Cloud Storage

By Garvit Singh

Cloud Storage

Cloud storage is a fundamental component of cloud computing, providing scalable and on-demand storage resources that can be accessed over the internet.

Object storage is suitable for unstructured data and web applications, block storage provides low-level access for structured data, file storage enables shared file systems, and CDNs improve the performance and security of content delivery.

1. **Object Storage**:
    - Object storage is a type of cloud storage that stores data as objects or files in a flat structure, each identified by a unique

key (often referred to as a "universal resource identifier" or URI).

- Objects typically consist of the data itself, metadata, and a unique identifier.
- Object storage is highly scalable and suitable for storing vast amounts of unstructured data, such as images, videos, documents, and backups.
- It's often used for web applications, content distribution, and data archival.
- Popular object storage services include Amazon S3, Google Cloud Storage, and Azure Blob Storage.

2. **Block Storage**:
    - Block storage divides data into fixed-size blocks and stores them on individual storage devices.
    - Unlike object storage, it is used for structured data, such as databases, virtual machines, and operating systems.

- Block storage provides high performance and low-latency access, making it suitable for applications that require direct, low-level access to storage, like databases and virtualization environments.
- Cloud providers offer block storage services, such as Amazon EBS (Elastic Block Store), Google Persistent Disks, and Azure Disk Storage.

3. **File Storage**:
    - File storage offers a file-based approach to storage, where data is organized into a hierarchical structure of directories and files.
    - It is often used for shared file systems and is accessible over network protocols like SMB (Server Message Block) and NFS (Network File System).
    - File storage is valuable for workloads that require a shared and accessible file system, like user home directories, shared

drives, and application data shared among multiple instances.

- Cloud providers offer file storage services, such as Amazon EFS (Elastic File System), Google Cloud Filestore, and Azure Files.

4. **Content Delivery Networks (CDNs)**:
    - CDNs are a network of distributed servers strategically placed in various geographical locations to optimize the delivery of web content and digital assets like images, videos, and web pages.
    - When a user requests content from a website, the CDN serves the content from the nearest server to reduce latency and improve load times.
    - CDNs not only enhance content delivery but also protect websites from DDoS attacks by distributing traffic and providing additional security features.

- Leading CDN providers include Akamai, Cloudflare, and Amazon CloudFront.

Thanks For Reading! 💙

By GARVIT SINGH

Information Technology Undergraduate