



# SAP-C02<sup>Q&As</sup>

AWS Certified Solutions Architect - Professional

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**QUESTION 1**

A company implements a containerized application by using Amazon Elastic Container Service (Amazon ECS) and Amazon API Gateway. The application data is stored in Amazon Aurora databases and Amazon DynamoDB databases. The company automates infrastructure provisioning by using AWS CloudFormation. The company automates application deployment by using AWS CodePipeline.

A solutions architect needs to implement a disaster recovery (DR) strategy that meets an RPO of 2 hours and an RTO of 4 hours.

Which solution will meet these requirements MOST cost-effectively?

- A. Set up an Aurora global database and DynamoDB global tables to replicate the databases to a secondary AWS Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon CloudFront with origin failover to route traffic to the secondary Region during a DR scenario.
- B. Use AWS Database Migration Service (AWS DMS), Amazon EventBridge (Amazon CloudWatch Events), and AWS Lambda to replicate the Aurora databases to a secondary AWS Region. Use DynamoDB Streams, EventBridge (CloudWatch Events), and Lambda to replicate the DynamoDB databases to the secondary Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon Route 53 failover routing to switch traffic from the primary Region to the secondary Region.
- C. Use AWS Backup to create backups of the Aurora databases and the DynamoDB databases in a secondary AWS Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon Route 53 failover routing to switch traffic from the primary Region to the secondary Region.
- D. Set up an Aurora global database and DynamoDB global tables to replicate the databases to a secondary AWS Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon Route 53 failover routing to switch traffic from the primary Region to the secondary Region.

Correct Answer: C

<https://aws.amazon.com/blogs/database/cost-effective-disaster-recovery-for-amazon-aurora-databases-using-aws-backup/>

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**QUESTION 2**

A solutions architect has been assigned to migrate a 50 TB Oracle data warehouse that contains sales data from on-premises to Amazon Redshift. Major updates to the sales data occur on the final calendar day of the month. For the remainder of the month, the data warehouse only receives minor daily updates and is primarily used for reading and reporting. Because of this, the migration process must start on the first day of the month and must be complete before the next set of updates occur. This provides approximately 30 days to complete the migration and ensure that the minor daily changes have been synchronized with the Amazon Redshift data warehouse. Because the migration cannot impact normal business network operations, the bandwidth allocated to the migration for moving data over the internet is 50 Mbps. The company wants to keep data migration costs low.

Which steps will allow the solutions architect to perform the migration within the specified timeline?

- A. Install Oracle database software on an Amazon EC2 instance. Configure VPN connectivity between AWS and the company's data center. Configure the Oracle database running on Amazon EC2 to join the Oracle Real Application Clusters (RAC). When the Oracle database on Amazon EC2 finishes synchronizing, create an AWS DMS ongoing replication task to migrate the data from the Oracle database on Amazon EC2 to Amazon Redshift. Verify the data migration is complete and perform the cut over to Amazon Redshift.



B. Create an AWS Snowball import job Export a backup of the Oracle data warehouse Copy the exported data to the Snowball device Return the Snowball device to AWS Create an Amazon RDS for Oracle database and restore the backup file to that RDS instance Create an AWS DMS task to migrate the data from the RDS for Oracle database to Amazon Redshift Copy daily incremental backups from Oracle in the data center to the RDS for Oracle database over the internet Verify the data migration is complete and perform the cut over to Amazon Redshift.

C. Install Oracle database software on an Amazon EC2 instance To minimize the migration time configure VPN connectivity between AWS and the company's data center by provisioning a 1 Gbps AWS Direct Connect connection Configure the Oracle database running on Amazon EC2 to be a read replica of the data center Oracle database Start the synchronization process between the company's on-premises data center and the Oracle database on Amazon EC2 When the Oracle database on Amazon EC2 is synchronized with the on-premises database create an AWS DMS ongoing replication task from the Oracle database read replica that is running on Amazon EC2 to Amazon Redshift Verify the data migration is complete and perform the cut over to Amazon Redshift.

D. Create an AWS Snowball import job. Configure a server in the company's data center with an extraction agent. Use AWS SCT to manage the extraction agent and convert the Oracle schema to an Amazon Redshift schema. Create a new project in AWS SCT using the registered data extraction agent. Create a local task and an AWS DMS task in AWS SCT with replication of ongoing changes. Copy data to the Snowball device and return the Snowball device to AWS. Allow AWS DMS to copy data from Amazon S3 to Amazon Redshift. Verify that the data migration is complete and perform the cut over to Amazon Redshift.

Correct Answer: D

Create an AWS Snowball import job. Configure a server in the company's data center with an extraction agent. Use AWS SCT to manage the extraction agent and convert the Oracle schema to an Amazon Redshift schema. Create a new

project in AWS SCT using the registered data extraction agent. Create a local task and an AWS DMS task in AWS SCT with replication of ongoing changes. Copy data to the Snowball device and return the Snowball device to AWS. Allow

AWS DMS to copy data from Amazon S3 to Amazon Redshift. Verify that the data migration is complete and perform the cut over to Amazon Redshift.

<https://aws.amazon.com/getting-started/hands-on/migrate-oracle-to-amazon-redshift/>

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### QUESTION 3

A team collects and routes behavioral data for an entire company. The company runs a Multi-AZ VPC environment with public subnets, private subnets, and an internet gateway Each public subnet also contains a NAT gateway Most of the company's applications read from and write to Amazon Kinesis Data Streams. Most of the workloads run in private subnets.

A solutions architect must review the infrastructure. The solutions architect needs to reduce costs and maintain the function of the applications. The solutions architect uses Cost Explorer and notices that the cost in the EC2-Other category is consistently high A further review shows that NatGateway-Bytes charges are increasing the cost in the EC2-Other category.

What should the solutions architect do to meet these requirements?

A. Enable VPC Flow Logs. Use Amazon Athena to analyze the logs for traffic that can be removed. Ensure that security groups are blocking traffic that is responsible for high costs.

B. Add an interface VPC endpoint for Kinesis Data Streams to the VPC. Ensure that applications have the correct IAM permissions to use the interface VPC endpoint.



C. Enable VPC Flow Logs and Amazon Detective. Review Detective findings for traffic that is not related to Kinesis Data Streams Configure security groups to block that traffic

D. Add an interface VPC endpoint for Kinesis Data Streams to the VPC Ensure that the VPC endpoint policy allows traffic from the applications

Correct Answer: D

<https://docs.aws.amazon.com/vpc/latest/privatelink/vpc-endpoints-access.html>

<https://aws.amazon.com/premiumsupport/knowledge-center/vpc-reduce-nat-gateway-transfer-costs/>

VPC endpoint policies enable you to control access by either attaching a policy to a VPC endpoint or by using additional fields in a policy that is attached to an IAM user, group, or role to restrict access to only occur via the specified VPC endpoint

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#### QUESTION 4

A company has a media metadata extraction pipeline running on AWS. Notifications containing a reference to a file Amazon S3 are sent to an Amazon Simple Notification Service (Amazon SNS) topic The pipeline consists of a number of AWS Lambda functions that are subscribed to the SNS topic The Lambda functions extract the S3 file and write metadata to an Amazon RDS PostgreSQL DB instance.

Users report that updates to the metadata are sometimes slow to appear or are lost. During these times, the CPU utilization on the database is high and the number of failed Lambda invocations increases. Which combination of actions should a solutions architect take to resolve this issue? (Select TWO.)

A. Enable message delivery status on the SNS topic Configure the SNS topic delivery policy to enable retries with exponential backoff

B. Create an Amazon Simple Queue Service (Amazon SQS) FIFO queue and subscribe the queue to the SNS topic Configure the Lambda functions to consume messages from the SQS queue.

C. Create an RDS proxy for the RDS instance Update the Lambda functions to connect to the RDS instance using the proxy.

D. Enable the RDS Data API for the RDS instance. Update the Lambda functions to connect to the RDS instance using the Data API

E. Create an Amazon Simple Queue Service (Amazon SQS) standard queue for each Lambda function and subscribe the queues to the SNS topic. Configure the Lambda functions to consume messages from their respective SQS queue.

Correct Answer: CE

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#### QUESTION 5

A company is developing a web application that runs on Amazon EC2 instances in an Auto Scaling group behind a public-facing Application Load Balancer (ALB). Only users from a specific country are allowed to access the application. The company needs the ability to log the access requests that have been blocked. The solution should require the least possible maintenance.

Which solution meets these requirements?

A. Create an IPSet containing a list of IP ranges that belong to the specified country. Create an AWS WAF web ACL.

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Configure a rule to block any requests that do not originate from an IP range in the IPSet. Associate the rule with the web ACL. Associate the web ACL with the ALB.

B. Create an AWS WAF web ACL. Configure a rule to block any requests that do not originate from the specified country. Associate the rule with the web ACL. Associate the web ACL with the ALB.

C. Configure AWS Shield to block any requests that do not originate from the specified country. Associate AWS Shield with the ALB.

D. Create a security group rule that allows ports 80 and 443 from IP ranges that belong to the specified country. Associate the security group with the ALB.

Correct Answer: B

The best solution is to create an AWS WAF web ACL and configure a rule to block any requests that do not originate from the specified country. This will ensure that only users from the allowed country can access the application. AWS WAF also provides logging capabilities that can capture the access requests that have been blocked. This solution requires the least possible maintenance as it does not involve updating IP ranges or security group rules. References: [AWS WAF Developer Guide], [AWS Shield Developer Guide]

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## QUESTION 6

A company is creating a centralized logging service running on Amazon EC2 that will receive and analyze logs from hundreds of AWS accounts. AWS PrivateLink is being used to provide connectivity between the client services and the logging service. In each AWS account with a client, an interface endpoint has been created for the logging service and is available. The logging service running on EC2 instances with a Network Load Balancer (NLB) are deployed in different subnets. The clients are unable to submit logs using the VPC endpoint.

Which combination of steps should a solutions architect take to resolve this issue? (Select TWO.)

A. Check that the NACL is attached to the logging service subnet to allow communications to and from the NLB subnets. Check that the NACL is attached to the NLB subnet to allow communications to and from the logging service subnets running on EC2 instances.

B. Check that the NACL is attached to the logging service subnets to allow communications to and from the interface endpoint subnets. Check that the NACL is attached to the interface endpoint subnet to allow communications to and from the logging service subnets running on EC2 instances.

C. Check the security group for the logging service running on the EC2 instances to ensure it allows Ingress from the NLB subnets.

D. Check the security group for the logging service running on EC2 instances to ensure it allows ingress from the clients.

E. Check the security group for the NLB to ensure it allows ingress from the interface endpoint subnets.

Correct Answer: AC

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## QUESTION 7

A company that provisions job boards for a seasonal workforce is seeing an increase in traffic and usage. The backend services run on a pair of Amazon EC2 instances behind an Application Load Balancer with Amazon DynamoDB as the datastore. Application read and write traffic is slow during peak seasons.



Which option provides a scalable application architecture to handle peak seasons with the LEAST development effort?

- A. Migrate the backend services to AWS Lambda. Increase the read and write capacity of DynamoDB.
- B. Migrate the backend services to AWS Lambda. Configure DynamoDB to use global tables.
- C. Use Auto Scaling groups for the backend services. Use DynamoDB auto scaling.
- D. Use Auto Scaling groups for the backend services. Use Amazon Simple Queue Service (Amazon SQS) and an AWS Lambda function to write to DynamoDB.

Correct Answer: C

Option C is correct because using Auto Scaling groups for the backend services allows the company to scale up or down the number of EC2 instances based on the demand and traffic. This way, the backend services can handle more requests during peak seasons without compromising performance or availability. Using DynamoDB auto scaling allows the company to adjust the provisioned read and write capacity of the table or index automatically based on the actual traffic patterns. This way, the table or index can handle sudden increases or decreases in workload without throttling or overprovisioning<sup>1</sup>. Option A is incorrect because migrating the backend services to AWS Lambda may require significant development effort to rewrite the code and test the functionality. Moreover, increasing the read and write capacity of DynamoDB manually may not be efficient or cost-effective, as it does not account for the variability of the workload. The company may end up paying for unused capacity or experiencing throttling if the workload exceeds the provisioned capacity<sup>1</sup>. Option B is incorrect because migrating the backend services to AWS Lambda may require significant development effort to rewrite the code and test the functionality. Moreover, configuring DynamoDB to use global tables may not be necessary or beneficial for the company, as global tables are mainly used for replicating data across multiple AWS Regions for fast local access and disaster recovery. Global tables do not automatically scale the provisioned capacity of each replica table; they still require manual or auto scaling settings<sup>2</sup>. Option D is incorrect because using Amazon Simple Queue Service (Amazon SQS) and an AWS Lambda function to write to DynamoDB may introduce additional complexity and latency to the application architecture. Amazon SQS is a message queue service that decouples and coordinates the components of a distributed system. AWS Lambda is a serverless compute service that runs code in response to events. Using these services may require significant development effort to integrate them with the backend services and DynamoDB. Moreover, they may not improve the read performance of DynamoDB, which may also be affected by high traffic<sup>3</sup>.

References: Auto Scaling groups DynamoDB auto scaling AWS Lambda DynamoDB global tables AWS Lambda vs EC2: Comparison of AWS Compute Resources - Simform Managing throughput capacity automatically with DynamoDB auto scaling - Amazon DynamoDB AWS Aurora Global Database vs. DynamoDB Global Tables Amazon Simple Queue Service (SQS)

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## QUESTION 8

A company runs an application on AWS. An AWS Lambda function uses credentials to authenticate to an Amazon RDS for MySQL DB instance. A security risk assessment identified that these credentials are not frequently rotated. Also, encryption at rest is not enabled for the DB instance. The security team requires that both of these issues be resolved.

Which strategy should a solutions architect recommend to remediate these security risks?

- A. Configure the Lambda function to store and retrieve the database credentials in AWS Secrets Manager and enable rotation of the credentials. Take a snapshot of the DB instance and encrypt a copy of that snapshot. Replace the DB instance with a new DB instance that is based on the encrypted snapshot.
- B. Enable IAM DB authentication on the DB instance. Grant the Lambda execution role access to the DB instance. Modify the DB instance and enable encryption.
- C. Enable IAM DB authentication on the DB instance. Grant the Lambda execution role access to the DB instance.





Create an encrypted read replica of the DB instance. Promote the encrypted read replica to be the new primary node.

D. Configure the Lambda function to store and retrieve the database credentials as encrypted AWS Systems Manager Parameter Store parameters. Create another Lambda function to automatically rotate the credentials. Create an encrypted read replica of the DB instance. Promote the encrypted read replica to be the new primary node.

Correct Answer: A

Parameter store can store DB credentials as secure string but CANNOT rotate secrets, hence, go with A + Cannot enable encryption on existing MySQL RDS instance, must create a new encrypted one from unencrypted snapshot. <https://aws.amazon.com/blogs/security/rotate-amazon-rds-database-credentials-automatically-with-aws-secretsmanager/#:~:text=Secrets%20Manager%20offers%20built%2Din%20integrations%20for%20rotating%20credentials%20for,rotate%20other%20types%20of%20secrets>. Encrypting a unencrypted instance of DB or creating a encrypted replica of an un encrypted DB instance are not possible Hence A is the only solution possible. <https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Overview.Encryption.html#Overview.Encryption.Limitations>

## QUESTION 9

A company operates an on-premises software-as-a-service (SaaS) solution that ingests several files daily. The company provides multiple public SFTP endpoints to its customers to facilitate the file transfers. The customers add the SFTP endpoint IP addresses to their firewall allow list for outbound traffic. Changes to the SFTP endpoint IP addresses are not permitted.

The company wants to migrate the SaaS solution to AWS and decrease the operational overhead of the file transfer service.

Which solution meets these requirements?

- A. Register the customer-owned block of IP addresses in the company's AWS account. Create Elastic IP addresses from the address pool and assign them to an Amazon S3 Transfer Acceleration endpoint. Use Amazon S3 Transfer Acceleration to store the files in Amazon S3.
- B. Add a subnet containing the customer-owned block of IP addresses to a VPC. Create Elastic IP addresses from the address pool and assign them to an Application Load Balancer (ALB). Launch EC2 instances hosting SFTP services in an Auto Scaling group behind the ALB. Store the files in attached Amazon Elastic Block Store (Amazon EBS) volumes.
- C. Register the customer-owned block of IP addresses with Amazon Route 53. Create alias records in Route 53 that point to a Network Load Balancer (NLB). Launch EC2 instances hosting SFTP services in an Auto Scaling group behind the NLB. Store the files in Amazon S3.
- D. Register the customer-owned block of IP addresses in the company's AWS account. Create Elastic IP addresses from the address pool and assign them to an Amazon S3 VPC endpoint. Enable SFTP support on the S3 bucket.

Correct Answer: A

Bring your own IP addresses (BYOIP) You can bring part or all of your publicly routable IPv4 or IPv6 address range from your on-premises network to your AWS account. You continue to own the address range, but AWS advertises it on the internet by default. After you bring the address range to AWS, it appears in your AWS account as an address pool. <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-byoip.html> AWS Transfer for SFTP enables you to easily move your file transfer workloads that use the Secure Shell File Transfer Protocol (SFTP) to AWS without needing to modify your applications or manage any SFTP servers. <https://aws.amazon.com/about-aws/whats-new/2018/11/aws-transfer-for-sftp-fully-managed-sftp-for-s3/>

**QUESTION 10**

A company wants to migrate its on-premises application to AWS. The database for the application stores structured product data and temporary user session data. The company needs to decouple the product data from the user session data. The company also needs to implement replication in another AWS Region for disaster recovery.

Which solution will meet these requirements with the HIGHEST performance?

- A. Create an Amazon RDS DB instance with separate schemas to host the product data and the user session data. Configure a read replica for the DB instance in another Region.
- B. Create an Amazon RDS DB instance to host the product data. Configure a read replica for the DB instance in another Region. Create a global datastore in Amazon ElastiCache for Memcached to host the user session data.
- C. Create two Amazon DynamoDB global tables. Use one global table to host the product data Use the other global table to host the user session data. Use DynamoDB Accelerator (DAX) for caching.
- D. Create an Amazon RDS DB instance to host the product data. Configure a read replica for the DB instance in another Region. Create an Amazon DynamoDB global table to host the user session data

Correct Answer: B

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**QUESTION 11**

An e-commerce company is revamping its IT infrastructure and is planning to use AWS services. The company's CIO has asked a solutions architect to design a simple, highly available, and loosely coupled order processing application. The application is responsible for receiving and processing orders before storing them in an Amazon DynamoDB table. The application has a sporadic traffic pattern and should be able to scale during marketing campaigns to process the orders with minimal delays.

Which of the following is the MOST reliable approach to meet the requirements?

- A. Receive the orders in an Amazon EC2-hosted database and use EC2 instances to process them.
- B. Receive the orders in an Amazon SQS queue and trigger an AWS Lambda function to process them.
- C. Receive the orders using the AWS Step Functions program and trigger an Amazon ECS container to process them.
- D. Receive the orders in Amazon Kinesis Data Streams and use Amazon EC2 instances to process them.

Correct Answer: B

Q: How does Amazon Kinesis Data Streams differ from Amazon SQS?

Amazon Kinesis Data Streams enables real-time processing of streaming big data. It provides ordering of records, as well as the ability to read and/or replay records in the same order to multiple Amazon Kinesis Applications. The Amazon Kinesis Client Library (KCL) delivers all records for a given partition key to the same record processor, making it easier to build multiple applications reading from the same Amazon Kinesis data stream (for example, to perform counting, aggregation, and filtering). <https://aws.amazon.com/kinesis/data-streams/faqs/> <https://aws.amazon.com/blogs/big-data/unite-real-time-and-batch-analytics-using-the-big-data-lambda-architecture-without-servers/>

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**QUESTION 12**





A company built an ecommerce website on AWS using a three-tier web architecture. The application is Java-based and composed of an Amazon CloudFront distribution, an Apache web server layer of Amazon EC2 instances in an Auto Scaling group, and a backend Amazon Aurora MySQL database.

Last month, during a promotional sales event, users reported errors and timeouts while adding items to their shopping carts. The operations team recovered the logs created by the web servers and reviewed Aurora DB cluster performance metrics. Some of the web servers were terminated before logs could be collected and the Aurora metrics were not sufficient for query performance analysis.

Which combination of steps must the solutions architect take to improve application performance visibility during peak traffic events? (Select THREE.)

- A. Configure the Aurora MySQL DB cluster to publish slow query and error logs to Amazon CloudWatch Logs.
- B. Implement the AWS X-Ray SDK to trace incoming HTTP requests on the EC2 instances and implement tracing of SQL queries with the X-Ray SDK for Java.
- C. Configure the Aurora MySQL DB cluster to stream slow query and error logs to Amazon Kinesis.
- D. Install and configure an Amazon CloudWatch Logs agent on the EC2 instances to send the Apache logs to CloudWatch Logs.
- E. Enable and configure AWS CloudTrail to collect and analyze application activity from Amazon EC2 and Aurora.
- F. Enable Aurora MySQL DB cluster performance benchmarking and publish the stream to AWS X-Ray.

Correct Answer: ABD

Configuring the Aurora MySQL DB cluster to publish slow query and error logs to Amazon CloudWatch Logs will allow the solutions architect to monitor and troubleshoot the database performance by identifying slow or problematic queries<sup>1</sup>.

CloudWatch Logs also provides features such as metric filters, alarms, and dashboards to analyze and visualize the log data<sup>2</sup>. Implementing the AWS X-Ray SDK to trace incoming HTTP requests on the EC2 instances and implement tracing

of SQL queries with the X-Ray SDK for Java will allow the solutions architect to measure and map the end-to-end latency and performance of the web application<sup>3</sup>. X-Ray traces show how requests travel through the application components,

such as web servers, load balancers, microservices, and databases<sup>4</sup>. X-Ray also provides features such as service maps, annotations, histograms, and error rates to analyze and optimize the application performance. Installing and

configuring an Amazon CloudWatch Logs agent on the EC2 instances to send the Apache logs to CloudWatch Logs will allow the solutions architect to monitor and troubleshoot the web server performance by collecting and storing the

Apache access and error logs. CloudWatch Logs also provides features such as metric filters, alarms, and dashboards to analyze and visualize the log data<sup>2</sup>.

References:

[Publishing Aurora MySQL logs to Amazon CloudWatch Logs](#) Working with log data in CloudWatch Logs

[Instrumenting your application with the X-Ray SDK for Java](#) Tracing requests with AWS X-Ray

[\[Analyzing application performance with AWS X-Ray\]](#) [\[Using CloudWatch Logs with your Apache web server\]](#)

**QUESTION 13**

A company has multiple business units. Each business unit has its own AWS account and runs a single website within that account. The company also has a single logging account. Logs from each business unit website are aggregated into a single Amazon S3 bucket in the logging account. The S3 bucket policy provides each business unit with access to write data into the bucket and requires data to be encrypted.

The company needs to encrypt logs uploaded into the bucket using a Single AWS Key Management Service (AWS KMS) CMK. The CMK that protects the data must be rotated once every 365 days.

Which strategy is the MOST operationally efficient for the company to use to meet these requirements?

- A. Create a customer managed CMK in the logging account. Update the CMK key policy to provide access to the logging account only. Manually rotate the CMK every 365 days.
- B. Create a customer managed CMK in the logging account. Update the CMK key policy to provide access to the logging account and business unit accounts. Enable automatic rotation of the CMK.
- C. Use an AWS managed CMK in the logging account. Update the CMK key policy to provide access to the logging account and business unit accounts. Manually rotate the CMK every 365 days.
- D. Use an AWS managed CMK in the logging account. Update the CMK key policy to provide access to the logging account only. Enable automatic rotation of the CMK.

Correct Answer: A

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**QUESTION 14**

A medical company is running an application in the AWS Cloud. The application simulates the effect of medical drugs in development.

The application consists of two parts: configuration and simulation. The configuration part runs in AWS Fargate containers in an Amazon Elastic Container Service (Amazon ECS) cluster. The simulation part runs on large, compute-optimized Amazon EC2 instances. Simulations can restart if they are interrupted.

The configuration part runs 24 hours a day with a steady load. The simulation part runs only for a few hours each night with a variable load. The company stores simulation results in Amazon S3, and researchers use the results for 30 days. The company must store simulations for 10 years and must be able to retrieve the simulations within 5 hours.

Which solution meets these requirements MOST cost-effectively?

- A. Purchase an EC2 Instance Savings Plan to cover the usage for the configuration part. Run the simulation part by using EC2 Spot Instances. Create an S3 Lifecycle policy to transition objects that are older than 30 days to S3 Intelligent-Tiering.
- B. Purchase an EC2 Instance Savings Plan to cover the usage for the configuration part and the simulation part. Create an S3 Lifecycle policy to transition objects that are older than 30 days to S3 Glacier.
- C. Purchase Compute Savings Plans to cover the usage for the configuration part. Run the simulation part by using EC2 Spot instances. Create an S3 Lifecycle policy to transition objects that are older than 30 days to S3 Glacier.
- D. Purchase Compute Savings Plans to cover the usage for the configuration part. Purchase EC2 Reserved Instances for the simulation part. Create an S3 Lifecycle policy to transition objects that are older than 30 days to S3 Glacier Deep



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Correct Answer: C

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### QUESTION 15

A large company has a business-critical application that runs in a single AWS Region. The application consists of multiple Amazon EC2 instances and an Amazon RDS Multi-AZ DB instance. The EC2 instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones.

A solutions architect is implementing a disaster recovery (DR) plan for the application. The solutions architect has created a pilot light application deployment in a new Region, which is referred to as the DR Region. The DR environment has an Auto Scaling group with a single EC2 instance and a read replica of the RDS DB instance.

The solutions architect must automate a failover from the primary application environment to the pilot light environment in the DR Region.

Which solution meets these requirements with the MOST operational efficiency?

- A. Publish an application availability metric to Amazon CloudWatch in the DR Region from the application environment in the primary Region. Create a CloudWatch alarm in the DR Region that is invoked when the application availability metric stops being delivered. Configure the CloudWatch alarm to send a notification to an Amazon Simple Notification Service (Amazon SNS) topic in the DR Region. Add an email subscription to the SNS topic that sends messages to the application owner upon notification, instruct a systems operator to sign in to the AWS Management Console and initiate failover operations for the application.
- B. Create a cron task that runs every 5 minutes by using one of the application's EC2 instances in the primary Region. Configure the cron task to check whether the application is available. Upon failure, the cron task notifies a systems operator and attempts to restart the application services.
- C. Create a cron task that runs every 5 minutes by using one of the application's EC2 instances in the primary Region. Configure the cron task to check whether the application is available. Upon failure, the cron task modifies the DR environment by promoting the read replica and by adding EC2 instances to the Auto Scaling group.
- D. Publish an application availability metric to Amazon CloudWatch in the DR Region from the application environment in the primary Region. Create a CloudWatch alarm in the DR Region that is invoked when the application availability metric stops being delivered. Configure the CloudWatch alarm to send a notification to an Amazon Simple Notification Service (Amazon SNS) topic in the DR Region. Use an AWS Lambda function that is invoked by Amazon SNS in the DR Region to promote the read replica and to add EC2 instances to the Auto Scaling group.

Correct Answer: D

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