

EXTERNAL STORAGE: USING THE CLOUD

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Summary

- ▶ You can use free cloud storage to protect yourself from losing data files and to synchronize data files between a server farm and multiple computers, cell phones, and tablets.
- ▶ This comparison of Google Drive, OneDrive, Box, Dropbox, and iCloud will help you decide which cloud storage service is best for you.
- ▶ Web location for full presentation: <http://aztcs.org>
 - ▶ Click on “Meeting Notes”

Acknowledgement

- ▶ Many thanks to **Bill Singer** of **Sun City Shadow Hills Computer Club** for editing and formatting this presentation in January of 2016.

Topics

- ▶ **Cloud Storage: General**
 - ▶ What it is
 - ▶ How it works
- ▶ **Five Cloud Storage Services: Google Drive, Microsoft OneDrive, Box, Dropbox, Apple iCloud**
- ▶ **Report Cards Comparing the Five Cloud Storage Services**
- ▶ **Pricing for Additional, Non-free Storage Space**
- ▶ **Additional Considerations**

Cloud Storage: General



What is cloud storage?

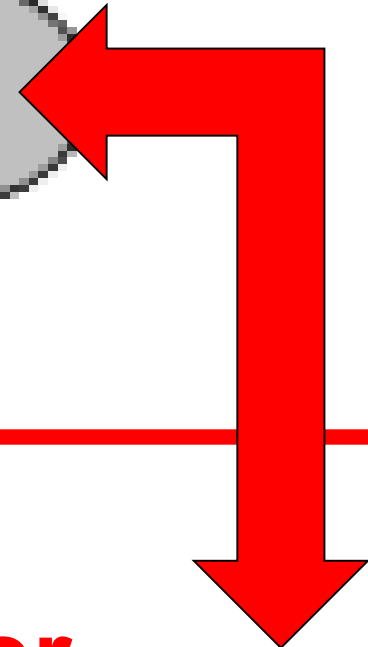
- ▶ The cloud is like an online version of a hard drive
 - ▶ Instead of having the drive within your computer or on another device, you save your files to virtual servers.
- ▶ **Benefits**
 - ▶ Files saved to the cloud can be **accessed by any device, anywhere you have internet access.**
 - ▶ Important files, photos, and videos are saved where they **won't be lost if your computer crashes.**
 - ▶ Allows easy **file sharing** with family and/or friends.

**Virtual Servers in
Server Farms in
the Internet Cloud**

**Internet
Connection**

**Computer
Storage
(by Roy
Wood)**

**Your
Computer**



How it Works

- ▶ **A cluster of interconnected server farms provided by the cloud storage service connects to the Internet which connects to your computer:**

**Server Farms
Operated by a
Web-based Cloud
Storage Service**

**Internet
Connection**

Your Computer, Tablet, PDA, or Cell Phone

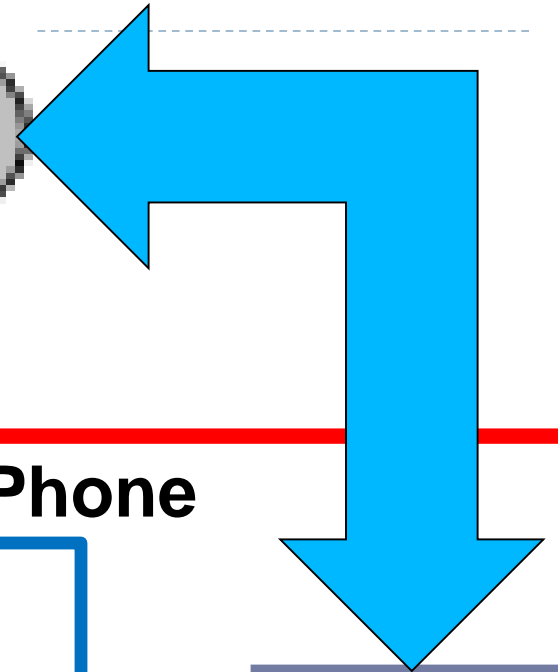


Web Browser

**Web Browser
Add-on
Provided by
Cloud Storage
Service or
HTML
Download and
Upload**

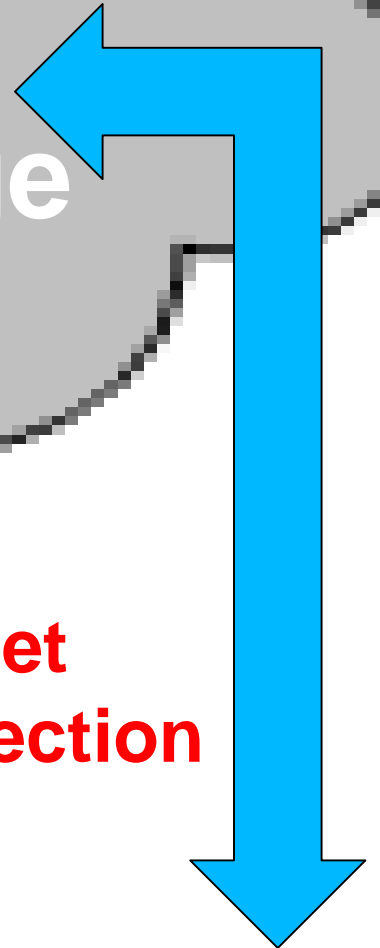
**Optional
Operating
System-
Specific App
Provided by the
Cloud Storage
Service**

**Ethernet
or
WiFi
Adapter
or
Wireless
Cellular
Transceiver**



**Server Farms
Operated by a Web-
based Cloud Storage
Service**

**Your
Internet
Connection**



**Internet
Connection**

Your Computer, Tablet, PDA, or Cell Phone

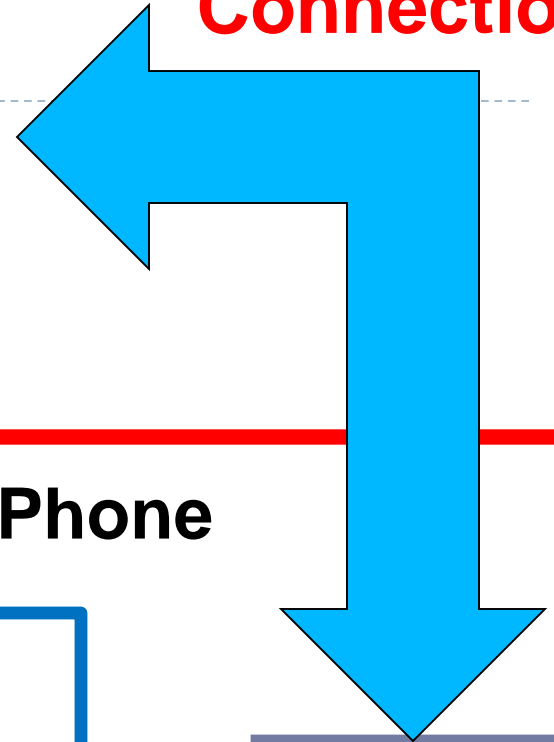


Web Browser

**Web Browser
Add-on
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Operating
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Provided by the
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**Ethernet
or
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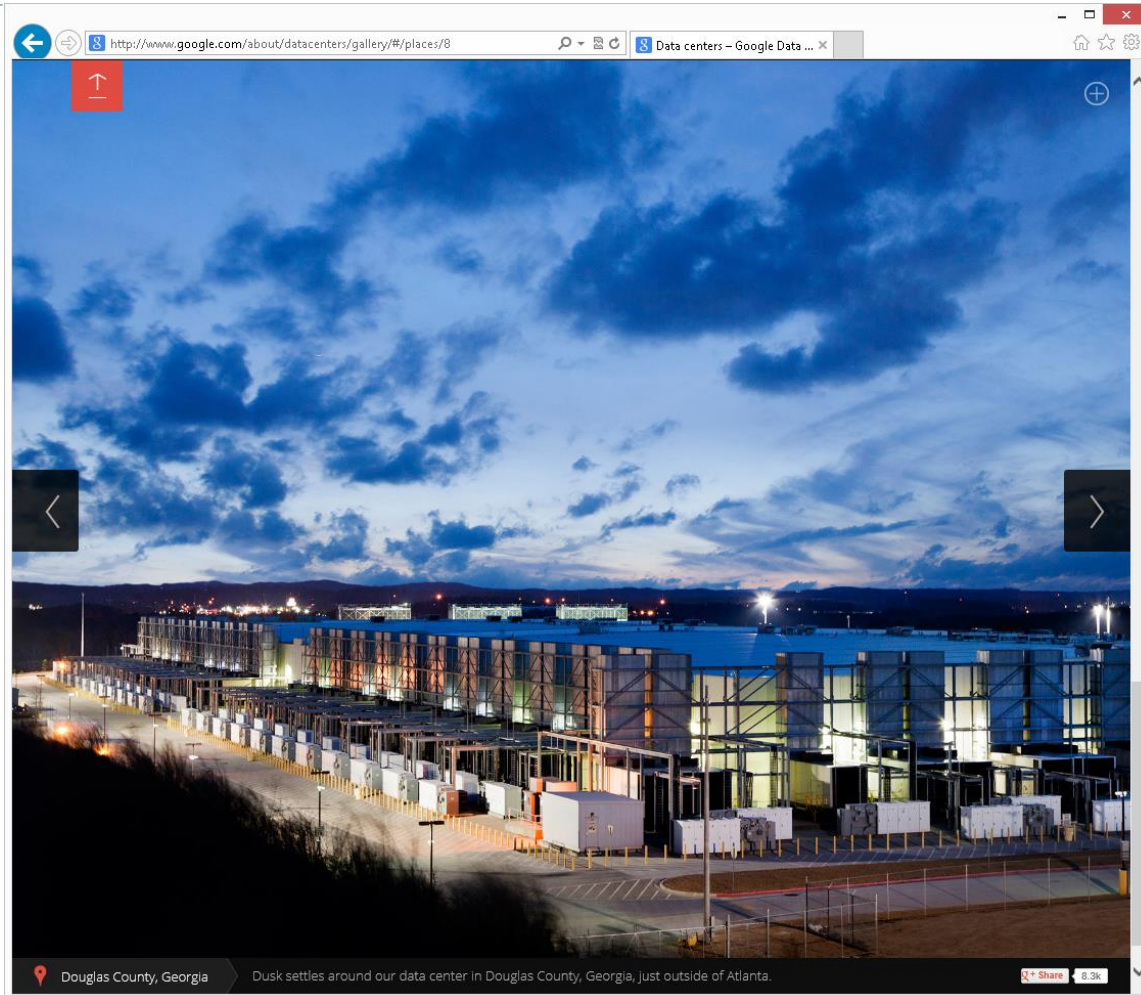


Google Drive Server Farms

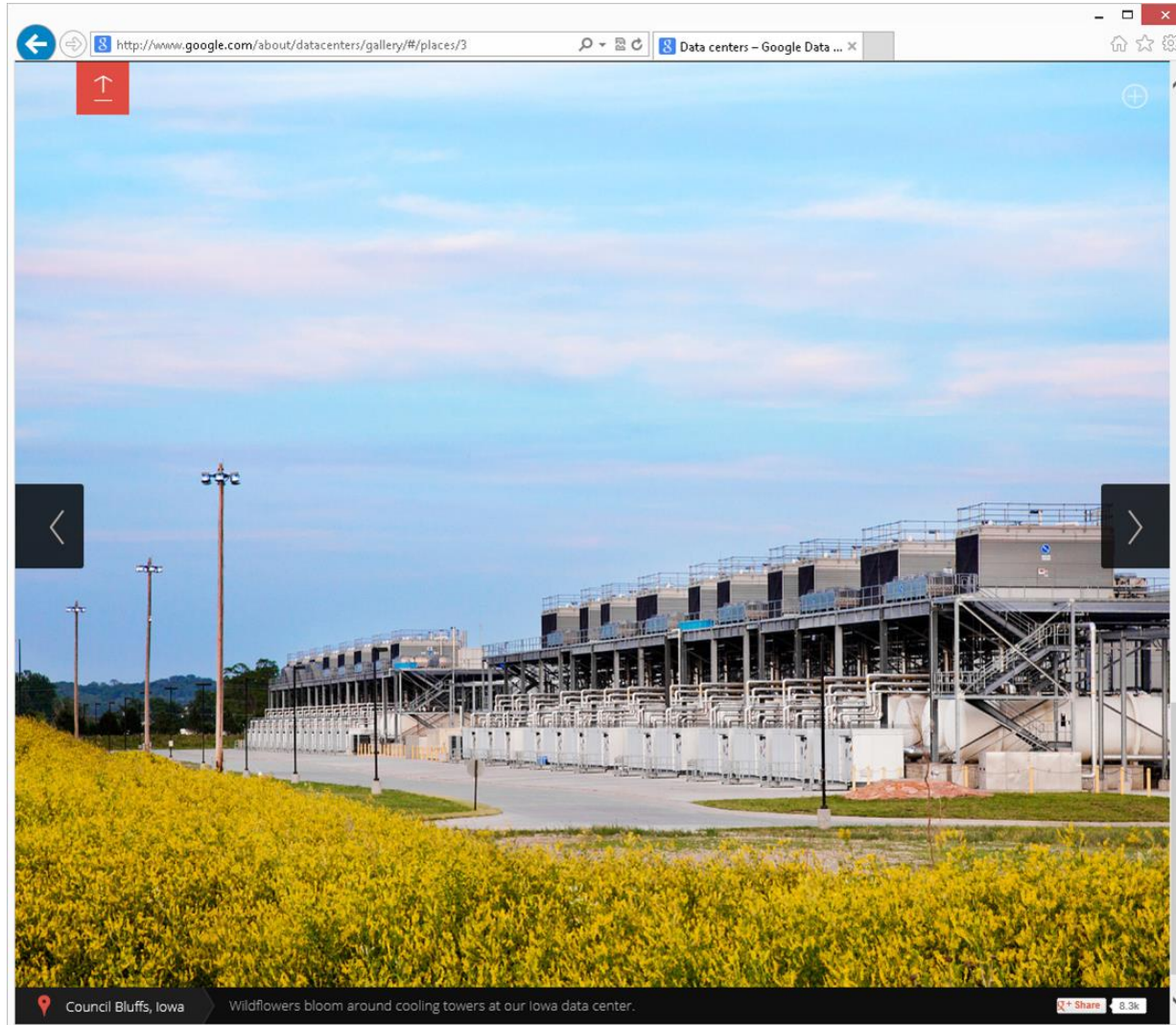
- ▶ Approximately 2 million servers for Google services such as "Google Drive", "Gmail", "Google Site", "Google Voice", "Google+", etc.
- ▶ Server farm locations:
 - Council Bluffs, Iowa
 - The Dalles, Oregon
 - Douglas County, Georgia
 - Lenoir, North Carolina
 - Pryor in Mayes County, Oklahoma
 - Berkeley County, South Carolina
 - Quilicura, Chile
 - Hamina, Finland
 - St. Ghislain, Belgium
 - Dublin, Ireland
 - Singapore
 - Changhua County, Taiwan



Server Farm in Douglas County, GA



Server Farm in Council Bluffs, Iowa



-
- ▶ The Iowa server farm cost \$1.5 billion to build according to

<http://www.datacenterknowledge.com/archives/2013/12/02/in-iowa-a-field-becomes-a-huge-google-server-farm/>

Uploading and Downloading to the Cloud

- ▶ Two ways to upload and download data files and folders to the cluster of server farms
- ▶ 1. Using a Web browser such as Internet Explorer, Mozilla Firefox, or Chrome (required)
- ▶ 2. Using a software program or app provided by the cloud storage service (optional)

Cloud Storage Accounts

- ▶ You probably already have a cloud storage account, if you use Gmail or any of Microsoft's online e-mail services:



Office



Windows Phone



Surface



Xbox



Bing



OneDrive



Outlook.com



Skype



Microsoft Store





+F



Search



YouTube



Maps



Play



News



Gmail



Drive



Calendar



FIVE CLOUD STORAGE SERVICES



Five Cloud Storage Services With Free Entry-Level Storage

- ▶ **Google Drive (15 GB shared between all Google services)**
- ▶ **Microsoft's OneDrive (5 GB as of 1/1/16)**
- ▶ **Box (10 GB)**
- ▶ **Dropbox (2 GB)**
- ▶ **Apple's iCloud (One GB from a "Windows.." or Linux.. computer, 5 GB from a OS X or iOS device)**

Five Cloud Storage Services

- ▶ According to <http://www.thetop10bestonlinebackup.com/> all of these cloud storage services claim to have "geo-redundant storage"

Google Drive (<http://drive.google.com>)

- ▶ Great online viewing and editing
- ▶ Easy to upload entire folders to: can use Google Chrome Web browser or proprietary Java plug-in for other browsers except for "Internet Explorer"
- ▶ Protects you from inadvertently editing the original copies of your data files

Microsoft's OneDrive (<http://onedrive.com>)

- ▶ "OneDrive" program is bundled with Windows 8.1 and Windows 10
- ▶ Two ways to upload entire folders:
 - Can use a supported Web browser.
 - Can use the OneDrive folder created by the "OneDrive" program
- ▶ "Version history" protects you from inadvertently editing the original copies of your data files

Dropbox (<http://dropbox.com>)

- ▶ Most feature-poor cloud storage system
- ▶ No folder uploads using just a Web browser
- ▶ Must install "Dropbox" program in order to do uploads of entire folders

Box (<http://box.com>)

- ▶ Most feature-rich cloud storage system
- ▶ Not-free user accounts can be certified as Health Insurance Portability and Accountability Act (HIPAA) compliant
- ▶ Most operating systems and platforms supported
- ▶ Can upload and download entire folders from supported Web browsers using Java-based add-ons

Apple's iCloud (<http://icloud.com>)

- ▶ http://www.localendar.com/event?DAM=PublishedEvent&m=525210&event_id=192&calendar_id=525210&more_info=N&export_date=Mar29,2016&category=1

iCloud

3:00 PM - 4:30 PM Mar 29, 2016
(General)

Instructor: Chris Konczey

Assistants: Cynthia Bakshy & Martha Horner

Class Size: 25

[Sign Up](#)

[Cancel this class](#)

Location:

Monterey Room, Santa Rosa Clubhouse

Apple's iCloud (<http://icloud.com>)

- ▶ iCloud is free with one Gigabyte of storage when you create an iCloud account with an existing Apple ID from inside a "Windows.." or "Linux" computer or tablet. If you create an iCloud account at Apple's server farm from inside a "Windows.." or "Linux" computer you can store files of a limited number of formats up at iCloud.
- ▶ If you create or access an existing iCloud account from within an Apple computer running OS X 10.7 Lion or higher or from an iPad or iPhone running iOS 5.0 or higher, then will will get 5 Gigabytes of free storage AND your account at <http://icloud.com> will now have an "iCloud Drive" icon that lets you store files of any format up in your "iCloud" account.

Apple's iCloud (<http://icloud.com>)

- ▶ If you create or access an existing iCloud account from within an Apple computer running OS X 10.7 Lion or higher or from an iPad or iPhone running iOS 5.0 or higher, then you can activate "iCloud Photo Library" inside the "Photos" configuration screens AND your account at <http://icloud.com> account will now have a "Photos" icon that lets you store photos up in your "iCloud" account.

Apple's iCloud (<http://icloud.com>)

- ▶ Online viewing and editing of office suite files
- ▶ Drag into browser to upload a single file
- ▶ Drag into "iCloud" folder (created by iCloud program) to upload an entire folder
- ▶ Right-click to download a single file from your account up at iCloud.
- ▶ iCloud has Back to My Mac which lets you access the files and screens in your Mac OS X computer from the Finder in another Mac OS X computer via the Internet.
See <https://support.apple.com/en-us/HT204618>

Report Cards: Comparing the Five Cloud Storage Services



REPORT CARD FOR **GOOGLE DRIVE**

AMOUNT OF FREE STORAGE?	15 GIGABYTES (15 GIGABYTES TOTAL FOR GOOGLE DRIVE, GMAIL, AND GOOGLE+ PHOTOS COMBINED)
UPLOAD AND DOWNLOAD FOLDERS OF DATA FILES?	YES, FOLDER UPLOADS AND DOWNLOADS FROM THE CHROME BROWSER OR WITH A JAVA APPLLET IN OTHER WEB BROWSERS. ALSO, FOLDER UPLOADS FROM THE GOOGLE DRIVE FOR PC APP'S GOOGLE DRIVE FOLDER.
STORE PHOTO FILES?	YES
WEB-BASED ONLINE VIEW AND EDIT OF DOCUMENTS AND PHOTOS?	YES
MAXIMUM SIZE FOR EACH OF THE FILES AND PHOTOS THAT YOU STORE THERE	SEE https://support.google.com/drive/answer/37603?hl=en&rd=1

REPORT CARD FOR **ONEDRIVE**

AMOUNT OF FREE STORAGE?	5 GigaBytes
UPLOAD AND DOWNLOAD ENTIRE FOLDERS?	YOU CAN UPLOAD USING EITHER AN ACCEPTABLE BROWSER OR THE "ONEDRIVE" FOLDER CREATED BY THE ONEDRIVE SOFTWARE PROGRAM. YOU CAN DOWNLOAD ENTIRE FOLDERS AS ZIP FILES WHEN YOU ACCESS ONEDRIVE.COM WITH AN ACCEPTABLE WEB BROWSER.
STORE PHOTO FILES?	YES
WEB-BASED ONLINE VIEW AND EDIT OF DOCUMENTS AND PHOTOS?	YES (CAN ONLY ROTATE AND TAG PHOTOS)
MAXIMUM SIZE FOR EACH OF THE FILES AND PHOTOS THAT YOU STORE THERE	10 GIGABYTES PER FILE OR PHOTO BUT LIMITED BY THE TOTAL AMOUNT OF STORAGE SPACE

REPORT CARD FOR **BOX**

AMOUNT OF FREE STORAGE?	10 GigaBytes
UPLOAD AND DOWNLOAD ENTIRE FOLDERS OF DATA FILES?	YES, FROM MOST WEB BROWSERS USING A JAVA BROWSER ADD-ON OR UPLOAD FROM THE <i>BOX SYNC</i> SOFTWARE PROGRAM
STORE PHOTO FILES?	YES
WEB-BASED ONLINE VIEW AND EDIT OF DOCUMENTS AND PHOTOS?	CAN ONLY VIEW DOCUMENTS AND PHOTOS
MAXIMUM SIZE FOR EACH OF THE FILE AND PHOTOS THAT YOU STORE THERE	250 MEGABYTES PER FILE OR PHOTO

REPORT CARD FOR **DROPBOX**

AMOUNT OF FREE STORAGE?	2 GigaBytes
UPLOAD AND DOWNLOAD ENTIRE FOLDERS OF DATA FILES?	YES, FROM THE LOCAL DROPBOX FOLDER IN YOUR USER ACCOUNT IF DROPBOX SOFTWARE IS INSTALLED AND ACTIVE
STORE PHOTO FILES?	YES
WEB-BASED ONLINE VIEW AND EDIT OF DOCUMENTS AND PHOTOS?	CAN ONLY VIEW DOCUMENTS AND PHOTOS
MAXIMUM SIZE FOR EACH OF THE FILES AND PHOTOS THAT YOU STORE THERE	300 MEGABYTE PER FILE OR PHOTO FROM WEB PAGE NO SIZE LIMIT PER FILE UP TO THE TOTAL STORAGE SPACE FROM DESKTOP SOFTWARE CLIENT

REPORT CARD FOR **iCLOUD**

AMOUNT OF FREE STORAGE?	ONE OR FIVE GIGABYTES
UPLOAD AND DOWNLOAD ENTIRE FOLDERS OF DATA FILES?	YES, FROM THE "iCLOUD DRIVE" FOLDER INSIDE YOUR "WINDOWS.." OR MAC COMPUTER, IF YOU ACTIVATE THIS FEATURE FROM INSIDE OS X OR iOS
STORES PHOTOS?	YES, BY MEANS OF "iCLOUD PHOTO LIBRARY" WHICH HAS TO BE ACTIVATED INSIDE "OS X" OR "iOS"
WEB-BASED ONLINE VIEW AND EDIT OF DOCUMENTS AND PHOTOS?	YES FOR DOCUMENTS WITH FREE "iWORK for iCloud" VIEWING BUT NO EDITING OF PHOTOS
MAXIMUM SIZE FOR EACH OF THE FILES AND PHOTOS THAT YOU STORE THERE	15 GIGABYTES PER FILE OR PHOTO BUT LIMITED BY THE TOTAL AMOUNT OF STORAGE SPACE



Pricing for Additional, Non-free Storage Space



Additional Storage Pricing

▶ Google Drive

- ▶ See <https://support.google.com/drive/answer/2375123?hl=en>

▶ Microsoft OneDrive

- ▶ <https://onedrive.live.com/about/en-us/plans/>

▶ DropBox

- ▶ "DropBox Pro" gives you 1 TB for \$9.99 a month
See <https://www.dropbox.com/business/pricing>

▶ Box

- ▶ 100 GB for \$5 a month
See <https://www.box.com/pricing/>

▶ Apple iCloud

- ▶ 50 GB for 99¢ a month
- ▶ 200 GB for \$2.99 a month
- ▶ 1 TB for \$9.99 a month

Additional Considerations



Downloads of Files as Zip Files From a Web Browser?

- ▶ **Google Drive, OneDrive, Box, and DropBox** allow you to download entire folders of data files as Zip files, when you access their respective Web sites with an acceptable Web browser
- ▶ **iCloud** does not let you download an entire folder after you access your account with a Web browser. Instead, you have to use the iCloud folder that is created by the iCloud program to upload and download entire folders

Online Sharing/Publishing of Stored Files or Folders

- ▶ For files or folders that you have stored at **OneDrive, Google Drive, Box, or Dropbox**, you can share files by logging into your cloud storage account with a Web browser.
- ▶ Locate the file or folder than you wish to share / publish. Then right-click on it and select the "Share.." option in the pop-up context menu.
iCloud does not have this capability.

User Agreements

- ▶ Microsoft's Code of Conduct, which applies to all of their services including OneDrive is more restrictive than the user agreements of other cloud storage services.
- ▶ In comparison to Microsoft's restrictive Code of Conduct, the Google Terms of Service are relatively lax.
- ▶ Dropbox has the simplest "terms of service" compared to other cloud services that we have tried.
- ▶ iCloud's "Terms and Conditions" spells out the crimes that you promise not to commit while using their services.

End of Presentation
