Day-14

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Based on yesterday's evaluation, today I learned a lot about S3 buckets, including their different types, the purposes they serve, and various facts related to S3. These are as follows:

- S3 allows automatic data classification
- Files stored in S3 are encrypted
- S3 storage is automatically distributed across 3 AZs, except 1A, which uses one zone.
- 1A is less expensive but also least available
- You can give up to 10 object tags to each object in S3 Bucket
- Amazon S3 Standard and Amazon S3 Intelligent Tiering Amazon S3 Glacier and Amazon S3 Glacier Deep Archive storage class can hold frequently accessed object storage class can hold archived data.
- If an object is less than 128 KB, Amazon S3 charges you for 128 KB.
- If you delete an object before the end of the 30-day minimum storage duration period, you are charged for 30 days.
- S3 supports lifecycle policies to automatically transition objects between storage classes or delete them after a specified time.
- Large files can be uploaded in parts to improve performance and reliability.
- You can enable logging to track requests made to your S3 bucket.
- S3 buckets are region-specific, meaning the data is stored in the AWS region you choose.
- Data in S3 is stored as objects within buckets, and each object has metadata and a unique key.

Other than that, I also learned about many migration techniques which we can use to migrate our on-premises data to the AWS cloud. I have listed some of them with their use case:

Direct Internet Upload: Upload data directly using an internet connection to S3 or other AWS services. Use Case: Used for small-to-medium-sized data.

AWS DataSync: Online service for Automated, fast, and secure data transfers to AWS. Use Case: Used for frequent or ongoing transfers.

AWS Snowball Edge: It is a physical device sent to you for transferring large datasets to AWS. Use Case: Used for large data with no or slow internet connectivity.

I was also given a set of question to solve by myself. I got a score of 14 out of 20 and after a detailed evaluation by Sir, I was advised to concentrate more, analyze the questions thoroughly, and understand the context of each question. I have attached the set of questions on the next page.

Sr No.	Subject	Question	A	B	C	D	Answer	Answer (Actual)
1	AWS EC2	What is the primary function of EC2 Elastic Load Balancers?,	To distribute traffic across multiple instances,	To manage security groups,	To enhance instance storage,	To improve security,	A	A
2	AWS EC2	Which service integrates seamlessly with EC2 for monitoring?,	Amazon S3,	Amazon CloudWatch,	AWS Config,	AWS Trusted Advisor,	B	B
3	AWS S3	What is the Transfer Acceleration feature in S3?,	Increases storage capacity,	Speeds up global uploads and downloads,	Enables cross-region replication,	Provides cost analysis,	C	B
4	AWS S3	How does S3 Object Lock help in data protection?,	Allows time-based access,	Prevents accidental deletions,	Implements write-once-read-many (WORM),	Encrypts all objects by default,	C	C
5	AWS VPC	What is the purpose of a VPC peering connection?,	To route internet traffic,	To connect two VPCs,	To improve data redundancy,	To extend VPC limits,	B	B
6	AWS VPC	What is the difference between public and private subnets in a VPC?,	Public subnets require NAT gateways,	Private subnets allow direct internet access,	Private subnets are isolated,	Public subnets are for internal traffic,	C	C
7	AWS EBS	What is an EBS-optimized instance?,	Offers consistent performance,	Improves IOPS for volumes,	Reduces network latency,	Lowers latency for HDD volumes,	A	A
8	AWS EBS	How does EBS encryption enhance data security?,	Through key rotation,	By integrating with IAM,	By encrypting during snapshots,	Through API Gateway,	B	A
9	AWS Instance Type	What is a key benefit of using Spot Instances?,	Reduced cost,	Better reliability,	Increased scalability,	Enhanced compute capacity,	A	A
10	AWS Instance Type	How do you enable high network throughput for EC2 instances?	By using VPC Flow Logs	Through enhanced networking adapters	By using auto-scaling	By upgrading instance type	B	B
11	AWS EC2	What is the purpose of EC2 Reserved Instances?	For temporary workloads	For long-term cost savings	For scalability on demand	For cost analysis	B	B
12	AWS EC2	Which feature allows EC2 instances to recover from failure automatically?	Auto Scaling	Elastic Load Balancing	Instance Recovery	CloudWatch Alarms	A	B
13	AWS S3	What is S3 Lifecycle Management?	Transitions objects between storage classes	Encrypts objects	Improves read/write speeds	Provides real-time data analysis	A	A
14	AWS S3	How does S3 Intelligent-Tiering optimize costs?	Automatically deletes unused objects	Moves frequently accessed data to Glacier	Reduces retrieval times	Allows manual data retrieval	D	C
15	AWS VPC	What is a NAT Instance in VPC?	Provides public IP to instances	Enables private instances to access the internet	Improves internal VPC communication	Assigns Elastic IP to VPC resources	B	B
16	AWS VPC	How do route tables work in VPC?	To define data flow between subnets	To filter inbound traffic	To isolate public traffic	To manage VPC peering	A	C
17	AWS EBS	What is an EBS snapshot?	A backup of an EBS volume	A copy of data stored in S3	An archived volume	A full disk backup	A	A
18	AWS EBS	Which type of EBS volume is best for data-intensive applications?	General Purpose SSD	Provisioned IOPS SSD	Throughput Optimized HDD	Cold HDD	B	B
19	AWS Instance Type	What is the difference between on-demand and spot instances?	Spot instances are cheaper	On-demand instances are pre-emptible	On-demand instances are cheaper	Spot instances are preemptible	D	A
20	AWS Instance Type	How does an Elastic Fabric Adapter enhance performance?	By reducing latency	By increasing bandwidth	By enabling HPC workloads	By supporting machine learning	B	B

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