

# ***BVCC General Meeting***

June 12, 2023

**"Cloud Storage Revisited"**

# Cloud Storage Re-Visited

- **Presentation slides and URL for video will be posted on BVCC website.**

**BVCC**

# What is Cloud Storage?

- **Storage space for your files that is located on the Internet**
- **There are many different cloud storage services**

**BVS**

# Why Use Cloud Storage

- **Backup - put copies of files on a remote site to protect against loss**
  - **Typically used for user data files, not for disk data images**
    - **Most ISP's support relatively slow upload speed (5-10 Mbps) vs USB 3.0 external hard drive (680 Mbps, 100x faster)**
  - **Can use accounts from more than one cloud storage service**
    - **As protection against failure or discontinuation of one service**
    - **To get additional free storage space**
- **Sharing files among multiple devices belonging to same user**
- **Sharing selected files with other users**
- **To retain access to files without storing all on local computer**

# You May Already Have "Free" Cloud Storage

- **Have iPhone, iPad, Mac or subscription to AppleTV+, AppleMusic? 5 GB iCloud storage incl with Apple ID**
- **Have a gmail.com email account? You then have a Google account with 15 GB free "Google Drive" storage shared among email storage, Google Drive, and Google Photos**
- **Did you create a free outlook.com email account setting up a computer with MS Windows? 5GB free OneDrive storage**

**Can upgrade all of the above to more storage for a monthly or annual fee.**

# You May Not Know You Are Already Using Cloud Storage

- **iCloud tightly integrated with iPhone/iPad and by default used for photo backup, keeping track of installed apps, etc.**
- **If outlook.com account used with Windows setup and OneDrive initialized, the Documents, Pictures, & Desktop directories will by default be synced with OneDrive, which also retains older versions of files for 30 days.**

# Overview of Common Cloud Services

Service	Default GB	Encrypted	1 <sup>st</sup> Upgrad	Price/mo	Price/yr	Supports
MS OneDrive	5GB	optional	100GB	\$1.99	\$19.99	bWMIA
<b>iCloud</b>	<b>5GB</b>	<b>Y (ZKE*)</b>	<b>50GB</b>	<b>\$0.99</b>		<b>bMI</b>
Google Drive	15GB	Y*	100GB	\$1.99	\$19.99	bWLM
<b>IDrive</b>	<b>5GB</b>	<b>ZKE</b>	<b>5TB</b>		<b>\$79.50</b>	<b>bWIA</b>
pCloud	10GB	ZKE	500GB		\$47.88	bWLMIA
<b>Dropbox</b>	<b>2GB</b>	<b>ZKE?</b>	<b>2TB</b>	<b>\$9.99</b>		<b>bWLMIA</b>

**ZKE = , only you can decrypt**

Support Key: b=browser, W=Windows, L=Linux, M= MacOS, I = iOS, A= Android

# How Cloud Storage is Accessed

- **Essentially all provide web access via a browser**
  - Login to account on cloud storage service web site
  - Can upload and download files to website, rename files, create directories, move files, etc.
  - May be limited to working with one file at a time
  - Not as convenient, or as fast, as working with local files via File Manager
  - iCloud is Apple-device specific - don't have full control of all the data from browser interface on other devices
- **Many provide an interface app for Windows, Linux, Mac, mobile devices**
  - makes cloud files look like a directory or lettered drive on your local computer
  - Much more convenient to use – can work with files using regular File Manager Techniques as if they were local files
  - May be a physical copy of all files and directories on your local machine that are synced with cloud copy, or may just have virtual copy – directory and file names on local computer but actual data must be read from the cloud and stored back on the cloud (takes up less local machine space, but slower to access data and need Internet access to read and save files).



# When You Shouldn't Use Desktop Interface

- **The desktop interface can make cloud files look like an extension to the local file system**
  - **That makes them more vulnerable to unintentional damage by you or by malware damage on a compromised system**
  - **If you have multiple cloud storage accounts, it probably makes sense to use at least one of these as a web-browser-only account and keep copies of files there that might be needed to recover if malware did damage to all cloud storage accessible to your File Manager.**

# How is Data Stored in Cloud Server

- **All cloud services encrypt data while in-transit on the Internet. Could still be or not be encrypted at-rest on the server, but suspect not-encrypted would now be a rarity.**
- **If not encrypted at-rest on the server**
  - **Don't use for sensitive data unless you manually encrypt individual sensitive files**
- **If encrypted at rest on drives at cloud server, secure unless your account encryption key is compromised**
  - **If encryption key can be determined by service provider – data could be revealed without your knowledge by a court order. Can still protect specific files by separate encryption of those files before saving to the cloud.**
  - **If encryption key unknown to service provider (Zero Knowledge Encryption), cloud service has no ability to access or reveal your data without your involvement.**

# Looking More Closely at Google Drive

- **Google Drive, Dale Harrington - APCUG Workshop**  
<https://www.youtube.com/watch?v=6ZpVVHfMASw>  
(presentation at 2:16 to 23:51, followed by Q & A)

**Google Drive**

**Dale Harrington, Micro-PC**

**February 22, 2023**



**An International  
Association of Technology  
& Computer User Groups**

**Wednesday Workshop**

## Meet our Presenter

**Dale Harrington** enjoys helping seniors (and younger whipper snappers) productively use and enjoy computers and other forms of technology. Since 1994 Dale has been a member of the Board of Directors for the Mile High Computer Resource Organization (MiCRO). He has presented numerous topics at MiCRO and other user groups in the Denver area. He also developed course materials for and taught introductory computer courses to seniors at local community centers.

Dale also worked for Computers in Ministry, providing technical support to local ministries in network support, Internet connectivity, servers, email services, end-user workstations, and related peripheral hardware and software systems.

He was the Maintenance Department Manager for Raytheon Support Service Company, where his staff was engaged in the performance of contract maintenance services for the USAF Technical Training operations at Lowry Air Force Base, Colorado. Prior to that, he was a Self-Employed Contract Consultant participating in a successful effort to develop a proposal for the performance of Training Equipment Maintenance at three United States Air Force Air Training Command Centers.

From 1966 until his retirement in 1986, Dale was in the USAF, where he performed various tasks, including operating and maintaining Instrumentation Systems equipment.

Show Google Drive Video

BYSS

# GOOGLE DRIVE & DOCS REFERENCES

---

Drive

<https://www.cloudwards.net/how-does-google-drive-work/>

<https://support.google.com/drive/answer/2424384?hl=en&co=GENIE.Platform%3DDesktop>

<https://www.androidauthority.com/how-to-use-google-drive-860193/>

[https://en.wikipedia.org/wiki/Google\\_Drive](https://en.wikipedia.org/wiki/Google_Drive)



# Additional Comments

- **A Google Account user name may be any email address**
  - All @gmail.com emails have a corresponding Google Account
  - Can explicitly create a Google Account with other email accounts
  - All Google Accounts have Google Drive space: 15GB free
  - Google Drive Directories and Files may be shared with any other Google Account, not just those in your "contacts" list, by specifying the email address associated with another Google Account
    - For people with multiple email addresses, you must know which email address they regularly use with Google Drive
  - Google Drive Directories and Files may be shared with those without a Google Account by emailing a "link"



# Shared Directories

- **Space Usage with shared directories is Counter-Intuitive**
  - Individual file ownership determines whose account the file space is "charged to" - the directory into which a file is placed may determine who shares, not who owns.
  - The Google Account that first adds a file to Google Drive is the default owner. The original owner is retained until explicitly changed.
  - Transfer of ownership to another user can be requested, but the other user must accept the transfer.
    - A user must already have shared access in order to become owner
    - There are ways to display the files you own, select all, and request that all be transferred to a new owner
- Deleted files go to trash for 30 days - may still be counted as used space until finally deleted

# Windows Desktop Support

- **Download and Install "Drive for Desktop" from Google.com**
  - Older "Backup and Sync" app no longer supported
  - There is currently no restriction on how many Google Accounts you can create, but the max you can define to "Drive for Desktop" is 4, and each will be assigned a unique Drive Letter on local computer.
  - The web interface to Google Drive only allows moving files within the Google Drive structure of a single Google Account
  - If you own multiple accounts, files may be transferred between accounts from Windows with Copy-Cut-Paste using File Manager if both accounts are defined to "Drive for Desktop"

# Windows Desktop Support

- **"Drive for Desktop" customization is under "Settings" "Preferences" (start from Google Drive icon on taskbar)**
  - **Can select to "Stream files" (default) or "Mirror files"**
    - Stream doesn't keep local copy of files unless "offline" file access requested
    - Mirror keeps local copy of all files in sync with Google Drive - faster access but more space on local computer for duplicate copies of all files
  - **Can specify that local directories keep a mirrored copy on Google Drive.**
    - Makes Google Drive act like an auto backup for specific Windows directories - similar to the way MS OneDrive handles directories like "Documents"

# Linux Desktop Support

- **None provided by Google, but ... Linux Gnome desktop has built in open-source support**
  - **Under Settings, select "Online Accounts", select "Add an Account" of type "Google", supply user email and password and perform what ever authentication response may be required to allow the new access. Then click on the new account entry and disable all the access features except "Files".**
  - **The Google Account email address will appear in the left navigation frame of the Files/Nautilus app, where it may be selected to give access to Drive files.**
  - **There is some weirdness at times, because Google Drive plays by different rules than typical filesystems: pasting a file into "Drive" results in new timestamp; renaming or deleting a file sometimes strange, probably from way Drive retains versions.**