



# The Sky's the Limit: Understanding and Using the Cloud

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## **1 What is the Cloud?**

In general, the **Cloud** refers to computer resources that are located on a network rather than on your own machine. In the media, the concept often gets reduced to services for storing files (for example, **DROPBOX**, **GOOGLE DRIVE**, or **ONEDRIVE**), but there is much more to the Cloud than storage of static files. The Cloud also includes services that work like the applications on your computer to allow you to create and modify text documents, spreadsheets, pictures, videos, and so on.

Using the Cloud, then, opens 2 possibilities:

1. Sharing your files with others, and
2. Using application-like services to collaborate with others in creating things.

As an example of file storage and sharing, the staff at Maxwell Library use a shared Dropbox account to give everyone on the staff access to files that any of us might need to use or to modify.

Maxwell also uses the application side of the Cloud in that Library Insight — the program we use for reserving space in the library — runs on remote computers using software that's created and maintained by an outside organization.<sup>1</sup>

Similarly, a folk dance group I'm part of uses various Google Docs to keep track of member availability for events we participate in and for planning an annual event that we host. Using Cloud computing gives everyone involved all of the functions for editing the documents (and not just the documents themselves)

<sup>1</sup> There are layers upon layers here since Library Insight does not itself have any servers of its own but runs its software on Microsoft's Cloud, kind of a Cloud within a Cloud.

without our having to worry about any issues of incompatibility among applications or operating systems.

## ***2 How can I get access to the Cloud?***

To use the Cloud, you'll need an account with a provider of Cloud-based services, but you may already have just such an account:

- If you use a Mac, iPad, or iPhone, you (probably) already have an iCloud account.
- If you use Gmail or an Android device, you already have a Google account.
- If you use Outlook, you already have a Microsoft account.

However, these 3 are not the only providers of Cloud services, and each has limitations that might make it less than adequate for your purposes.

In particular, Apple's services are specifically oriented to machines running Apple's applications on either the iOS or macOS. While people using other OSes or 3<sup>rd</sup>-party applications can access material in Apple's Cloud, the access is not as smooth as it would be with other providers. Because of this limitation, I won't be looking at iCloud in the comparison below.

For the individual user, the major draw of the Cloud is the ability to store files so that they can use them from any of their devices and the related ability of being able to share specific files with friends. Thus, the comparison here will focus on file storage/sharing. In the Further resources section at the end of this document, I list some of the application-like services that Google, Microsoft, and iCloud offer.

Since we're only looking at file storage/sharing, we can add Dropbox and Amazon Drive to the mix. Table 1 shows some of the features and restrictions of each provider.

	<b>Dropbox</b>	<b>Google Drive</b>	<b>OneDrive</b>	<b>Amazon Drive</b>
<b>File size restrictions?</b>	20 GB with Website No limit with Dropbox app	5 TB <sup>2</sup>	10 GB	48 GB with app
<b>Free storage?</b>	50 GB	17 GB <sup>3</sup>	5 GB	5 GB
<b>Can I earn extra free storage?</b>	Yes	No	No	No
<b>Paid plans</b>	1 TB for \$10/mo. or \$100/yr.	100 GB for \$2/mo. or \$20/yr. 1 TB for \$10/mo. or \$100/yr.	50 GB for \$2/mo. 1 TB for \$7/mo. or \$70/yr.	100 GB for \$12/yr. 1 TB for \$60/yr. <sup>4</sup> Unlimited photos with Amazon Prime
<b>OSes supported</b>	Windows, Mac OS X, Linux, Android, iOS, Windows Phone	Windows, Mac OS X, Android, iOS	Windows, Mac OS X, Android, iOS, Windows Phone	Windows, Mac OS X, Android, iOS, Kindle Fire

*Table 1: Comparison of features for Dropbox, Google Drive, OneDrive, and Amazon Drive*

### **3 Other considerations**

- Security

If it's in the Cloud, it's left your control, so you want to know that the provider has at least

- Anti-virus detection
- Multifactor user authentication

<sup>2</sup> Files created with or converted to Google Docs, Google Sheets, or Google Slides are restricted to much smaller sizes than this.

<sup>3</sup> The 17 GB limit is for the total of your Gmail, Google Drive, and Google Photos.

<sup>4</sup> Amazon Drive offers storage up to 30 TB at rates proportional to 1 TB for \$60/yr. Hence, 30 TB costs \$1800/yr.

- Data encryption
- What happens when data gets lost  
What systems and procedures do they have for backing your data up so that it can be restored?
- Tech support  
You want them available 24/7/365 and with minimal lengths of on-hold time.
- Downtime?  
Ideally, never. But since that's not realistic, you at least want the provider to have downtime be infrequent and only for brief periods.

## 4 Further resources

### Providers

- Amazon
  - [Amazon Drive](https://www.amazon.com/b/?node=15547130011) at <https://www.amazon.com/b/?node=15547130011>
- Apple
  - [iCloud](https://www.icloud.com/) at <https://www.icloud.com/>
  - The apps of iWork for iCloud are available at the URL in the previous line.
- Dropbox
  - [Dropbox](https://www.dropbox.com/) at <https://www.dropbox.com/>
- Google
  - [Google Drive](https://www.google.com/drive/) at <https://www.google.com/drive/>
  - [Google Docs](https://www.google.com/docs/about/) at <https://www.google.com/docs/about/>
- Microsoft
  - [Microsoft OneDrive](https://onedrive.live.com/about/en-us/) at <https://onedrive.live.com/about/en-us/>
  - [Microsoft Office Online](https://www.office.com/) at <https://www.office.com/>

### Tutorials

- [Free Using the Cloud Tutorials at GCFLearnFree](https://www.gcflearnfree.org/topics/usingthecloud) at <https://www.gcflearnfree.org/topics/usingthecloud> has tutorials on a few Cloud-based services:
  - Dropbox
  - Etsy: Marketplace for handmade and other creative goods
  - Prezi: For creating presentations

They also have tutorials on several of the specific services that Google and Microsoft offer.

## Articles

- Mitroff, Sarah. "OneDrive, Dropbox, Google Drive and Box: Which Cloud Storage Service Is Right for You?" *CNET*, February 1, 2016. <https://www.cnet.com/how-to/onedrive-dropbox-google-drive-and-box-which-cloud-storage-service-is-right-for-you/>.
- Shandrow, Kim Lachance. "10 Questions to Ask When Choosing a Cloud Provider." *Entrepreneur*, June 4, 2013. <https://www.entrepreneur.com/article/226845>.

## Application-like features

In the 3 tables below, you can see some of the application-like Cloud-based services that Google, Microsoft, and Apple offer.

Service	Purpose
iCloud File storage	<ul style="list-style-type: none"> <li>• iCloud Drive</li> <li>• iCloud Photo Library</li> <li>• Family Sharing                             <ul style="list-style-type: none"> <li>• iTunes</li> <li>• iBooks</li> <li>• App Store purchases</li> </ul> </li> </ul>
iWork for iCloud	<ul style="list-style-type: none"> <li>• Pages: For text documents</li> <li>• Numbers: For spreadsheets</li> <li>• Keynote: For creating presentations</li> <li>• Mail</li> </ul>
Some other Apple services relating to the Cloud	<ul style="list-style-type: none"> <li>• Contacts</li> <li>• Calendar</li> <li>• Reminders</li> </ul>

*Table 2: iCloud (Apple)*

<b>Service</b>	<b>Purpose</b>
Google Drive	File storage
Google Docs	<ul style="list-style-type: none"> <li>• Documents: For creating and working with text documents</li> <li>• Sheets: For spreadsheets</li> <li>• Slides: For creating presentations</li> <li>• Forms: For collecting and organizing data</li> <li>• Drawings: For simple vector graphics or diagrams</li> </ul>
Some other Google services relating to the Cloud	<ul style="list-style-type: none"> <li>• Photos: Storing, organizing, and sharing images</li> <li>• Maps: Maps and navigation</li> <li>• Translate: Translation between languages</li> <li>• Gmail</li> <li>• Contacts</li> <li>• Calendar</li> </ul>

*Table 3: Google*

<b>Service</b>	<b>Purpose</b>
OneDrive	File storage
Office Online	OneDrive and Office Online work together to give storage of files in general and the capabilities of Microsoft Office: <ul style="list-style-type: none"> <li>• Word: For text documents</li> <li>• Excel: For spreadsheets</li> <li>• PowerPoint: For creating presentations</li> <li>• OneNote: For taking and organizing notes</li> </ul>
SharePoint	Document management & storage within organizations

*Table 4: Microsoft*