Azure Storage

So far, we talked about “Compute” and “networking”. Now we talk about the third pillar of computing, which is “Storage”.

Azure Storage Services

Azure storage services consist of a few different storages.

- General purpose storage

- Disk Storage (virtual hard disks for virtual machines)

- File Storage

- Storage tiers

Note that storage consider as an infrastructure as a Service (IaaS).

Azure Storage (GPv2) / Standard Storage

It contains 4 types of data: Container, File, Queue, Table

Can hold up to 5 Petabytes (5PB) = 5 million GB

Pay for what you use (2 cents per GB per month) / Cheap

Not recommended for high-demand workloads

When creating a GPv2 storage account we have the option for a “**Data Lake**”. Data Lake is extremely large storage. Good for “big data” analytics.

When dealing with high-demand workloads, we may consider “**Premium Storage Options**”. This allows us to choose a couple different blobs (block blobs). This are for “Blob Storage” (Blob Storage is optimized for storing massive amounts of unstructured data) and not for queues and Tables. This uses premium SSD, and they triple the operations per seconds (OPS), lower latency (time to first byte), and more expensive.

There are multiple high-performance options: Premium SSD, Premium SSD v2, Ultra Disk

Container (Blob - Binary Large Object) Storage

These are files of any type (TXT, PDF, CSV, ...). Store loosely in a container (like putting everything in a box).

We can set privacy (private / public)

These are “unstructured data”

Container storage:

- Can create multiple containers
- Each container can contain blobs
- There is concept of folder (note: it is not like windows folders / no hierarchy)
- Only pay for what you use

In AWS, “storage account” is called “Storage Service (S3)”.

When creating a storage account we can choose “location”. We can create multiple storage accounts in any region of the world. It is important to keep the data close to the person / service consuming it (for access speed), and price varies by region.

Redundancy:

- Azure keeps 3 copies of your data by default
- Locally or Zone redundant
- Azure will almost never lose a file once it is successfully received it.

We can also choose “globally redundancy” for storage. In this case:

- Azure keeps 6 copies of your data (3 locally and 3 in another region)
- Honors data sovereignty laws

Access Tiers for storage accounts

There are 4 access tiers:

- Hot: The default / balanced

- Cool: Cheaper storage, expensive read/write operations

- Cold: Cheaper storage, expensive read/write operations

- Archive: Can not get immediate access to files, cheapest storage, most expensive operations