Block Storage

This lesson will help you understand block storage.

We'll cover the following

What is block storage?

Block storage is the data storage technique where data is broken down into blocks of equal size and each individual block is given a unique identifier for easy accessibility.

These blocks are stored in physical storage wherever it is most efficient. As opposed to adhering to a fixed path as in a file system, blocks can be stored anywhere in the system, making more efficient use of the resources.

When the client requests information from a block storage system, it re-assembles the blocks based on the request and returns the information to the client. This approach facilitates efficient, fast, and reliable movement of data over the network. It offers more storage efficiency and performance than file storage.

Block storage is largely used by storage area networks and larger cloud-based environments. It is the storage of raw data that is decoupled from the environment. The data is abstracted from the environment, just like containers abstract the application from the environment.

Block storage in the cloud

Persistent disks and *local transient disks* that are attached to the compute instances offer block storage in a cloud environment.

Block storage provides more granular control over the data and also offers consistent performance. It is well suited for both *high throughput* and *transaction-intensive* workloads such as *relational* and *NoSQL* databases, media streaming, big

data analytics, and so on.

Google Cloud Persistent Disk and *Amazon Elastic Block Store* are examples of block storage cloud service.

Here are a couple of examples of how companies are leveraging the cloud block storage service to improve their systems and also to cut down latency and storage costs:

- *Slack* uses *AWS* block storage to take daily backup of their *MySQL* instances. The block storage persistent disks are attached to the *MySQL* instances and are used as temporary storage before all the data is moved to *AWS S3*, which is an object storage service. We'll discuss object storage in the next lesson.
- *Infor* reduced their monthly data backup costs by *75%* using *AWS* block storage service. With block storage, they cut down the full database backup time by *30%,* increasing system efficiency, and cutting down the costs.