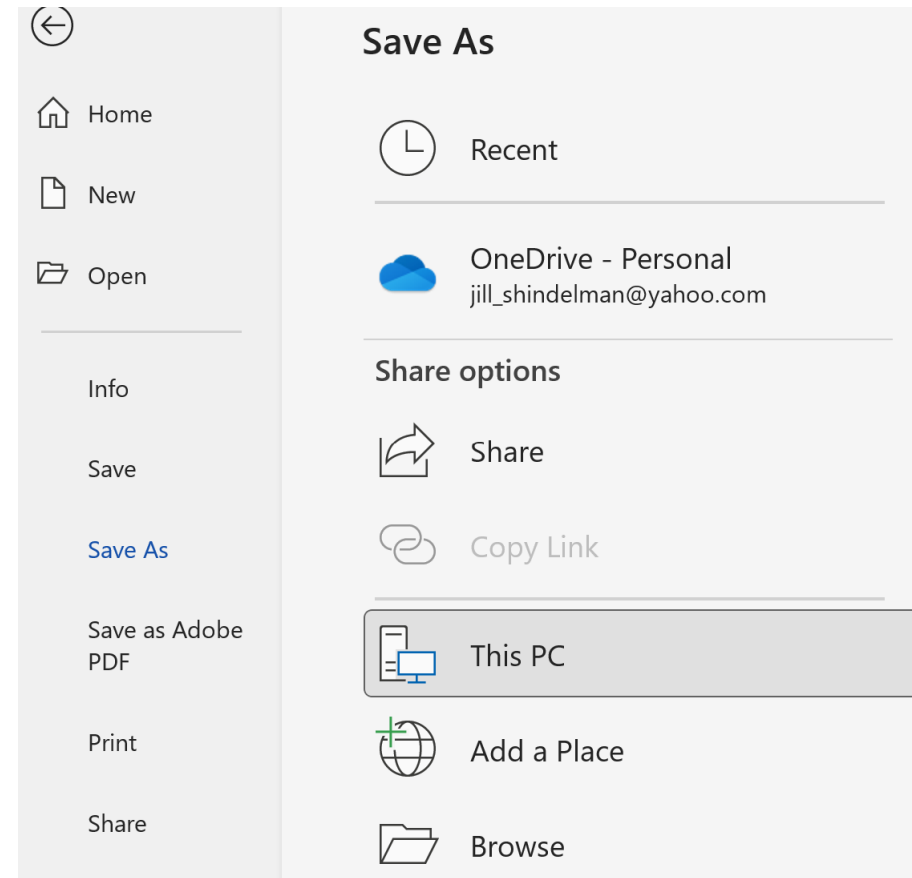
The **Temp** folder contains **pointers** to the files, which are actually located on OneDrive

Backup to an External Drive


- If you have many photo, video, and/or music files, you will want to back them up on an external drive rather than having them take up space on your OneDrive
- There are many available from different suppliers.
 - Western Digital and Sandisk are two of them.
- My Western Digital external drive has auto backup software that I set to back up my entire machine once a week. A complete image of all the files and the system.
- That is my extra insurance.

How *AutoSave* Works

- The first time you save a file, you get to say where to put it (**File > Save As**)
- If you save it to OneDrive, it automatically gets the **AutoSave** attribute:



Benefits of OneDrive's "AutoSave"

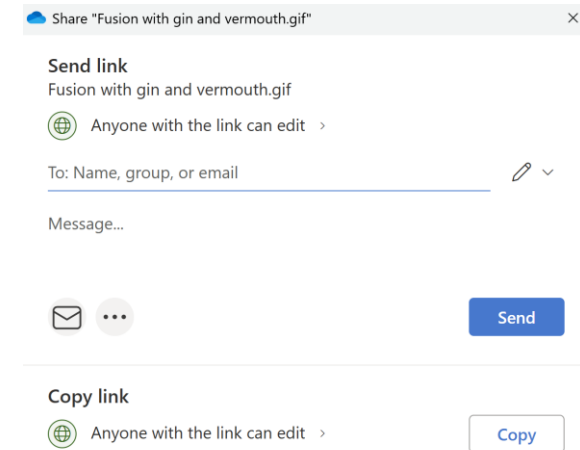
- Files on OneDrive are saved automatically in real time
- If your computer crashes in mid-edit, the current version of the file is still available in "the cloud"
- Earlier versions of Autosaved files can be retrieved
- To access an earlier version:
 - **Right-click** on the file name in File Explorer
 - Choose **Version history**
 - Earlier versions will appear accompanied by a three-dot icon 
 - Click on the icon and select **Restore**, **View**, or **Delete**

AutoSave Caveats

- Only files in the current format (.docx, .xlsx, pptx) can be Autosaved
- You cannot move files in the older format (.doc, .xls, .ppt) to OneDrive and expect them to be Autosaved – you must first save them in the newer format
- It will take slightly longer for a file to be retrieved from OneDrive than from your PC's local devices
- Because changes made to Autosaved files are applied in real time, you may have to rethink how you deal with files you share with others (for example, you may want to **Save a Copy** of the file and give it a new name before you start editing it rather than renaming the file after you finish editing it)

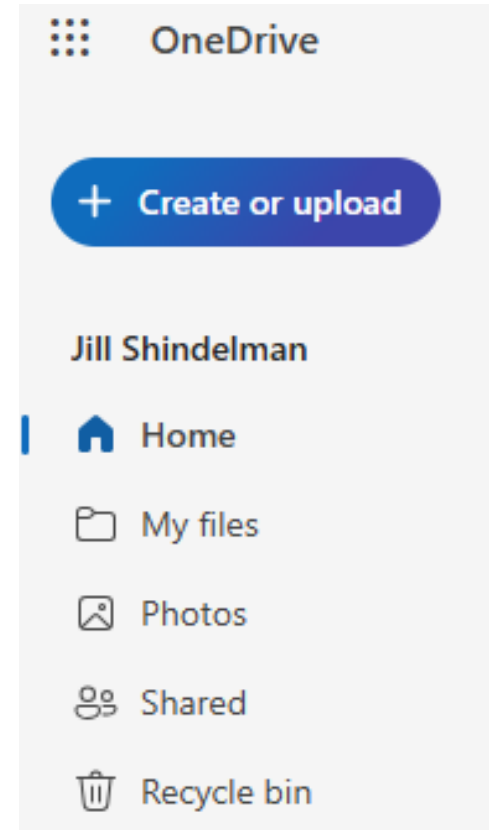
Sharing Files with Others

- With OneDrive, this is an alternative to sending the file as an email attachment (very useful for large files!)
- To do this, right-click on the file name in File Explorer and select **Share**
- This opens a window with a link to the file that can be copied (this is better) or sent directly in an email




OneDrive on the Internet

- Go to onedrive.live.com
- Log in with your Microsoft username and password
- You will see the contents of your OneDrive
- You can access and edit all the files
- The Web versions of Office apps are slightly different



Copilot in Windows 11

- Copilot is Microsoft's A.I. tool, built on a framework from OpenAI
- It includes an image generation tool called Designer
- It can be accessed from the Internet as a stand-alone app
- It is integrated into Windows 11 ( icon on the taskbar)
- Microsoft sells an advanced version called Copilot Pro for \$20/month
- Copilot Pro is said to offer faster performance and support for more image generation projects (up to 100 per day)
- Copilot Pro integrates with Microsoft 365 programs, with a separate pane side-by-side with the pane you use to write a Word document
- Integration with Excel, PowerPoint, and Outlook is a work in progress

Copilot in Windows 10

- Copilot was not automatically included in Windows 10, but it can be installed manually on your PC for any system at the 22H2 release level (this is the final release level for Windows 10)
- You can always access Copilot from the internet via *[copilot.Microsoft.com](https://copilot.microsoft.com)*
- You can even access a free, limited-use copy of Designer at *[designer.Microsoft.com](https://designer.microsoft.com)*

Copilot as a Useful Tool

- We all know that Artificial Intelligence tools should not be used for medical or financial advice, and even A.I.-generated “facts” should be verified
- But Copilot can be very helpful in learning more about Microsoft software or diagnosing problems when they occur (after all, it’s a Microsoft product!)
- The next time you run into a software issue, especially one with an error message, launch Copilot and ask for help
- It also provides references to websites where it obtained the information in its answer, so you can go to those websites to learn more

Preparing to Move to Windows 11

- The most important first step is to review your Windows directory structure in File Explorer
- You may need to lay out a new structure that best fits your needs
- Ideally, you would create that new structure on OneDrive using your “old” computer and then copy the files into it as part of installing Windows 11
- This will allow you to transfer the entire contents of OneDrive to your new computer when you install Windows 11
- You should also review the Microsoft 365 product offerings so you know which one to select when you reach that step in setup

Additional Resources from Microsoft

Since Microsoft constantly tweaks their software and websites, these links may already be out of date by the time you access them

- *Planning for upgrading to Windows 11:*

<https://support.microsoft.com/en-us/windows/getting-ready-for-the-windows-11-upgrade-eb50813f-c7da-4cf8-89a3-6ba0d33b2773>

- *Video training courses on Microsoft 365:*

https://support.microsoft.com/en-us/office/microsoft-365-basics-video-training-396b8d9e-e118-42d0-8a0d-87d1f2f055fb?wt.mc_id=OTC_HOME

- *Information on Microsoft's Extended Security Updates Program*

<https://learn.microsoft.com/en-us/windows/whats-new/extended-security-updates>