

# **AWS Solution Architect Associate**

Version : C03

Domain 3

Task 1

**Determine high-performing and/or  
scalable storage solutions**

# Hybrid Storage Solutions

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AWS offers several hybrid storage solutions that allow organizations to seamlessly integrate their on-premises infrastructure with the AWS cloud

## → AWS Storage Gateway

- ◆ Enables hybrid storage between on-premises environments and AWS storage infrastructure.
- ◆ Supports three types of storage interfaces
  - **File Gateways** - Provides file-based storage
  - **Volume Gateways** - Offers block-based storage
  - **Tape Gateways** - Provides virtual tape infrastructure
- ◆ These gateways enable applications to seamlessly use AWS cloud storage while retaining on-premises data

## → AWS Snow Family

- ◆ Offers physical devices designed to securely transfer large amounts of data into and out of AWS
- ◆ **Snowball** is a petabyte-scale data transport solution that uses secure appliances to transfer large amounts of data into and out of AWS.
- ◆ **Snowcone** is a smaller rugged device designed for edge computing and data transfer in harsh environments.

# Hybrid Storage Solutions

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## → **AWS Direct Connect**

- ◆ Allows you to establish a dedicated network connection between your on-premises data center and AWS
- ◆ Public internet can be bypassed to achieve higher bandwidth and more consistent network performance which is especially beneficial for hybrid storage solutions requiring low-latency access to AWS services

## → **Amazon S3 Transfer Acceleration**

- ◆ This feature enables fast, easy, and secure transfers of files over long distances between your client and an S3 bucket
- ◆ It utilizes Amazon CloudFront's globally distributed edge locations to accelerate the data transfer

## → **AWS Storage Services**

- ◆ AWS offers a range of storage services such as Amazon S3, Amazon EBS, Amazon EFS and Amazon FSx that can be utilized in hybrid architectures.
- ◆ These services provide scalable, durable and highly available storage solutions for various use cases.

# AWS Storage Service - Usecases

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## → Amazon S3

- ◆ **Data Backup and Archiving** : Store backups of on-premises data, databases and applications securely in the cloud
- ◆ **Static Website Hosting** : Host static websites with high availability and scalability
- ◆ **Data Lakes** : Store and analyze vast amounts of structured and unstructured data for analytics and machine learning
- ◆ **Content Distribution** : Distribute content globally with low latency using Amazon CloudFront CDN
- ◆ **Mobile and IoT Data Storage** : Store data generated by mobile applications and IoT devices securely

## → Amazon EBS

- ◆ **Database Storage** : Use EBS volumes as block storage for database instances such as Amazon RDS, Amazon EC2, and Amazon Redshift.
- ◆ **Enterprise Applications** : Store data for enterprise applications requiring high-performance block storage.
- ◆ **Boot Volumes** : Use EBS volumes as boot volumes for EC2 instances, providing persistent storage.
- ◆ **Development and Testing** : Provision storage for development and testing environments with flexible capacity and performance.

# AWS Storage Service - Usecases

## → Amazon EFS

- ◆ **Content Management** : Share files across multiple EC2 instances for content management systems, media processing, and web serving
- ◆ **Big Data Analytics** : Share data across multiple compute instances for big data analytics workloads
- ◆ **Container Storage** : Provide persistent storage for containers running on Amazon ECS or Kubernetes
- ◆ **Machine Learning** : Share training data and models across multiple compute instances for machine learning tasks

## → AWS Storage Gateway

- ◆ **Hybrid Cloud Storage** : Integrate on-premises environments with AWS storage services for seamless data transfer and backup
- ◆ **Disaster Recovery** : Replicate on-premises data to AWS for disaster recovery purposes using Storage Gateway
- ◆ **Media and Entertainment** : Enable cloud-based workflows for media production, processing, and archiving
- ◆ **Data Migration** : Simplify and accelerate data migration to and from the cloud using Storage Gateway.

# AWS Storage Service - Usecases

## → Amazon FSx

- ◆ **Windows File Storage** : Store and access Windows-based applications and workloads using Amazon FSx for Windows File Server
  - ◆ **High-Performance Computing** : Use Amazon FSx for Lustre for high-performance computing (HPC) workloads such as simulations, rendering and financial modeling
  - ◆ **SAP Workloads** : Store data for SAP applications using Amazon FSx for NetApp ONTAP
  - ◆ **Electronic Design Automation** : Share data across design tools and teams in the semiconductor industry
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# Storage Services - Performance / Scalability

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AWS Storage Service	Throughput	Latency	Scalability
Amazon S3	Highly scalable	Higher latency	Highly scalable
Amazon EBS	High throughput	Low latency	Easily scalable
Amazon EFS	Scalable throughput	Higher latency	Highly scalable
Amazon FSx	High throughput	Low latency	Scalable
AWS Storage Gateway	Variable throughput	Optimized latency	Scalable

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**The END**