Doug Hillary – Tech Coach

What is the Cloud? Part 3: Different Types of Clouds

Previously, we talked about how clouds work, how you interact with the cloud, and the benefits of the cloud, as well as what the cloud is. Today, we will discuss the most common types of clouds in use today.

Different Types of Clouds

There are several types of cloud models prevalent in the industry today. Many of the examples I provided above are "public" clouds which are widely available for use by the public and businesses. A second model is called a "private" cloud which is used exclusively by one organization or business and is not widely available to the public. The third common model is a mixture of the two, called "hybrid" clouds. Below is a brief description of each of these cloud models.

Public Cloud

In a public cloud solution like the example above, information and data are stored in servers which are managed and maintained by service providers such as Google, Amazon, Microsoft, and many others. These datacenters can include thousands of servers along with the storage databases, networking, and backup equipment to operate 24X7X365. These cloud service providers ensure that the equipment and software are operating properly, and available to you as needed. They provide public cloud services directly to end-users (i.e., Amazon.com), as well as third parties who then deliver application services to end users and consumers through the internet. A good example of this is Netflix. Netflix utilizes Amazon's AWS (Amazon Web Services) datacenters to provide programming content to end users. Since AWS has a substantial datacenter infrastructure, they enable Netflix to quickly scale up (add) capacity or scale down (decrease) capacity depending on demand. While many services are provided free, you can also subscribe to get higher levels of service (e.g., more storage, better features, etc.). This means you have a great deal of flexibility in how you purchase and use these various services without having to worry about the equipment or data.
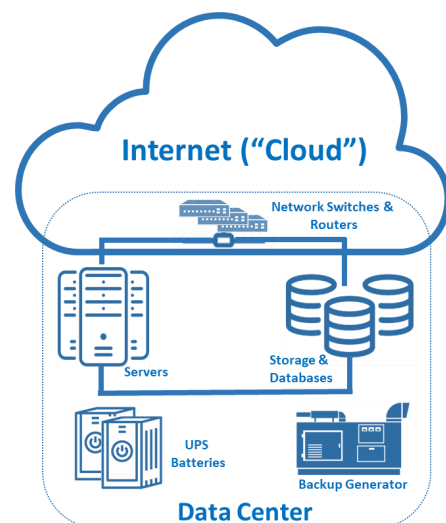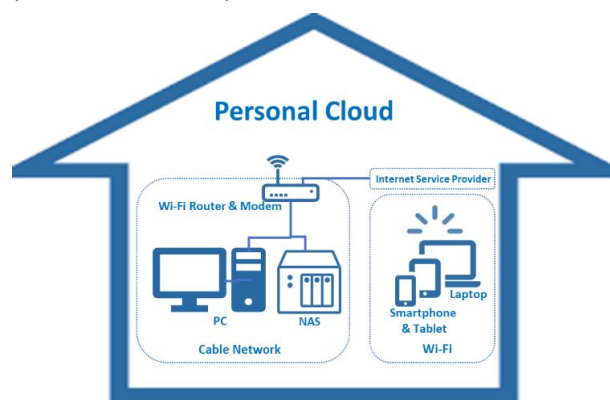
Private Cloud

Private clouds are represented by an infrastructure that is owned and operated by a single entity or organization and can be managed either externally by a third party or by the organizations' own IT department. Most organizations opt for private clouds due to concerns over data privacy, security, and risk, particularly for highly sensitive information or applications. A private cloud also allows the organization to fully manage the environment and control any changes in the infrastructure or applications which can minimize disruptions or problems which can occur due to hardware or software changes.

Hybrid Cloud

A hybrid cloud is essentially the combination of a public and private cloud infrastructure. This allows an organization to gain the benefits of both public and private cloud models. For example, the organization may store sensitive customer information or financial data on a private cloud but may utilize a public cloud for less critical functions or applications (e.g., software development and testing). Another good example would be the need to meet higher temporary demand like holiday shopping. In this case, an organization could tap into the available capacity of the public cloud to support the higher demand during the holiday without having to invest in the infrastructure which could sit idle the rest of the year.

Public Clouds and "Personal Clouds"

As a consumer you have many choices to store and backup your data and information. As described in the previous section, you can use a public cloud service like Apple's iCloud, Google's Drive, Dropbox, or many other offerings. Public cloud services provide an inexpensive, scalable, and easy way to back up your data, music, photos, books, or other files from your mobile devices (or PC) to the cloud. There are

many options to choose from which are easy to set up and manage, and relatively safe. However, if you do not trust having your data in the cloud or wish to have more control or privacy with your data, you can also create your own private cloud. You can set up your own private cloud by connecting storage device(s) or hard drives to your network. If you set it up properly, you will be able to access your data from anywhere, just like public cloud services. While there is a higher up-front cost, it provides an interesting and useful option to consider.

Advantages of Public Cloud Services:

There are many advantages of public cloud storage services like Apple iCloud, Google Drive, Amazon Cloud Drive, Dropbox, Microsoft OneDrive to store and backup your data, photos, videos, or music.

- Cost effective – generally these services offer a certain amount of storage for free (i.e., 5 GB for iCloud, 15 GB for Google Drive or Google One, 2 GB for Dropbox) and charge more for higher levels of storage. However, it can get expensive if you need a lot of storage. For example, 10 TB storage on Google is $99.99/month.

- Easy – these services are relatively easy to set up and use, particularly if you use iCloud for iOS devices and Google Drive for Android devices.
- Flexibility – you can easily add or reduce storage capacity depending on your storage needs or how much you are willing to pay
- Availability – your data is always and readily available to view, download or share with others
- Accessibility – since public clouds exist on the internet you can access your data through your PC, or your mobile devices through apps or web interfaces that your cloud service provider offers
- Backup – public cloud service providers operate out of data centers that provide backup and redundancy for your data so there is typically a low risk of losing your data. However, errors or data loss can occur, so it is not 100% safe.

In the next and final column on the cloud, we will discuss what you can do to merely back up your data if the cloud sounds too complex or does not fit your needs.

Tech Coach Assistance
Tech Coaches are now providing remote Tech Coaching. Simply send an email to _techcoach@laketravislibrary.org_ and one of our coaches will respond to assist you with any questions or challenges you have regarding cloud storage, or even help you set up your own private cloud.