

Domain: Design High-Performing Architectures

A global beverage company is using AWS cloud infrastructure for hosting its web application. For a new beverage, the company plans to use a unique voice using Amazon Polly to help market this product to a wide range of customers.

Which feature can be used with Amazon Polly for this purpose?

- A. Create custom Lexicons with Amazon Polly
- B. Use a custom SSML tag with Amazon Polly
- C. Build a Brand Voice using Amazon Polly
- D. Use a Newscaster Speaking Style with Amazon Polly

Domain: Design High-Performing Architectures

An airline company needs to analyze customer feedback about services provided. A large number of files are created which have texts such as Ticket returns and Flight complaints based upon customer feedback. This text should be categorized, and a label needs to be assigned for further analysis. The company is planning to use Amazon Comprehend for this purpose. The project team is looking for your suggestions for storing files that Amazon Comprehend can use for processing and saving the results.

How can a solution be implemented for this purpose?

- A. Store the files in Amazon EFS volumes. Use Amazon Comprehend to read the data from the Amazon EFS volumes and write results to Amazon Redshift
- B. Store the files in Amazon EBS volumes. Use Amazon Comprehend to read the data from the Amazon EBS volumes and write results to Amazon S3 buckets
- C. Store the files in Amazon Redshift. Use Amazon Comprehend to read the data from the Amazon Redshift and write results to Amazon S3 buckets
- D. Store the files in Amazon S3 bucket. Use Amazon Comprehend to read the data from the Amazon S3 bucket and write results to Amazon Redshift

Domain: Design High-Performing Architectures

A stock broking company has deployed a stock trading web application on the Amazon EC2 instance. The company is looking for virtual agents to be integrated with this application to provide conversational channels to its premium customers. Real-time personalized stock recommendations should be provided for premium customers during market hours.

Which service is best suited to integrate with this application?

- A. Amazon Lex
- B. Amazon Translate
- C. Amazon Transcribe
- D. Amazon Personalize

A Company has provisioned a website in the US West (N. California) region using Amazon EC2 instance and Amazon CloudFront. The company is using IAM to control access to these resources. The client plans to use a third-party SSL/TLS certificate to support HTTPS. As an AWS consultant, you have been engaged to advise importing the certificate and using it along with Amazon CloudFront. Certificates should be easily imported, and you should monitor the expiration dates of imported certificates.

How can certificates be provisioned to meet this requirement?

- A. Import the third-party certificate in the US East (N. Virginia) region of AWS Certificate Manager and use it for Amazon CloudFront in the US West (N. California) region
- B. Import the third-party certificate in the US West (N. California) region of AWS Certificate Manager and use it for Amazon CloudFront in the US West (N. California) region
- C. Import the third-party certificate in the US East (N. Virginia) region of IAM Certificate Manager and use it for Amazon CloudFront in the US West (N. California) region
- D. Import the third-party certificate in the US West (N. California) region of IAM Certificate Manager and use it for Amazon CloudFront in the US West (N. California) region

Domain: Design Resilient Architectures

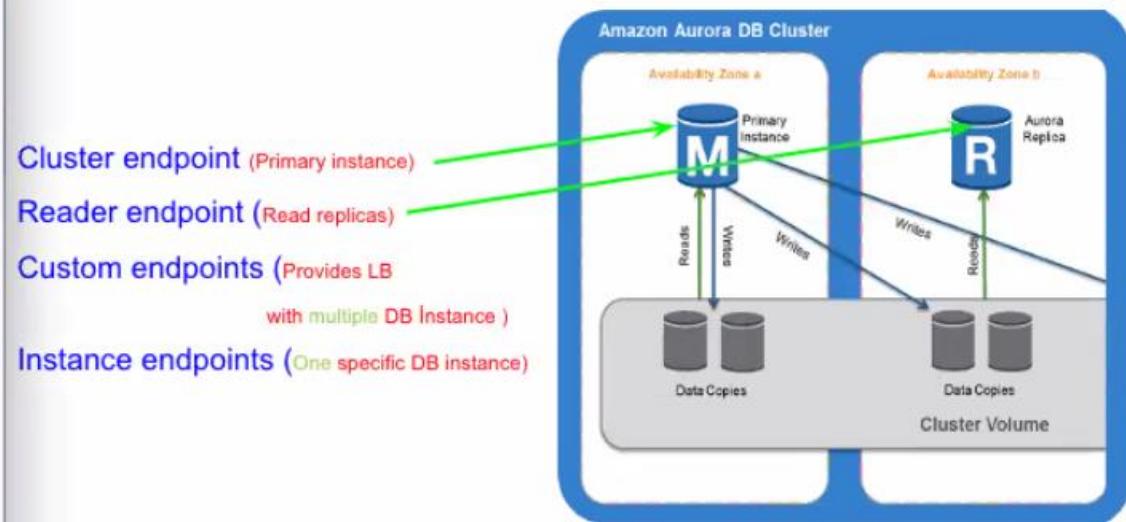
The Developer Team has deployed a new application using Amazon Aurora DB cluster. This cluster has a primary instance and five Aurora Replicas. While testing this application, it was observed that the primary instance is getting overutilized with the read requests. Before going to production, the Project Manager wants you to analyze the issue and suggest changes.



Which design changes can a solution architect propose to the application?

- A. Point application to the custom endpoint of the Amazon Aurora
- B. Point application to cluster endpoint of the Amazon Aurora
- C. Point application to reader endpoint of the Amazon Aurora
- D. Point application to instance endpoint of the Amazon Aurora

show Answer



Domain: Design Secure Architectures

A gaming company stores large size (terabytes to petabytes) of clickstream events data

into their central S3 bucket. The company wants to analyze this clickstream data to generate business insight. Amazon Redshift, hosted securely in a private subnet of a VPC, is used for all data warehouse-related and analytical solutions. Using Amazon Redshift, the company wants to explore some solutions to securely run complex analytical queries on the clickstream data stored in S3 without transforming/copying or loading the data in the Redshift.

As a Solutions Architect, which of the following AWS services would you recommend for this requirement, knowing that security and cost are two major priorities for the company?

- A. Create a VPC endpoint to establish a secure connection between Amazon Redshift and the S3 central bucket and use Amazon Athena to run the query
- B. Use NAT Gateway to connect Amazon Redshift to the internet and access the S3 static website. Use Amazon Redshift Spectrum to run the query
- C. Create a VPC endpoint to establish a secure connection between Amazon Redshift and the S3 central bucket and use Amazon Redshift Spectrum to run the query
- D. Create Site-to-Site VPN to set up a secure connection between Amazon Redshift and the S3 central bucket and use Amazon Redshift Spectrum to run the query

Domain: Design Secure Architectures

The drug research team in a Pharmaceutical company produces highly sensitive data and stores them in Amazon S3. The team wants to ensure top-notch security for their data while it is stored in Amazon S3. To have better control of the security, the team wants to use their own encryption key but doesn't want to maintain any code to perform data encryption and decryption. Also, the team wants to be responsible for storing the Secret key.

As a Solutions Architect, which of the following encryption types will suit the above requirement?

- A. Server-side encryption with customer-provided encryption keys (SSE-C)
- B. Server-Side Encryption with Amazon S3-Managed Keys (SSE-S3)
- C. Server-Side Encryption with KMS keys Stored in AWS Key Management Service (SSE-KMS)
- D. Protect the data using Client-Side Encryption

Domain: Design Cost-Optimized Architectures

An online retail company stores a large number of customer data (terabytes to petabytes) into Amazon S3. The company wants to drive some business insight out of this data. They plan to securely run SQL-based complex analytical queries on the S3 data directly and process it to generate business insights and build a data visualization dashboard for the business and management review and decision-making.

You are hired as a Solutions Architect to provide a cost-effective and quick solution to this. Which of the following AWS services would you recommend?

- A. Use Amazon Redshift Spectrum to run SQL-based queries on the data stored in Amazon S3 and then process it to Amazon Kinesis Data Analytics for creating a dashboard
- B. Use Amazon Redshift to run SQL-based queries on the data stored in Amazon S3 and then process it on a custom web-based dashboard for data visualization
- C. Use Amazon EMR to run SQL-based queries on the data stored in Amazon S3 and then process it to Amazon Quicksight for data visualization
- D. Use Amazon Athena to run SQL-based queries on the data stored in Amazon S3 and then process it to Amazon Quicksight for dashboard view

Domain: Design Cost-Optimized Architectures

An organization has archived all their data to Amazon S3 Glacier for a long term. However, the organization needs to retrieve some portion of the archived data regularly. This retrieval process is quite random and incurs a good amount of cost for the organization. As expense is the top priority, the organization wants to set a data retrieval policy to avoid any data retrieval charges.

Which one of the following retrieval policies suits this in the best way?

- A. No Retrieval Limit
- B. Free Tier Only
- C. Max Retrieval Rate
- D. Standard Retrieval

Domain: Design High-Performing Architectures

A gaming company planned to launch their new gaming application that will be in both web and mobile platforms. The company considers using GraphQL API to securely query or update data through a single endpoint from multiple databases, microservices, and several other API endpoints. They also want some portions of the data to be updated and accessed in real-time.

The customer prefers to build this new application mostly on serverless components of AWS.

As a Solutions Architect, which of the following AWS services would you recommend the customer to develop their GraphQL API?

A. Kinesis Data Firehose

B. Amazon Neptune

C. Amazon API Gateway

D. AWS AppSync

Domain: Design High-Performing Architectures

A weather forecasting company comes up with the requirement of building a high-performance, highly parallel POSIX-compliant file system that stores data across multiple network file systems to serve thousands of simultaneous clients, driving millions of IOPS (Input/Output Operations per Second) with sub-millisecond latency. The company needs a cost-optimized file system storage for short-term, processing-heavy workloads that can provide burst throughput to meet this requirement.

What type of file systems storage will suit the company in the best way?

- A. FSx for Lustre with Deployment Type as Scratch File System
- B. FSx for Lustre with Deployment Type as Persistent file systems
- C. Amazon Elastic File System (Amazon EFS)
- D. Amazon FSx for Windows File Server

Domain: Design Resilient Architectures

A premier educational institute is stepping up to AWS Cloud as part of their 'Go Digital' initiative. The goal is to design a hybrid cloud storage service that gives them on-premises access to virtually unlimited cloud storage. Hence the institute plans to use AWS native service to back up their on-premises files using NFS and SMB file protocol. The institute wants to minimize latency in accessing the files in AWS by the students and users located across the globe. Hence the institute prefers to have multi-region replicas of the storage class so that the users can access it from AWS Regions that are geographically closer to them.

You are hired as a Solutions Architect to design this hybrid cloud facility. What will be your choice for the low-cost, secure and durable AWS Storage that supports multi-region data availability?

- A. Tape Gateway
- B. Amazon S3 File Gateway
- C. Amazon FSx File Gateway
- D. Volume Gateway

Domain: Design Cost-Optimized Architectures

To comply with industry regulations, a Healthcare organization wants to keep their large volume of lab records in some durable, secure, lowest-cost AWS storage for a long period of time (say about five years). The data will be rarely accessed once per quarter but requires immediate retrieval (in milliseconds). You are a Solutions Architect in the organization and the organization wants your suggestion to select a suitable storage class here. Which of the following would you recommend for the given requirement?

- A. S3 Glacier Flexible Retrieval
- B. S3 Glacier Deep Archive
- C. S3 Glacier Instant Retrieval
- D. S3 Standard-Infrequent Access

An online retail company recently tied up with an external audit firm.

The retail company maintains all logs and saves them to an Amazon S3 bucket and the bucket access is restricted by Service Control Policy (SCP) for all other accounts of the company except the Admin account. The audit firm maintains all their audit related application and services in their own AWS account, and needs immediate access to retail company's S3 bucket to kick off their audit.

You are a solution architect and part of the admin team of the retail company, how should you enable the bucket access for the external audit team in the most secure manner, with no operational and management overload, and easy to deploy?

- A. Create a common IAM user in the retail company's AWS account and attach it to the IAM Role that has AmazonS3FullAccess. Share the IAM user details with the audit team
- B. Allow access to the audit firm in IAM Policy, Service Control Policy (SCP), and Amazon S3 Bucket Policy in the retail company's AWS account
- C. Allow S3 access to the audit firm in the retail company's SCP, just like the Admin account
- D. Add a bucket policy on the S3 bucket granting access to the aws account of the audit firm. Add HTTPS-only calls using "aws:SecureTransport" in the bucket policy

Domain: Design Cost-Optimized Architectures

A customer is looking for file storage in AWS that supports Network File System version 4 (NFSv4.1 and NFSv4.0) protocol. They want a simple, serverless, set-and-forget service that can grow and shrink automatically as they add and remove files. Accessibility of these files is going to be random and infrequent. The customer is also looking for an option to save cost by transitioning the files that have not been accessed for quite some time automatically to a low-cost storage tier. As a Solution Architect, which storage service will you choose that fits the customer's requirement perfectly?

- A. Use Amazon S3 for storage as it is for better cost-saving option
- B. Use Amazon S3 Glacier for the storage
- C. Use Amazon Elastic File System (EFS) with lifecycle policy
- D. Amazon FSx for Lustre

Domain: Design Resilient Architectures

A drug research team in a Medical Company has decided to use Amazon Elastic File System (EFS) as shared file system storage for their Linux workloads. All these files are related to new drug discoveries in the field of cancer treatment and are critically important for the next six months. The customer is looking for a solution to protect the data by backing up the EFS file system and simplifying the creation, migration, restoration, and deletion of backups while providing improved reporting and auditing.

As a Solution Architect, what would be your suggestions for a centralized and easy-to-develop backup strategy for the above requirement?

- A. Use Amazon S3 File Gateway to back up the Amazon EFS file system
- B. Use AWS Backup to back up the Amazon EFS file systems
- C. Amazon FSx File Gateway to back up the Amazon EFS file systems
- D. Use Amazon S3 Transfer Acceleration to copy the files from EFS into a centralized S3 bucket and then configure Cross-Region Replication of the bucket

The CIO of a Start-up company is very much concerned with the performance of their DevOps team as they take a long time to detect and investigate issues using AWS resources. Sometimes this leads to a revenue loss for the company. In addition to this, the same team had several compliance issues in a recent security audit as the audit team found secure information like application configurations, custom environment variables, product keys, credentials, and sensitive AMI IDs being mentioned directly in the code.

The company has hired you as a Solution Architect, and the CIO instructed you to resolve all the challenges faced by the DevOps team on priority and get them back to their efficiency.

He has also emphasized implementing a cost-effective solution for storing secure information that does not need automated secret rotation.

What would you do to achieve the requirement? (Select TWO)

- A. For quick failure analysis and investigation, use AWS Systems Manager Application Manager
- B. For quick failure analysis and investigation, use AWS AppSync
- C. Resolve the compliance issue by storing all the secrets in AWS Secrets Manager and changing the code to access the secrets from there
- D. Resolve the compliance issue by storing all the secrets in AWS Systems Manager Parameter Store and changing the code to access the secrets from there
- E. Resolve the compliance issue by storing all the secrets in a private Amazon S3 bucket. Then create a Gateway VPN Endpoint to access the secret from the bucket securely

An organization in the banking sector has got their AWS resources distributed in multiple Availability Zones (AZ) in a region. They share one NAT gateway to connect to all their RDS instances placed in Private Subnet in different AZs to the internet. While trying to perform some Database related operations, the employee of the organization reported intermittent connectivity issues. However, on checking the logs in AWS, they found that the RDS instances were all up and running during the time when the issue was reported.

You are hired as a Solution Architect to identify the root cause of this connectivity issue and remediate it without compromising security and resiliency. How would you approach this?



- A. The customer experiences a connectivity issue when the NAT gateway's Availability Zone goes down. To remediate this, create a NAT gateway in each Availability Zone and configure your routing to ensure that resources use the NAT gateway in the same Availability Zone
- B. The customer experiences a connectivity issue due to insufficient IAM Policy and Roles. Resolve this by adding the required permissions in the IAM Policy and attach them to the role used for the AWS resources
- C. The customer experiences a connectivity issue due to low bandwidth in their network. Ask the customer to sign up for a higher bandwidth plan with the network provider/operator
- D. The customer experiences the connectivity issue when the NAT gateway's Availability Zone goes down. To remediate this, remove the NAT gateway and use VPC Peering to connect to the Multi-AZ RDS instances

Domain: Design Resilient Architectures

An online advertising company wants to build a solution in AWS that will understand the interest of the customer and provide relevant and personalized recommendations of new products to them. The company is looking for a self-managed, highly durable, and available Database engine that stores relationships between information such as customer's interests, community networks, friend circle, likes, purchase history, etc., and quickly maps them to identify the pattern.

As a Solution Architect in the company, what would be your recommendations for the database here?

- A. Amazon DocumentDB
- B. Amazon DynamoDB
- C. Amazon Aurora
- D. Amazon Neptune

Domain: Design Resilient Architectures

In response to the high demand and increase in load, a customer plans to migrate his on-premises and native MongoDB to AWS Cloud. The customer is looking for a compatible Database solution in AWS for easy and fast migration with minimum operation and management overhead. The new database should also be compatible with existing MongoDB so that the applications don't require code changes.

As a Solution Architect in the company, what would be your suggestion for this scenario?

A. Amazon DocumentDB

B. Amazon DynamoDB

C. Amazon Keyspaces

D. Amazon Neptune

Domain: Design Secure Architectures

You are an engineer in charge of the FinOps department of your organization. The multi-account strategy has been created using AWS Control Tower as part of the best practices and recommendations. You want to ensure that all accounts under the 'OU=development' of the AWS Organizations should not create resources outside of Ireland (eu-west-1). How can you make sure that the required condition is applied using the below Policy Statement?

```
{  
    "Version": "2012-10-17",  
    "Statement": [  
        {  
            "Sid": "IrelandDeny",  
            "Effect": "Deny",  
            "Action": [  
                "*"  
            ],  
            "Resource": "*",  
            "Condition": {  
                "StringNotEquals": {  
                    "aws:RequestedRegion": [  
                        "eu-west-1"  
                    ]  
                }  
            }  
        }  
    ]  
}
```

- A. Add the Policy Statement to a Permissions Boundary to the developer IAM role
- B. Add the Policy Statement to the SCP (Service control policy) and attach it to the Organizational Unit OU=development
- C. Add the Policy Statement to the SCP (Service control policy) and attach it to the Organizational Unit OU=root
- D. Add the Policy Statement as a managed policy for the role

Domain: Design Resilient Architectures

You are working in a multimedia company and want to transfer a massive amount of data to Amazon S3. You have heard that SnowBall Edge could be the right tool for this purpose. When you are trying to transfer data using the AWS CLI, one of our biggest files of 12TB, you get an error with the client validating this transfer. What could be the main cause of the error?

- A. The maximum file size that could be transferred using the AWS CLI is 150GB
- B. The maximum file size that could be transferred using the AWS CLI is 5TB
- C. The role that you are using to transfer files can't transfer more than 5TB
- D. Amazon S3 doesn't support files larger than 10TB

Domain: Design Secure Architectures

You are a Research Scientist working on NLP (Natural Language Processing) models. You are planning to use Amazon Comprehend to do some research about multiple texts that are currently stored in your email, but you have some ownership concerns about this service. Who would retain the ownership of the content of the emails that you will analyze using Amazon Comprehend?



A. Customer



B. AWS



C. A third-party company that is in charge of managing the Amazon Comprehend service



D. Both, AWS and the Customer

Domain: Design Resilient Architectures

You are a DevOps Engineer specializing in Containers. You want to run your container workloads running in a Linux environment in your current Data Center for regulations with easy management of your Docker tasks using the AWS Console. You have heard about Amazon ECS Anywhere, and you would like to explore it deeply. What are the main components you should have in your current Linux Servers in an ECS Cluster?



- A. AWS Systems Manager Agent, Amazon ECS container agent, and Docker must be installed on these Linux Servers
- B. AWS Systems Manager Agent Docker must be installed as part of the process
- C. Amazon ECS container agent and Docker must be installed on these external instances
- D. The Amazon CloudWatch Agent, Amazon ECS container agent, and Docker must be installed on these external instances

Domain: Design Resilient Architectures

You are a DevOps Engineer for a company specializing in Container technology. You are currently running your container workloads nodes in your bare metal nodes due to regulatory compliance rules. You would like to continue running your workloads on hardware (bare metal) without any virtualization, but want to use an AWS-managed service for managing multiple clusters of nodes. What is the best solution to integrate your container workloads from your data Center using a Kubernetes ecosystem?

- A. Use Amazon ECS Anywhere
- B. Move all your workloads from your current Data Center to Amazon EKS
- C. Deploy an Amazon EKS Anywhere technology on bare metal nodes
- D. Create a VMware vSphere cluster and integrate it with Amazon EKS Anywhere

Domain: Design High-Performing Architectures

Which of the following components are included with Amazon EKS Distro?

- A. Kubelet, CNI plugins, CoreDNS, etcd, CSI Sidecars, Kubernetes Metrics Server
- B. CNI plugins, CoreDNS, etcd, CSI Sidecars, Kubernetes Metrics Server, Amazon Systems Manager Agent
- C. FluxCD operator, Kubernetes, CNI plugins, CoreDNS ,etcd,CSI Sidecars
- D. Amazon CloudWatch agent, Kubernetes, CNI plugins, CoreDNS, etcd, CSI Sidecars, Kubernetes Metrics Server

Domain: Design High-Performing Architectures

You are the owner of a Microservices application that has a poor latency when it runs into the ECS cluster. Which AWS services could help you analyze the root cause by tracing different calls into the application?

- A. Amazon CloudWatch
- B. AWS X-Ray
- C. Amazon Event Bridge
- D. Amazon CloudTrail

Domain: Design Secure Architectures

You are a Security Consultant who wants to prevent the application from DDoS attacks. You have heard about AWS Shield and DDoS attack vectors. Which of the following classes of attacks can be detected using AWS Shield?

- A. Layer 7 (Data Link Layer attacks)
- B. Layer 5 (Session Layer attacks)
- C. Layer 4 (Network protocol attacks)
- D. Layer 3 (Network volumetric attacks)
- E. Layer 1 (Physical Layer attacks)

Domain: Design Secure Architectures

You are a Cloud Database Administrator and want to enable IAM authentication on your Aurora Databases for the user 'iam_db_user'. Which of the following is the correct method to enable the IAM authentication in your Aurora MySQL Database using AWSAuthenticationPlugin?

- A. CREATE USER iam_db_user IDENTIFIED WITH AWSAuthenticationPlugin;
- B. CREATE USER iam_db_user_plugin;
- C. Rename IAM iam_db_user as a Database user
- D. CREATE USER iam_db_user IDENTIFIED WITH AWSAuthenticationPlugin AS 'RDS';

Domain: Design Resilient Architectures

You are using AWS DataSync to migrate more than 8TB from on-prem to Amazon S3. After the first DataSync task runs, you notice that some files were not copied. After reviewing the CloudWatch logs, you noticed that the files were skipped. What could be the main cause?

- A. The source file was locked and couldn't be opened by AWS DataSync
- B. The source file was opened and modified while it was transferred 
- C. The source file's owner has been changed after it was transferred during the VERIFYING phase
- D. The source file's permissions are changed after it was transferred and couldn't be read during the VERIFYING phase

Domain: Design Secure Architectures

Your company plans to use AppSync with Amazon DynamoDB as a data source. The operations you need to manage between AWS AppSync DynamoDB resolver and DynamoDB are *BatchGetItem*, *BatchPutItem*, and *BatchDeleteItem*. Which policy should you assign to AppSync to use DynamoDB as a source of data and apply the above operations?

B. {
 "Version": "2012-10-17",
 "Statement": [
 {
 >Action": [
 "dynamodb:BatchGetItem",
 "dynamodb:BatchPutItem",
 "dynamodb:BatchDeleteItem"
],
 "Effect": "Allow",
 "Resource": [
 "arn:aws:dynamodb:region:account:table/TABLENAME",
 "arn:aws:dynamodb:region:account:table/TABLENAME/*"
]
 }
]
}

Domain: Design Resilient Architectures

You are a solutions architect working for an online retailer. Your online website uses REST API calls via API Gateway and Lambda from your Angular SPA front-end to interact with your DynamoDB data store. Your DynamoDB tables are used for customer preferences, account, and product information. When your web traffic spikes, some requests return a 429 error response. What might be the reason your requests are returning a 429 response?

- A. Your Lambda function has exceeded the concurrency limit
- B. DynamoDB concurrency limit has been exceeded
- C. Your Angular service failed to connect to your API Gateway REST endpoint
- D. Your Angular service cannot handle the volume spike
- E. Your API Gateway has exceeded the steady-state request rate and burst limits

Domain: Design Resilient Architectures

You are a solutions architect working for a data analytics company that delivers analytics data to politicians that need the data to manage their campaigns. Political campaigns use your company's analytics data to decide on where to spend their campaign money to get the best results for the efforts. Your political campaign users access your analytics data through an Angular SPA via API Gateway REST endpoints. You need to manage the access and use of your analytics platform to ensure that the individual campaign data is separate. Specifically, you need to produce logs of all user requests and responses to those requests, including request payloads, response payloads, and error traces. Which type of AWS logging service should you use to achieve your goals?

- A. Use CloudWatch access logging
- B. Use CloudWatch execution logging
- C. Use CloudTrail logging
- D. Use CloudTrail execution logging

Domain: Design Secure Applications and Architectures

You are a solutions architect working for a media company that produces stock images and videos for sale via a mobile app and website. Your app and website allow users to gain access only to stock content they have purchased. Your content is stored in S3 buckets. You need to restrict access to multiple files that your users have purchased. Also, due to the nature of the stock content (purchasable by multiple users), you don't want to change the URLs of each stock item.

Which access control option best fits your scenario?

- A. Use CloudFront signed URLs
- B. Use S3 Presigned URLs
- C. Use CloudFront Signed Cookies
- D. Use S3 Signed Cookies

Domain: Design High-Performing Architectures

You are a solutions architect working for a financial services firm that operates applications in the hybrid cloud model. You have applications running on EC2 instances in your VPC that communicate with resources in your on-prem data center. You have a workload on an EC2 network interface in one subnet and a transit gateway association in a different subnet. Also, these two subnets are associated with different NACLs. You have set up Network Access Control List (NACL) rules to control the traffic to and from your EC2 instances and transit gateway.

Which of the following is true about the NACL rules for traffic from your EC2 instances to the transit gateway?

- A. Outbound rules use the source IP address to evaluate traffic from the instances to the transit gateway
- B. Outbound rules use the destination IP address to evaluate traffic from the instances to the transit gateway
- C. Outbound rules are not evaluated for the transit gateway subnet
- D. Inbound rules use the destination IP address to evaluate traffic from the transit gateway to the instances

Domain: Design High-Performing Architectures

A start-up firm has created account A using the Amazon RDS DB instance as a database for a web application. The operations team regularly creates manual snapshots for this DB instance in unencrypted format. The Projects Team plans to create a DB instance in other accounts using these snapshots. They are looking for your suggestion for sharing this snapshot and restoring it to DB instances in other accounts. While sharing this snapshot, it must allow only specific accounts specified by the project teams to restore DB instances from the snapshot.

What actions can be initiated for this purpose?

- A. From Account A, share the manual snapshot by setting the 'DB snapshot' visibility option as private. In other Accounts, directly restore to DB instances from the snapshot
- B. From Account A, share the manual snapshot by setting the 'DB snapshot' visibility option as public. In other Accounts, directly restore to DB instances from the snapshot
- C. From Account A, share the manual snapshot by setting the 'DB snapshot' visibility option as private. In other Accounts, create a copy from the snapshot and then restore it to the DB instance from that copy
- D. From Account A, share the manual snapshot by setting the 'DB snapshot' visibility option as public. In other Accounts, create a copy from the snapshot and then restore it to the DB instance from that copy

An electronic manufacturing company plans to deploy a web application using the Amazon Aurora database. The Management is concerned about the disk failures with DB instances and needs your advice for increasing reliability using Amazon Aurora automatic features. In the event of disk failures, data loss should be avoided, reducing additional work to perform from the point-in-time restoration.

What design suggestions can be provided to increase reliability?

- A. Add Aurora Replicas to primary DB instances by placing them in different regions. Aurora's crash recovery feature will avoid data loss post disk failure
- B. Add Aurora Replicas to primary DB instances by placing them in different availability zones. Aurora storage auto-repair feature will avoid data loss post disk failure
- C. Add Aurora Replicas to the primary DB instance by placing them in different regions. Aurora Survivable page cache feature will avoid data loss post disk failure
- D. Add Aurora Replicas to the primary DB instance by placing them in different availability zones. Aurora's crash recovery feature will avoid data loss post disk failure

Domain: Design Cost-Optimized Architectures

A financial institute has deployed a critical web application in the AWS cloud. The management team is looking for a resilient solution with RTO/RPO in 20 minutes during a disaster. They have budget concerns, and the cost of provisioning the backup infrastructure should not be very high. As a solution architect, you have been assigned to work on setting a resilient solution meeting the RTO/RPO requirements within the cost constraints.

Which strategy is suited perfectly?

- A. Multi-Site Active/Active
- B. Warm Standby
- C. Backup & Restore
- D. Pilot Light

Domain: Design Resilient Architectures

A critical application deployed in AWS Cloud requires maximum availability to avoid any outages. The project team has already deployed all resources in multiple regions with redundancy at all levels. They are concerned about the configuration of Amazon Route 53 for this application which should complement higher availability and reliability. Route 53 should be configured to use failover resources during a disaster.

What solution can be implemented with Amazon Route 53 for maximum availability and increased reliability?

- A. Associate multiple IP endpoints in different regions to Route 53 hostname. Use a weighted route policy to change the weights of the primary and failover resources. So, all traffic is diverted to failover resources during a disaster
- B. Create two sets of public-hosted zones for resources in multiple regions. During a disaster, update Route 53 public-hosted zone records to point to a healthy endpoint
- C. Create two sets of private hosted zones for resources in multiple regions. During a disaster, update Route 53 private hosted zone records to point to a healthy endpoint
- D. Associate multiple IP endpoints in different regions to Route 53 hostname. Using health checks, configure Route 53 to automatically failover to healthy endpoints during a disaster

Domain: Design Cost-Optimized Architectures

An IT company is using EBS volumes for storing projects related work. Some of these projects are already closed. The data for these projects should be stored long-term as per regulatory guidelines and will be rarely accessed. The operations team is looking for options to store the snapshots created from EBS volumes. The solution should be cost-effective and incur the least admin work.

What solution can be designed for storing data from EBS volumes?

- A. Create EBS Snapshots from the volumes and store them in the EBS Snapshots Archive
- B. Use Lambda functions to store incremental EBS snapshots to AWS S3 Glacier
- C. Create EBS Snapshots from the volumes and store them in a third-party low-cost, long-term storage
- D. Create EBS Snapshots from the volumes and store them in the EBS standard tier

Domain: Design Cost-Optimized Architectures

A company is sharing geospatial data with users in different AWS accounts for commercial purposes.

Users from these accounts access a large amount of data stored in the Amazon S3 bucket in the us-east-1 region from different AWS regions. The company has incurred high charges for this data sharing belonging to transfer charges. The Finance Team is looking for an option to minimize these charges.

What solution can be designed to minimize this cost?

- A. Configure Amazon CloudFront in front of the Amazon S3 bucket to share data from the nearest edge locations
- B. Configure the Requester Pays option on the Amazon S3 bucket
- C. Share pre-signed URLs with the users to access data from the Amazon S3 bucket
- D. Replicate data to Amazon S3 buckets in all the regions to enable users to download data from local Amazon S3 buckets

Domain: Design Secure Architectures

An IT firm is planning to store all its critical project-related documents in an Amazon S3 bucket. All these files should be encrypted at rest. As per security guidelines, firms need to manage the encryption process internally, but keys used for the encryption should not be stored locally.

How can encryption solutions be designed to meet the data encryption guidelines?

- A. Use a key stored within the application for client-side encryption while uploading/downloading data from the Amazon S3 bucket
- B. Use an AWS KMS key for client-side encryption while uploading/downloading data from the Amazon S3 bucket
- C. Use a customer-provided key for client-side encryption while uploading/downloading data from the Amazon S3 bucket
- D. Use an Amazon S3 bucket key for client-side encryption while uploading/downloading data from the Amazon S3 bucket

The operations team requires users to grant permission to access AWS resources. Resources are categorized as critical and non-critical resources. For granting these permissions, the principle of least privilege should be followed. Users will be accessing critical resources only on a required basis and non-critical resources on a daily basis. The proposed solution should be an efficient solution considering a large number of resources and users.

How can access permissions be designed for this purpose?

- A. Assign permissions to roles for access to critical resources. Users can switch to these roles to access critical resources. Users can use regular credentials to access non-critical resources
- B. Create separate user ids for accessing non-critical and critical resources. Users can switch between two user ids while accessing non-critical and critical resources
- C. Grant full access to all the users to both critical and non-critical resources
- D. Create a resource-based policy on critical resources. Grant permission to specific users who require access to these resources. Users can use regular credentials to access non-critical resources

Domain: Design Secure Architectures

A company has recently installed multiple software on an Amazon EC2 instance for its new web application. Recently there was an incident that caused a major outage to this web application. The root cause was identified as network ports were open which were exploited. The Security Team is looking for a detailed report on the Amazon EC2 instance which should gather information on all network ports open unintentionally and not used for any service. The solution should provide a list that can help remediate these findings based on criticality.

Which of the following approaches can be initiated to get the required reports?

- A. Implement Amazon Inspector on the Amazon EC2 instance
- B. Implement Amazon GuardDuty on the Amazon EC2 instance
- C. Implement Amazon Detective on Amazon EC2 instance
- D. Implement AWS Artifact on Amazon EC2 instance

Domain: Design Resilient Architectures

A Direct Connect connection is established from an on-premises location to the AWS us-west-1 region using BGP (Border Gateway Protocol). This connectivity will only be used for accessing Amazon S3 from on-premises. IT head wants to ensure on-premises prefixes are advertised only to the us-west-1 region. These prefixes should not be exported to any other AWS region.

How can the BGP routing policy be designed to control these advertisements?

- A. Set NO_EXPORT BGP community tags while advertising prefixes to AWS in the us-west-1 region
- B. Do not apply any BGP community tags; advertising prefixes can never be controlled
- C. Use BGP community tags while advertising prefixes to AWS in the us-west-1 region
- D. Use Local preference BGP community tags while advertising prefixes to AWS in the us-west-1 region

!!! Hoca D şikki da olabilir, incelemek lazım dedi !!!

<https://docs.aws.amazon.com/directconnect/latest/UserGuide/routing-and-bgp.html>

An engineering firm uses Amazon CloudTrail to record user activities across multiple accounts. Log files for this CloudTrail are stored in the Amazon S3 bucket in the us-east-1 region. Keys used for encrypting these logs should be managed by the Security team in this firm. Only specific users in the team should have permission to use this key for encrypting and decrypting log files. You have been assigned to work on this solution to suggest an efficient solution for additional security to log files from multiple accounts.

Which of the following solutions can you propose?

- A. Use Server-side encryption with Amazon S3-managed encryption keys (SSE-S3) for CloudTrail log files. Use different keys for encrypting and decrypting log files for multiple accounts across different regions
- B. Use Server-side encryption with AWS KMS-managed keys (SSE-KMS) for CloudTrail log files. Create a KMS key in the same region as the S3 bucket storing the log files. Use the same key for encrypting and decrypting log files for multiple accounts across different regions
- C. Use Server-side encryption with Amazon S3-managed encryption keys (SSE-S3) for CloudTrail log files. Use the same keys for encrypting and decrypting log files for multiple accounts across different regions
- D. Use Server-side encryption with AWS KMS-managed keys (SSE-KMS) for CloudTrail log files. Create a KMS key in a different region than the S3 bucket storing the log files. Use the different keys for encrypting and decrypting log files for multiple accounts across different regions

Domain: Design High-Performing Architectures

An online educational platform is developing a web application that millions of students will use to access educational content. They will be using the Amazon EC2 instance for their compute services and are looking for a high-performance shared storage solution that will be accessed parallelly. For each of the user sessions accessing a file system, it should be able to provide high throughput of more than 25 GB/s.

Which file system can be selected to meet performance requirements?

- A. FSx for NetApp ONTAP
- B. FSx for Lustre
- C. FSx for Windows File Server
- D. FSx for OpenZFS

Domain: Design High-Performing Architectures

An R&D firm is looking to store research data in the AWS cloud. At on-premises locations, currently, they are storing this data in Windows servers and are looking for a storage option in AWS without any changes in the application. This data transfer to the cloud should be transparent to the end-users and should not have any performance impact. Files stored in AWS need to be accessed by SMB (Server Message Block) clients as well.

How can hybrid cloud storage be designed?

- A. Implement hybrid cloud storage using the Amazon S3 file gateway
- B. Implement hybrid cloud storage using cached mode volume gateway
- C. Implement hybrid cloud storage using Amazon FSx file gateway
- D. Implement hybrid cloud storage using a stored mode volume gateway

Domain: Design Cost-Optimized Architectures

A large manufacturing company is looking to track IoT sensor data collected from thousands of equipment across multiple factory units. This is extremely high-volume traffic that needs to be collected in real time and should be efficiently visualized. The company is looking for a suitable database in the AWS cloud for storing these sensor data.

Which of the following cost-effective databases can be selected for this purpose?

- A. Send sensor data to Amazon RDS (Relational Database Service) using Amazon Kinesis and visualize data using Amazon QuickSight
- B. Send sensor data to Amazon Neptune using Amazon Kinesis and visualize data using Amazon QuickSight
- C. Send sensor data to Amazon DynamoDB using Amazon Kinesis and visualize data using Amazon QuickSight
- D. Send sensor data to Amazon Timestream using Amazon Kinesis and visualize data using Amazon QuickSight

Database type	Use cases	AWS service
Relational	Traditional applications, enterprise resource planning (ERP), customer relationship management (CRM), ecommerce	 Amazon Aurora  Amazon RDS  Amazon Redshift
Key-value	High-traffic web applications, ecommerce systems, gaming applications	 Amazon DynamoDB
In-memory	Caching, session management, gaming leaderboards, geospatial applications	 Amazon ElastiCache  Amazon MemoryDB for Redis
Document	Content management, catalogs, user profiles  JSON workloads	 Amazon DocumentDB (with MongoDB compatibility)
Wide column	High-scale industrial apps for equipment maintenance, fleet management, and route optimization	 Amazon Keyspaces  Apache Cassandra
Graph	Fraud detection, social networking, recommendation engines	 Amazon Neptune
Time series	Internet of Things (IoT) applications, DevOps, Industrial telemetry	 Amazon Timestream
Ledger	Systems of record, supply chain, registrations, banking transactions	 Amazon Ledger Database Services (QLDB)

Domain: Design High-Performing Architectures

A start-up firm is using a JSON-based database for content management. They are planning to rehost this database to AWS Cloud from on-premises. For this, they are looking for a suitable option to deploy this database, which can handle millions of requests per second with low latency. Databases should have a flexible schema that can store any type of user data from multiple sources and should effectively process similar data stored in different formats.

Which of the following databases can be selected to meet the requirements?

- A. Use Amazon DocumentDB (with MongoDB compatibility) in the AWS cloud to rehost the database from an on-premises location
- B. Use Amazon Neptune in the AWS cloud to rehost the database from an on-premises location
- C. Use Amazon Timestream in AWS cloud to rehost database from an on-premises location
- D. Use Amazon Keyspaces in AWS cloud to rehost database from an on-premises location

James is trying to launch a t2.micro EC2 instance having permissions as per the AmazonEC2FullAccess Policy. He is using Amazon Linux 2 AMI and proceeded without a key pair. For the root volume, he has selected General Purpose EBS Volume with 8 GB of storage and has encrypted it by manually specifying the encryption key name. After reviewing the configurations, he launches the instance.

The instance appears in the list, but the instance has changed its state from Pending to Shutting Down to Terminated immediately without being in Running State. Upon finding it, he checked it happened because of the error: Client.InternalError: Client error on launch. Which of the following options describe the root cause and the solution for the given problem in the best way?

- A. The EBS Volume is encrypted with a KMS key which James has no permission for decryption. The admin should give him permission to access KMS Key
- B. The mentioned policy applies to only certain instance types. James should try launching the EC2 instance with another type than t2.micro
- C. James has created the instance without a key pair. He should launch the instance again by using a key pair
- D. The EBS Volume limits in his account have been exceeded. He needs to submit a request to AWS to increase the limit

You are designing an architecture for one of your client's applications. You created a VPC within the us-east-1 region consisting of two public subnets and a private subnet. The first public subnet contains a web server and the private subnet contains the database server. All the other VPC Networking components are also set including Internet gateway, route tables, security groups, etc. Your team lead reviewed the architecture and informed you about the client's requirement of making the current architecture highly available with MINIMAL COST. He also specified that the client could accept a minor downtime, but the cost is the priority here.

Which options can make your current architecture highly available with minimum effort and costs?

- A. Span the architecture components to a second Availability zone by creating similar resources in it as AZ-1 and then distributing the traffic using an application load balancer
- B. Create a standby instance in the second public subnet. Attach a secondary ENI to the instance in the first public subnet. In case of a failure, detach this ENI and attach it to the standby instance
- C. Span the architecture components to a second region by creating similar resources in it as available in US-East-1 and then distributing the traffic using an application load balancer
- D. Implement dynamic scaling in this architecture by using Cloudwatch, Elastic Load Balancing, and Auto Scaling together. This solution will bring automated scaling and high availability with zero downtime

Domain: Design High-Performing Architectures

You have launched an EC2 instance with a General Purpose EBS Volume of 16384 GB as its root volume (`/dev/xvda`). After working on it for some time, you observed the need to have more storage with this instance. You found a volume (`/dev/xvdfl`) available in your account. Therefore this volume is attached as an additional volume with your EC2 instance.

One of your teammates informed you that this volume (`/dev/xvdfl`) was created from the snapshot of the root volume of another instance. Later on, upon rebooting the instance, you connect to it and observe that the instance has booted from `/dev/xvdfl`, whereas it was supposed to boot from `/dev/xvda` (original root volume). What should you do now to resolve the problem and let the instance boot from the correct volume?

- A. Keep the additional volume in an Availability zone other than the one where the EC2 instance and its root volume reside, then attach it to the EC2 instance
- B. Change the label of the additional volume using the `e2label` command
- C. Unmount the additional volume and add more storage capacity to the existing General Purpose volume only
- D. Change the label of the additional volume using the `e2changelabel` command

Domain: Design Resilient Architectures

You are working as a solutions architect in an E-Commerce based company with users from around the globe. There was feedback coming from various users of different countries to have the website content in their local languages. So, the company has now translated the website into multiple languages and is rolling out the feature soon for its users.

Now you need to send the traffic based on the location of the user. For example, if a request comes from Japan, it should be routed to the server in the ap-northeast-1 (Tokyo) region where the application is in the Japanese language. You can do so by specifying the IP address of that particular server while configuring the records in Route 53. Which one of the following routing policies should you use in Amazon Route 53 that will fulfill the given requirement?

- A. Weighted Routing Policy
- B. Geoproximity Routing Policy
- C. Geolocation Routing Policy
- D. Multivalue Answer Routing Policy

You are working as a solutions architect in a team who is handling the infrastructure provisioning, scaling, load balancing and monitoring, etc for a workload. This workload is hosted on a fleet of Linux servers on-premises. You have been assigned a task to capture the application logs, percentage of total disk space that is used, the amount of memory currently in use, and the percentage of time that the CPU is idle from the Linux servers.

Using this data, your team is going to build an operational dashboard. This dashboard will help set high-resolution alarms to alert and take automated actions and understand the service and application health easily. Which one of the following options is the best solution to satisfy this requirement?

- A. Use Amazon Cloudtrail standard metrics and logs to collect the required metrics and application logs
- B. Use Amazon Cloudtrail unified agent to collect the required metrics and application logs
- C. Use Amazon Cloudwatch Standard metrics and logs to collect the required metrics and application logs
- D. Use Amazon Cloudwatch unified agent to collect the required metrics and application logs

You are an IAM User in Account A and have created a Lambda function. One of the members of the Testing team, who is an IAM User in Account B, needs to perform some test cases and keep the code in his local system for record purposes. For the same, he needs to invoke your Lambda function in his account and should be able to download the code as well. Also, you need to make sure that the User of Account B can still perform his normal operations along with this lambda invocation requirement. Which options will allow User B to perform the required actions in his account with minimal effort?

- A. Use a Resource-based policy with your lambda function and grant permissions using lambda:*
- B. Create an IAM Role in Account A so that User B can assume this role and perform the required actions
- C. Use a Resource-based policy with your lambda function and grant permissions using lambda:InvokeFunction and lambda:GetFunction
- D. Create an IAM User for User B in Account A so that he can log in and perform the required actions

Domain: Design High-Performing Architectures

You have designed an architecture for a highly available web application with a dynamic workload. This architecture consists of a set of EC2 instances managed by an Auto Scaling Group and a load balancer for the even distribution of traffic. Your manager has reviewed the functioning of this architecture and is concerned about the latency of the scaling out process. Whenever there is a need to scale out, it takes a few seconds to a few minutes for Auto Scaling to launch the instance, register it with the load balancer, and start serving the requests. The Manager has asked you to look for a way to reduce this latency so that instances can start serving the requests as quickly as possible. Which of the following options can satisfy the given requirement?

- A. Use Warm Pool with Auto Scaling
- B. Use the Desired capacity parameter to scale out quickly
- C. Use Lifecycle hooks with Auto Scaling
- D. Use the Scheduled scaling type to scale out quickly

A Healthcare Industry has a requirement to store patient records on AWS securely and cost-effectively. This data isn't frequently accessed but needs to be kept as records for about six years as per the industry's policies. But there can be scenarios where they might need to query this data within minutes. They will need to access only the required data by performing filtering over the existing data. As a Solutions Architect, which of the following solutions will you recommend for the given scenario?

- A. Store the data in Amazon S3 Standard and Use S3 Select to query the data
- B. Store the data in Amazon S3 Glacier and Use Glacier Select to query the data
- C. Store the data in Amazon Redshift and perform SQL queries to retrieve the required data
- D. Store the data in Amazon S3 Standard Infrequent Access and Use S3 Select to query the data

You have stored some of your documents as objects in the Amazon S3 Standard Storage Class. You have an urgent requirement of fetching just a subset of the data from the S3 Object. As a best practice, you want to reduce the latency of data retrieval and the amount of data that S3 will transfer to your location. You have tried using S3 Select to filter and query over the required subset of data with an SQL Expression of about 300 KB. But you have not been able to get the results yet. What can be the possible cause behind this failure?

- A. You can't perform the queries using S3 Select on the data stored in S3 Standard Class
- B. The maximum length of a SQL expression is limited to 200 KB
- C. Use Glacier Select instead of S3 Select to query the data successfully
- D. The maximum length of a SQL expression is limited to 256 KB

You have built a serverless architecture composed of Lambda Functions exposed through API Gateway for one of your client's applications. For the database layer, you have used DynamoDB. Your team lead has reviewed the architecture and is concerned about the cost of numerous API Calls being made to the backend (Lambda Functions) for so many similar requests. Also, the client is concerned about providing as low latency as possible for the application users' requests. You have to look for a solution where the latency and overall cost can be reduced for the current architecture without much effort.

- A. Cache the computed request's responses using the CloudFront CDN caching
- B. Use the API Gateway QuickResponse feature to reduce the latency and number of calls to the backend
- C. Enable API Gateway Caching to cache the computed request's responses
- D. Adjust API Gateway Throttling settings to reduce the latency and number of calls to the backend

Domain: Design High-Performing Architectures

You have designed a gaming application with game servers hosted on EC2 Instances. For the leaderboards, you have used a DynamoDB table named Scores. Your manager has instructed you to build a feature to publish a Congratulations and Rewards Message with the winner's name on the app's Social Media network. This message should be posted each time the HighestScore Attribute is updated in the Scores DynamoDB table. Which of the following options can satisfy the requirement in the BEST way?

- A. DynamoDB Streams with AWS Lambda
- B. DynamoDB Global Tables with AWS Lambda
- C. DynamoDB Accelerator with AWS Lambda
- D. DynamoDB Transactions with AWS Lambda

Domain: Design High-Performing Architectures

You are working in an organization who is using a Multi-Cloud environment. They have workloads deployed and data stored in Google cloud, Microsoft Azure, and AWS Cloud as well. Your manager has informed you about the decision to migrate one of the workloads from Google Cloud to AWS. For the same, he has asked you to migrate all the data stored in Google cloud storage buckets to Amazon S3 buckets without much effort. Which of the following services can help in accomplishing this task?

- A. AWS Migration Hub
- B. Amazon Storage Gateway
- C. AWS DataSync
- D. S3 Transfer Acceleration

Domain: Design Cost-Optimized Architectures

Jackson handles the capacity provisioning for an E-Commerce application's workload. A sale is starting in the coming week, and the team has predicted a huge traffic spike during the sale days. Jackson has provisioned 5 t2.large Reserved Instances for the consistent portion of the workload. As per the predictions, there will be huge spikes in traffic which will be temporary.

Jackson is looking for a way to serve this portion of the workload in the MOST cost-effective way without much effort. Note that the application is already designed to recover from any instance failures. Which of the following options satisfies the given requirement in the best way?

- A. Use Savings Plans for the spiky traffic
- B. Use Spot Instances for the spiky traffic
- C. Use On-Demand Instances for the spiky traffic
- D. Use Dedicated Hosts for the spiky traffic

Domain: Design High-Performing Architectures

An IT Company is working on the disaster recovery strategy for one of their workloads deployed on AWS. They have begun with the recovery planning of the storage components. As of now, they have an EFS File System deployed in us-east-1 being used by hundreds of instances in this region. As a part of their recovery strategy, they also want the file system to be available in ap-south-1. For the same, they are looking for a way to bring a copy of this file system to ap-south-1 in the easiest way possible. Which of the following options can provide the BEST solution in this case?

- A. Use Amazon EFS Replication to accomplish the cross-region replication
- B. Bring the data in an S3 Bucket in us-east-1 and enable cross-region replication to copy the data to a bucket in ap-south-1
- C. Use AWS DataSync to accomplish the cross-region replication
- D. Use AWS Direct Connect to accomplish the cross-region replication

Domain: Design Secure Architectures

Your organization is looking for a standalone Active Directory solution on AWS with certain features and budget constraints. The first requirement is that the users in this directory should be able to use their directory credentials to log in to AWS Management Console and manage AWS resources. Also, there's a requirement to have daily automated snapshots. The number of users will not exceed 450. Which one of the following options can provide the required features at the lowest possible cost?

- A. AWS Directory Service for Microsoft AD
- B. Active Directory Connector
- C. Simple Active Directory
- D. Amazon Cognito