

# Amazon-Web-Services

## Exam Questions SAP-C02

AWS Certified Solutions Architect - Professional



### NEW QUESTION 1

- (Exam Topic 1)

A startup company recently migrated a large ecommerce website to AWS. The website has experienced a 70% increase in sales. Software engineers are using a private GitHub repository to manage code. The DevOps learn is using Jenkins for builds and unit testing. The engineers need to receive notifications for bad builds and zero downtime during deployments. The engineers also need to ensure any changes to production are seamless for users and can be rolled back in the event of a major issue.

The software engineers have decided to use AWS CodePipeline to manage their build and deployment process.

Which solution will meet these requirements?

- A. Use GitHub websockets to trigger the CodePipeline pipeline
- B. Use the Jenkins plugin for AWS CodeBuild to conduct unit testing
- C. Send alerts to an Amazon SNS topic for any bad build
- D. Deploy in an in-place
- E. all-at-once deployment configuration using AWS CodeDeploy.
- F. Use GitHub webhooks to trigger the CodePipeline pipeline
- G. Use the Jenkins plugin for AWS CodeBuild to conduct unit testing
- H. Send alerts to an Amazon SNS topic for any bad build
- I. Deploy in a blue/green deployment using AWS CodeDeploy.
- J. Use GitHub websockets to trigger the CodePipeline pipeline
- K. Use AWS X-Ray for unit testing and static code analysis
- L. Send alerts to an Amazon SNS topic for any bad build
- M. Deploy in a blue/green deployment using AWS CodeDeploy.
- N. Use GitHub webhooks to trigger the CodePipeline pipeline
- O. Use AWS X-Ray for unit testing and static code analysis
- P. Send alerts to an Amazon SNS topic for any bad build
- Q. Deploy in an in-place, all-at-once deployment configuration using AWS CodeDeploy.

**Answer: B**

### NEW QUESTION 2

- (Exam Topic 1)

A company is serving files to its customers through an SFTP server that is accessible over the internet. The SFTP server is running on a single Amazon EC2 instance with an Elastic IP address attached. Customers connect to the SFTP server through its Elastic IP address and use SSH for authentication. The EC2 instance also has an attached security group that allows access from all customer IP addresses.

A solutions architect must implement a solution to improve availability, minimize the complexity of infrastructure management, and minimize the disruption to customers who access files. The solution must not change the way customers connect.

Which solution will meet these requirements?

- A. Disassociate the Elastic IP address from the EC2 instance. Create an Amazon S3 bucket to be used for SFTP file hosting. Create an AWS Transfer Family server. Configure the Transfer Family server with a publicly accessible endpoint.
- B. Associate the SFTP Elastic IP address with the new endpoint.
- C. Point the Transfer Family server to the S3 bucket. Sync all files from the SFTP server to the S3 bucket.
- D. Disassociate the Elastic IP address from the EC2 instance.
- E. Create an Amazon S3 bucket to be used for SFTP file hosting. Create an AWS Transfer Family server.
- F. Configure the Transfer Family server with a VPC-hosted internet-facing endpoint.
- G. internet-facing endpoint.
- H. Associate the SFTP Elastic IP address with the new endpoint.
- I. Attach the security group with customer IP addresses to the new endpoint.
- J. Point the Transfer Family server to the S3 bucket.
- K. Sync all files from the SFTP server to the S3 bucket.
- L. Disassociate the Elastic IP address from the EC2 instance.
- M. Create a new Amazon Elastic File System (Amazon EFS) file system to be used for SFTP file hosting.
- N. Create an AWS Fargate task definition to run an SFTP server.
- O. Specify the EFS file system as a mount in the task definition. Create a Fargate service by using the task definition, and place a Network Load Balancer (NLB) in front of the service. When configuring the service, attach the security group with customer IP addresses to the tasks that run the SFTP server. Associate the Elastic IP address with the NLB. Sync all files from the SFTP server to the S3 bucket.
- P. Disassociate the Elastic IP address from the EC2 instance. Create a multi-attach Amazon Elastic Block Store (Amazon EBS) volume to be used for SFTP file hosting. Create a Network Load Balancer (NLB) with the Elastic IP address attached. Create an Auto Scaling group with EC2 instances that run an SFTP server. Define in the Auto Scaling group that instances that are launched should attach the new multi-attach EBS volume. Configure the Auto Scaling group to automatically add instances behind the NLB. Configure the Auto Scaling group to use the security group that allows customer IP addresses for the EC2 instances that the Auto Scaling group launches. Sync all files from the SFTP server to the new multi-attach EBS volume.

**Answer: B**

#### Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/aws-sftp-endpoint-type/>

<https://docs.aws.amazon.com/transfer/latest/userguide/create-server-in-vpc.html> <https://aws.amazon.com/premiumsupport/knowledge-center/aws-sftp-endpoint-type/>

### NEW QUESTION 3

- (Exam Topic 1)

A company has a website that enables users to upload videos. Company policy states the uploaded videos must be analyzed for restricted content. An uploaded video is placed in Amazon S3, and a message is pushed to an Amazon SQS queue with the video's location. A backend application pulls this location from Amazon SQS and analyzes the video.

The video analysis is compute-intensive and occurs sporadically during the day. The website scales with demand. The video analysis application runs on a fixed number of instances. Peak demand occurs during the holidays, so the company must add instances to the application during this time. All instances used are currently on-demand Amazon EC2 T2 instances. The company wants to reduce the cost of the current solution.

Which of the following solutions is MOST cost-effective?

- A. Keep the website on T2 instance
- B. Determine the minimum number of website instances required during off-peak times and use Spot Instances to cover them while using Reserved Instances to cover peak demand
- C. Use Amazon EC2 R4 and Amazon EC2 R5 Reserved Instances in an Auto Scaling group for the video analysis application
- D. Keep the website on T2 instance
- E. Determine the minimum number of website instances required during off-peak times and use Reserved Instances to cover them while using On-Demand Instances to cover peak demand
- F. Use Spot Fleet for the video analysis application comprised of Amazon EC2 C4 and Amazon EC2 C5 Spot Instances.
- G. Migrate the website to AWS Elastic Beanstalk and Amazon EC2 C4 instance
- H. Determine the minimum number of website instances required during off-peak times and use On-Demand Instances to cover them while using Spot capacity to cover peak demand Use Spot Fleet for the video analysis application comprised of C4 and Amazon EC2 C5 instances.
- I. Migrate the website to AWS Elastic Beanstalk and Amazon EC2 R4 instance
- J. Determine the minimum number of website instances required during off-peak times and use Reserved Instances to cover them while using On-Demand Instances to cover peak demand Use Spot Fleet for the video analysis application comprised of R4 and Amazon EC2 R5 instances

**Answer: B**

#### NEW QUESTION 4

- (Exam Topic 1)

An enterprise runs 103 line-of-business applications on virtual machines in an on-premises data center. Many of the applications are simple PHP, Java, or Ruby web applications, are no longer actively developed, and serve little traffic.

Which approach should be used to migrate these applications to AWS with the LOWEST infrastructure costs?

- A. Deploy the applications to single-instance AWS Elastic Beanstalk environments without a load balancer.
- B. Use AWS SMS to create AMIs for each virtual machine and run them in Amazon EC2.
- C. Convert each application to a Docker image and deploy to a small Amazon ECS cluster behind an Application Load Balancer.
- D. Use VM Import/Export to create AMIs for each virtual machine and run them in single-instance AWS Elastic Beanstalk environments by configuring a custom image.

**Answer: C**

#### NEW QUESTION 5

- (Exam Topic 1)

A company has many AWS accounts and uses AWS Organizations to manage all of them. A solutions architect must implement a solution that the company can use to share a common network across multiple accounts.

The company's infrastructure team has a dedicated infrastructure account that has a VPC. The infrastructure team must use this account to manage the network. Individual accounts cannot have the ability to manage their own networks. However, individual accounts must be able to create AWS resources within subnets.

Which combination of actions should the solutions architect perform to meet these requirements? (Select TWO.)

- A. Create a transit gateway in the infrastructure account.
- B. Enable resource sharing from the AWS Organizations management account.
- C. Create VPCs in each AWS account within the organization in AWS Organization
- D. Configure the VPCs to share the same CIDR range and subnets as the VPC in the infrastructure account
- E. Peer the VPCs in each individual account with the VPC in the infrastructure account,
- F. Create a resource share in AWS Resource Access Manager in the infrastructure account
- G. Select the specific AWS Organizations OU that will use the shared network
- H. Select each subnet to associate with the resource share.
- I. Create a resource share in AWS Resource Access Manager in the infrastructure account
- J. Select the specific AWS Organizations OU that will use the shared network
- K. Select each prefix list to associate with the resource share.

**Answer: CE**

#### Explanation:

<https://docs.aws.amazon.com/vpc/latest/userguide/sharing-managed-prefix-lists.html>

#### NEW QUESTION 6

- (Exam Topic 1)

A company has a complex web application that leverages Amazon CloudFront for global scalability and performance. Over time, users report that the web application is slowing down.

The company's operations team reports that the CloudFront cache hit ratio has been dropping steadily. The cache metrics report indicates that query strings on some URLs are inconsistently ordered and are specified sometimes in mixed-case letters and sometimes in lowercase letters.

Which set of actions should the solutions architect take to increase the cache hit ratio as quickly as possible?

- A. Deploy a Lambda@Edge function to sort parameters by name and force them to be lowercase
- B. Select the CloudFront viewer request trigger to invoke the function.
- C. Update the CloudFront distribution to disable caching based on query string parameters.
- D. Deploy a reverse proxy after the load balancer to post-process the emitted URLs in the application to force the URL strings to be lowercase.
- E. Update the CloudFront distribution to specify casing-insensitive query string processing.

**Answer: A**

#### Explanation:

[https://docs.amazonaws.cn/en\\_us/AmazonCloudFront/latest/DeveloperGuide/lambda-examples.html#lambda-ex](https://docs.amazonaws.cn/en_us/AmazonCloudFront/latest/DeveloperGuide/lambda-examples.html#lambda-ex) Before CloudFront serves content from the cache it will trigger any Lambda function associated with the Viewer Request, in which we can normalize parameters.

<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/lambda-examples.html#lambda-examp>

#### NEW QUESTION 7

- (Exam Topic 1)

A company has developed an application that is running Windows Server on VMware vSphere VMs that the company hosts on-premises. The application data is stored in a proprietary format that must be read through the application. The company manually provisioned the servers and the application. As part of its disaster recovery plan, the company wants the ability to host its application on AWS temporarily if the company's on-premises environment becomes unavailable. The company wants the application to return to on-premises hosting after a disaster recovery event is complete. The RPO is 15 minutes. Which solution meets these requirements with the LEAST amount of operational overhead?

- A. Configure AWS DataSync
- B. Replicate the data to Amazon Elastic Block Store (Amazon EBS) volumes. When the on-premises environment is unavailable, use AWS CloudFormation templates to provision Amazon EC2 instances and attach the EBS volumes.
- C. Configure CloudEndure Disaster Recovery. Replicate the data to replication Amazon EC2 instances that are attached to Amazon Elastic Block Store (Amazon EBS) volumes. When the on-premises environment is unavailable, use CloudEndure to launch EC2 instances that use the replicated volumes.
- D. Provision an AWS Storage Gateway. When the on-premises environment is unavailable, use the gateway to launch EC2 instances that use the replicated volumes.
- E. Recreate the data to an Amazon S3 bucket.
- F. When the on-premises environment is unavailable, use AWS Backup to restore the data to Amazon Elastic Block Store (Amazon EBS) volumes and launch Amazon EC2 instances from these EBS volumes.
- G. Provision an Amazon FSx for Windows File Server file system on AWS. Replicate the data to the file system. When the on-premises environment is unavailable, use AWS CloudFormation templates to provision Amazon EC2 instances and use AWS CloudFormation Init commands to mount the Amazon FSx file shares.

**Answer: D**

### NEW QUESTION 8

- (Exam Topic 1)

A company that is developing a mobile game is making game assets available in two AWS Regions. Game assets are served from a set of Amazon EC2 instances behind an Application Load Balancer (ALB) in each Region. The company requires game assets to be fetched from the closest Region. If game assets become unavailable in the closest Region, they should be fetched from the other Region.

What should a solutions architect do to meet these requirements?

- A. Create an Amazon CloudFront distribution.
- B. Create an origin group with one origin for each ALB.
- C. Set one of the origins as primary.
- D. Create an Amazon Route 53 health check for each ALB.
- E. Create a Route 53 failover routing record pointing to the two ALBs.
- F. Set the Evaluate Target Health value to Yes.
- G. Create two Amazon CloudFront distributions, each with one ALB as the origin.
- H. Create an Amazon Route 53 failover routing record pointing to the two CloudFront distributions.
- I. Set the Evaluate Target Health value to Yes.
- J. Create an Amazon Route 53 health check for each ALB.
- K. Create a Route 53 latency alias record pointing to the two ALBs.
- L. Set the Evaluate Target Health value to Yes.

**Answer: D**

#### Explanation:

Failover routing policy – Use when you want to configure active-passive failover. Latency routing policy – Use when you have resources in multiple AWS Regions and you want to route traffic to the region that provides the best latency. <https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html>

### NEW QUESTION 9

- (Exam Topic 1)

A company hosts a photography website on AWS that has global visitors. The website has experienced steady increases in traffic during the last 12 months, and users have reported a delay in displaying images. The company wants to configure Amazon CloudFront to deliver photos to visitors with minimal latency.

Which actions will achieve this goal? (Select TWO.)

- A. Set the Minimum TTL and Maximum TTL to 0 in the CloudFront distribution.
- B. Set the Minimum TTL and Maximum TTL to a high value in the CloudFront distribution.
- C. Set the CloudFront distribution to forward all headers, all cookies, and all query strings to the origin.
- D. Set up additional origin servers that are geographically closer to the requester.
- E. Configure latency-based routing in Amazon Route 53.
- F. Select Price Class 100 on the CloudFront distribution.

**Answer: BD**

### NEW QUESTION 10

- (Exam Topic 1)

A company wants to change its internal cloud billing strategy for each of its business units. Currently, the cloud governance team shares reports for overall cloud spending with the head of each business unit. The company uses AWS Organizations to manage the separate AWS accounts for each business unit. The existing tagging standard in Organizations includes the application, environment, and owner. The cloud governance team wants a centralized solution so each business unit receives monthly reports on its cloud spending. The solution should also send notifications for any cloud spending that exceeds a set threshold.

Which solution is the MOST cost-effective way to meet these requirements?

- A. Configure AWS Budgets in each account and configure budget alerts that are grouped by application, environment, and owner.
- B. Add each business unit to an Amazon SNS topic for each alert.
- C. Use Cost Explorer in each account to create monthly reports for each business unit.
- D. Configure AWS Budgets in the organization's master account and configure budget alerts that are grouped by application, environment, and owner.
- E. Add each business unit to an Amazon SNS topic for each alert.
- F. Use Cost Explorer in the organization's master account to create monthly reports for each business unit.
- G. Configure AWS Budgets in each account and configure budget alerts that are grouped by application, environment, and owner.
- H. Add each business unit to an Amazon SNS topic for each alert.
- I. Use the AWS Billing and Cost Management dashboard in each account to create monthly reports for each business unit.
- J. Enable AWS Cost and Usage Reports in the organization's master account and configure reports grouped by application, environment, and owner.
- K. Create an AWS Lambda function that processes AWS Cost and Usage Reports, sends budget alerts, and sends monthly reports to each business unit's email.

list.

**Answer:** B

**Explanation:**

Configure AWS Budgets in the organization's master account and configure budget alerts that are grouped by application, environment, and owner. Add each business unit to an Amazon SNS topic for each alert. Use Cost Explorer in the organization's master account to create monthly reports for each business unit.  
<https://aws.amazon.com/about-aws/whats-new/2019/07/introducing-aws-budgets-reports/#:~:text=AWS%20Bud>

**NEW QUESTION 10**

- (Exam Topic 1)

A solutions architect must analyze a company's Amazon EC2 Instances and Amazon Elastic Block Store (Amazon EBS) volumes to determine whether the company is using resources efficiently. The company is running several large, high-memory EC2 instances to host database clusters that are deployed in active/passive configurations. The utilization of these EC2 instances varies by the applications that use the databases, and the company has not identified a pattern. The solutions architect must analyze the environment and take action based on the findings. Which solution meets these requirements MOST cost-effectively?

- A. Create a dashboard by using AWS Systems Manager OpsCenter. Configure visualizations for Amazon CloudWatch metrics that are associated with the EC2 instances and their EBS volumes. Review the dashboard periodically and identify usage patterns. Rightsize the EC2 instances based on the peaks in the metrics.
- B. Turn on Amazon CloudWatch detailed monitoring for the EC2 instances and their EBS volumes. Create and review a dashboard that is based on the metrics. Identify usage patterns. Rightsize the EC2 instances based on the peaks in the metrics.
- C. Install the Amazon CloudWatch agent on each of the EC2 instances. Turn on AWS Compute Optimizer, and let it run for at least 12 hours. Review the recommendations from Compute Optimizer, and rightsize the EC2 instances as directed.
- D. Sign up for the AWS Enterprise Support plan. Turn on AWS Trusted Advisor. Wait 12 hours. Review the recommendations from Trusted Advisor, and rightsize the EC2 instances as directed.

**Answer:** C

**Explanation:**

(<https://aws.amazon.com/compute-optimizer/pricing/> , <https://aws.amazon.com/systems-manager/pricing/> ). <https://aws.amazon.com/compute-optimizer/>

**NEW QUESTION 15**

- (Exam Topic 1)

A company has multiple AWS accounts as part of an organization created with AWS Organizations. Each account has a VPC in the us-east-2 Region and is used for either production or development workloads. Amazon EC2 instances across production accounts need to communicate with each other, and EC2 instances across development accounts need to communicate with each other, but production and development instances should not be able to communicate with each other.

To facilitate connectivity, the company created a common network account. The company used AWS Transit Gateway to create a transit gateway in the us-east-2 Region in the network account and shared the transit gateway with the entire organization by using AWS Resource Access Manager. Network administrators then attached VPCs in each account to the transit gateway, after which the EC2 instances were able to communicate across accounts. However, production and development accounts were also able to communicate with one another.

Which set of steps should a solutions architect take to ensure production traffic and development traffic are completely isolated?

- A. Modify the security groups assigned to development EC2 instances to block traffic from production EC2 instances.
- B. Modify the security groups assigned to production EC2 instances to block traffic from development EC2 instances.
- C. Create a tag on each VPC attachment with a value of either production or development, according to the type of account being attached.
- D. Using the Network Manager feature of AWS Transit Gateway, create policies that restrict traffic between VPCs based on the value of this tag.
- E. Create separate route tables for production and development traffic.
- F. Delete each account's association and route propagation to the default AWS Transit Gateway route table.
- G. Attach development VPCs to the development AWS Transit Gateway route table and production VPCs to the production route table, and enable automatic route propagation on each attachment.
- H. Create a tag on each VPC attachment with a value of either production or development, according to the type of account being attached.
- I. Modify the AWS Transit Gateway routing table to route production tagged attachments to one another and development tagged attachments to one another.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/vpc/latest/tgw/vpc-tgw.pdf>

**NEW QUESTION 19**

- (Exam Topic 1)

A company is storing data on premises on a Windows file server. The company produces 5 GB of new data daily.

The company migrated part of its Windows-based workload to AWS and needs the data to be available on a file system in the cloud. The company already has established an AWS Direct Connect connection between the on-premises network and AWS.

Which data migration strategy should the company use?

- A. Use the file gateway option in AWS Storage Gateway to replace the existing Windows file server, and point the existing file share to the new file gateway.
- B. Use AWS DataSync to schedule a daily task to replicate data between the on-premises Windows file server and Amazon FSx.
- C. Use AWS Data Pipeline to schedule a daily task to replicate data between the on-premises Windows file server and Amazon Elastic File System (Amazon EFS).
- D. Use AWS DataSync to schedule a daily task to replicate data between the on-premises Windows file server and Amazon Elastic File System (Amazon EFS).

**Answer:** B

**Explanation:**

<https://aws.amazon.com/storagegateway/file/> <https://docs.aws.amazon.com/fsx/latest/WindowsGuide/migrate-files-to-fsx-datasync.html>

<https://docs.aws.amazon.com/systems-manager/latest/userguide/prereqs-operating-systems.html#prereqs-os-win>

**NEW QUESTION 23**

- (Exam Topic 1)

The company needs to determine which costs on the monthly AWS bill are attributable to each application or team. The company also must be able to create reports to compare costs from the last 12 months and to help forecast costs for the next 12 months. A solutions architect must recommend an AWS Billing and Cost Management solution that provides these cost reports.

Which combination of actions will meet these requirements? (Select THREE.)

- A. Activate the user-defined cost allocation tags that represent the application and the team.
- B. Activate the AWS generated cost allocation tags that represent the application and the team.
- C. Create a cost category for each application in Billing and Cost Management.
- D. Activate IAM access to Billing and Cost Management.
- E. Create a cost budget.
- F. Enable Cost Explorer.

**Answer:** ACF

**Explanation:**

<https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/manage-cost-categories.html> <https://aws.amazon.com/premiumsupport/knowledge-center/cost-explorer-analyze-spending-and-usage/> <https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/manage-cost-categories.html>  
<https://docs.aws.amazon.com/cost-management/latest/userguide/ce-enable.html>

### NEW QUESTION 27

- (Exam Topic 1)

A company that tracks medical devices in hospitals wants to migrate its existing storage solution to the AWS Cloud. The company equips all of its devices with sensors that collect location and usage information. This sensor data is sent in unpredictable patterns with large spikes. The data is stored in a MySQL database running on premises at each hospital. The company wants the cloud storage solution to scale with usage.

The company's analytics team uses the sensor data to calculate usage by device type and hospital. The team needs to keep analysis tools running locally while fetching data from the cloud. The team also needs to use existing Java application and SQL queries with as few changes as possible.

How should a solutions architect meet these requirements while ensuring the sensor data is secure?

- A. Store the data in an Amazon Aurora Serverless database
- B. Serve the data through a Network Load Balancer (NLB). Authenticate users using the NLB with credentials stored in AWS Secrets Manager.
- C. Store the data in an Amazon S3 bucket
- D. Serve the data through Amazon QuickSight using an IAM user authorized with AWS Identity and Access Management (IAM) with the S3 bucket as the data source.
- E. Store the data in an Amazon Aurora Serverless database
- F. Serve the data through the Aurora Data API using an IAM user authorized with AWS Identity and Access Management (IAM) and the AWS Secrets Manager ARN.
- G. Store the data in an Amazon S3 bucket
- H. Serve the data through Amazon Athena using AWS PrivateLink to secure the data in transit.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/blogs/aws/new-data-api-for-amazon-aurora-serverless/> <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/data-api.html>  
<https://aws.amazon.com/blogs/aws/aws-privatelink-for-amazon-s3-now-available/> <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/data-api.html#data-api.access>

The data is currently stored in a MySQL database running on-prem. Storing MySQL data in S3 doesn't sound good so B & D are out. Aurora Data API "enables the SQL HTTP endpoint, a connectionless Web Service API for running SQL queries against this database. When the SQL HTTP endpoint is enabled, you can also query your database from inside the RDS console (these features are free to use)."

### NEW QUESTION 28

- (Exam Topic 1)

A large payroll company recently merged with a small staffing company. The unified company now has multiple business units, each with its own existing AWS account.

A solutions architect must ensure that the company can centrally manage the billing and access policies for all the AWS accounts. The solutions architect configures AWS Organizations by sending an invitation to all member accounts of the company from a centralized management account.

What should the solutions architect do next to meet these requirements?

- A. Create the OrganizationAccountAccess IAM group in each member account
- B. Include the necessary IAM roles for each administrator.
- C. Create the OrganizationAccountAccessPolicy IAM policy in each member account
- D. Connect the member accounts to the management account by using cross-account access.
- E. Create the OrganizationAccountAccessRole IAM role in each member account
- F. Grant permission to the management account to assume the IAM role.
- G. Create the OrganizationAccountAccessRole IAM role in the management account Attach the Administrator Access AWS managed policy to the IAM role
- H. Assign the IAM role to the administrators in each member account.

**Answer:** C

### NEW QUESTION 30

- (Exam Topic 1)

A company is running a data-intensive application on AWS. The application runs on a cluster of hundreds of Amazon EC2 instances. A shared file system also runs on several EC2 instances that store 200 TB of data. The application reads and modifies the data on the shared file system and generates a report. The job runs once monthly, reads a subset of the files from the shared file system, and takes about 72 hours to complete. The compute instances scale in an Auto Scaling group, but the instances that host the shared file system run continuously. The compute and storage instances are all in the same AWS Region.

A solutions architect needs to reduce costs by replacing the shared file system instances. The file system must provide high performance access to the needed data for the duration of the 72-hour run.

Which solution will provide the LARGEST overall cost reduction while meeting these requirements?

- A. Migrate the data from the existing shared file system to an Amazon S3 bucket that uses the S3 Intelligent-Tiering storage class

- B. Before the job runs each month, use Amazon FSx for Lustre to create a new file system with the data from Amazon S3 by using lazy loadin
- C. Use the new file system as the shared storage for the duration of the jo
- D. Delete the file system when the job is complete.
- E. Migrate the data from the existing shared file system to a large Amazon Elastic Block Store (Amazon EBS) volume with Multi-Attach enable
- F. Attach the EBS volume to each of the instances by using a user data script in the Auto Scaling group launch templat
- G. Use the EBS volume as the shared storage for the duration of the jo
- H. Detach the EBS volume when the job is complete.
- I. Migrate the data from the existing shared file system to an Amazon S3 bucket that uses the S3 Standard storage clas
- J. Before the job runs each month, use Amazon FSx for Lustre to create a new file system with the data from Amazon S3 by using batch loadin
- K. Use the new file system as the shared storage for the duration of the jo
- L. Delete the file system when the job is complete.
- M. Migrate the data from the existing shared file system to an Amazon S3 bucke
- N. Before the job runs each month, use AWS Storage Gateway to create a file gateway with the data from Amazon S3. Use the file gateway as the shared storage for the jo
- O. Delete the file gateway when the job is complete.

**Answer: B**

### NEW QUESTION 32

- (Exam Topic 1)

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 (or 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 SOS queue and trigger an AWS Lambda function lo process them.
- C. Receive the orders using the AWS Step Functions program and trigger an Amazon ECS container lo process them.
- D. Receive the orders in Amazon Kinesis Data Streams and use Amazon EC2 instances to process them.

**Answer: B**

#### Explanation:

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-architect>

### NEW QUESTION 36

- (Exam Topic 1)

A company has application services that have been containerized and deployed on multiple Amazon EC2 instances with public IPs. An Apache Kafka cluster has been deployed to the EC2 instances. A PostgreSQL database has been migrated to Amazon RDS lor PostgreSQL. The company expects a significant increase of orders on its platform when a new version of its flagship product is released.

What changes to the current architecture will reduce operational overhead and support the product release?

- A. Create an EC2 Auto Scaling group behind an Application Load Balance
- B. Create additional read replicas for the DB instanc
- C. Create Amazon Kinesis data streams and configure the application services lo use the data stream
- D. Store and serve static content directly from Amazon S3.
- E. Create an EC2 Auto Scaling group behind an Application Load Balance
- F. Deploy the DB instance in Multi-AZ mode and enable storage auto scalin
- G. Create Amazon Kinesis data streams and configure the application services to use the data stream
- H. Store and serve static content directly from Amazon S3.
- I. Deploy the application on a Kubernetes cluster created on the EC2 instances behind an Application Load Balance
- J. Deploy the DB instance in Multi-AZ mode and enable storage auto scalin
- K. Create an Amazon Managed Streaming for Apache Kafka cluster and configure the application services to use the cluste
- L. Store static content in Amazon S3 behind an Amazon CloudFront distribution.
- M. Deploy the application on Amazon Elastic Kubernetes Service (Amazon EKS) with AWS Fargate and enable auto scaling behind an Application Load Balance
- N. Create additional read replicas for the DB instanc
- O. Create an Amazon Managed Streaming for Apache Kafka cluster and configure the application services to use the cluste
- P. Store static content in Amazon S3 behind an Amazon CloudFront distribution.

**Answer: D**

#### Explanation:

Deploy the application on Amazon Elastic Kubernetes Service (Amazon EKS) with AWS Fargate and enable auto scaling behind an Application Load Balancer. Create additional read replicas for the DB instance. Create an Amazon Managed Streaming for Apache Kafka cluster and configure the application services to use the cluster. Store static content in Amazon S3 behind an Amazon CloudFront distribution.

### NEW QUESTION 37

- (Exam Topic 1)

A solutions architect needs to advise a company on how to migrate its on-premises data processing application to the AWS Cloud. Currently, users upload input files through a web portal. The web server then stores the uploaded files on NAS and messages the processing server over a message queue. Each media file can take up to 1 hour to process. The company has determined that the number of media files awaiting processing is significantly higher during business hours, with the number of files rapidly declining after business hours.

What is the MOST cost-effective migration recommendation?

- A. Create a queue using Amazon SQ
- B. Configure the existing web server to publish to the new queue. When there are messages in the queue, invoke an AWS Lambda function to pull requests from the queue and process the file
- C. Store the processed files in an Amazon S3 bucket.
- D. Create a queue using Amazon M
- E. Configure the existing web server to publish to the new queue. When there are messages in the queue, create a new Amazon EC2 instance to pull requests from the queue and process the file
- F. Store the processed files in Amazon EF
- G. Shut down the EC2 instance after the task is complete.
- H. Create a queue using Amazon M
- I. Configure the existing web server to publish to the new queue. When there are messages in the queue, invoke an AWS Lambda function to pull requests from the queue and process the file
- J. Store the processed files in Amazon EFS.
- K. Create a queue using Amazon SO
- L. Configure the existing web server to publish to the new queu
- M. Use Amazon EC2 instances in an EC2 Auto Scaling group to pull requests from the queue and process the file
- N. Scale the EC2 instances based on the SOS queue lengt
- O. Store the processed files in an Amazon S3 bucket.

**Answer:** D

**Explanation:**

<https://aws.amazon.com/blogs/compute/operating-lambda-performance-optimization-part-1/>

**NEW QUESTION 42**

- (Exam Topic 1)

A company standardized its method of deploying applications to AWS using AWS CodePipeline and AWS Cloud Formation. The applications are in Typescript and Python. The company has recently acquired another business that deploys applications to AWS using Python scripts.

Developers from the newly acquired company are hesitant to move their applications under CloudFormation because it would require than they learn a new domain-specific language and eliminate their access to language features, such as looping.

How can the acquired applications quickly be brought up to deployment standards while addressing the developers' concerns?

- A. Create CloudFormation templates and re-use parts of the Python scripts as instance user dat
- B. Use the AWS Cloud Development Kit (AWS CDK) to deploy the application using these template
- C. Incorporate the AWS CDK into CodePipeline and deploy the application to AWS using these templates.
- D. Use a third-party resource provisioning engine inside AWS CodeBuild to standardize the deployment processes of the existing and acquired compan
- E. Orchestrate the CodeBuild job using CodePipeline.
- F. Standardize on AWS OpsWork
- G. Integrate OpsWorks with CodePipelin
- H. Have the developers create Chef recipes to deploy their applications on AWS.
- I. Define the AWS resources using Typescript or Pytho
- J. Use the AWS Cloud Development Kit (AWS CDK) to create CloudFormation templates from the developers' code, and use the AWS CDK to create CloudFormation stack
- K. Incorporate the AWS CDK as a CodeBuild job in CodePipeline.

**Answer:** D

**NEW QUESTION 44**

- (Exam Topic 1)

A web application is hosted in a dedicated VPC that is connected to a company's on-premises data center over a Site-to-Site VPN connection. The application is accessible from the company network only. This is a temporary non-production application that is used during business hours. The workload is generally low with occasional surges.

The application has an Amazon Aurora MySQL provisioned database cluster on the backend. The VPC has an internet gateway and a NAT gateways attached. The web servers are in private subnets in an Auto Scaling group behind an Elastic Load Balancer. The web servers also upload data to an Amazon S3 bucket through the internet.

A solutions architect needs to reduce operational costs and simplify the architecture. Which strategy should the solutions architect use?

- A. Review the Auto Scaling group settings and ensure the scheduled actions are specified to operate the Amazon EC2 instances during business hours onl
- B. Use 3-year scheduled Reserved Instances for the web server EC2 instance
- C. Detach the internet gateway and remove the NAT gateways from the VP
- D. Use an Aurora Serverless database and set up a VPC endpoint for the S3 bucket.
- E. Review the Auto Scaling group settings and ensure the scheduled actions are specified to operate the Amazon EC2 instances during business hours onl
- F. Detach the internet gateway and remove the NAT gateways from the VP
- G. Use an Aurora Serverless database and set up a VPC endpoint for the S3 bucket, then update the network routing and security rules and policies related to the changes.
- H. Review the Auto Scaling group settings and ensure the scheduled actions are specified to operate the Amazon EC2 instances during business hours onl
- I. Detach the internet gateway from the VPC, and use an Aurora Serverless databas
- J. Set up a VPC endpoint for the S3 bucket, then update the network routing and security rules and policies related to the changes.
- K. Use 3-year scheduled Reserved Instances for the web server Amazon EC2 instance
- L. Remove the NAT gateways from the VPC, and set up a VPC endpoint for the S3 bucke
- M. Use Amazon
- N. CloudWatch and AWS Lambda to stop and start the Aurora DB cluster so it operates during business hours onl
- O. Update the network routing and security rules and policies related to the changes.

**Answer:** B

**Explanation:**

The application is accessible from the company network only remove NAT and IGW, application - S3 with VPC endpoint. Non-Production application no need to go for Reserved instances

To build site-to-site vpn, you don't need internet gateway. Instead, customer gateway is needed.

<https://docs.aws.amazon.com/vpn/latest/s2svpn/SetUpVPNConnections.html#vpn-create-cgw>

#### NEW QUESTION 45

- (Exam Topic 1)

A company is running an Apache Hadoop cluster on Amazon EC2 instances. The Hadoop cluster stores approximately 100 TB of data for weekly operational reports and allows occasional access for data scientists to retrieve data. The company needs to reduce the cost and operational complexity for storing and serving this data.

Which solution meets these requirements in the MOST cost-effective manner?

- A. Move the Hadoop cluster from EC2 instances to Amazon EM
- B. Allow data access patterns to remain the same.
- C. Write a script that resizes the EC2 instances to a smaller instance type during downtime and resizes the instances to a larger instance type before the reports are created.
- D. Move the data to Amazon S3 and use Amazon Athena to query the data for report
- E. Allow the data scientists to access the data directly in Amazon S3.
- F. Migrate the data to Amazon DynamoDB and modify the reports to fetch data from DynamoD
- G. Allow the data scientists to access the data directly in DynamoDB.

**Answer: C**

#### Explanation:

"The company needs to reduce the cost and operational complexity for storing and serving this data. Which solution meets these requirements in the MOST cost-effective manner?" EMR storage is ephemeral. The company has 100TB that need to persist, they would have to use EMRFS to backup to S3 anyway.

<https://docs.aws.amazon.com/emr/latest/ManagementGuide/emr-plan-storage.html>

100TB

EBS - 8.109\$ S3 - 2.355\$

You have saved 5.752\$

This amount can be used for Athen. BTW. we don't know indexes, amount of data that is scanned. What we know is that it will be: "occasional access for data scientists to retrieve data"

#### NEW QUESTION 50

- (Exam Topic 1)

A company is running a tone-of-business (LOB) application on AWS to support its users. The application runs in one VPC, with a backup copy in a second VPC in a different AWS Region for disaster recovery. The company has a single AWS Direct Connect connection between its on-premises network and AWS. The connection terminates at a Direct Connect gateway.

All access to the application must originate from the company's on-premises network, and traffic must be encrypted in transit through the use of IPsec. The company is routing traffic through a VPN tunnel over the Direct Connect connection to provide the required encryption.

A business continuity audit determines that the Direct Connect connection represents a potential single point of failure for access to the application. The company needs to remediate this issue as quickly as possible.

Which approach will meet these requirements?

- A. Order a second Direct Connect connection to a different Direct Connect location.
- B. Terminate the second Direct Connect connection at the same Direct Connect gateway.
- C. Configure an AWS Site-to-Site VPN connection over the internet. Terminate the VPN connection at a virtual private gateway in the secondary Region.
- D. Create a transit gateway. Attach the VPCs to the transit gateway, and connect the transit gateway to the Direct Connect gateway. Configure an AWS Site-to-Site VPN connection, and terminate it at the transit gateway.
- E. Create a transit gateway.
- F. Attach the VPCs to the transit gateway, and connect the transit gateway to the Direct Connect gateway.
- G. Order a second Direct Connect connection, and terminate it at the transit gateway.

**Answer: C**

#### Explanation:

Create a transit gateway. Attach the VPCs to the transit gateway, and connect the transit gateway to the Direct Connect gateway. Configure an AWS Site-to-Site VPN connection, and terminate it at the transit gateway.

<https://aws.amazon.com/premiumsupport/knowledge-center/dx-configure-dx-and-vpn-failover-tgw/>

All access to the application must originate from the company's on-premises network and traffic must be encrypted in transit through the use of IPsec. = need to use VPN.

#### NEW QUESTION 55

- (Exam Topic 1)

An education company is running a web application used by college students around the world. The application runs in an Amazon Elastic Container Service (Amazon ECS) cluster in an Auto Scaling group behind an Application Load Balancer (ALB). A system administrator detects a weekly spike in the number of failed login attempts, which overwhelm the application's authentication service. All the failed login attempts originate from about 500 different IP addresses that change each week. A solutions architect must prevent the failed login attempts from overwhelming the authentication service.

Which solution meets these requirements with the MOST operational efficiency?

- A. Use AWS Firewall Manager to create a security group and security group policy to deny access from the IP addresses.
- B. Create an AWS WAF web ACL with a rate-based rule, and set the rule action to Block.
- C. Connect the web ACL to the ALB.
- D. Use AWS Firewall Manager to create a security group and security group policy to allow access only to specific CIDR ranges.
- E. Create an AWS WAF web ACL with an IP set match rule, and set the rule action to Block.
- F. Connect the web ACL to the ALB.

**Answer: B**

#### Explanation:

<https://docs.aws.amazon.com/waf/latest/developerguide/waf-rule-statement-type-rate-based.html>

The IP set match statement inspects the IP address of a web request against a set of IP addresses and address ranges. Use this to allow or block web requests based on the IP addresses that the requests originate from. By default, AWS WAF uses the IP address from the web request origin, but you can configure the rule to use an HTTP header like X-Forwarded-For instead.

<https://docs.aws.amazon.com/waf/latest/developerguide/waf-rule-statement-type-ipset-match.html>

<https://docs.aws.amazon.com/waf/latest/developerguide/waf-rule-statement-type-rate-based.html>

### NEW QUESTION 57

- (Exam Topic 1)

A company has a photo sharing social networking application. To provide a consistent experience for users, the company performs some image processing on the photos uploaded by users before publishing on the application. The image processing is implemented using a set of Python libraries.

The current architecture is as follows:

- The image processing Python code runs in a single Amazon EC2 instance and stores the processed images in an Amazon S3 bucket named ImageBucket.
- The front-end application, hosted in another bucket, loads the images from ImageBucket to display to users. With plans for global expansion, the company wants to implement changes in its existing architecture to be able to scale for increased demand on the application and reduce management complexity as the application scales.

Which combination of changes should a solutions architect make? (Select TWO.)

- A. Place the image processing EC2 instance into an Auto Scaling group.
- B. Use AWS Lambda to run the image processing tasks.
- C. Use Amazon Rekognition for image processing.
- D. Use Amazon CloudFront in front of ImageBucket.
- E. Deploy the applications in an Amazon ECS cluster and apply Service Auto Scaling.

**Answer: BD**

#### Explanation:

<https://prismatic.io/blog/why-we-moved-from-lambda-to-ecs/>

### NEW QUESTION 59

- (Exam Topic 1)

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.

**Answer: ABD**

#### Explanation:

[https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/USER\\_LogAccess.Concepts.MySQL.html#](https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/USER_LogAccess.Concepts.MySQL.html#) <https://aws.amazon.com/blogs/mt/simplifying-apache-server-logs-with-amazon-cloudwatch-logs-insights/> <https://docs.aws.amazon.com/xray/latest/devguide/xray-sdk-dotnet-messagehandler.html> <https://docs.aws.amazon.com/xray/latest/devguide/xray-sdk-java-sqlclients.html>

### NEW QUESTION 62

- (Exam Topic 1)

A company stores sales transaction data in Amazon DynamoDB tables. To detect anomalous behaviors and respond quickly, all changes to the items stored in the DynamoDB tables must be logged within 30 minutes.

Which solution meets the requirements?

- A. Copy the DynamoDB tables into Apache Hive tables on Amazon EMR every hour and analyze them (or anomalous behavior)
- B. Send Amazon SNS notifications when anomalous behaviors are detected.
- C. Use AWS CloudTrail to capture all the APIs that change the DynamoDB table
- D. Send SNS notifications when anomalous behaviors are detected using CloudTrail event filtering.
- E. Use Amazon DynamoDB Streams to capture and send updates to AWS Lambda
- F. Create a Lambda function to output records to Amazon Kinesis Data Stream
- G. Analyze any anomalies with Amazon Kinesis Data Analytics
- H. Send SNS notifications when anomalous behaviors are detected.
- I. Use event patterns in Amazon CloudWatch Events to capture DynamoDB API call events with an AWS Lambda (unction as a target to analyze behavior)
- J. Send SNS notifications when anomalous behaviors are detected.

**Answer: C**

#### Explanation:

[https://aws.amazon.com/blogs/database/dynamodb-streams-use-cases-and-design-patterns/#:~:text=DynamoDB DynamoDb Stream to capture DynamoDB update. And Kinesis Data Analytics for anomaly detection \(it uses AWS proprietary Random Cut Forest Algorithm\)](https://aws.amazon.com/blogs/database/dynamodb-streams-use-cases-and-design-patterns/#:~:text=DynamoDB DynamoDb Stream to capture DynamoDB update. And Kinesis Data Analytics for anomaly detection (it uses AWS proprietary Random Cut Forest Algorithm))

### NEW QUESTION 64

- (Exam Topic 1)

A solutions architect is responsible for redesigning a legacy Java application to improve its availability, data durability, and scalability. Currently, the application runs on a single high-memory Amazon EC2 instance. It accepts HTTP requests from upstream clients, adds them to an in-memory queue, and responds with a 200 status. A separate application thread reads items from the queue, processes them, and persists the results to an Amazon RDS MySQL instance. The processing time for each item takes 90 seconds on average, most of which is spent waiting on external service calls, but the application is written to process multiple items in parallel.

Traffic to this service is unpredictable. During periods of high load, items may sit in the internal queue for over an hour while the application processes the backlog.

In addition, the current system has issues with availability and data loss if the single application node fails.

Clients that access this service cannot be modified. They expect to receive a response to each HTTP request they send within 10 seconds before they will time out and retry the request.

Which approach would improve the availability and durability of the system while decreasing the processing latency and minimizing costs?

- A. Create an Amazon API Gateway REST API that uses Lambda proxy integration to pass requests to an AWS Lambda function
- B. Migrate the core processing code to a Lambda function and write a wrapper class that provides a handler method that converts the proxy events to the internal application data model and invokes the processing module.
- C. Create an Amazon API Gateway REST API that uses a service proxy to put items in an Amazon SQS queue
- D. Extract the core processing code from the existing application and update it to pull items from Amazon SQS instead of an in-memory queue
- E. Deploy the new processing application to smaller EC2 instances within an Auto Scaling group that scales dynamically based on the approximate number of messages in the Amazon SQS queue.
- F. Modify the application to use Amazon DynamoDB instead of Amazon RDS
- G. Configure Auto Scaling for the DynamoDB table
- H. Deploy the application within an Auto Scaling group with a scaling policy based on CPU utilization
- I. Back the in-memory queue with a memory-mapped file to an instance store volume and periodically write that file to Amazon S3.
- J. Update the application to use a Redis task queue instead of the in-memory queue
- K. Build a Docker container image for the application
- L. Create an Amazon ECS task definition that includes the application container and a separate container to host Redis
- M. Deploy the new task definition as an ECS service using AWS Fargate, and enable Auto Scaling.

**Answer: B**

**Explanation:**

The obvious challenges here are long workloads, scalability based on queue load, and reliability. Almost always the default answer to queue related workload is SQS. Since the workloads are very long (90 minutes) Lambdas cannot be used (15 mins max timeout). So, autoscaled smaller EC2 nodes that wait on external services to complete the task makes more sense. If the task fails, the message is returned to the queue and retried.

**NEW QUESTION 66**

- (Exam Topic 1)

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 Log
- B. Use Amazon Athena to analyze the logs for traffic that can be removed
- C. Ensure that security groups are blocking traffic that is responsible for high costs.
- D. Add an interface VPC endpoint for Kinesis Data Streams to the VPC
- E. Ensure that applications have the correct IAM permissions to use the interface VPC endpoint.
- F. Enable VPC Flow Logs and Amazon Detective
- G. Review Detective findings for traffic that is not related to Kinesis Data Streams. Configure security groups to block that traffic
- H. Add an interface VPC endpoint for Kinesis Data Streams to the VPC. Ensure that the VPC endpoint policy allows traffic from the applications

**Answer: D**

**Explanation:**

<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

**NEW QUESTION 69**

- (Exam Topic 1)

A large company is running a popular web application. The application runs on several Amazon EC2 Linux instances in an Auto Scaling group in a private subnet. An Application Load Balancer is targeting the instances in the Auto Scaling group in the private subnet. AWS Systems Manager Session Manager is configured, and AWS Systems Manager Agent is running on all the EC2 instances.

The company recently released a new version of the application. Some EC2 instances are now being marked as unhealthy and are being terminated. As a result, the application is running at reduced capacity. A solutions architect tries to determine the root cause by analyzing Amazon CloudWatch logs that are collected from the application, but the logs are inconclusive.

How should the solutions architect gain access to an EC2 instance to troubleshoot the issue?

- A. Suspend the Auto Scaling group's HealthCheck scaling process
- B. Use Session Manager to log in to an instance that is marked as unhealthy
- C. Enable EC2 instance termination protection. Use Session Manager to log in to an instance that is marked as unhealthy.
- D. Set the termination policy to OldestInstance on the Auto Scaling group
- E. Use Session Manager to log in to an instance that is marked as unhealthy
- F. Suspend the Auto Scaling group's Terminate process
- G. Use Session Manager to log in to an instance that is marked as unhealthy

**Answer: D**

**Explanation:**

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-suspend-resume-processes.html>

It shows. For Amazon EC2 Auto Scaling, there are two primary process types: Launch and Terminate. The Launch process adds a new Amazon EC2 instance to an Auto Scaling group, increasing its capacity. The Terminate process removes an Amazon EC2 instance from the group, decreasing its capacity. HealthCheck process for EC2 autoscaling is not a primary process! It is a process along with the following AddToLoadBalancer AlarmNotification AZRebalance HealthCheck InstanceRefresh ReplaceUnhealthy ScheduledActions. From the requirements, some EC2 instances are now being marked as unhealthy and are being

terminated. Application is running at reduced capacity not because instances are marked unhealthy but because they are being terminated.  
<https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-suspend-resume-processes.html#choosing-suspend-r>

#### NEW QUESTION 72

- (Exam Topic 1)

A solutions architect is evaluating the reliability of a recently migrated application running on AWS. The front end is hosted on Amazon S3 and accelerated by Amazon CloudFront. The application layer is running in a stateless Docker container on an Amazon EC2 On-Demand Instance with an Elastic IP address. The storage layer is a MongoDB database running on an EC2 Reserved Instance in the same Availability Zone as the application layer.

Which combination of steps should the solutions architect take to eliminate single points of failure with minimal application code changes? (Select TWO.)

- A. Create a REST API in Amazon API Gateway and use AWS Lambda functions as the application layer.
- B. Create an Application Load Balancer and migrate the Docker container to AWS Fargate.
- C. Migrate the storage layer to Amazon DynamoDB.
- D. Migrate the storage layer to Amazon DocumentDB (with MongoDB compatibility).
- E. Create an Application Load Balancer and move the storage layer to an EC2 Auto Scaling group.

**Answer:** BD

#### Explanation:

[https://aws.amazon.com/documentdb/?nc1=h\\_ls](https://aws.amazon.com/documentdb/?nc1=h_ls)

<https://aws.amazon.com/blogs/containers/using-alb-ingress-controller-with-amazon-eks-on-fargate/>

#### NEW QUESTION 77

- (Exam Topic 1)

A company runs an application that gives users the ability to search for videos and related information by using keywords that are curated from content providers. The application data is stored in an on-premises Oracle database that is 800 GB in size.

The company wants to migrate the data to an Amazon Aurora MySQL DB instance. A solutions architect plans to use the AWS Schema Conversion Tool and AWS Database Migration Service (AWS DMS) for the migration. During the migration, the existing database must serve ongoing requests. The migration must be completed with minimum downtime

Which solution will meet these requirements?

- A. Create primary key indexes, secondary indexes, and referential integrity constraints in the target database before starting the migration process
- B. Use AWS DMS to run the conversion report for Oracle to Aurora MySQL
- C. Remediate any issues Then use AWS DMS to migrate the data
- D. Use the M5 or CS DMS replication instance type for ongoing replication
- E. Turn off automatic backups and logging of the target database until the migration and cutover processes are complete

**Answer:** B

#### Explanation:

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Managing.Backups.html>

#### NEW QUESTION 82

- (Exam Topic 1)

A company needs to create and manage multiple AWS accounts for a number of departments from a central location. The security team requires read-only access to all accounts from its own AWS account. The company is using AWS Organizations and created an account for the security team.

How should a solutions architect meet these requirements?

- A. Use the OrganizationAccountAccessRole IAM role to create a new IAM policy with read-only access in each member account
- B. Establish a trust relationship between the IAM policy in each member account and the security account
- C. Ask the security team to use the IAM policy to gain access.
- D. Use the OrganizationAccountAccessRole IAM role to create a new IAM role with read-only access in each member account
- E. Establish a trust relationship between the IAM role in each member account and the security account
- F. Ask the security team to use the IAM role to gain access.
- G. Ask the security team to use AWS Security Token Service (AWS STS) to call the AssumeRole API for the OrganizationAccountAccessRole IAM role in the master account from the security account
- H. Use the generated temporary credentials to gain access.
- I. Ask the security team to use AWS Security Token Service (AWS STS) to call the AssumeRole API for the OrganizationAccountAccessRole IAM role in the member account from the security account
- J. Use the generated temporary credentials to gain access.

**Answer:** D

#### NEW QUESTION 85

- (Exam Topic 1)

A company maintains a restaurant review website. The website is a single-page application where files are stored in Amazon S3 and delivered using Amazon CloudFront. The company receives several fake postings every day that are manually removed.

The security team has identified that most of the fake posts are from bots with IP addresses that have a bad reputation within the same global region. The team needs to create a solution to help restrict the bots from accessing the website.

Which strategy should a solutions architect use?

- A. Use AWS Firewall Manager to control the CloudFront distribution security setting
- B. Create a geographical block rule and associate it with Firewall Manager.
- C. Associate an AWS WAF web ACL with the CloudFront distributio
- D. Select the managed Amazon IP reputation rule group for the web ACL with a deny action.
- E. Use AWS Firewall Manager to control the CloudFront distribution security setting
- F. Select the managed Amazon IP reputation rule group and associate it with Firewall Manager with a deny action.
- G. Associate an AWS WAF web ACL with the CloudFront distributio
- H. Create a rule group for the web ACL with a geographical match statement with a deny action.

**Answer:** B

**Explanation:**

IP reputation rule groups allow you to block requests based on their source. Choose one or more of these rule groups if you want to reduce your exposure to BOTS!!!! traffic or exploitation attempts  
The Amazon IP reputation list rule group contains rules that are based on Amazon internal threat intelligence. This is useful if you would like to block IP addresses typically associated with bots or other threats. Inspects for a list of IP addresses that have been identified as bots by Amazon threat intelligence.

**NEW QUESTION 88**

- (Exam Topic 1)

A financial company is building a system to generate monthly, immutable bank account statements for its users. Statements are stored in Amazon S3. Users should have immediate access to their monthly statements for up to 2 years. Some users access their statements frequently, whereas others rarely access their statements. The company's security and compliance policy requires that the statements be retained for at least 7 years. What is the MOST cost-effective solution to meet the company's needs?

- A. Create an S3 bucket with Object Lock disable
- B. Store statements in S3 Standard
- C. Define an S3 Lifecycle policy to transition the data to S3 Standard-Infrequent Access (S3 Standard-IA) after 30 day
- D. Define another S3 Lifecycle policy to move the data to S3 Glacier Deep Archive after 2 year
- E. Attach an S3 Glacier Vault Lock policy with deny delete permissions for archives less than 7 years old.
- F. Create an S3 bucket with versioning enable
- G. Store statements in S3 Intelligent-Tiering
- H. Use same-Region replication to replicate objects to a backup S3 bucket
- I. Define an S3 Lifecycle policy for the backup S3 bucket to move the data to S3 Glacier
- J. Attach an S3 Glacier Vault Lock policy with deny delete permissions for archives less than 7 years old.
- K. Create an S3 bucket with Object Lock enable
- L. Store statements in S3 Intelligent-Tiering
- M. Enable compliance mode with a default retention period of 2 year
- N. Define an S3 Lifecycle policy to move the data to S3 Glacier after 2 year
- O. Attach an S3 Glacier Vault Lock policy with deny delete permissions for archives less than 7 years old.
- P. Create an S3 bucket with versioning disable
- Q. Store statements in S3 One Zone-Infrequent Access (S3 One Zone-IA). Define an S3 Lifecycle policy to move the data to S3 Glacier Deep Archive after 2 year
- R. Attach an S3 Glacier Vault Lock policy with deny delete permissions for archives less than 7 years old.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2018/11/s3-object-lock/>

Create an S3 bucket with Object Lock enabled. Store statements in S3 Intelligent-Tiering. Enable compliance mode with a default retention period of 2 years. Define an S3 Lifecycle policy to move the data to S3 Glacier after 2 years. Attach an S3 Glacier Vault Lock policy with deny delete permissions for archives less than 7 years old.

<https://docs.aws.amazon.com/AmazonS3/latest/userguide/object-lock-overview.html>

**NEW QUESTION 91**

- (Exam Topic 1)

A company is planning to set up a REST API application on AWS. The application team wants to set up a new identity store on AWS. The IT team does not want to maintain any infrastructure or servers for this deployment. What is the MOST operationally efficient solution that meets these requirements?

- A. Deploy the application as AWS Lambda function
- B. Set up Amazon API Gateway REST API endpoints for the application. Create a Lambda function, and configure a Lambda authorizer
- C. Deploy the application in AWS AppSync, and configure AWS Lambda resolvers. Set up an Amazon Cognito user pool, and configure AWS AppSync to use the user pool for authorization
- D. Deploy the application as AWS Lambda function
- E. Set up Amazon API Gateway REST API endpoints for the application. Set up an Amazon Cognito user pool, and configure an Amazon Cognito authorizer
- F. Deploy the application in Amazon Elastic Kubernetes Service (Amazon EKS) cluster
- G. Set up an Application Load Balancer for the EKS pods. Set up an Amazon Cognito user pool and service pod for authentication.

**Answer:** C

**NEW QUESTION 92**

- (Exam Topic 1)

A solution architect needs to deploy an application on a fleet of Amazon EC2 instances. The EC2 instances run in private subnets in an Auto Scaling group. The application is expected to generate logs at a rate of 100 MB each second on each of the EC2 instances.

The logs must be stored in an Amazon S3 bucket so that an Amazon EMR cluster can consume them for further processing. The logs must be quickly accessible for the first 90 days and should be retrievable within 48 hours thereafter.

What is the MOST cost-effective solution that meets these requirements?

- A. Set up an S3 copy job to write logs from each EC2 instance to the S3 bucket with S3 Standard storage. Use a NAT instance within the private subnets to connect to Amazon S3. Create S3 Lifecycle policies to move logs that are older than 90 days to S3 Glacier.
- B. Set up an S3 sync job to copy logs from each EC2 instance to the S3 bucket with S3 Standard storage. Use a gateway VPC endpoint for Amazon S3 to connect to Amazon S3. Create S3 Lifecycle policies to move logs that are older than 90 days to S3 Glacier Deep Archive.
- C. Set up an S3 batch operation to copy logs from each EC2 instance to the S3 bucket with S3 Standard storage. Use a NAT gateway with the private subnets to connect to Amazon S3. Create S3 Lifecycle policies to move logs that are older than 90 days to S3 Glacier Deep Archive.
- D. Set up an S3 sync job to copy logs from each EC2 instance to the S3 bucket with S3 Standard storage. Use a gateway VPC endpoint for Amazon S3 to connect to Amazon S3. Create S3 Lifecycle policies to move logs that are older than 90 days to S3 Glacier.

**Answer:** C

### NEW QUESTION 97

- (Exam Topic 1)

A medical company is running a REST API on a set of Amazon EC2 instances. The EC2 instances run in an Auto Scaling group behind an Application Load Balancer (ALB). The ALB runs in three public subnets, and the EC2 instances run in three private subnets. The company has deployed an Amazon CloudFront distribution that has the ALB as the only origin.

Which solution should a solutions architect recommend to enhance the origin security?

- A. Store a random string in AWS Secrets Manager
- B. Create an AWS Lambda function for automatic secret rotation
- C. Configure CloudFront to inject the random string as a custom HTTP header for the origin requests
- D. Create an AWS WAF web ACL rule with a string match rule for the custom header
- E. Associate the web ACL with the ALB.
- F. Create an AWS WAF web ACL rule with an IP match condition of the CloudFront service IP address range
- G. Associate the web ACL with the ALB
- H. Move the ALB into the three private subnets.
- I. Store a random string in AWS Systems Manager Parameter Store
- J. Configure Parameter Store automatic rotation for the string
- K. Configure CloudFront to inject the random string as a custom HTTP header for the origin requests
- L. Inspect the value of the custom HTTP header, and block access in the ALB.
- M. Configure AWS Shield Advanced
- N. Create a security group policy to allow connections from CloudFront service IP address range
- O. Add the policy to AWS Shield Advanced, and attach the policy to the ALB.

**Answer: D**

#### Explanation:

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-suspend-resume-processes.html>

It shows For Amazon EC2 Auto Scaling, there are two primary process types: Launch and Terminate. The Launch process adds a new Amazon EC2 instance to an Auto Scaling group, increasing its capacity. The Terminate process removes an Amazon EC2 instance from the group, decreasing its capacity. HealthCheck process for EC2 autoscaling is not a primary process! It is a process along with the following AddToLoadBalancer AlarmNotification AZRebalance HealthCheck InstanceRefresh ReplaceUnhealthy ScheduledActions From the requirements, Some EC2 instances are now being marked as unhealthy and are being terminated. Application is running at reduced capacity not because instances are marked unhealthy but because they are being terminated.

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-suspend-resume-processes.html#choosing-suspend-r>

### NEW QUESTION 100

- (Exam Topic 1)

A company hosts a web application that runs on a group of Amazon EC2 instances that are behind an Application Load Balancer (ALB) in a VPC. The company wants to analyze the network payloads to reverse-engineer a sophisticated attack of the application.

Which approach should the company take to achieve this goal?

- A. Enable VPC Flow Log
- B. Store the flow logs in an Amazon S3 bucket for analysis.
- C. Enable Traffic Mirroring on the network interface of the EC2 instance
- D. Send the mirrored traffic to a target for storage and analysis.
- E. Create an AWS WAF web ACL
- F. and associate it with the ALB
- G. Configure AWS WAF logging.
- H. Enable logging for the ALB
- I. Store the logs in an Amazon S3 bucket for analysis.

**Answer: A**

### NEW QUESTION 102

- (Exam Topic 1)

A solutions architect is building a web application that uses an Amazon RDS for PostgreSQL DB instance. The DB instance is expected to receive many more reads than writes. The solutions architect needs to ensure that the large amount of read traffic can be accommodated and that the DB instance is highly available. Which steps should the solutions architect take to meet these requirements? (Select THREE.)

- A. Create multiple read replicas and put them into an Auto Scaling group
- B. Create multiple read replicas in different Availability Zones.
- C. Create an Amazon Route 53 hosted zone and a record set for each read replica with a TTL and a weighted routing policy
- D. Create an Application Load Balancer (ALB) and put the read replicas behind the ALB.
- E. Configure an Amazon CloudWatch alarm to detect a failed read replica. Set the alarm to directly invoke an AWS Lambda function to delete its Route 53 record set.
- F. Configure an Amazon Route 53 health check for each read replica using its endpoint

**Answer: BCF**

#### Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/requests-rds-read-replicas/>

You can use Amazon Route 53 weighted record sets to distribute requests across your read replicas. Within a Route 53 hosted zone, create individual record sets for each DNS endpoint associated with your read replicas and give them the same weight. Then, direct requests to the endpoint of the record set. You can incorporate Route 53 health checks to be sure that Route 53 directs traffic away from unavailable read replicas

### NEW QUESTION 106

- (Exam Topic 1)

A company is moving a business-critical multi-tier application to AWS. The architecture consists of a desktop client application and server infrastructure. The server infrastructure resides in an on-premises data center that frequently fails to maintain the application uptime SLA of 99.95%. A solutions architect must re-architect the application to ensure that it can meet or exceed the SLA.

The application contains a PostgreSQL database running on a single virtual machine. The business logic and presentation layers are load balanced between

multiple virtual machines. Remote users complain about slow load times while using this latency-sensitive application. Which of the following will meet the availability requirements with little change to the application while improving user experience and minimizing costs?

- A. Migrate the database to a PostgreSQL database in Amazon EC2. Host the application and presentation layers in automatically scaled Amazon ECS containers behind an Application Load Balance
- B. Allocate an Amazon Workspaces Workspace for each end user to improve the user experience.
- C. Migrate the database to an Amazon RDS Aurora PostgreSQL configuratio
- D. Host the application and presentation layers in an Auto Scaling configuration on Amazon EC2 instances behind an Application Load Balance
- E. Use Amazon AppStream 2.0 to improve the user experience.
- F. Migrate the database to an Amazon RDS PostgreSQL Multi-AZ configuratio
- G. Host the application and presentation layers in automatically scaled AWS Fargate containers behind a Network Load Balance
- H. Use Amazon ElastiCache to improve the user experience.
- I. Migrate the database to an Amazon Redshift cluster with at least two node
- J. Combine and host the application and presentation layers in automatically scaled Amazon ECS containers behind an Application Load Balance
- K. Use Amazon CloudFront to improve the user experience.

**Answer: B**

**Explanation:**

Aurora would improve availability that can replicate to multiple AZ (6 copies). Auto scaling would improve the performance together with a ALB. AppStream is like Citrix that deliver hosted Apps to users.

**NEW QUESTION 111**

- (Exam Topic 1)

A North American company with headquarters on the East Coast is deploying a new web application running on Amazon EC2 in the us-east-1 Region. The application should dynamically scale to meet user demand and maintain resiliency. Additionally, the application must have disaster recovery capabilities in an active-passive configuration with the us-west-1 Region.

Which steps should a solutions architect take after creating a VPC in the us-east-1 Region?

- A. Create a VPC in the us-west-1 Regio
- B. Use inter-Region VPC peering to connect both VPC
- C. Deploy an Application Load Balancer (ALB) spanning multiple Availability Zones (AZs) to the VPC in the us-east-1 Regio
- D. Deploy EC2 instances across multiple AZs in each Region as part of an Auto Scaling group spanning both VPCs and served by the ALB.
- E. Deploy an Application Load Balancer (ALB) spanning multiple Availability Zones (AZs) to the VPC in the us-east-1 Regio
- F. Deploy EC2 instances across multiple AZs as part of an Auto Scaling group served by the AL
- G. Deploy the same solution to the us-west-1 Region Create an Amazon Route 53 record set with a failover routing policy and health checks enabled to provide high availability across both Regions.
- H. Create a VPC in the us-west-1 Regio
- I. Use inter-Region VPC peering to connect both VPCs Deploy an Application Load Balancer (ALB) that spans both VPCs Deploy EC2 instances across multiple Availability Zones as part of an Auto Scaling group in each VPC served by the AL
- J. Create an Amazon Route 53 record that points to the ALB.
- K. Deploy an Application Load Balancer (ALB) spanning multiple Availability Zones (AZs) to the VPC in the us-east-1 Regio
- L. Deploy EC2 instances across multiple AZs as part of an Auto Scaling group served by the AL
- M. Deploy the same solution to the us-west-1 Regio
- N. Create separate Amazon Route 53 records in each Region that point to the ALB in the Regio
- O. Use Route 53 health checks to provide high availability across both Regions.

**Answer: B**

**Explanation:**

A new web application in a active-passive DR mode. a Route 53 record set with a failover routing policy.

**NEW QUESTION 116**

- (Exam Topic 1)

A company runs a popular public-facing ecommerce website. Its user base is growing quickly from a local market to a national market. The website is hosted in an on-premises data center with web servers and a MySQL database. The company wants to migrate its workload to AWS. A solutions architect needs to create a solution to:

- Improve security
- Improve reliability Improve availability
- Reduce latency
- Reduce maintenance

Which combination of steps should the solutions architect take to meet these requirements? (Select THREE.)

- A. Use Amazon EC2 instances in two Availability Zones for the web servers in an Auto Scaling group behind an Application Load Balancer.
- B. Migrate the database to a Multi-AZ Amazon Aurora MySQL DB cluster.
- C. Use Amazon EC2 instances in two Availability Zones to host a highly available MySQL database cluster.
- D. Host static website content in Amazon S3. Use S3 Transfer Acceleration to reduce latency while serving webpage
- E. Use AWS WAF to improve website security.
- F. Host static website content in Amazon S3. Use Amazon CloudFront to reduce latency while serving webpage
- G. Use AWS WAF to improve website security
- H. Migrate the database to a single-AZ Amazon RDS for MySQL DB instance.

**Answer: ABE**

**NEW QUESTION 121**

- (Exam Topic 1)

A company is using AWS CodePipeline for the CI/CO of an application to an Amazon EC2 Auto Scaling group. All AWS resources are defined in AWS CloudFormation templates. The application artifacts are stored in an Amazon S3 bucket and deployed to the Auto Scaling group using instance user data scripts. As the application has become more complex, recent resource changes in the Cloud Formation templates have caused unplanned downtime.

How should a solutions architect improve the CI/CD pipeline to reduce the likelihood that changes in the templates will cause downtime?

- A. Adapt the deployment scripts to detect and report CloudFormation error conditions when performing deployment
- B. Write test plans for a testing team to execute in a non-production environment before approving the change for production.
- C. Implement automated testing using AWS CodeBuild in a test environment
- D. Use CloudFormation changesets to evaluate changes before deployment
- E. Use AWS CodeDeploy to leverage blue/green deployment patterns to allow evaluations and the ability to revert changes, if needed.
- F. Use plugins for the integrated development environment (IDE) to check the templates for errors, and use the AWS CLI to validate that the templates are correct
- G. Adapt the deployment code to check for error conditions and generate notifications on error
- H. Deploy to a test environment and execute a manual test plan before approving the change for production.
- I. Use AWS CodeDeploy and a blue/green deployment pattern with CloudFormation to replace the user data deployment script
- J. Have the operators log in to running instances and go through a manual test plan to verify the application is running as expected.

**Answer: B**

**Explanation:**

<https://aws.amazon.com/blogs/devops/performing-bluegreen-deployments-with-aws-codedeploy-and-auto-scaling/> When one adopts go infrastructure as code, we need to test the infrastructure code as well via automated testing, and revert to original if things are not performing correctly.

**NEW QUESTION 125**

- (Exam Topic 1)

A company runs a popular web application in an on-premises data center. The application receives four million views weekly. The company expects traffic to increase by 200% because of an advertisement that will be published soon.

The company needs to decrease the load on the origin before the increase of traffic occurs. The company does not have enough time to move the entire application to the AWS Cloud.

Which solution will meet these requirements?

- A. Create an Amazon CloudFront content delivery network (CDN). Enable query forwarding to the origin. Create a managed cache policy that includes query string
- B. Use an on-premises load balancer as the origin
- C. Offload the DNS querying to AWS to handle CloudFront CDN traffic.
- D. Create an Amazon CloudFront content delivery network (CDN) that uses a Real Time Messaging Protocol (RTMP) distribution
- E. Enable query forwarding to the origin
- F. Use an on-premises load balancer as the origin
- G. Offload the DNS querying to AWS to handle CloudFront CDN traffic.
- H. Create an accelerator in AWS Global Accelerator
- I. Add listeners for HTTP and HTTPS TCP ports. Create an endpoint group
- J. Create a Network Load Balancer (NLB), and attach it to the endpoint group
- K. Point the NLB to the on-premises server
- L. Offload the DNS querying to AWS to handle AWS Global Accelerator traffic.
- M. Create an accelerator in AWS Global Accelerator
- N. Add listeners for HTTP and HTTPS TCP ports. Create an endpoint group
- O. Create an Application Load Balancer (ALB), and attach it to the endpoint group
- P. Point the ALB to the on-premises server
- Q. Offload the DNS querying to AWS to handle AWS Global Accelerator traffic.

**Answer: D**

**NEW QUESTION 126**

- (Exam Topic 1)

A developer reports receiving an Error 403: Access Denied message when they try to download an object from an Amazon S3 bucket. The S3 bucket is accessed using an S3 endpoint inside a VPC, and is encrypted with an AWS KMS key. A solutions architect has verified that (the developer is assuming the correct IAM role in the account that allows the object to be downloaded. The S3 bucket policy and the NACL are also valid.

Which additional step should the solutions architect take to troubleshoot this issue?

- A. Ensure that blocking all public access has not been enabled in the S3 bucket.
- B. Verify that the IAM role has permission to decrypt the referenced KMS key.
- C. Verify that the IAM role has the correct trust relationship configured.
- D. Check that local firewall rules are not preventing access to the S3 endpoint.

**Answer: B**

**NEW QUESTION 130**

- (Exam Topic 1)

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 credential
- B. Take a snapshot of the DB instance and encrypt a copy of that snapshot
- C. Replace the DB instance with a new DB instance that is based on the encrypted snapshot.
- D. Enable IAM DB authentication on the DB instance
- E. Grant the Lambda execution role access to the DB instance
- F. Modify the DB instance and enable encryption.
- G. Enable IAM DB authentication on the DB instance
- H. Grant the Lambda execution role access to the DB instance
- I. Create an encrypted read replica of the DB instance
- J. Promote the encrypted read replica to be the new primary node.
- K. Configure the Lambda function to store and retrieve the database credentials as encrypted AWS Systems Manager Parameter Store parameter
- L. Create another Lambda function to automatically rotate the credential
- M. Create an encrypted read replica of the DB instance
- N. Promote the encrypted read replica to be the new primary node.

**Answer:** A

**Explanation:**

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-secrets>- 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>.

**NEW QUESTION 134**

- (Exam Topic 1)

An ecommerce website running on AWS uses an Amazon RDS for MySQL DB instance with General Purpose SSD storage. The developers chose an appropriate instance type based on demand, and configured 100 GB of storage with a sufficient amount of free space.

The website was running smoothly for a few weeks until a marketing campaign launched. On the second day of the campaign, users reported long wait times and time outs. Amazon CloudWatch metrics indicated that both reads and writes to the DB instance were experiencing long response times. The CloudWatch metrics show 40% to 50% CPU and memory utilization, and sufficient free storage space is still available. The application server logs show no evidence of database connectivity issues.

What could be the root cause of the issue with the marketing campaign?

- A. It exhausted the I/O credit balance due to provisioning low disk storage during the setup phase.
- B. It caused the data in the tables to change frequently, requiring indexes to be rebuilt to optimize queries.
- C. It exhausted the maximum number of allowed connections to the database instance.
- D. It exhausted the network bandwidth available to the RDS for MySQL DB instance.

**Answer:** A

**Explanation:**

"When using General Purpose SSD storage, your DB instance receives an initial I/O credit balance of 5.4 million I/O credits. This initial credit balance is enough to sustain a burst performance of 3,000 IOPS for 30 minutes."

<https://aws.amazon.com/blogs/database/how-to-use-cloudwatch-metrics-to-decide-between-general-purpose-or>

**NEW QUESTION 139**

- (Exam Topic 2)

A finance company is storing financial records in an Amazon S3 bucket. The company persists a record for every financial transaction. According to regulatory requirements, the records cannot be modified for at least 1 year after they are written. The records are read on a regular basis and must be immediately accessible.

Which solution will meet these requirements?

- A. Create a new S3 bucket
- B. Turn on S3 Object Lock, set a default retention period of 1 year, and set the retention mode to compliance mod
- C. Store all records in the new S3 bucket.
- D. Create an S3 Lifecycle rule to immediately transfer new objects to the S3 Glacier storage tier Create an S3 Glacier Vault Lock policy that has a retention period of 1 year.
- E. Create an S3 Lifecycle rule to immediately transfer new objects to the S3 Intelligent-Tiering storage tier. Set a retention period of 1 year.
- F. Create an S3 bucket policy with a Deny action for PutObject operations with a condition where the s3:x-amz-object-retention header is not equal to 1 year.

**Answer:** A

**NEW QUESTION 143**

- (Exam Topic 2)

A company is in the process of implementing AWS Organizations to constrain its developers to use only Amazon EC2, Amazon S3 and Amazon DynamoDB. The developers account resides in a dedicated organizational unit (OU). The solutions architect has implemented the following SCP on the developers account:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AllowEC2",
      "Effect": "Allow",
      "Action": "ec2:*",
      "Resource": "*"
    },
    {
      "Sid": "AllowDynamoDB",
      "Effect": "Allow",
      "Action": "dynamodb:*",
      "Resource": "*"
    },
    {
      "Sid": "AllowS3",
      "Effect": "Allow",
      "Action": "s3:*",
      "Resource": "*"
    }
  ]
}
```

When this policy is deployed, IAM users in the developers account are still able to use AWS services that are not listed in the policy. What should the solutions architect do to eliminate the developers' ability to use services outside the scope of this policy?

- A. Create an explicit deny statement for each AWS service that should be constrained
- B. Remove the Full AWS Access SCP from the developer account's OU
- C. Modify the Full AWS Access SCP to explicitly deny all services
- D. Add an explicit deny statement using a wildcard to the end of the SCP

**Answer: B**

#### NEW QUESTION 146

- (Exam Topic 2)

A company is migrating its marketing website and content management system from an on-premises data center to AWS. The company wants the AWS application to be deployed in a VPC with Amazon EC2 instances used for the web servers and an Amazon RDS instance for the database. The company has a runbook document that describes the installation process of the on-premises system. The company would like to base the AWS system on the processes referenced in the runbook document. The runbook document describes the installation and configuration of the operating systems, network settings, the website, and content management system software on the servers. After the migration is complete, the company wants to be able to make changes quickly to take advantage of other AWS features. How can the application and environment be deployed and automated in AWS, while allowing for future changes?

- A. Update the runbook to describe how to create the VPC
- B. the EC2 instances and the RDS instance for the application by using the AWS Console. Make sure that the rest of the steps in the runbook are updated to reflect any changes that may come from the AWS migration
- C. Write a Python script that uses the AWS API to create the VPC
- D. the EC2 instances and the RDS instance for the application. Write shell scripts that implement the rest of the steps in the runbook. Have the Python script copy and run the shell scripts on the newly created instances to complete the installation
- E. Write an AWS CloudFormation template that creates the VPC, the EC2 instances, and the RDS instance for the application. Ensure that the rest of the steps in the runbook are updated to reflect any changes that may come from the AWS migration
- F. Write an AWS CloudFormation template that creates the VPC, the EC2 instances, and the RDS instance for the application. Include EC2 user data in the AWS CloudFormation template to install and configure the software.

**Answer: D**

#### NEW QUESTION 151

- (Exam Topic 2)

A company hosts a blog post application on AWS using Amazon API Gateway, Amazon DynamoDB, and AWS Lambda. The application currently does not use API keys to authorize requests. The API model is as follows:

GET /posts/{postId} to get post details

GET /users/{userId} to get user details

GET /comments/{commentId} to get comments details

The company has noticed users are actively discussing topics in the comments section, and the company wants to increase user engagement by making the comments appear in real time.

Which design should be used to reduce comment latency and improve user experience?

- A. Use edge-optimized API with Amazon CloudFront to cache API responses.
- B. Modify the blog application code to request GET/commentsV{commentId} every 10 seconds
- C. Use AWS AppSync and leverage WebSockets to deliver comments
- D. Change the concurrency limit of the Lambda functions to lower the API response time.

**Answer: C**

#### NEW QUESTION 153

- (Exam Topic 2)

A company wants to allow its marketing team to perform SQL queries on customer records to identify market segments. The data is spread across hundreds of files. The records must be encrypted in transit and at rest. The team manager must have the ability to manage users and groups but no team members should have access to services or resources not required for the SQL queries. Additionally, administrators need to audit the queries made and receive notifications when a query violates rules defined by the security team.

AWS Organizations has been used to create a new account and an AWS IAM user with administrator permissions for the team manager. Which design meets these requirements?

- A. Apply a service control policy (SCP) that allows access to IAM, Amazon RDS, and AWS CloudTrail. Load customer records in Amazon RDS MySQL and train users to run queries using the AWS CLI.
- B. Stream the query logs to Amazon CloudWatch Logs from the RDS database instance. Use a subscription filter with AWS Lambda functions to audit and alarm on queries against personal data.
- C. Apply a service control policy (SCP) that denies access to all services except IAM, Amazon Athena, Amazon S3, and AWS CloudTrail. Store customer record files in Amazon S3 and train users to run queries using the CLI via Athena. Analyze CloudTrail events to audit and alarm on queries against personal data.
- D. Apply a service control policy (SCP) that denies access to all services except IAM, Amazon DynamoDB, and AWS CloudTrail. Store customer records in DynamoDB and train users to run queries using the AWS CLI. Enable DynamoDB streams to track the queries that are issued and use an AWS Lambda function for real-time monitoring and alerting.
- E. Apply a service control policy (SCP) that allows access to IAM, Amazon Athena, Amazon S3, and AWS CloudTrail. Store customer records as files in Amazon S3 and train users to leverage the Amazon S3 Select feature and run queries using the AWS CLI. Enable S3 object-level logging and analyze CloudTrail events to audit and alarm on queries against personal data.

**Answer: B**

#### NEW QUESTION 154

- (Exam Topic 2)

A company's solution architect is designing a disaster recovery (DR) solution for an application that runs on AWS. The application uses PostgreSQL 11.7 as its database. The company has an RPO of 30 seconds. The solution architect must design a DR solution with the primary database in the us-east-1 Region and the database in the us-west-2 Region.

What should the solution architect do to meet these requirements with minimum application change?

- A. Migrate the database to Amazon RDS for PostgreSQL in us-east-1. Set up a read replica up a read replica in us-west-2. Set the managed PRO for the RDS database to 30 seconds.
- B. Migrate the database to Amazon for PostgreSQL in us-east-1. Set up a standby replica in an Availability Zone in us-west-2, Set the managed PRO for the RDS database to 30 seconds.
- C. Migrate the database to an Amazon Aurora PostgreSQL global database with the primary Region as us-east-1 and the secondary Region as us-west-2. Set the managed PRO for the Aurora database to 30 seconds.
- D. Migrate the database to Amazon DynamoDB in us-east-1. Set up global tables with replica tables that are created in us-west-2.

**Answer: A**

#### NEW QUESTION 156

- (Exam Topic 2)

A company is running a two-tier web-based application in an on-premises data center. The application layer consists of a single server running a stateful application. The application connects to a PostgreSQL database running on a separate server. The application's user base is expected to grow significantly, so the company is migrating the application and database to AWS. The solution will use Amazon Aurora PostgreSQL, Amazon EC2 Auto Scaling, and Elastic Load Balancing.

Which solution will provide a consistent user experience that will allow the application and database tiers to scale?

- A. Enable Aurora Auto Scaling for Aurora Replica
- B. Use a Network Load Balancer with the least outstanding requests routing algorithm and sticky sessions enabled
- C. Enable Aurora Auto Scaling for Aurora writer
- D. Use an Application Load Balancer with the round robin routing algorithm and sticky sessions enabled
- E. Aurora Auto Scaling for Aurora Replica
- F. Use an Application Load Balancer with the round robin routing algorithm and sticky sessions enabled.
- G. Aurora Auto Scaling for Aurora writer
- H. Use a Network Load Balancer with the least outstanding requests routing algorithm and sticky sessions enabled.

**Answer: C**

#### NEW QUESTION 158

- (Exam Topic 2)

A company runs a proprietary stateless ETL application on an Amazon EC2 Linux instance. The application is a Linux binary, and the source code cannot be modified. The application is single-threaded, uses 2 GB of RAM, and is highly CPU intensive. The application is scheduled to run every 4 hours and runs for up to 20 minutes. A solutions architect wants to revise the architecture for the solution.

Which strategy should the solutions architect use?

- A. Use AWS Lambda to run the applicatio
- B. Use Amazon CloudWatch Logs to invoke the Lambda function every 4 hours
- C. Use AWS Batch to run the application. Use an AWS Step Functions state machine to invoke the AWS Batch job every 4 hours
- D. Use AWS Fargate to run the application. Use Amazon EventBridge (Amazon CloudWatch Events) to invoke the Fargate task every 4 hours
- E. Use Amazon EC2 Spot Instances to run the application. Use AWS CodeDeploy to deploy and run the application every 4 hours.

**Answer: C**

#### NEW QUESTION 160

- (Exam Topic 2)

A company wants to migrate its workloads from on-premises to AWS. The workloads run on Linux and Windows. The company has a large on-premises infrastructure that consists of physical machines and VMs that host numerous applications.

The company must capture details about the system configuration, system performance, running processes, and network configurations of its on-premises servers. The company also must divide the on-premises applications into groups for AWS migrations. The company needs recommendations for Amazon EC2 instance types so that the company can run its workloads on AWS in the most cost-effective manner.

Which combination of steps should a solutions architect take to meet these requirements? (Select THREE.)

- A. Assess the existing applications by installing AWS Application Discovery Agent on the physical machines and VMs.
- B. Assess the existing applications by installing AWS Systems Manager Agent on the physical machines and VMs
- C. Group servers into applications for migration by using AWS Systems Manager Application Manager.
- D. Group servers into applications for migration by using AWS Migration Hub.
- E. Generate recommended instance types and associated costs by using AWS Migration Hub.
- F. Import data about server sizes into AWS Trusted Advisor
- G. Follow the recommendations for cost optimization.

**Answer: BDF**

#### NEW QUESTION 165

- (Exam Topic 2)

A company is running a three-tier web application in an on-premises data center. The frontend is served by an Apache web server, the middle tier is a monolithic Java application, and the storage tier is a PostgreSQL database.

During a recent marketing promotion, customers could not place orders through the application because the application crashed. An analysis showed that all three tiers were overloaded. The application became unresponsive, and the database reached its capacity limit because of read operations. The company already has several similar promotions scheduled in the near future.

A solutions architect must develop a plan for migration to AWS to resolve these issues. The solution must maximize scalability and must minimize operational effort.

Which combination of steps will meet these requirements? (Select THREE.)

- A. Refactor the frontend so that static assets can be hosted on Amazon S3. Use Amazon CloudFront to serve the frontend to customer
- B. Connect the frontend to the Java application.
- C. Rehost the Apache web server of the frontend on Amazon EC2 instances that are in an Auto Scaling group
- D. Use a load balancer in front of the Auto Scaling group
- E. Use Amazon Elastic File System (Amazon EFS) to host the static assets that the Apache web server needs.

- F. Rehost the Java application in an AWS Elastic Beanstalk environment that includes auto scaling.
- G. Refactor the Java applicatio
- H. Develop a Docker container to run the Java applicatio
- I. Use AWS Fargate to host the container.
- J. Use AWS Database Migration Service (AWS DMS) to replatform the PostgreSQL database to an Amazon Aurora PostgreSQL databas
- K. Use Aurora Auto Scaling for read replicas.
- L. Rehost the PostgreSQL database on an Amazon EC2 instance that has twice as much memory as the on-premises server.

**Answer:** BCF

#### NEW QUESTION 167

- (Exam Topic 2)

A fleet of Amazon ECS instances is used to poll an Amazon SQS queue and update items in an Amazon DynamoDB database. Items in the table are not being updated, and the SQS queue is filling up. Amazon CloudWatch Logs are showing consistent 400 errors when attempting to update the table. The provisioned write capacity units are appropriately configured, and no throttling is occurring. What is the LIKELY cause of the failure\*?

- A. The ECS service was deleted
- B. The ECS configuration does not contain an Auto Scaling group
- C. The ECS instance task execution IAM role was modified
- D. The ECS task role was modified

**Answer:** D

#### NEW QUESTION 171

- (Exam Topic 2)

A company has more than 10,000 sensors that send data to an on-premises Apache Kafka server by using the Message Queuing Telemetry Transport (MQTT) protocol. The on-premises Kafka server transforms the data and then stores the results as objects in an Amazon S3 bucket. Recently, the Kafka server crashed. The company lost sensor data while the server was being restored. A solutions architect must create a new design on AWS that is highly available and scalable to prevent a similar occurrence. Which solution will meet these requirements?

- A. Launch two Amazon EC2 instances to host the Kafka server in an active/standby configuration across two Availability Zones
- B. Create a domain name in Amazon Route 53. Create a Route 53 failover policy. Route the sensors to send the data to the domain name.
- C. Migrate the on-premises Kafka server to Amazon Managed Streaming for Apache Kafka (Amazon MSK). Create a Network Load Balancer (NLB) that points to the Amazon MSK broker.
- D. Enable NLB health checks. Route the sensors to send the data to the NLB.
- E. Deploy AWS IoT Core, and connect it to an Amazon Kinesis Data Firehose delivery stream. Use an AWS Lambda function to handle data transformation. Route the sensors to send the data to AWS IoT Core.
- F. Deploy AWS IoT Core, and launch an Amazon EC2 instance to host the Kafka server. Configure AWS IoT Core to send the data to the EC2 instance. Route the sensors to send the data to AWS IoT Core.

**Answer:** A

#### NEW QUESTION 176

- (Exam Topic 2)

A company has a new security policy. The policy requires the company to log any event that retrieves data from Amazon S3 buckets. The company must save these audit logs in a dedicated S3 bucket. The company created the audit logs S3 bucket in an AWS account that is designated for centralized logging. The S3 bucket has a bucket policy that allows write-only cross-account access. A solutions architect must ensure that all S3 object-level access is being logged for current S3 buckets and future S3 buckets. Which solution will meet these requirements?

- A. Enable server access logging for all current S3 buckets
- B. Use the audit logs S3 bucket as a destination for audit logs
- C. Enable replication between all current S3 buckets and the audit logs S3 bucket. Enable S3 Versioning in the audit logs S3 bucket.
- D. Configure S3 Event Notifications for all current S3 buckets to invoke an AWS Lambda function every time objects are accessed. Store Lambda logs in the audit logs S3 bucket.
- E. Enable AWS CloudTrail
- F. Use the audit logs S3 bucket to store logs. Enable data event logging for S3 event sources, current S3 buckets, and future S3 buckets.

**Answer:** D

#### NEW QUESTION 177

- (Exam Topic 2)

A company uses AWS Organizations with a single OU named Production to manage multiple accounts. All accounts are members of the Production OU. Administrators use deny list SCPs in the root of the organization to manage access to restricted services. The company recently acquired a new business unit and invited the new unit's existing AWS account to the organization. Once onboarded, the administrators of the new business unit discovered that they are not able to update existing AWS Config rules to meet the company's policies. Which option will allow administrators to make changes and continue to enforce the current policies without introducing additional long-term maintenance?

- A. Remove the organization's root SCPs that limit access to AWS Config. Create AWS Service Catalog products for the company's standard AWS Config rules and deploy them throughout the organization, including the new account.
- B. Create a temporary OU named Onboarding for the new account. Apply an SCP to the Onboarding OU to allow AWS Config actions. Move the new account to the Production OU when adjustments to AWS Config are complete.
- C. Convert the organization's root SCPs from deny list SCPs to allow list SCPs to allow the required services only. Temporarily apply an SCP to the organization's root that allows AWS Config actions for principals only in the new account.
- D. Create a temporary OU named Onboarding for the new account. Apply an SCP to the Onboarding OU to allow AWS Config actions.
- E. Move the organization's root SCP to the Production OU.
- F. Move the new account to the Production OU when adjustments to AWS Config are complete.

**Answer:** D

**NEW QUESTION 178**

- (Exam Topic 2)

A company uses multiple AWS accounts in a single AWS Region. A solutions architect is designing a solution to consolidate logs generated by Elastic Load Balancers (ELBs) in the AppDev, AppTest, and AppProd accounts. The logs should be stored in an existing Amazon S3 bucket named s3-elb-logs in the central AWS account. The central account is used for log consolidation only and does not have ELBs deployed. ELB logs must be encrypted at rest. Which combination of steps should the solutions architect take to build the solution? (Select TWO)

- A. Update the S3 bucket policy for the s3-elb-logs bucket to allow the s3 PutBucketLogging action for the central AWS account ID
- B. Update the S3 bucket policy for the s3-elb-logs bucket to allow the s3 PutObject and s3 DeleteObject actions for the AppDev, AppTest, and AppProd account IDs
- C. Update the S3 bucket policy for the s3-elb-logs bucket to allow the s3 PutObject action for the AppDev, AppTest, and AppProd account IDs
- D. Enable access logging for the ELB
- E. Set the S3 location to the s3-elb-logs bucket
- F. Enable Amazon S3 default encryption using server-side encryption with S3 managed encryption keys (SSE-S3) for the s3-elb-logs S3 bucket

**Answer:** AE

**NEW QUESTION 182**

- (Exam Topic 2)

A company is planning to migrate an application from on-premises to the AWS Cloud. The company will begin the migration by moving the application's underlying data storage to AWS. The application data is stored on a shared file system on-premises, and the application servers connect to the shared file system through SMB.

A solutions architect must implement a solution that uses an Amazon S3 bucket for shared storage. Until the application is fully migrated and code is rewritten to use native Amazon S3 APIs, the application must continue to have access to the data through SMB. The solutions architect must migrate the application data to AWS to its new location while still allowing the on-premises application to access the data.

Which solution will meet these requirements?

- A. Create a new Amazon FSx for Windows File System. Configure AWS DataSync with one location for the on-premises file share and one location for the new Amazon FSx file system. Create a new DataSync task to copy the data from the on-premises file share location to the Amazon FSx file system.
- B. Create an S3 bucket for the application.
- C. Copy the data from the on-premises storage to the S3 bucket.
- D. Deploy an AWS Server Migration Service (AWS SMS) VM to the on-premises environment.
- E. Use AWS SMS to migrate the file storage server from on-premises to an Amazon EC2 instance.
- F. Create an S3 bucket for the application.
- G. Deploy a new AWS Storage Gateway File Gateway on on-premises.
- H. Create a new file share that stores data in the S3 bucket and is associated with the File Gateway.
- I. Copy the data from the on-premises storage to the new File Gateway endpoint.

**Answer:** A

**NEW QUESTION 187**

- (Exam Topic 2)

A company has developed a web application. The company is hosting the application on a group of Amazon EC2 instances behind an Application Load Balancer. The company wants to improve the security posture of the application and plans to use AWS WAF web ACLs. The solution must not adversely affect legitimate traffic to the application.

How should a solutions architect configure the web ACLs to meet these requirements?

- A. Set the action of the web ACL rules to Count.
- B. Enable AWS WAF logging. Analyze the requests for false positives. Modify the rules to avoid any false positives. Over time, change the action of the web ACL rules from Count to Block.
- C. Use only rate-based rules in the web ACL.
- D. and set the throttle limit as high as possible. Temporarily block all requests that exceed the limit.
- E. Define nested rules to narrow the scope of the rate tracking.
- F. Set the action of the web ACL rules to Block.
- G. Use only AWS managed rule groups in the web ACLs. Evaluate the rule groups by using Amazon CloudWatch metrics with AWS WAF sampled requests or AWS WAF logs.
- H. Use only custom rule groups in the web ACL.
- I. and set the action to Allow. Enable AWS WAF logging. Analyze the requests for false positives. Modify the rules to avoid any false positives. Over time, change the action of the web ACL rules from Allow to Block.

**Answer:** B

**NEW QUESTION 188**

- (Exam Topic 2)

A Solutions Architect is constructing a containerized .NET Core application for AWS Fargate. The application's backend needs a high-availability version of Microsoft SQL Server. All application levels must be extremely accessible. The credentials associated with the SQL Server connection string should not be saved to disk inside the .NET Core front-end containers.

Which tactics should the Solutions Architect use to achieve these objectives?

- A. Set up SQL Server to run in Fargate with Service Auto Scaling.
- B. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to SQL Server running in Fargate.
- C. Specify the ARN of the secret in AWS Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be injected into the containers as environment variables on startup for reading into the application to construct the connection string.
- D. Set up the .NET Core service using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.
- E. Create a Multi-AZ deployment of SQL Server on Amazon RDS.
- F. Create a secret in AWS Secrets Manager for the credentials to the RDS database.
- G. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to the RDS database in Secrets Manager.

- H. Specify the ARN of the secret in Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be injected into the containers as environment variables on startup for reading into the application to construct the connection string
- I. Set up the .NET Core service in Fargate using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.
- J. Create an Auto Scaling group to run SQL Server on Amazon EC2. Create a secret in AWS Secrets Manager for the credentials to SQL Server running on EC2. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to SQL Server on EC2. Specify the ARN of the secret in Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be injected into the containers as environment variables on startup for reading into the application to construct the connection string
- K. Set up the .NET Core service using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.
- L. Create a Multi-AZ deployment of SQL Server on Amazon RDS
- M. Create a secret in AWS Secrets Manager for the credentials to the RDS database
- N. Create non-persistent empty storage for the .NET Core containers in the Fargate task definition to store the sensitive information
- O. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to the RDS database in Secrets Manager
- P. Specify the ARN of the secret in Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be written to the non-persistent empty storage on startup for reading into the application to construct the connection string
- Q. Set up the .NET Core service using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.

**Answer: B**

**Explanation:**

Secrets Manager natively supports SQL Server on RDS. No real need to create additional 'ephemeral storage' to fetch credentials, as these can be injected to containers as environment variables. <https://aws.amazon.com/premiumsupport/knowledge-center/ecs-data-security-container-task/>

**NEW QUESTION 190**

- (Exam Topic 2)

A company is running an application in the AWS Cloud. The application runs on containers in an Amazon Elastic Container Service (Amazon ECS) cluster. The ECS tasks use the Fargate launch type. The application's data is relational and is stored in Amazon Aurora MySQL. To meet regulatory requirements, the application must be able to recover to a separate AWS Region in the event of an application failure. In case of a failure, no data can be lost. Which solution will meet these requirements with the LEAST amount of operational overhead?

- A. Provision an Aurora Replica in a different Region.
- B. Set up AWS DataSync for continuous replication of the data to a different Region.
- C. Set up AWS Database Migration Service (AWS DMS) to perform a continuous replication of the data to a different Region.
- D. Use Amazon Data Lifecycle Manager (Amazon DLM) to schedule a snapshot every 5 minutes.

**Answer: B**

**NEW QUESTION 193**

- (Exam Topic 2)

A company has an on-premises Microsoft SQL Server database that writes a nightly 200 GB export to a local drive. The company wants to move the backups to more robust cloud storage on Amazon S3. The company has set up a 10 Gbps AWS Direct Connect connection between the on-premises data center and AWS. Which solution meets these requirements Most cost effectively?

- A. Create a new S3 bucket Deploy an AWS Storage Gateway file gateway within the VPC that is connected to the Direct Connect connection
- B. Create a new SMB file share
- C. Write nightly database exports to the new SMB file share.
- D. Create an Amazon FSx for Windows File Server Single-AZ file system within the VPC that is connected to the Direct Connect connection
- E. Create a new SMB file share
- F. Write nightly database exports to an SMB file share on the Amazon FSx file system Enable backups.
- G. Create an Amazon FSx for Windows File Server Multi-AZ system within the VPC that is connected to the Direct Connect connection
- H. Create a new SMB file share
- I. Write nightly database exports to an SMB file share on the Amazon FSx file system
- J. Enable nightly backups.
- K. Create a new S3 bucket
- L. Deploy an AWS Storage Gateway volume gateway within the VPC that is connected to the Direct Connect connection
- M. Create a new SMB file share
- N. Write nightly database exports to the new SMB file share on the volume gateway, and automate copies of this data to an S3 bucket.

**Answer: A**

**NEW QUESTION 198**

- (Exam Topic 2)

A software development company has multiple engineers who are working remotely. The company is running Active Directory Domain Services (AD DS) on an Amazon EC2 instance. The company's security policy states that all internal, nonpublic services that are deployed in a VPC must be accessible through a VPN. Multi-factor authentication (MFA) must be used for access to a VPN.

What should a solution architect do to meet these requirements?

- A. Create an AWS Site-to-Site VPN connection Configure integration between a VPN and AD DS
- B. Use an Amazon WorkSpaces client with MFA support enabled to establish a VPN connection.
- C. Create an AWS Client VPN endpoint Create an AD Connector directory for integration with AD DS Enable MFA for AD Connector Use AWS Client VPN to establish a VPN connection.
- D. Create multiple AWS Site-to-Site VPN connections by using AWS VPN CloudHub Configure integration between AWS VPN CloudHub and AD DS Use AWS Cop40t to establish a VPN connection.
- E. Create an Amazon WorkLink endpoint Configure integration between Amazon WorkLink and AD DS
- F. Enable MFA in Amazon WorkLink Use AWS Client VPN to establish a VPN connection.

**Answer: B**

**NEW QUESTION 203**

- (Exam Topic 2)

A company is running multiple workloads in the AWS Cloud. The company has separate units for software development. The company uses AWS Organizations and federation with SAML to give permissions to developers to manage resources in their AWS accounts. The development units each deploy their production workloads into a common production account.

Recently, an incident occurred in the production account in which members of a development unit terminated an EC2 instance that belonged to a different development unit. A solutions architect must create a solution that prevents a similar incident from happening in the future. The solution also must allow developers the possibility to manage the instances used for their workloads.

Which strategy will meet these requirements?

- A. Create separate OUs in AWS Organizations for each development unit. Assign the created OUs to the company AWS accounts. Create separate SCPs with a deny action and a StringNotEquals condition for the DevelopmentUnit resource tag that matches the development unit name. Assign the SCP to the corresponding OU.
- B. Pass an attribute for DevelopmentUnit as an AWS Security Token Service (AWS STS) session tag during SAML federation. Update the IAM policy for the developers' assumed IAM role with a deny action and a StringNotEquals condition for the DevelopmentUnit resource tag and aws:PrincipalTag/DevelopmentUnit.
- C. Pass an attribute for DevelopmentUnit as an AWS Security Token Service (AWS STS) session tag during SAML federation. Create an SCP with an allow action and a StringEquals condition for the DevelopmentUnit resource tag and aws:PrincipalTag/DevelopmentUnit. Assign the SCP to the root OU.
- D. Create separate IAM policies for each development unit. For every IAM policy, add an allow action and a StringEquals condition for the DevelopmentUnit resource tag and the development unit name. During SAML federation, use AWS Security Token Service (AWS STS) to assign the IAM policy and match the development unit name to the assumed IAM role.

**Answer: A**

#### NEW QUESTION 208

- (Exam Topic 2)

A company is planning to migrate an Amazon RDS for Oracle database to an RDS for PostgreSQL DB instance in another AWS account. A solutions architect needs to design a migration strategy that will require no downtime and that will minimize the amount of time necessary to complete the migration. The migration strategy must replicate all existing data and any new data that is created during the migration. The target database must be identical to the source database at completion of the migration process.

All applications currently use an Amazon Route 53 CNAME record as their endpoint for communication with the RDS for Oracle DB instance. The RDS for Oracle DB instance is in a private subnet.

Which combination of steps should the solutions architect take to meet these requirements? (Select THREE.)

- A. Create a new RDS for PostgreSQL DB instance in the target account. Use the AWS Schema Conversion Tool (AWS SCT) to migrate the database schema from the source database to the target database.
- B. Use the AWS Schema Conversion Tool (AWS SCT) to create a new RDS for PostgreSQL DB instance in the target account with the schema and initial data from the source database.
- C. Configure VPC peering between the VPCs in the two AWS accounts to provide connectivity to both DB instances from the target account.
- D. Configure the security groups that are attached to each DB instance to allow traffic on the database port from the VPC in the target account.
- E. Temporarily allow the source DB instance to be publicly accessible to provide connectivity from the VPC in the target account. Configure the security groups that are attached to each DB instance to allow traffic on the database port from the VPC in the target account.
- F. Use AWS Database Migration Service (AWS DMS) in the target account to perform a full load plus change data capture (CDC) migration from the source database to the target database. When the migration is complete, change the CNAME record to point to the target DB instance endpoint.
- G. Use AWS Database Migration Service (AWS DMS) in the target account to perform a change data capture (CDC) migration from the source database to the target database. When the migration is complete, change the CNAME record to point to the target DB instance endpoint.

**Answer: BCE**

#### NEW QUESTION 209

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