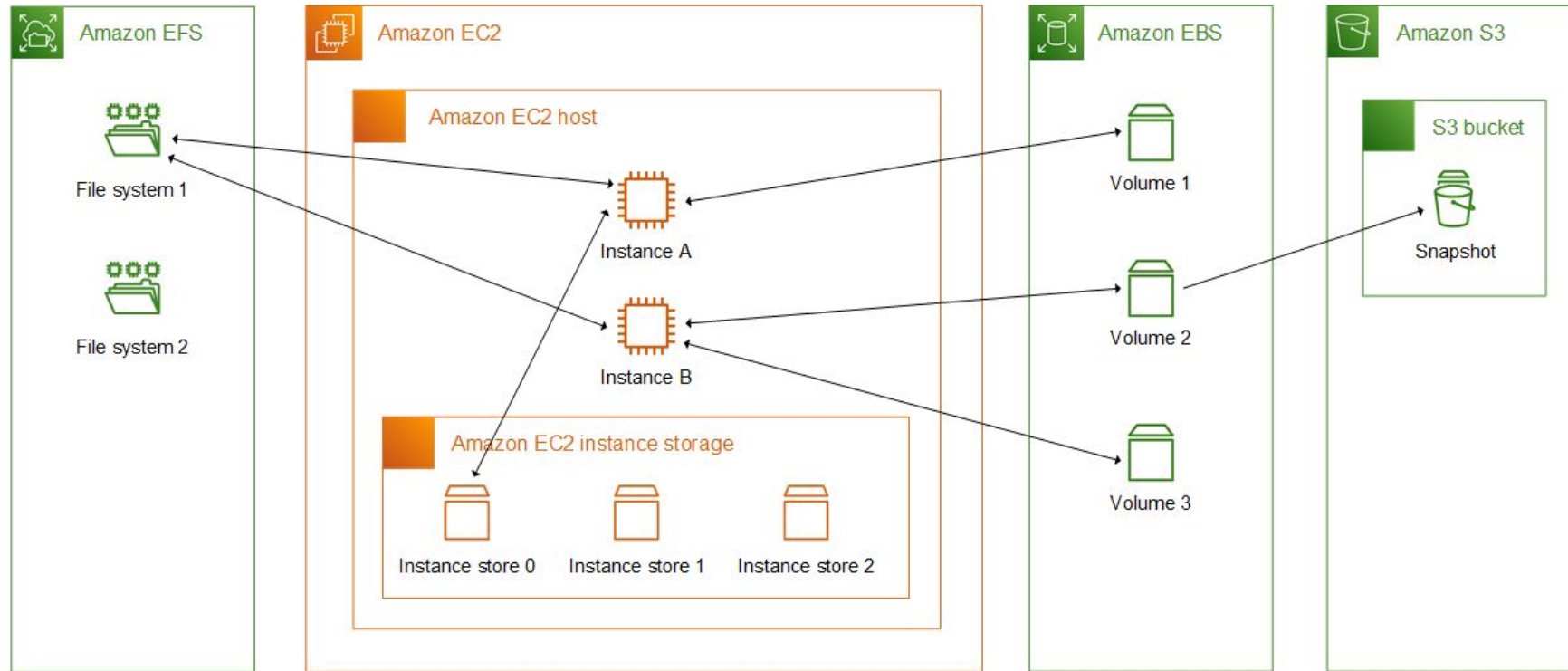




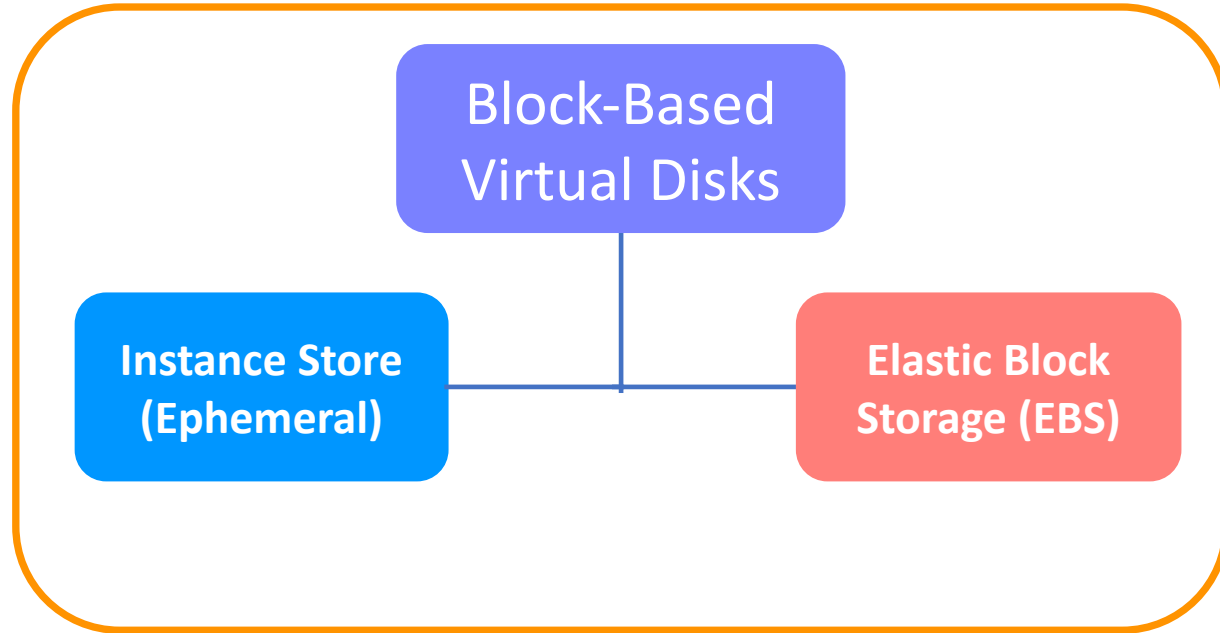
EC2 Volumes



- Block-based Storage: **Instance Store** and **Elastic Block Store (EBS)**
- Object-based Storage: **Simple Storage Service (S3)**
- File-based Storage: **Elastic File System (EFS)**

EC2 Volumes

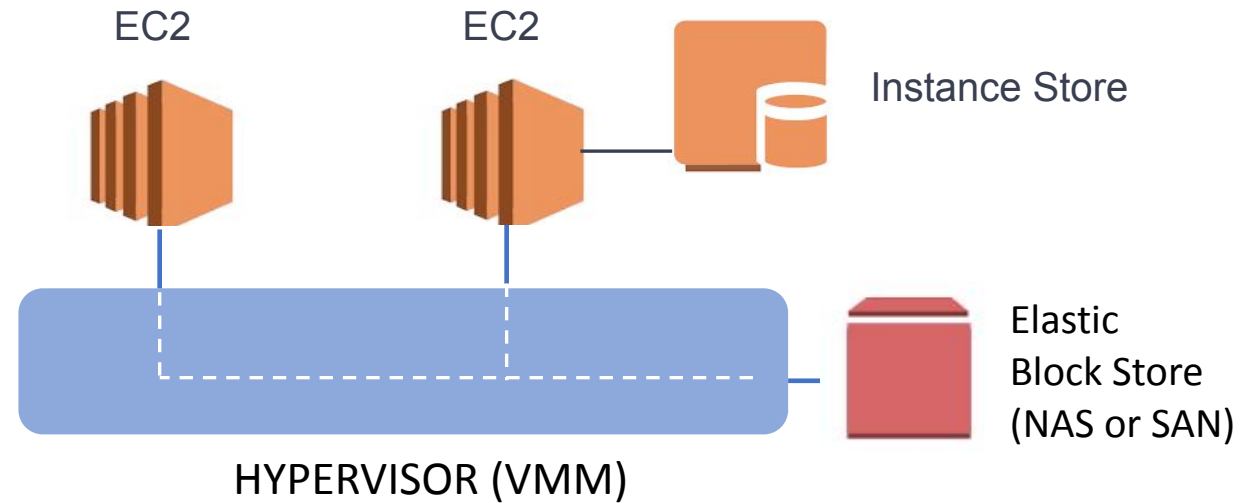
What is Volumes?



- Volumes are durable **storage devices (virtual)** that can be attached to EC2 instances.
- They are location in which the associated machine **stores its data or loads its applications**.
- There are two volume types in the block storage category. These are **Instance Store (Ephemeral)** and **Elastic Block Store (EBS)**.

EC2 Volumes

Instance Store and Elastic Block Store



- **Instance Store** is located on disks that are **physically attached to the host computer**.
- **Elastic Block Store** is **connected to the hypervisor** and accessible to each machine associated with the hypervisor.



EC2 Volumes

Instance Store

- You can specify instance store for an instance **only when you launch it**.
- The data in an instance store persists **only during the lifetime** of its associated instance.
- Data in the instance store is lost under any of the following circumstances:
 - The underlying **disk drive fails**
 - The instance **stops**
 - The instance **hibernates**
 - The instance **terminates**



EC2 Volumes

Elastic Block Store (EBS)

- EBS volumes are **flexible**.
- EBS volumes persist **independently** from the running life of an EC2 instance.
- You can attach **multiple EBS volumes** to **a single instance**. The volume and instance must be **in the same Availability Zone**.
- You can use **Multi-Attach** to mount a volume to multiple instances at the same time.(Considerations and limitations)

EC2 Volumes

Instance Store (Ephemeral) vs. Elastic Block Store (EBS)



EC2 INSTANCE STORE

- Direct connect to one instance
- Non-persistent data storage
- No replication
- Snapshots are not available
- Both SSD and HDD Backed

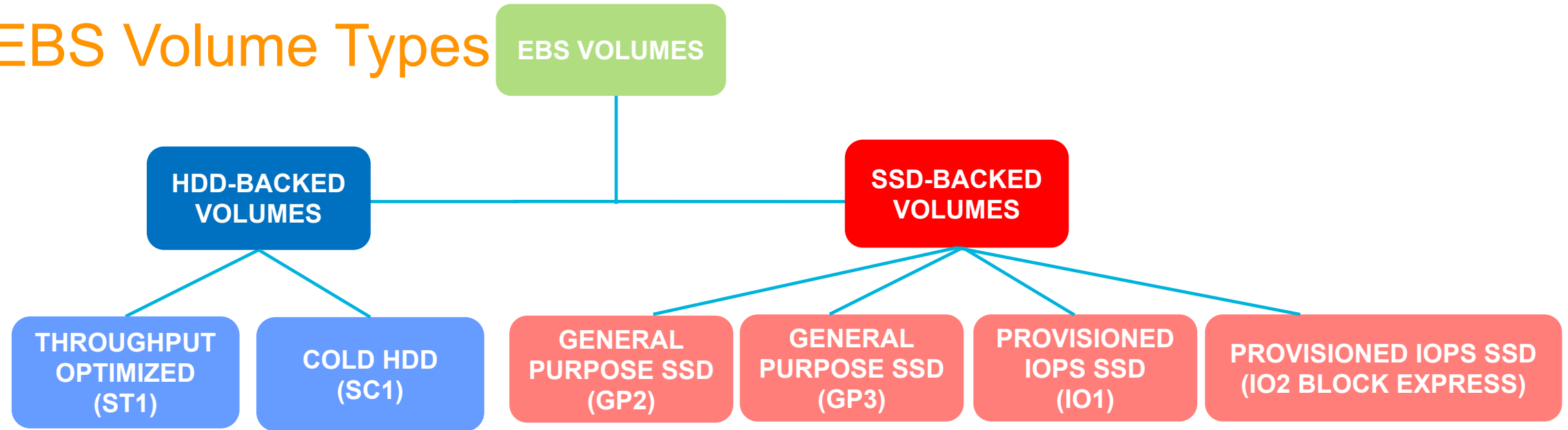


ELASTIC BLOCK STORE

- Connect to different instances
- Persistent data storage
- Replicates data in the same AZ
- Snapshots are available
- Both SSD and HDD Backed

EC2 Volumes

EBS Volume Types



- There are 6 types of volumes in 2 categories for the different use cases.
- HDD-backed volumes are used for large streaming workloads where throughput is a better performance measure than IOPS.
- SSD-backed volumes are used for frequent read/write operations where the dominant performance attribute is IOPS.



THANKS!

Any questions?

You can find me at:

- ▶ @Guile - Instructor
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Let's get our hands dirty!

- Managing EBS Volumes on Console and Terminal
 - attaching
 - detaching
 - mounting
 - partition
 - resizing

