

Introduction to Storage Services

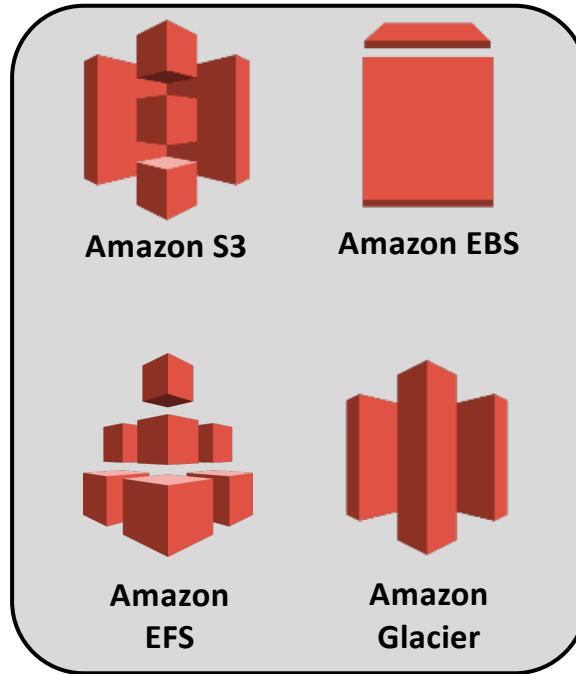
Core AWS Services



**Amazon
VPC**



Amazon EC2



Storage



Amazon
RDS



Amazon
DynamoDB

Database



AWS IAM

Amazon Elastic Block Store (Amazon EBS)



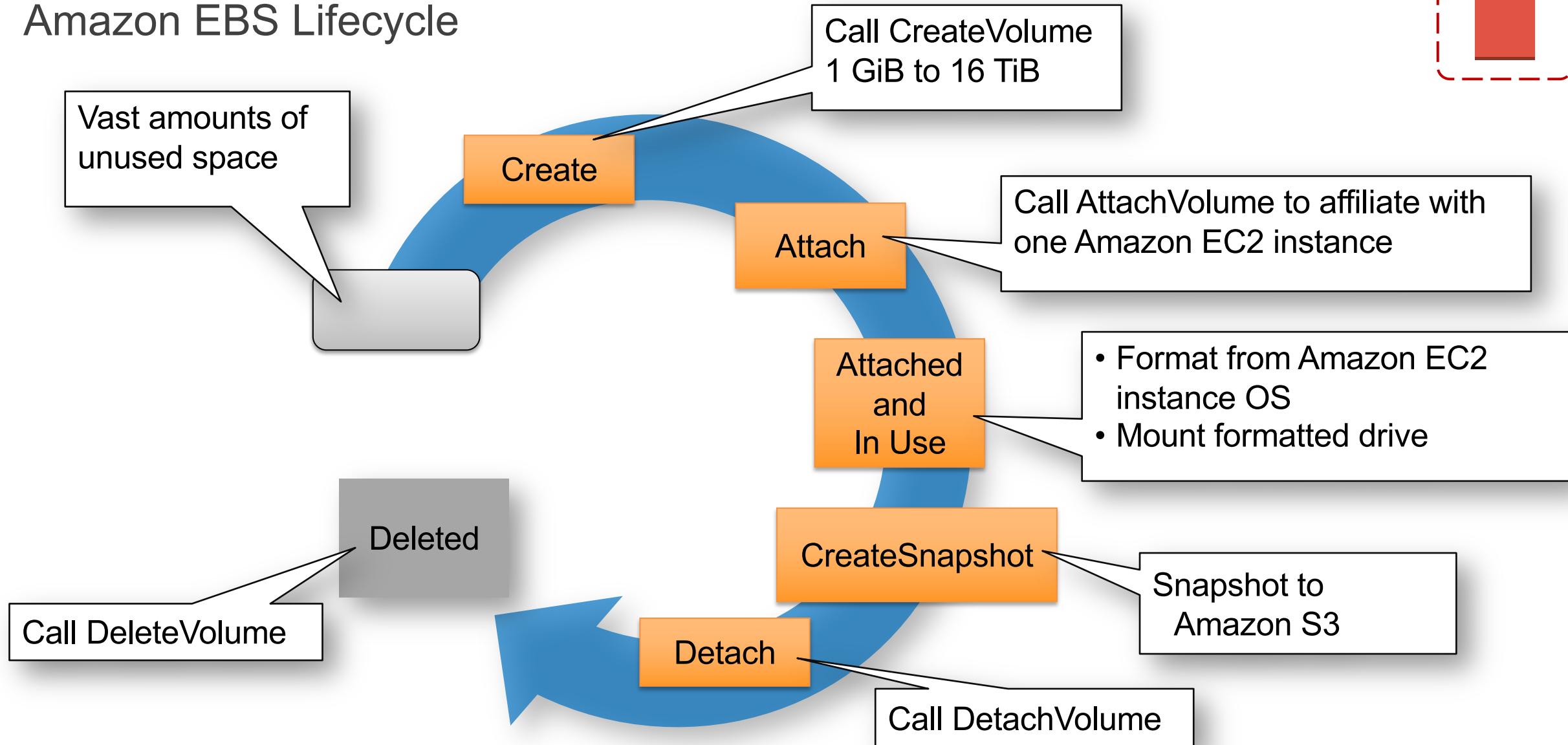
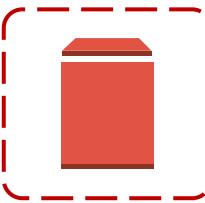
Amazon Elastic Block Store (Amazon EBS)

*Amazon EBS allows you to **create individual storage volumes** and **attach them** to an Amazon EC2 instance.*

- Amazon EBS offers block-level storage
- Volumes are automatically replicated within its Availability Zone
- Can be backed up automatically to Amazon S3
- Uses:
 - Boot volumes and storage for Amazon EC2 instances
 - Data storage with a file system
 - Database hosts
 - Enterprise applications



Amazon EBS Lifecycle



Amazon EBS Volume Types



	Solid-State Drives (SSD)		Hard Disk Drives (HDD)	
	General Purpose	Provisioned IOPS	Throughput-Optimized	Cold
Max volume size	16 TiB	16 TiB	16 TiB	16 TiB
Max IOPS/volume	10,000	32,000	500	250
Max throughput/volume	160 MiB/s	500 MiB/s	500 MiB/s	250 MiB/s



Amazon EBS Volume Types



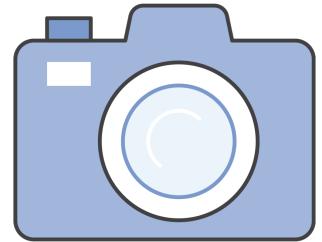
Use Cases

Solid-State Drives (SSD)		Hard Disk Drives (HDD)		
	General Purpose	Provisioned IOPS	Throughput-Optimized	
	<ul style="list-style-type: none">• Recommended for most workloads• System boot volumes• Virtual desktops• Low-latency interactive apps• Development and test environments	<ul style="list-style-type: none">• I/O-intensive workloads<ul style="list-style-type: none">• Relational DBs• NoSQL DBs	<ul style="list-style-type: none">• Streaming workloads requiring consistent, fast throughput at a low price• Big data• Data warehouses• Log processing• Cannot be a boot volume	<ul style="list-style-type: none">• Throughput-oriented storage for large volumes of data that is infrequently accessed• Scenarios where the lowest storage cost is important• Cannot be a boot volume



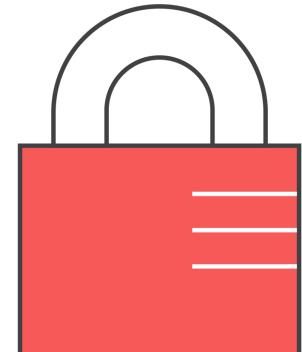
Snapshots

- cube Point-in-time snapshots
- cube Recreate a new volume at any time



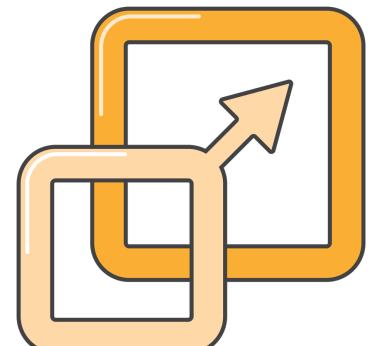
Encryption

- cube Encrypted Amazon EBS volumes
- cube No additional cost



Elasticity

- cube Increase capacity
- cube Change to different types



1. Volumes

- cube icon Amazon EBS volumes persist independently from the instance
- cube icon All volume types are charged by the amount provisioned per month

2. Input Output Operations per Second (IOPS)

- cube icon General Purpose (SSD)
 - cube icon Charged by the amount you provision in GB per month until storage is released
- cube icon Magnetic
 - cube icon Charged by the number of requests to volume
- cube icon Provisioned IOPS (SSD)
 - cube icon Charged by the amount you provision in IOPS (by % of day / month used)



3. Snapshots

- 💡 Added cost of Amazon EBS snapshots to Amazon S3 is per GB-month of data stored

4. Data Transfer

- 💡 Inbound data transfer is free
- 💡 Outbound data transfer charges are tiered



Amazon EBS Features:

- Persistent and customizable block storage for Amazon EC2
- HDD and SSD types
- Replicated in the same Availability Zone
- Easy and transparent encryption
- Elastic volumes
- Back up using snapshots

