



# Amazon-Web-Services

## Exam Questions SAP-C02

AWS Certified Solutions Architect - Professional

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## NEW QUESTION 1

- (Exam Topic 1)

A company is developing a new serverless API by using Amazon API Gateway and AWS Lambda. The company integrated the Lambda functions with API Gateway to use several shared libraries and custom classes.

A solutions architect needs to simplify the deployment of the solution and optimize for code reuse. Which solution will meet these requirements?

- A. Deploy the shared libraries and custom classes into a Docker image
- B. Store the image in an S3 bucket. Create a Lambda layer that uses the Docker image as the source
- C. Deploy the API's Lambda functions as Zip package
- D. Configure the packages to use the Lambda layer.
- E. Deploy the shared libraries and custom classes to a Docker image
- F. Upload the image to Amazon Elastic Container Registry (Amazon ECR). Create a Lambda layer that uses the Docker image as the source
- G. Deploy the API's Lambda functions as Zip package
- H. Configure the packages to use the Lambda layer.
- I. Deploy the shared libraries and custom classes to a Docker container in Amazon Elastic Container Service (Amazon ECS) by using the AWS Fargate launch type
- J. Deploy the API's Lambda functions as Zip package
- K. Configure the packages to use the deployed container as a Lambda layer.
- L. Deploy the shared libraries, custom classes, and code for the API's Lambda functions to a Docker image
- M. Upload the image to Amazon Elastic Container Registry (Amazon ECR). Configure the API's Lambda functions to use the Docker image as the deployment package.

**Answer:** B

### Explanation:

Deploying the shared libraries and custom classes to a Docker image and uploading the image to Amazon Elastic Container Registry (Amazon ECR) and creating a Lambda layer that uses the Docker image as the source. Then, deploying the API's Lambda functions as Zip packages and configuring the packages to use the Lambda layer would meet the requirements for simplifying the deployment and optimizing for code reuse.

A Lambda layer is a distribution mechanism for libraries, custom runtimes, and other function dependencies. It allows you to manage your in-development function code separately from your dependencies, this way you can easily update your dependencies without having to update your entire function code.

By deploying the shared libraries and custom classes to a Docker image and uploading the image to Amazon Elastic Container Registry (ECR), it makes it easy to manage and version the dependencies. This way, the company can use the same version of the dependencies across different Lambda functions.

By creating a Lambda layer that uses the Docker image as the source, the company can configure the API's Lambda functions to use the layer, reducing the need to include the dependencies in each function package, and making it easy to update the dependencies across all functions at once.

Reference:

AWS Lambda Layers documentation: <https://docs.aws.amazon.com/lambda/latest/dg/configuration-layers.html>

AWS Elastic Container Registry (ECR) documentation: <https://aws.amazon.com/ecr/> Building Lambda Layers with Docker documentation:

<https://aws.amazon.com/blogs/compute/building-lambda-layers-with-docker/>

## NEW QUESTION 2

- (Exam Topic 1)

A company wants to migrate its data analytics environment from on premises to AWS. The environment consists of two simple Node.js applications. One of the applications collects sensor data and loads it into a MySQL database. The other application aggregates the data into reports. When the aggregation jobs run, some of the load jobs fail to run correctly.

The company must resolve the data loading issue. The company also needs the migration to occur without interruptions or changes for the company's customers. What should a solutions architect do to meet these requirements?

- A. Set up an Amazon Aurora MySQL database as a replication target for the on-premises database. Create an Aurora Replica for the Aurora MySQL database, and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as AWS Lambda functions behind a Network Load Balancer (NLB), and use Amazon RDS Proxy to write to the Aurora MySQL database. When the databases are synced, disable the replication job and restart the Aurora Replica as the primary instance.
- B. Point the collector DNS record to the NLB.
- C. Set up an Amazon Aurora MySQL database. Use AWS Database Migration Service (AWS DMS) to perform continuous data replication from the on-premises database to Aurora. Move the aggregation jobs to run against the Aurora MySQL database. Set up collection endpoints behind an Application Load Balancer (ALB) as Amazon EC2 instances in an Auto Scaling group. When the databases are synced, point the collector DNS record to the ALB. Disable the AWS DMS sync task after the cutover from on premises to AWS.
- D. Set up an Amazon Aurora MySQL database. Use AWS Database Migration Service (AWS DMS) to perform continuous data replication from the on-premises database to Aurora. Create an Aurora Replica for the Aurora MySQL database and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as AWS Lambda functions behind an Application Load Balancer (ALB) and use Amazon RDS Proxy to write to the Aurora MySQL database. When the databases are synced, point the collector DNS record to the ALB. Disable the AWS DMS sync task after the cutover from on premises to AWS.
- E. Set up an Amazon Aurora MySQL database. Create an Aurora Replica for the Aurora MySQL database and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as an Amazon Kinesis data stream. Use Amazon Kinesis Data Firehose to replicate the data to the Aurora MySQL database. When the databases are synced, disable the replication job and restart the Aurora Replica as the primary instance. Point the collector DNS record to the Kinesis data stream.

**Answer:** C

### Explanation:

Set up an Amazon Aurora MySQL database. Use AWS Database Migration Service (AWS DMS) to perform continuous data replication from the on-premises database to Aurora. Create an Aurora Replica for the Aurora MySQL database, and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as AWS Lambda functions behind an Application Load Balancer (ALB), and use Amazon RDS Proxy to write to the Aurora MySQL database. When the databases are synced, point the collector DNS record to the ALB. Disable the AWS DMS sync task after the cutover from on premises to AWS.

Amazon RDS Proxy allows applications to pool and share connections established with the database, improving database efficiency and application scalability. With RDS Proxy, failover times for Aurora and RDS databases are reduced by up to 66%.

## NEW QUESTION 3

- (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 4**

- (Exam Topic 1)

An application is using an Amazon RDS for MySQL Multi-AZ DB instance in the us-east-1 Region. After a failover test, the application lost the connections to the database and could not re-establish the connections. After a restart of the application, the application re-established the connections.

A solutions architect must implement a solution so that the application can re-establish connections to the database without requiring a restart.

Which solution will meet these requirements?

- A. Create an Amazon Aurora MySQL Serverless v1 DB instance
- B. Migrate the RDS DB instance to the Aurora Serverless v1 DB instance
- C. Update the connection settings in the application to point to the Aurora reader endpoint.
- D. Create an RDS proxy
- E. Configure the existing RDS endpoint as a target
- F. Update the connection settings in the application to point to the RDS proxy endpoint.
- G. Create a two-node Amazon Aurora MySQL DB cluster
- H. Migrate the RDS DB instance to the Aurora DB cluster
- I. Create an RDS proxy
- J. Configure the existing RDS endpoint as a target
- K. Update the connection settings in the application to point to the RDS proxy endpoint.
- L. Create an Amazon S3 bucket
- M. Export the database to Amazon S3 by using AWS Database Migration Service (AWS DMS). Configure Amazon Athena to use the S3 bucket as a data store
- N. Install the latest Open Database Connectivity (ODBC) driver for the application
- O. Update the connection settings in the application to point to the Athena endpoint

**Answer: B**

**Explanation:**

Amazon RDS Proxy is a fully managed database proxy service for Amazon Relational Database Service (RDS) that makes applications more scalable, resilient, and secure. It allows applications to pool and share connections to an RDS database, which can help reduce database connection overhead, improve scalability, and provide automatic failover and high availability.

**NEW QUESTION 5**

- (Exam Topic 1)

A large mobile gaming company has successfully migrated all of its on-premises infrastructure to the AWS Cloud. A solutions architect is reviewing the environment to ensure that it was built according to the design and that it is running in alignment with the Well-Architected Framework.

While reviewing previous monthly costs in Cost Explorer, the solutions architect notices that the creation and subsequent termination of several large instance types account for a high proportion of the costs. The solutions architect finds out that the company's developers are launching new Amazon EC2 instances as part of their testing and that the developers are not using the appropriate instance types.

The solutions architect must implement a control mechanism to limit the instance types that only the developers can launch.

Which solution will meet these requirements?

- A. Create a desired-instance-type managed rule in AWS Config
- B. Configure the rule with the instance types that are allowed
- C. Attach the rule to an event to run each time a new EC2 instance is launched.
- D. In the EC2 console, create a launch template that specifies the instance types that are allowed
- E. Assign the launch template to the developers' IAM accounts.
- F. Create a new IAM policy
- G. Specify the instance types that are allowed
- H. Attach the policy to an IAM group that contains the IAM accounts for the developers
- I. Use EC2 Image Builder to create an image pipeline for the developers and assist them in the creation of a golden image.

**Answer: C**

**Explanation:**

This is doable with IAM policy creation to restrict users to specific instance types. Found the below article. <https://blog.vizuri.com/limiting-allowed-aws-instance-type-with-iam-policy>

**NEW QUESTION 6**



- (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
- E. Configure the existing web server to publish to the new queue
- F. When there are messages in the queue, create a new Amazon EC2 instance to pull requests from the queue and process the file
- G. Store the processed files in Amazon EF
- H. Shut down the EC2 instance after the task is complete.
- I. Create a queue using Amazon M
- J. 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
- K. Store the processed files in Amazon EFS.
- L. Create a queue using Amazon SO
- M. Configure the existing web server to publish to the new queue
- N. Use Amazon EC2 instances in an EC2 Auto Scaling group to pull requests from the queue and process the file
- O. Scale the EC2 instances based on the SQS queue length
- P. 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 7

- (Exam Topic 1)

A company has migrated its forms-processing application to AWS. When users interact with the application, they upload scanned forms as files through a web application. A database stores user metadata and references to files that are stored in Amazon S3. The web application runs on Amazon EC2 instances and an Amazon RDS for PostgreSQL database.

When forms are uploaded, the application sends notifications to a team through Amazon Simple Notification Service (Amazon SNS). A team member then logs in and processes each form. The team member performs data validation on the form and extracts relevant data before entering the information into another system that uses an API.

A solutions architect needs to automate the manual processing of the forms. The solution must provide accurate form extraction, minimize time to market, and minimize long-term operational overhead.

Which solution will meet these requirements?

- A. Develop custom libraries to perform optical character recognition (OCR) on the form
- B. Deploy the libraries to an Amazon Elastic Kubernetes Service (Amazon EKS) cluster as an application tier
- C. Use this tier to process the forms when forms are uploaded
- D. Store the output in Amazon S3. Parse this output by extracting the data into an Amazon DynamoDB table
- E. Submit the data to the target system's API
- F. Host the new application tier on EC2 instances.
- G. Extend the system with an application tier that uses AWS Step Functions and AWS Lambda
- H. Configure this tier to use artificial intelligence and machine learning (AI/ML) models that are trained and hosted on an EC2 instance to perform optical character recognition (OCR) on the forms when forms are uploaded
- I. Store the output in Amazon S3. Parse this output by extracting the data that is required within the application tier
- J. Submit the data to the target system's API.
- K. Host a new application tier on EC2 instance
- L. Use this tier to call endpoints that host artificial intelligence and machine learning (AI/ML) models that are trained and hosted in Amazon SageMaker to perform optical character recognition (OCR) on the form
- M. Store the output in Amazon ElastiCache
- N. Parse this output by extracting the data that is required within the application tier
- O. Submit the data to the target system's API.
- P. Extend the system with an application tier that uses AWS Step Functions and AWS Lambda
- Q. Configure this tier to use Amazon Textract and Amazon Comprehend to perform optical character recognition (OCR) on the forms when forms are uploaded
- R. Store the output in Amazon S3. Parse this output by extracting the data that is required within the application tier
- S. Submit the data to the target system's API.

**Answer: D**

**Explanation:**

Extend the system with an application tier that uses AWS Step Functions and AWS Lambda. Configure this tier to use Amazon Textract and Amazon Comprehend to perform optical character recognition (OCR) on the forms when forms are uploaded. Store the output in Amazon S3. Parse this output by extracting the data that is required within the application tier. Submit the data to the target system's API. This solution meets the requirements of accurate form extraction, minimal time to market, and minimal long-term operational overhead. Amazon Textract and Amazon Comprehend are fully managed and serverless services that can perform OCR and extract relevant data from the forms, which eliminates the need to develop custom libraries or train and host models. Using AWS Step Functions and Lambda allows for easy automation of the process and the ability to scale as needed.

## NEW QUESTION 8

- (Exam Topic 1)

A company is running an application in the AWS Cloud. The company's security team must approve the creation of all new IAM users. When a new IAM user is created, all access for the user must be removed automatically. The security team must then receive a notification to approve the user. The company has a multi-Region AWS CloudTrail trail in the AWS account.

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

- A. Create an Amazon EventBridge (Amazon CloudWatch Events) rule.
- B. Define a pattern with the detail-type value set to AWS API Call via CloudTrail and an eventName of CreateUser.
- C. Configure CloudTrail to send a notification for the CreateUser event to an Amazon Simple Notification Service (Amazon SNS) topic.
- D. Invoke a container that runs in Amazon Elastic Container Service (Amazon ECS) with AWS Fargate technology to remove access.
- E. Invoke an AWS Step Functions state machine to remove access.
- F. Use Amazon Simple Notification Service (Amazon SNS) to notify the security team.
- G. Use Amazon Pinpoint to notify the security team.

**Answer:** ADE

**Explanation:**

[https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/send-a-notification-when-an-iam-user-is-crea](https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/send-a-notification-when-an-iam-user-is-created.html)

**NEW QUESTION 9**

- (Exam Topic 1)

A software as a service (SaaS) based company provides a case management solution to customers. A part of the solution, the company uses a standalone Simple Mail Transfer Protocol (SMTP) server to send email messages from an application. The application also stores an email template for acknowledgement email messages that populate customer data before the application sends the email message to the customer.

The company plans to migrate this messaging functionality to the AWS Cloud and needs to minimize operational overhead.

Which solution will meet these requirements MOST cost-effectively?

- A. Set up an SMTP server on Amazon EC2 instances by using an AMI from the AWS Marketplace.
- B. Store the email template in an Amazon S3 bucket.
- C. Create an AWS Lambda function to retrieve the template from the S3 bucket and to merge the customer data from the application with the template.
- D. Use an SDK in the Lambda function to send the email message.
- E. Set up Amazon Simple Email Service (Amazon SES) to send email messages.
- F. Store the email template in an Amazon S3 bucket.
- G. Create an AWS Lambda function to retrieve the template from the S3 bucket and to merge the customer data from the application with the template.
- H. Use an SDK in the Lambda function to send the email message.
- I. Set up an SMTP server on Amazon EC2 instances by using an AMI from the AWS Marketplace.
- J. Store the email template in Amazon Simple Email Service (Amazon SES) with parameters for the customer data.
- K. Create an AWS Lambda function to call the SES SendEmail API operation and to pass customer data to replace the parameters.
- L. Use the AWS Marketplace SMTP server to send the email message.
- M. Set up Amazon Simple Email Service (Amazon SES) to send email messages.
- N. Store the email template on Amazon SES with parameters for the customer data.
- O. Create an AWS Lambda function to call the SendTemplatedEmail API operation and to pass customer data to replace the parameters and the email destination.

**Answer:** D

**Explanation:**

In this solution, the company can use Amazon SES to send email messages, which will minimize operational overhead as SES is a fully managed service that handles sending and receiving email messages. The company can store the email template on Amazon S3 with parameters for the customer data and use an AWS Lambda function to call the SendTemplatedEmail API operation, passing in the customer data to replace the parameters and the email destination. This solution eliminates the need to set up and manage an SMTP server on EC2 instances, which can be costly and time-consuming.

**NEW QUESTION 10**

- (Exam Topic 1)

An international delivery company hosts a delivery management system on AWS. Drivers use the system to upload confirmation of delivery. Confirmation includes the recipient's signature or a photo of the package with the recipient. The driver's handheld device uploads signatures and photos through FTP to a single Amazon EC2 instance. Each handheld device saves a file in a directory based on the signed-in user, and the file name matches the delivery number. The EC2 instance then adds metadata to the file after querying a central database to pull delivery information. The file is then placed in Amazon S3 for archiving.

As the company expands, drivers report that the system is rejecting connections. The FTP server is having problems because of dropped connections and memory issues. In response to these problems, a system engineer schedules a cron task to reboot the EC2 instance every 30 minutes. The billing team reports that files are not always in the archive and that the central system is not always updated.

A solutions architect needs to design a solution that maximizes scalability to ensure that the archive always receives the files and that systems are always updated. The handheld devices cannot be modified, so the company cannot deploy a new application.

Which solution will meet these requirements?

- A. Create an AMI of the existing EC2 instance.
- B. Create an Auto Scaling group of EC2 instances behind an Application Load Balance.
- C. Configure the Auto Scaling group to have a minimum of three instances.
- D. Use AWS Transfer Family to create an FTP server that places the files in Amazon Elastic File System (Amazon EFS). Mount the EFS volume to the existing EC2 instance.
- E. Point the EC2 instance to the new path for file processing.
- F. Use AWS Transfer Family to create an FTP server that places the files in Amazon S3. Use an S3 event notification through Amazon Simple Notification Service (Amazon SNS) to invoke an AWS Lambda function.
- G. Configure the Lambda function to add the metadata and update the delivery system.
- H. Update the handheld devices to place the files directly in Amazon S3. Use an S3 event notification through Amazon Simple Queue Service (Amazon SQS) to invoke an AWS Lambda function.
- I. Configure the Lambda function to add the metadata and update the delivery system.

**Answer:** C

**Explanation:**

Using AWS Transfer Family to create an FTP server that places the files in Amazon S3 and using S3 event notifications through Amazon Simple Notification Service (Amazon SNS) to invoke an AWS Lambda function will ensure that the archive always receives the files and that the central system is always updated. This solution maximizes scalability and eliminates the need for manual intervention, such as rebooting the EC2 instance.

**NEW QUESTION 10**

- (Exam Topic 1)

A company is developing and hosting several projects in the AWS Cloud. The projects are developed across multiple AWS accounts under the same organization in AWS Organizations. The company requires the cost for cloud infrastructure to be allocated to the owning project. The team responsible for all of the AWS accounts has discovered that several Amazon EC2 instances are lacking the Project tag used for cost allocation.

Which actions should a solutions architect take to resolve the problem and prevent it from happening in the future? (Select THREE.)

- A. Create an AWS Config rule in each account to find resources with missing tags.
- B. Create an SCP in the organization with a deny action for ec2:RunInstances if the Project tag is missing.
- C. Use Amazon Inspector in the organization to find resources with missing tags.
- D. Create an IAM policy in each account with a deny action for ec2:RunInstances if the Project tag is missing.
- E. Create an AWS Config aggregator for the organization to collect a list of EC2 instances with the missing Project tag.
- F. Use AWS Security Hub to aggregate a list of EC2 instances with the missing Project tag.

**Answer:** ABE

**Explanation:**

<https://docs.aws.amazon.com/config/latest/developerguide/config-rule-multi-account-deployment.html>

<https://docs.aws.amazon.com/config/latest/developerguide/aggregate-data.html>

[https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps\\_examples\\_tagging.htm](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps_examples_tagging.htm)

### NEW QUESTION 13

- (Exam Topic 1)

A company has a serverless application comprised of Amazon CloudFront, Amazon API Gateway, and AWS Lambda functions. The current deployment process of the application code is to create a new version number of the Lambda function and run an AWS CLI script to update. If the new function version has errors, another CLI script reverts by deploying the previous working version of the function. The company would like to decrease the time to deploy new versions of the application logic provided by the Lambda functions, and also reduce the time to detect and revert when errors are identified.

How can this be accomplished?

- A. Create and deploy nested AWS CloudFormation stacks with the parent stack consisting of the AWS CloudFront distribution and API Gateway, and the child stack containing the Lambda function.
- B. For changes to Lambda, create an AWS CloudFormation change set and deploy; if errors are triggered, revert the AWS CloudFormation change set to the previous version.
- C. Use AWS SAM and built-in AWS CodeDeploy to deploy the new Lambda version, gradually shift traffic to the new version, and use pre-traffic and post-traffic test functions to verify code.
- D. Rollback if Amazon CloudWatch alarms are triggered.
- E. Refactor the AWS CLI scripts into a single script that deploys the new Lambda version.
- F. When deployment is completed, the script tests execution.
- G. If errors are detected, revert to the previous Lambda version.
- H. Create and deploy an AWS CloudFormation stack that consists of a new API Gateway endpoint that references the new Lambda version.
- I. Change the CloudFront origin to the new API Gateway endpoint, monitor errors and if detected, change the AWS CloudFront origin to the previous API Gateway endpoint.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2017/11/aws-lambda-supports-traffic-shifting-and-phased-deploy>

### NEW QUESTION 18

- (Exam Topic 1)

A company has 50 AWS accounts that are members of an organization in AWS Organizations. Each account contains multiple VPCs. The company wants to use AWS Transit Gateway to establish connectivity between the VPCs in each member account. Each time a new member account is created, the company wants to automate the process of creating a new VPC and a transit gateway attachment.

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

- A. From the management account, share the transit gateway with member accounts by using AWS Resource Access Manager.
- B. From the management account, share the transit gateway with member accounts by using an AWS Organizations SCP.
- C. Launch an AWS CloudFormation stack set from the management account that automatically creates a new VPC and a VPC transit gateway attachment in a member account.
- D. Associate the attachment with the transit gateway in the management account by using the transit gateway ID.
- E. Launch an AWS CloudFormation stack set from the management account that automatically creates a new VPC and a peering transit gateway attachment in a member account.
- F. Share the attachment with the transit gateway in the management account by using a transit gateway service-linked role.
- G. From the management account, share the transit gateway with member accounts by using AWS Service Catalog.

**Answer:** AC

**Explanation:**

<https://aws.amazon.com/blogs/mt/self-service-vpcs-in-aws-control-tower-using-aws-service-catalog/> <https://docs.aws.amazon.com/vpc/latest/tgw/tgw-transit-gateways.html>

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resource-ec2-transitgatewayattachment.html>

### NEW QUESTION 23

- (Exam Topic 1)

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:** A

**Explanation:**

Provision an Aurora Replica in a different Region will meet the requirement of the application being able to recover to a separate AWS Region in the event of an application failure, and no data can be lost, with the least amount of operational overhead.

**NEW QUESTION 25**

- (Exam Topic 1)

A company is running an application on several Amazon EC2 instances in an Auto Scaling group behind an Application Load Balancer. The load on the application varies throughout the day, and EC2 instances are scaled in and out on a regular basis. Log files from the EC2 instances are copied to a central Amazon S3 bucket every 15 minutes. The security team discovers that log files are missing from some of the terminated EC2 instances.

Which set of actions will ensure that log files are copied to the central S3 bucket from the terminated EC2 instances?

- A. Create a script to copy log files to Amazon S3, and store the script in a file on the EC2 instance
- B. Create an Auto Scaling lifecycle hook and an Amazon EventBridge (Amazon CloudWatch Events) rule to detect lifecycle events from the Auto Scaling group
- C. Invoke an AWS Lambda function on the autoscaling:EC2\_INSTANCE\_TERMINATING transition to send ABANDON to the Auto Scaling group to prevent termination, run the script to copy the log files, and terminate the instance using the AWS SDK.
- D. Create an AWS Systems Manager document with a script to copy log files to Amazon S3. Create an Auto Scaling lifecycle hook and an Amazon EventBridge (Amazon CloudWatch Events) rule to detect lifecycle events from the Auto Scaling group
- E. Invoke an AWS Lambda function on the autoscaling:EC2\_INSTANCE\_TERMINATING transition to call the AWS Systems Manager API SendCommand operation to run the document to copy the log files and send CONTINUE to the Auto Scaling group to terminate the instance.
- F. Change the log delivery rate to every 5 minute
- G. Create a script to copy log files to Amazon S3, and add the script to EC2 instance user data
- H. Create an Amazon EventBridge (Amazon CloudWatch Events) rule to detect EC2 instance termination
- I. Invoke an AWS Lambda function from the EventBridge (CloudWatch Events) rule that uses the AWS CLI to run the user-data script to copy the log files and terminate the instance.
- J. Create an AWS Systems Manager document with a script to copy log files to Amazon S3. Create an Auto Scaling lifecycle hook that publishes a message to an Amazon Simple Notification Service (Amazon SNS) topic
- K. From the SNS notification, call the AWS Systems Manager API SendCommand operation to run the document to copy the log files and send ABANDON to the Auto Scaling group to terminate the instance.

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/adding-lifecycle-hooks.html>

- Refer to Default Result section - If the instance is terminating, both abandon and continue allow the instance to terminate. However, abandon stops any remaining actions, such as other lifecycle hooks, and continue allows any other lifecycle hooks to complete.

[https://aws.amazon.com/blogs/infrastructure-and-automation/run-code-before-terminating-an-ec2-auto-scaling-i](https://aws.amazon.com/blogs/infrastructure-and-automation/run-code-before-terminating-an-ec2-auto-scaling-instance/) <https://github.com/aws-samples/aws-lambda-lifecycle-hooks-function>

[https://github.com/aws-samples/aws-lambda-lifecycle-hooks-function/blob/master/cloudformation/template.yam](https://github.com/aws-samples/aws-lambda-lifecycle-hooks-function/blob/master/cloudformation/template.yaml)

**NEW QUESTION 30**

- (Exam Topic 1)

A finance company hosts a data lake in Amazon S3. The company receives financial data records over SFTP each night from several third parties. The company runs its own SFTP server on an Amazon EC2 instance in a public subnet of a VPC. After the files are uploaded, they are moved to the data lake by a cron job that runs on the same instance. The SFTP server is reachable on DNS [sftp.example.com](https://www.example.com) through the use of Amazon Route 53.

What should a solutions architect do to improve the reliability and scalability of the SFTP solution?

- A. Move the EC2 instance into an Auto Scaling group
- B. Place the EC2 instance behind an Application Load Balancer (ALB). Update the DNS record [sftp.example.com](https://www.example.com) in Route 53 to point to the ALB.
- C. Migrate the SFTP server to AWS Transfer for SFTP
- D. Update the DNS record [sftp.example.com](https://www.example.com) in Route 53 to point to the server endpoint hostname.
- E. Migrate the SFTP server to a file gateway in AWS Storage Gateway
- F. Update the DNS record [sftp.example.com](https://www.example.com) in Route 53 to point to the file gateway endpoint.
- G. Place the EC2 instance behind a Network Load Balancer (NLB). Update the DNS record [sftp.example.com](https://www.example.com) in Route 53 to point to the NLB.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/aws-transfer-family/faqs/> <https://docs.aws.amazon.com/transfer/latest/userguide/what-is-aws-transfer-family.html>

[https://aws.amazon.com/about-aws/whats-new/2018/11/aws-transfer-for-sftp-fully-managed-sftp-for-s3/?nc1=h\\_](https://aws.amazon.com/about-aws/whats-new/2018/11/aws-transfer-for-sftp-fully-managed-sftp-for-s3/?nc1=h_)

**NEW QUESTION 34**

- (Exam Topic 1)

A company is running a traditional web application on Amazon EC2 instances. The company needs to refactor the application as microservices that run on containers. Separate versions of the application exist in two distinct environments: production and testing. Load for the application is variable, but the minimum load and the maximum load are known. A solutions architect needs to design the updated application with a serverless architecture that minimizes operational complexity.

Which solution will meet these requirements MOST cost-effectively?

- A. Upload the container images to AWS Lambda as function
- B. Configure a concurrency limit for the associated Lambda functions to handle the expected peak load
- C. Configure two separate Lambda integrations within Amazon API Gateway: one for production and one for testing.
- D. Upload the container images to Amazon Elastic Container Registry (Amazon ECR). Configure two auto scaled Amazon Elastic Container Service (Amazon ECS) clusters with the Fargate launch type to handle the expected load
- E. Deploy tasks from the ECR image
- F. Configure two separate Application Load Balancers to direct traffic to the ECS clusters.



- G. Upload the container images to Amazon Elastic Container Registry (Amazon ECR). Configure two auto scaled Amazon Elastic Kubernetes Service (Amazon EKS) clusters with the Fargate launch type to handle the expected load.
- H. Deploy tasks from the ECR image
- I. Configure two separate Application Load Balancers to direct traffic to the EKS clusters.
- J. Upload the container images to AWS Elastic Beanstalk
- K. In Elastic Beanstalk, create separate environments and deployments for production and testing
- L. Configure two separate Application Load Balancers to direct traffic to the Elastic Beanstalk deployments.

**Answer: B**

**Explanation:**

minimizes operational + microservices that run on containers = AWS Elastic Beanstalk

**NEW QUESTION 37**

- (Exam Topic 1)

A company has an organization in AWS Organizations that has a large number of AWS accounts. One of the AWS accounts is designated as a transit account and has a transit gateway that is shared with all of the other AWS accounts. AWS Site-to-Site VPN connections are configured between all of the company's global offices and the transit account. The company has AWS Config enabled on all of its accounts.

The company's networking team needs to centrally manage a list of internal IP address ranges that belong to the global offices. Developers will reference this list to gain access to applications securely.

Which solution meets these requirements with the LEAST amount of operational overhead?

- A. Create a JSON file that is hosted in Amazon S3 and that lists all of the internal IP address ranges. Configure an Amazon Simple Notification Service (Amazon SNS) topic in each of the accounts that can be involved when the JSON file is updated.
- B. Subscribe an AWS Lambda function to the SNS topic to update all relevant security group rules with the updated IP address ranges.
- C. Create a new AWS Config managed rule that contains all of the internal IP address ranges. Use the rule to check the security groups in each of the accounts to ensure compliance with the list of IP address ranges.
- D. Configure the rule to automatically remediate any noncompliant security group that is detected.
- E. In the transit account, create a VPC prefix list with all of the internal IP address ranges.
- F. Use AWS Resource Access Manager to share the prefix list with all of the other accounts.
- G. Use the shared prefix list to configure security group rules in the other accounts.
- H. In the transit account, create a security group with all of the internal IP address ranges.
- I. Configure the security groups in the other accounts to reference the transit account's security group by using a nested security group reference of `*-<transit-account-id>/.sg-1a2b3c4d`.

**Answer: C**

**Explanation:**

Customer-managed prefix lists — Sets of IP address ranges that you define and manage. You can share your prefix list with other AWS accounts, enabling those accounts to reference the prefix list in their own resources. <https://docs.aws.amazon.com/vpc/latest/userguide/managed-prefix-lists.html>

A VPC prefix list is created in the transit account with all of the internal IP address ranges, and then shared to all of the other accounts using AWS Resource Access Manager. This allows for central management of the IP address ranges, and eliminates the need for manual updates to security group rules in each account. This solution also allows for compliance checks to be run using AWS Config and for any non-compliant security groups to be automatically remediated.

**NEW QUESTION 39**

- (Exam Topic 1)

A life sciences company is using a combination of open source tools to manage data analysis workflows and Docker containers running on servers in its on-premises data center to process genomics data. Sequencing data is generated and stored on a local storage area network (SAN), and then the data is processed. The research and development teams are running into capacity issues and have decided to re-architect their genomics analysis platform on AWS to scale based on workload demands and reduce the turnaround time from weeks to days.

The company has a high-speed AWS Direct Connect connection. Sequencers will generate around 200 GB of data for each genome, and individual jobs can take several hours to process the data with ideal compute capacity. The end result will be stored in Amazon S3. The company is expecting 10-15 job requests each day. Which solution meets these requirements?

- A. Use regularly scheduled AWS Snowball Edge devices to transfer the sequencing data into AWS. When AWS receives the Snowball Edge device and the data is loaded into Amazon S3, use S3 events to trigger an AWS Lambda function to process the data.
- B. Use AWS Data Pipeline to transfer the sequencing data to Amazon S3. Use S3 events to trigger an Amazon EC2 Auto Scaling group to launch custom-AMI EC2 instances running the Docker containers to process the data.
- C. Use AWS DataSync to transfer the sequencing data to Amazon S3. Use S3 events to trigger an AWS Lambda function that starts an AWS Step Functions workflow. Store the Docker images in Amazon Elastic Container Registry (Amazon ECR) and trigger AWS Batch to run the container and process the sequencing data.
- D. Use an AWS Storage Gateway file gateway to transfer the sequencing data to Amazon S3. Use S3 events to trigger an AWS Batch job that runs on Amazon EC2 instances running the Docker containers to process the data.

**Answer: C**

**Explanation:**

AWS DataSync can be used to transfer the sequencing data to Amazon S3, which is a more efficient and faster method than using Snowball Edge devices. Once the data is in S3, S3 events can trigger an AWS Lambda function that starts an AWS Step Functions workflow. The Docker images can be stored in Amazon Elastic Container Registry (Amazon ECR) and AWS Batch can be used to run the container and process the sequencing data.

**NEW QUESTION 40**

- (Exam Topic 1)

A company is planning to migrate its business-critical applications from an on-premises data center to AWS. The company has an on-premises installation of a Microsoft SQL Server Always On cluster. The company wants to migrate to an AWS managed database service. A solutions architect must design a heterogeneous database migration on AWS.

Which solution will meet these requirements?

- A. Migrate the SQL Server databases to Amazon RDS for MySQL by using backup and restore utilities.
- B. Use an AWS Snowball Edge Storage Optimized device to transfer data to Amazon S3. Set up Amazon RDS for MySQL.

- C. Use S3 integration with SQL Server features, such as BULK INSERT.
- D. Use the AWS Schema Conversion Tool to translate the database schema to Amazon RDS for MeSQ
- E. Then use AWS Database Migration Service (AWS DMS) to migrate the data from on-premises databases to Amazon RDS.
- F. Use AWS DataSync to migrate data over the network between on-premises storage and Amazon S3. Set up Amazon RDS for MySQL
- G. Use S3 integration with SQL Server features, such as BULK INSERT.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/dms/schema-conversion-tool/>

AWS Schema Conversion Tool (SCT) can automatically convert the database schema from Microsoft SQL Server to Amazon RDS for MySQL. This allows for a smooth transition of the database schema without any manual intervention. AWS DMS can then be used to migrate the data from the on-premises databases to the newly created Amazon RDS for MySQL instance. This service can perform a one-time migration of the data or can set up ongoing replication of data changes to keep the on-premises and AWS databases in sync.

**NEW QUESTION 45**

- (Exam Topic 1)

An enterprise company wants to allow its developers to purchase third-party software through AWS Marketplace. The company uses an AWS Organizations account structure with full features enabled, and has a shared services account in each organizational unit (OU) that will be used by procurement managers. The procurement team's policy indicates that developers should be able to obtain third-party software from an approved list only and use Private Marketplace in AWS Marketplace to achieve this requirement. The procurement team wants administration of Private Marketplace to be restricted to a role named procurement-manager-role, which could be assumed by procurement managers. Other IAM users, groups, roles, and account administrators in the company should be denied Private Marketplace administrative access.

What is the MOST efficient way to design an architecture to meet these requirements?

- A. Create an IAM role named procurement-manager-role in all AWS accounts in the organization. Add the PowerUserAccess managed policy to the role. Apply an inline policy to all IAM users and roles in every AWS account to deny permissions on the AWSPRivateMarketplaceAdminFullAccess managed policy.
- B. Create an IAM role named procurement-manager-role in all AWS accounts in the organization. Add the AdministratorAccess managed policy to the role. Define a permissions boundary with the AWSPRivateMarketplaceAdminFullAccess managed policy and attach it to all the developer roles.
- C. Create an IAM role named procurement-manager-role in all the shared services accounts in the organization. Add the AWSPRivateMarketplaceAdminFullAccess managed policy to the role. Create an organization root-level SCP to deny permissions to administer Private Marketplace to everyone except the role named procurement-manager-role. Create another organization root-level SCP to deny permissions to create an IAM role named procurement-manager-role to everyone in the organization.
- D. Create an IAM role named procurement-manager-role in all AWS accounts that will be used by developer.
- E. Add the AWSPRivateMarketplaceAdminFullAccess managed policy to the role.
- F. Create an SCP in Organizations to deny permissions to administer Private Marketplace to everyone except the role named procurement-manager-role.
- G. Apply the SCP to all the shared services accounts in the organization.

**Answer:** C

**Explanation:**

SCP to deny permissions to administer Private Marketplace to everyone except the role named procurement-manager-role.

<https://aws.amazon.com/blogs/awsmarketplace/controlling-access-to-a-well-architected-private-marketplace-usi>

This approach allows the procurement managers to assume the procurement-manager-role in shared services accounts, which have the AWSPRivateMarketplaceAdminFullAccess managed policy attached to it and can then manage the Private Marketplace. The organization root-level SCP denies the permission to administer Private Marketplace to everyone except the role named procurement-manager-role, and another SCP denies the permission to create an IAM role named procurement-manager-role to everyone in the organization, ensuring that only the procurement team can assume the role and manage the Private Marketplace. This approach provides a centralized way to manage and restrict access to Private Marketplace while maintaining a high level of security.

**NEW QUESTION 49**

- (Exam Topic 1)

A company has created an OU in AWS Organizations for each of its engineering teams. Each OU owns multiple AWS accounts. The organization has hundreds of AWS accounts. A solutions architect must design a solution so that each OU can view a breakdown of usage costs across its AWS accounts. Which solution meets these requirements?

- A. Create an AWS Cost and Usage Report (CUR) for each OU by using AWS Resource Access Manager. Allow each team to visualize the CUR through an Amazon QuickSight dashboard.
- B. Create an AWS Cost and Usage Report (CUR) from the AWS Organizations management account. Allow each team to visualize the CUR through an Amazon QuickSight dashboard.
- C. Create an AWS Cost and Usage Report (CUR) in each AWS Organizations member account. Allow each team to visualize the CUR through an Amazon QuickSight dashboard.
- D. Create an AWS Cost and Usage Report (CUR) by using AWS Systems Manager. Allow each team to visualize the CUR through Systems Manager OpsCenter dashboards.

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/cur/latest/userguide/billing-cur-limits.html>

**NEW QUESTION 53**

- (Exam Topic 1)

A retail company is hosting an e-commerce website on AWS across multiple AWS Regions. The company wants the website to be operational at all times for online purchases. The website stores data in an Amazon RDS for MySQL DB instance.

Which solution will provide the HIGHEST availability for the database?

- A. Configure automated backups on Amazon RDS
- B. In the case of disruption, promote an automated backup to be a standalone DB instance
- C. Direct database traffic to the promoted DB instance
- D. Create a replacement read replica that has the promoted DB instance as its source.
- E. Configure global tables and read replicas on Amazon RDS

- F. Activate the cross-Region scop
- G. In the case of disruption, use AWS Lambda to copy the read replicas from one Region to another Region.
- H. Configure global tables and automated backups on Amazon RD
- I. In the case of disruption, use AWS Lambda to copy the read replicas from one Region to another Region.
- J. Configure read replicas on Amazon RD
- K. In the case of disruption, promote a cross-Region and read replica to be a standalone DB instanc
- L. Direct database traffic to the promoted DB instanc
- M. Create areplacement read replica that has the promoted DB instance as its source.

**Answer:** D

**Explanation:**

This solution will provide the highest availability for the database, as the read replicas will allow the database to be available in multiple Regions, thus reducing the chances of disruption. Additionally, the promotion of the cross-Region read replica to become a standalone DB instance will ensure that the database is still available even if one of the Regions experiences disruptions.

**NEW QUESTION 58**

- (Exam Topic 1)

A company developed a pilot application by using AWS Elastic Beanstalk and Java. To save costs during development, the company's development team deployed the application into a single-instance environment. Recent tests indicate that the application consumes more CPU than expected. CPU utilization is regularly greater than 85%, which causes some performance bottlenecks.

A solutions architect must mitigate the performance issues before the company launches the application to production.

Which solution will meet these requirements with the LEAST operational overhead?

- A. Create a new Elastic Beanstalk applicatio
- B. Select a load-balanced environment typ
- C. Select all Availability Zone
- D. Add a scale-out rule that will run if the maximum CPU utilization is over 85% for 5 minutes.
- E. Create a second Elastic Beanstalk environmen
- F. Apply the traffic-splitting deployment polic
- G. Specify a percentage of incoming traffic to direct to the new environment in the average CPU utilization is over 85% for 5 minutes.
- H. Modify the existing environment's capacity configuration to use a load-balanced environment type.Select all Availability Zone
- I. Add a scale-out rule that will run if the average CPU utilization is over 85% for 5 minutes.
- J. Select the Rebuild environment action with the load balancing option Select an Availability Zones Add a scale-out rule that will run if the sum CPU utilization is over 85% for 5 minutes.

**Answer:** C

**Explanation:**

This solution will meet the requirements with the least operational overhead because it allows the company to modify the existing environment's capacity configuration, so it becomes a load-balanced environment type. By selecting all availability zones, the company can ensure that the application is running in multiple availability zones, which can help to improve the availability and scalability of the application. The company can also add a scale-out rule that will run if the average CPU utilization is over 85% for 5 minutes, which can help to mitigate the performance issues. This solution does not require creating new Elastic Beanstalk environments or rebuilding the existing one, which reduces the operational overhead.

You can refer to the AWS Elastic Beanstalk documentation for more information on how to use this service: <https://aws.amazon.com/elasticbeanstalk/> You can refer to the AWS documentation for more information on how to use autoscaling: <https://aws.amazon.com/autoscaling/>

**NEW QUESTION 63**

- (Exam Topic 1)

A company is subject to regulatory audits of its financial information. External auditors who use a single AWS account need access to the company's AWS account. A solutions architect must provide the auditors with secure, read-only access to the company's AWS account. The solution must comply with AWS security best practices.

Which solution will meet these requirements?

- A. In the company's AWS account, create resource policies for all resources in the account to grant access to the auditors' AWS accoun
- B. Assign a unique external ID to the resource policy.
- C. In the company's AWS account create an IAM role that trusts the auditors' AWS account Create an IAM policy that has the required permission
- D. Attach the policy to the rol
- E. Assign a unique external ID to the role's trust policy.
- F. In the company's AWS account, create an IAM use
- G. Attach the required IAM policies to the IAM user.Create API access keys for the IAM use
- H. Share the access keys with the auditors.
- I. In the company's AWS account, create an IAM group that has the required permissions Create an IAM user in the company s account for each audito
- J. Add the IAM users to the IAM group.

**Answer:** B

**Explanation:**

This solution will allow the external auditors to have read-only access to the company's AWS account while being compliant with AWS security best practices. By creating an IAM role, which is a secure and flexible way of granting access to AWS resources, and trusting the auditors' AWS account, the company can ensure that the auditors only have the permissions that are required for their role and nothing more. Assigning a unique external ID to the role's trust policy, it will ensure that only the auditors' AWS account can assume the role.

Reference:

AWS IAM Roles documentation: <https://aws.amazon.com/iam/features/roles/> AWS IAM Best practices: <https://aws.amazon.com/iam/security-best-practices/>

**NEW QUESTION 66**

- (Exam Topic 1)

A company is using an on-premises Active Directory service for user authentication. The company wants to use the same authentication service to sign in to the company's AWS accounts, which are using AWS Organizations. AWS Site-to-Site VPN connectivity already exists between the on-premises environment and all the company's AWS accounts.



The company's security policy requires conditional access to the accounts based on user groups and roles. User identities must be managed in a single location. Which solution will meet these requirements?

- A. Configure AWS Single Sign-On (AWS SSO) to connect to Active Directory by using SAML 2.0. Enable automatic provisioning by using the System for Cross-domain Identity Management (SCIM) v2.0 protocol.
- B. Grant access to the AWS accounts by using attribute-based access controls (ABACs).
- C. Configure AWS Single Sign-On (AWS SSO) by using AWS SSO as an identity source.
- D. Enable automatic provisioning by using the System for Cross-domain Identity Management (SCIM) v2.0 protocol.
- E. Grant access to the AWS accounts by using AWS SSO permission sets.
- F. In one of the company's AWS accounts, configure AWS Identity and Access Management (IAM) to use a SAML 2.0 identity provider.
- G. Provision IAM users that are mapped to the federated user.
- H. Grant access that corresponds to appropriate groups in Active Directory.
- I. Grant access to the required AWS accounts by using cross-account IAM users.
- J. In one of the company's AWS accounts, configure AWS Identity and Access Management (IAM) to use an OpenID Connect (OIDC) identity provider.
- K. Provision IAM roles that grant access to the AWS account for the federated users that correspond to appropriate groups in Active Directory.
- L. Grant access to the required AWS accounts by using cross-account IAM roles.

**Answer:** D

**Explanation:**

<https://aws.amazon.com/blogs/aws/new-attributes-based-access-control-with-aws-single-sign-on/>

#### NEW QUESTION 71

- (Exam Topic 1)

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 positive. 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 positive. Over time, change the action of the web ACL rules from Allow to Block.

**Answer:** A

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/waf-analyze-count-action-rules/>

#### NEW QUESTION 75

- (Exam Topic 1)

A company has a latency-sensitive trading platform that uses Amazon DynamoDB as a storage backend. The company configured the DynamoDB table to use on-demand capacity mode. A solutions architect needs to design a solution to improve the performance of the trading platform. The new solution must ensure high availability for the trading platform.

Which solution will meet these requirements with the LEAST latency?

- A. Create a two-node DynamoDB Accelerator (DAX) cluster. Configure an application to read and write data by using DAX.
- B. Create a three-node DynamoDB Accelerator (DAX) cluster.
- C. Configure an application to read data by using DAX and to write data directly to the DynamoDB table.
- D. Create a three-node DynamoDB Accelerator (DAX) cluster.
- E. Configure an application to read data directly from the DynamoDB table and to write data by using DAX.
- F. Create a single-node DynamoDB Accelerator (DAX) cluster.
- G. Configure an application to read data by using DAX and to write data directly to the DynamoDB table.

**Answer:** B

**Explanation:**

A DAX cluster can be deployed with one or two nodes for development or test workloads. One- and two-node clusters are not fault-tolerant, and we don't recommend using fewer than three nodes for production use. If a one- or two-node cluster encounters software or hardware errors, the cluster can become unavailable or lose cached data. A DAX cluster can be deployed with one or two nodes for development or test workloads. One and two-node clusters are not fault-tolerant, and we don't recommend using fewer than three nodes for production use. If a one- or two-node cluster encounters software or hardware errors, the cluster can become unavailable or lose cached data.

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/DAX.concepts.cluster.html>

#### NEW QUESTION 76

- (Exam Topic 1)

A company that uses AWS Organizations allows developers to experiment on AWS. As part of the landing zone that the company has deployed, developers use their company email address to request an account. The company wants to ensure that developers are not launching costly services or running services unnecessarily. The company must give developers a fixed monthly budget to limit their AWS costs.

Which combination of steps will meet these requirements? (Choose three.)

- A. Create an SCP to set a fixed monthly account usage limit.



- B. Apply the SCP to the developer accounts.
- C. Use AWS Budgets to create a fixed monthly budget for each developer's account as part of the account creation process.
- D. Create an SCP to deny access to costly services and component
- E. Apply the SCP to the developer accounts.
- F. Create an IAM policy to deny access to costly services and component
- G. Apply the IAM policy to the developer accounts.
- H. Create an AWS Budgets alert action to terminate services when the budgeted amount is reached. Configure the action to terminate all services.
- I. Create an AWS Budgets alert action to send an Amazon Simple Notification Service (Amazon SNS) notification when the budgeted amount is reached
- J. Invoke an AWS Lambda function to terminate all services.

**Answer:** BCF

**Explanation:**

- Option A is incorrect because creating an SCP to set a fixed monthly account usage limit is not possible. SCPs are policies that specify the services and actions that users and roles can use in the member accounts of an AWS Organization. SCPs cannot enforce budget limits or prevent users from launching costly services or running services unnecessarily1
  - Option B is correct because using AWS Budgets to create a fixed monthly budget for each developer's account as part of the account creation process meets the requirement of giving developers a fixed monthly budget to limit their AWS costs. AWS Budgets allows you to plan your service usage, service costs, and instance reservations. You can create budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount2
  - Option C is correct because creating an SCP to deny access to costly services and components meets the requirement of ensuring that developers are not launching costly services or running services unnecessarily. SCPs can restrict access to certain AWS services or actions based on conditions such as region, resource tags, or request time. For example, an SCP can deny access to Amazon Redshift clusters or Amazon EC2 instances with certain instance types1
  - Option D is incorrect because creating an IAM policy to deny access to costly services and components is not sufficient to meet the requirement of ensuring that developers are not launching costly services or running services unnecessarily. IAM policies can only control access to resources within a single AWS account. If developers have multiple accounts or can create new accounts, they can bypass the IAM policy restrictions. SCPs can apply across multiple accounts within an AWS Organization and prevent users from creating new accounts that do not comply with the SCP rules3
  - Option E is incorrect because creating an AWS Budgets alert action to terminate services when the budgeted amount is reached is not possible. AWS Budgets alert actions can only perform one of the following actions: apply an IAM policy, apply an SCP, or send a notification through Amazon SNS. AWS Budgets alert actions cannot terminate services directly.
  - Option F is correct because creating an AWS Budgets alert action to send an Amazon SNS notification when the budgeted amount is reached and invoking an AWS Lambda function to terminate all services meets the requirement of giving developers a fixed monthly budget to limit their AWS costs. AWS Budgets alert actions can send notifications through Amazon SNS when a budget threshold is breached. Amazon SNS can trigger an AWS Lambda function that can perform custom logic such as terminating all services in the developer's account. This way, developers cannot exceed their budget limit and incur additional costs.
- References: 1: [https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps.html](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps.html) 2: <https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/budgets-create.html> 3: <https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html> : <https://docs.aws.amazon.com/cost-management/latest/userguide/budgets-actions.html> : <https://docs.aws.amazon.com/sns/latest/dg/sns-lambda.html> : <https://docs.aws.amazon.com/lambda/latest/dg/welcome.html>

**NEW QUESTION 77**

- (Exam Topic 1)

A company runs its application in the eu-west-1 Region and has one account for each of its environments development, testing, and production All the environments are running 24 hours a day 7 days a week by using stateful Amazon EC2 instances and Amazon RDS for MySQL databases The databases are between 500 GB and 800 GB in size The development team and testing team work on business days during business hours, but the production environment operates 24 hours a day. 7 days a week. The company wants to reduce costs AH resources are tagged with an environment tag with either development, testing, or production as the key. What should a solutions architect do to reduce costs with the LEAST operational effort?

- A. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs once every day Configure the rule to invoke one AWS Lambda function that starts or stops instances based on the tag day and time.
- B. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs every business day in the evening
- C. Configure the rule to invoke an AWS Lambda function that stops instances based on the tag Create a second EventBridge (CloudWatch Events) rule that runs every business day in the morning Configure the second rule to invoke another Lambda function that starts instances based on the tag
- D. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs every business day in the evening Configure the rule to invoke an AWS Lambda function that terminates instances based on the tag Create a second EventBridge (CloudWatch Events) rule that runs every business day in the morning Configure the second rule to invoke another Lambda function that restores the instances from their last backup based on the tag.
- E. Create an Amazon EventBridge rule that runs every hour
- F. Configure the rule to invoke one AWS Lambda function that terminates or restores instances from their last backup based on the tag
- G. day, and time.

**Answer:** B

**Explanation:**

Creating an Amazon EventBridge rule that runs every business day in the evening to stop instances and another rule that runs every business day in the morning to start instances based on the tag will reduce costs with the least operational effort. This approach allows for instances to be stopped during non-business hours when they are not in use, reducing the costs associated with running them. It also allows for instances to be started again in the morning when the development and testing teams need to use them.

**NEW QUESTION 82**

- (Exam Topic 1)

A finance company is running its business-critical application on current-generation Linux EC2 instances The application includes a self-managed MySQL database performing heavy I/O operations. The application is working fine to handle a moderate amount of traffic during the month. However, it slows down during the final three days of each month due to month-end reporting, even though the company is using Elastic Load Balancers and Auto Scaling within its infrastructure to meet the increased demand.

Which of the following actions would allow the database to handle the month-end load with the LEAST impact on performance?

- A. Pre-warming Elastic Load Balancers, using a bigger instance type, changing all Amazon EBS volumes to GP2 volumes.
- B. Performing a one-time migration of the database cluster to Amazon RDS

- C. and creating several additional read replicas to handle the load during end of month
- D. Using Amazon CloudWatch with AWS Lambda to change the type, size, or IOPS of Amazon EBS volumes in the cluster based on a specific CloudWatch metric
- F. Replacing all existing Amazon EBS volumes with new Provisioned IOPS volumes that have the maximum available storage size and I/O per second by taking snapshots before the end of the month and reverting back afterwards.

**Answer: B**

**Explanation:**

In this scenario, the Amazon EC2 instances are in an Auto Scaling group already which means that the database read operations is the possible bottleneck especially during the month-end wherein the reports are generated. This can be solved by creating RDS read replicas.

**NEW QUESTION 83**

- (Exam Topic 1)

A financial services company receives a regular data feed from its credit card servicing partner. Approximately 5.1 records are sent every 15 minutes in plaintext, delivered over HTTPS directly into an Amazon S3 bucket with server-side encryption. This feed contains sensitive credit card primary account number (PAN) data. The company needs to automatically mask the PAN before sending the data to another S3 bucket for additional internal processing. The company also needs to remove and merge specific fields, and then transform the record into JSON format. Additionally, extra feeds are likely to be added in the future, so any design needs to be easily expandable.

Which solutions will meet these requirements?

- A. Trigger an AWS Lambda function on file delivery that extracts each record and writes it to an Amazon SQS queue.
- B. Trigger another Lambda function when new messages arrive in the SQS queue to process the records, writing the results to a temporary location in Amazon S3. Trigger a final Lambda function once the SQS queue is empty to transform the records into JSON format and send the results to another S3 bucket for internal processing.
- C. Trigger an AWS Lambda function on file delivery that extracts each record and writes it to an Amazon SQS queue.
- D. Configure an AWS Fargate container application to automatically scale to a single instance when the SQS queue contains a message.
- E. Have the application process each record, and transform the record into JSON format.
- F. When the queue is empty, send the results to another S3 bucket for internal processing and scale down the AWS Fargate instance.
- G. Create an AWS Glue crawler and custom classifier based on the data feed formats and build a table definition to match the data.
- H. Trigger an AWS Lambda function on file delivery to start an AWS Glue ETL job to transform the entire record according to the processing and transformation requirements.
- I. Define the output format as JSON.
- J. Once complete, have the ETL job send the results to another S3 bucket for internal processing.
- K. Create an AWS Glue crawler and custom classifier based upon the data feed formats and build a table definition to match the data.
- L. Perform an Amazon Athena query on file delivery to start an Amazon EMR ETL job to transform the entire record according to the processing and transformation requirements.
- M. Define the output format as JSON.
- N. Once complete, send the results to another S3 bucket for internal processing and scale down the EMR cluster.

**Answer: C**

**Explanation:**

You can use a Glue crawler to populate the AWS Glue Data Catalog with tables. The Lambda function can be triggered using S3 event notifications when object creation events occur. The Lambda function will then trigger the Glue ETL job to transform the records, masking the sensitive data and modifying the output format to JSON. This solution meets all requirements.

**NEW QUESTION 86**

- (Exam Topic 1)

A company recently acquired several other companies. Each company has a separate AWS account with a different billing and reporting method. The acquiring company has consolidated all the accounts into one organization in AWS Organizations. However, the acquiring company has found it difficult to generate a cost report that contains meaningful groups for all the teams.

The acquiring company's finance team needs a solution to report on costs for all the companies through a self-managed application.

Which solution will meet these requirements?

- A. Create an AWS Cost and Usage Report for the organization and define tags and cost categories in the report.
- B. Define tags and cost categories in the report.
- C. Create a table in Amazon Athena and an Amazon QuickSight dataset based on the Athena table.
- D. Create an Amazon QuickSight dataset based on the Athena table.
- E. Share the dataset with the finance team.
- F. Create an AWS Cost and Usage Report for the organization and define tags and cost categories in the report.
- G. Define tags and cost categories in the report.
- H. Create a specialized template in AWS Cost Explorer that the finance department will use to build reports.
- I. Create an Amazon QuickSight dataset that receives spending information from the AWS Price List Query API.
- J. Share the dataset with the finance team.
- K. Use the AWS Price List Query API to collect account spending information.
- L. Create a specialized template in AWS Cost Explorer that the finance department will use to build reports.

**Answer: A**

**Explanation:**

Creating an AWS Cost and Usage Report for the organization and defining tags and cost categories in the report will allow for detailed cost reporting for the different companies that have been consolidated into one organization. By creating a table in Amazon Athena and an Amazon QuickSight dataset based on the Athena table, the finance team will be able to easily query and generate reports on the costs for all the companies. The dataset can then be shared with the finance team for them to use for their reporting needs.

**NEW QUESTION 90**

- (Exam Topic 1)

A company is using AWS Organizations to manage multiple AWS accounts. For security purposes, the company requires the creation of an Amazon Simple Notification Service (Amazon SNS) topic that enables integration with a third-party alerting system in all the Organizations member accounts.

A solutions architect used an AWS CloudFormation template to create the SNS topic and stack sets to automate the deployment of CloudFormation stacks. Trusted access has been enabled in Organizations.

What should the solutions architect do to deploy the CloudFormation StackSets in all AWS accounts?

- A. Create a stack set in the Organizations member account
- B. Use service-managed permission
- C. Set deployment options to deploy to an organization
- D. Use CloudFormation StackSets drift detection.
- E. Create stacks in the Organizations member account
- F. Use self-service permission
- G. Set deployment options to deploy to an organization
- H. Enable the CloudFormation StackSets automatic deployment.
- I. Create a stack set in the Organizations management account. Use service-managed permission.
- J. Set deployment options to deploy to the organization
- K. Enable CloudFormation StackSets automatic deployment.
- L. Create stacks in the Organizations management account
- M. Use service-managed permission
- N. Set deployment options to deploy to the organization
- O. Enable CloudFormation StackSets drift detection.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/blogs/aws/use-cloudformation-stacksets-to-provision-resources-across-multiple-aws-ac>

## NEW QUESTION 92

- (Exam Topic 1)

A company is hosting a critical application on a single Amazon EC2 instance. The application uses an Amazon ElastiCache for Redis single-node cluster for an in-memory data store. The application uses an Amazon RDS for MariaDB DB instance for a relational database. For the application to function, each piece of the infrastructure must be healthy and must be in an active state.

A solutions architect needs to improve the application's architecture so that the infrastructure can automatically recover from failure with the least possible downtime.

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

- A. Use an Elastic Load Balancer to distribute traffic across multiple EC2 instances
- B. Ensure that the EC2 instances are part of an Auto Scaling group that has a minimum capacity of two instances.
- C. Use an Elastic Load Balancer to distribute traffic across multiple EC2 instances. Ensure that the EC2 instances are configured in unlimited mode.
- D. Modify the DB instance to create a read replica in the same Availability Zone
- E. Promote the read replica to be the primary DB instance in failure scenarios.
- F. Modify the DB instance to create a Multi-AZ deployment that extends across two Availability Zones.
- G. Create a replication group for the ElastiCache for Redis cluster
- H. Configure the cluster to use an Auto Scaling group that has a minimum capacity of two instances.
- I. Create a replication group for the ElastiCache for Redis cluster
- J. Enable Multi-AZ on the cluster.

**Answer:** ADF

**Explanation:**

➤ Option A is correct because using an Elastic Load Balancer and an Auto Scaling group with a minimum capacity of two instances can improve the availability and scalability of the EC2 instances that host the application. The load balancer can distribute traffic across multiple instances and the Auto Scaling group can replace any unhealthy instances automatically.

➤ Option D is correct because modifying the DB instance to create a Multi-AZ deployment that extends across two Availability Zones can improve the availability and durability of the RDS for MariaDB database. Multi-AZ deployments provide enhanced data protection and minimize downtime by automatically failing over to a standby replica in another Availability Zone in case of a planned or unplanned outage.

➤ Option F is correct because creating a replication group for the ElastiCache for Redis cluster and enabling Multi-AZ on the cluster can improve the availability and fault tolerance of the in-memory data store. A replication group consists of a primary node and up to five read-only replica nodes that are synchronized with the primary node using asynchronous replication. Multi-AZ allows automatic failover to one of the replicas if the primary node fails or becomes unreachable.

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<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/burstable-performance-instances-unlimited-mode.html> 3:

[https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER\\_ReadRepl.html](https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER_ReadRepl.html) 4:

<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html> 5:

<https://docs.aws.amazon.com/AmazonElastiCache/latest/red-ug/AutoScaling.html> 6: <https://docs.aws.amazon.com/AmazonElastiCache/latest/red-ug/Replication.Redis.Groups.html>

## NEW QUESTION 93

- (Exam Topic 1)

A company is using multiple AWS accounts. The DNS records are stored in a private hosted zone for Amazon Route 53 in Account A. The company's applications and databases are running in Account B.

A solutions architect will deploy a two-net application in a new VPC. To simplify the configuration, the db.example.com CNAME record set for the Amazon RDS endpoint was created in a private hosted zone for Amazon Route 53.

During deployment, the application failed to start. Troubleshooting revealed that db.example.com is not resolvable on the Amazon EC2 instance. The solutions architect confirmed that the record set was created correctly in Route 53.

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

- A. Deploy the database on a separate EC2 instance in the new VPC. Create a record set for the instance's private IP in the private hosted zone.
- B. Use SSH to connect to the application tier EC2 instance. Add an RDS endpoint IP address to the /etc/resolv.conf file.
- C. Create an authorization to associate the private hosted zone in Account A with the new VPC in Account B.
- D. Create a private hosted zone for the example.com domain in Account B. Configure Route 53 replication between AWS accounts.



- E. Associate a new VPC in Account B with a hosted zone in Account
- F. Delete the association authorization In Account A.

**Answer:** CE

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/private-hosted-zone-different-account/>

#### NEW QUESTION 96

- (Exam Topic 1)

A company is building a software-as-a-service (SaaS) solution on AWS. The company has deployed an Amazon API Gateway REST API with AWS Lambda integration in multiple AWS Regions and in the same production account.

The company offers tiered pricing that gives customers the ability to pay for the capacity to make a certain number of API calls per second. The premium tier offers up to 3,000 calls per second, and customers are identified by a unique API key. Several premium tier customers in various Regions report that they receive error responses of 429 Too Many Requests from multiple API methods during peak usage hours. Logs indicate that the Lambda function is never invoked.

What could be the cause of the error messages for these customers?

- A. The Lambda function reached its concurrency limit.
- B. The Lambda function its Region limit for concurrency.
- C. The company reached its API Gateway account limit for calls per second.
- D. The company reached its API Gateway default per-method limit for calls per second.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-request-throttling.html#apig-reques>

#### NEW QUESTION 98

- (Exam Topic 1)

A company is running a web application in the AWS Cloud. The application consists of dynamic content that is created on a set of Amazon EC2 instances. The EC2 instances run in an Auto Scaling group that is configured as a target group for an Application Load Balancer (ALB).

The company is using an Amazon CloudFront distribution to distribute the application globally. The CloudFront distribution uses the ALB as an origin. The company uses Amazon Route 53 for DNS and has created an A record of www.example.com for the CloudFront distribution.

A solutions architect must configure the application so that it is highly available and fault tolerant. Which solution meets these requirements?

- A. Provision a full, secondary application deployment in a different AWS Region
- B. Update the Route 53 A record to be a failover record
- C. Add both of the CloudFront distributions as value
- D. Create Route 53 health checks.
- E. Provision an ALB, an Auto Scaling group, and EC2 instances in a different AWS Region
- F. Update the CloudFront distribution, and create a second origin for the new AL
- G. Create an origin group for the two origin
- H. Configure one origin as primary and one origin as secondary.
- I. Provision an Auto Scaling group and EC2 instances in a different AWS Region
- J. Create a second target for the new Auto Scaling group in the AL
- K. Set up the failover routing algorithm on the ALB.
- L. Provision a full, secondary application deployment in a different AWS Region
- M. Create a second CloudFront distribution, and add the new application setup as an origin
- N. Create an AWS Global Accelerator accelerator
- O. Add both of the CloudFront distributions as endpoints.

**Answer:** B

**Explanation:**

[https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/DownloadDistS3AndCustomOrigins.h](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/DownloadDistS3AndCustomOrigins.html)

[https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/high\\_availability\\_origin\\_failover.html](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/high_availability_origin_failover.html)

You can set up CloudFront with origin failover for scenarios that require high availability. To get started, you create an origin group with two origins: a primary and a secondary. If the primary origin is unavailable, or returns specific HTTP response status codes that indicate a failure, CloudFront automatically switches to the secondary origin.

#### NEW QUESTION 99

- (Exam Topic 1)

A company that has multiple AWS accounts is using AWS Organizations. The company's AWS accounts host VPCs, Amazon EC2 instances, and containers.

The company's compliance team has deployed a security tool in each VPC where the company has deployments. The security tools run on EC2 instances and send information to the AWS account that is dedicated for the compliance team. The company has tagged all the compliance-related resources with a key of "costCenter" and a value of "compliance".

The company wants to identify the cost of the security tools that are running on the EC2 instances so that the company can charge the compliance team's AWS account. The cost calculation must be as accurate as possible.

What should a solutions architect do to meet these requirements?

- A. In the management account of the organization, activate the costCenter user-defined tag
- B. Configure monthly AWS Cost and Usage Reports to save to an Amazon S3 bucket in the management account
- C. Use the tag breakdown in the report to obtain the total cost for the costCenter tagged resources.
- D. In the member accounts of the organization, activate the costCenter user-defined tag
- E. Configure monthly AWS Cost and Usage Reports to save to an Amazon S3 bucket in the management account
- F. Schedule a monthly AWS Lambda function to retrieve the reports and calculate the total cost for the costCenter tagged resources.
- G. In the member accounts of the organization activate the costCenter user-defined tag
- H. From the management account, schedule a monthly AWS Cost and Usage Report
- I. Use the tag breakdown in the report to calculate the total cost for the costCenter tagged resources.
- J. Create a custom report in the organization view in AWS Trusted Advisor



K. Configure the report to generate a monthly billing summary for the costCenter tagged resources in the compliance team's AWS account.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/custom-tags.html>

<https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/configurecostallocreport.html>

**NEW QUESTION 102**

- (Exam Topic 1)

A company with global offices has a single 1 Gbps AWS Direct Connect connection to a single AWS Region. The company's on-premises network uses the connection to communicate with the company's resources in the AWS Cloud. The connection has a single private virtual interface that connects to a single VPC. A solutions architect must implement a solution that adds a redundant Direct Connect connection in the same Region. The solution also must provide connectivity to other Regions through the same pair of Direct Connect connections as the company expands into other Regions. Which solution meets these requirements?

- A. Provision a Direct Connect gateway
- B. Delete the existing private virtual interface from the existing connectio
- C. Create the second Direct Connect connectio
- D. Create a new private virtual interlace on each connection, and connect both private vidual interfaces to the Direct Connect gateway
- E. Connect the Direct Connect gateway to the single VPC.
- F. Keep the existing private virtual interfac
- G. Create the second Direct Connect connectio
- H. Create a new private virtual interface on the new connection, and connect the new private virtual interface to the single VPC.
- I. Keep the existing private virtual interfac
- J. Create the second Direct Connect connectio
- K. Create a new public virtual interface on the new connection, and connect the new public virtual interface to the single VPC.
- L. Provision a transit gateway
- M. Delete the existing private virtual interface from the existing connection.Create the second Direct Connect connectio
- N. Create a new private virtual interface on each connection, and connect both private virtual interfaces to the transit gateway
- O. Associate the transit gateway with the single VPC.

**Answer:** A

**Explanation:**

A Direct Connect gateway is a globally available resource. You can create the Direct Connect gateway in any Region and access it from all other Regions. The following describe scenarios where you can use a Direct Connect gateway.

<https://docs.aws.amazon.com/directconnect/latest/UserGuide/direct-connect-gateways-intro.html>

**NEW QUESTION 103**

- (Exam Topic 1)

A company has its cloud infrastructure on AWS A solutions architect needs to define the infrastructure as code. The infrastructure is currently deployed in one AWS Region. The company's business expansion plan includes deployments in multiple Regions across multiple AWS accounts What should the solutions architect do to meet these requirements?

- A. Use AWS CloudFormation templates Add IAM policies to control the various accounts Deploy the templates across the multiple Regions
- B. Use AWS Organizations Deploy AWS CloudFormation templates from the management account Use AWS Control Tower to manage deployments across accounts
- C. Use AWS Organizations and AWS CloudFormation StackSets Deploy a CloudFormation template from an account that has the necessary IAM permissions
- D. Use nested stacks with AWS CloudFormation templates Change the Region by using nested stacks

**Answer:** C

**Explanation:**

<https://aws.amazon.com/blogs/aws/new-use-aws-cloudformation-stacksets-for-multiple-accounts-in-an-aws-orga> AWS Organizations allows the management of multiple AWS accounts as a single entity and AWS

CloudFormation StackSets allows creating, updating, and deleting stacks across multiple accounts and regions in an organization. This solution allows creating a single CloudFormation template that can be deployed across multiple accounts and regions, and also allows for the management of access and permissions for the different accounts through the use of IAM roles and policies in the management account.

**NEW QUESTION 107**

- (Exam Topic 1)

A company built an application based on AWS Lambda deployed in an AWS CloudFormation stack. The last production release of the web application introduced an issue that resulted in an outage lasting several minutes. A solutions architect must adjust the deployment process to support a canary release. Which solution will meet these requirements?

- A. Create an alias for every new deployed version of the Lambda functio
- B. Use the AWS CLI update-alias command with the routing-config parameter to distribute the load.
- C. Deploy the application into a new CloudFormation stac
- D. Use an Amazon Route 53 weighted routing policy to distribute the load.
- E. Create a version for every new deployed Lambda functio
- F. Use the AWS CLIupdate-function-configuration command with the routing-config parameter to distribute the load.
- G. Configure AWS CodeDeploy and use CodeDeployDefault.OneAtATime in the Deployment configuration to distribute the load.

**Answer:** A

**Explanation:**

<https://aws.amazon.com/blogs/compute/implementing-canary-deployments-of-aws-lambda-functions-with-alias->

<https://docs.aws.amazon.com/lambda/latest/dg/configuration-aliases.html>

#### NEW QUESTION 110

- (Exam Topic 1)

An AWS customer has a web application that runs on premises. The web application fetches data from a third-party API that is behind a firewall. The third party accepts only one public CIDR block in each client's allow list.

The customer wants to migrate their web application to the AWS Cloud. The application will be hosted on a set of Amazon EC2 instances behind an Application Load Balancer (ALB) in a VPC. The ALB is located in public subnets. The EC2 instances are located in private subnets. NAT gateways provide internet access to the private subnets.

How should a solutions architect ensure that the web application can continue to call the third-party API after the migration?

- A. Associate a block of customer-owned public IP addresses to the VP
- B. Enable public IP addressing for public subnets in the VPC.
- C. Register a block of customer-owned public IP addresses in the AWS accoun
- D. Create Elastic IP addresses from the address block and assign them to the NAT gateways in the VPC.
- E. Create Elastic IP addresses from the block of customer-owned IP addresse
- F. Assign the static Elastic IP addresses to the ALB.
- G. Register a block of customer-owned public IP addresses in the AWS accoun
- H. Set up AWS Global Accelerator to use Elastic IP addresses from the address bloc
- I. Set the ALB as the accelerator endpoint.

**Answer:** B

#### Explanation:

When EC2 instances reach third-party API through internet, their private IP addresses will be masked by NAT Gateway public IP address.

<https://aws.amazon.com/blogs/networking-and-content-delivery/introducing-bring-your-own-ip-byoip-for-amaz>

#### NEW QUESTION 111

- (Exam Topic 1)

A video processing company wants to build a machine learning (ML) model by using 600 TB of compressed data that is stored as thousands of files in the company's on-premises network attached storage system. The company does not have the necessary compute resources on premises for ML experiments and wants to use AWS.

The company needs to complete the data transfer to AWS within 3 weeks. The data transfer will be a one-time transfer. The data must be encrypted in transit. The measured upload speed of the company's internet connection is 100 Mbps, and multiple departments share the connection.

Which solution will meet these requirements MOST cost-effectively?

- A. Order several AWS Snowball Edge Storage Optimized devices by using the AWS Management Consol
- B. Configure the devices with a destination S3 bucke
- C. Copy the data to the device
- D. Ship the devices back to AWS.
- E. Set up a 10 Gbps AWS Direct Connect connection between the company location and the nearest AWS Regio
- F. Transfer the data over a VPN connection into the Region to store the data in Amazon S3.
- G. Create a VPN connection between the on-premises network storage and the nearest AWS Region. Transfer the data over the VPN connection.
- H. Deploy an AWS Storage Gateway file gateway on premise
- I. Configure the file gateway with a destination S3 bucke
- J. Copy the data to the file gateway.

**Answer:** A

#### Explanation:

This solution will meet the requirements of the company as it provides a secure, cost-effective and fast way of transferring large data sets from on-premises to AWS. Snowball Edge devices encrypt the data during transfer, and the devices are shipped back to AWS for import into S3. This option is more cost effective than using Direct Connect or VPN connections as it does not require the company to pay for long-term dedicated connections.

#### NEW QUESTION 115

- (Exam Topic 1)

A company uses a service to collect metadata from applications that the company hosts on premises. Consumer devices such as TVs and internet radios access the applications. Many older devices do not support certain HTTP headers and exhibit errors when these headers are present in responses. The company has configured an on-premises load balancer to remove the unsupported headers from responses sent to older devices, which the company identified by the User-Agent headers.

The company wants to migrate the service to AWS, adopt serverless technologies, and retain the ability to support the older devices. The company has already migrated the applications into a set of AWS Lambda functions.

Which solution will meet these requirements?

- A. Create an Amazon CloudFront distribution for the metadata servic
- B. Create an Application Load Balancer (ALB). Configure the CloudFront distribution to forward requests to the AL
- C. Configure the ALB to invoke the correct Lambda function for each type of reques
- D. Create a CloudFront function to remove the problematic headers based on the value of the User-Agent header.
- E. Create an Amazon API Gateway REST API for the metadata servic
- F. Configure API Gateway to invoke the correct Lambda function for each type of reques
- G. Modify the default gateway responses to remove the problematic headers based on the value of the User-Agent header.
- H. Create an Amazon API Gateway HTTP API for the metadata servic
- I. Configure API Gateway to invoke the correct Lambda function for each type of reques
- J. Create a response mapping template to remove the problematic headers based on the value of the User-Agen
- K. Associate the response data mapping with the HTTP API.
- L. Create an Amazon CloudFront distribution for the metadata servic
- M. Create an Application Load Balancer (ALB). Configure the CloudFront distribution to forward requests to the AL
- N. Configure the ALB to invoke the correct Lambda function for each type of reques
- O. Create a Lambda@Edge function that will remove the problematic headers in response to viewer requests based on the value of the User-Agent header.

**Answer:** D

#### Explanation:

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

#### NEW QUESTION 118

- (Exam Topic 1)

A company has a web application that allows users to upload short videos. The videos are stored on Amazon EBS volumes and analyzed by custom recognition software for categorization.

The website contains static content that has variable traffic with peaks in certain months. The architecture consists of Amazon EC2 instances running in an Auto Scaling group for the web application and EC2

instances running in an Auto Scaling group to process an Amazon SQS queue. The company wants to

re-architect the application to reduce operational overhead using AWS managed services where possible and remove dependencies on third-party software.

Which solution meets these requirements?

- A. Use Amazon ECS containers for the web application and Spot Instances for the Auto Scaling group that processes the SQS queue.
- B. Replace the custom software with Amazon Rekognition to categorize the videos.
- C. Store the uploaded videos in Amazon EFS and mount the file system to the EC2 instances for the web application.
- D. Process the SQS queue with an AWS Lambda function that calls the Amazon Rekognition API to categorize the videos.
- E. Host the web application in Amazon S3. Store the uploaded videos in Amazon S3. Use S3 event notifications to publish events to the SQS queue. Process the SQS queue with an AWS Lambda function that calls the Amazon Rekognition API to categorize the videos.
- F. Use AWS Elastic Beanstalk to launch EC2 instances in an Auto Scaling group for the web application and launch a worker environment to process the SQS queue. Replace the custom software with Amazon Rekognition to categorize the videos.

**Answer: C**

#### Explanation:

➤ Option C is correct because hosting the web application in Amazon S3, storing the uploaded videos in Amazon S3, and using S3 event notifications to publish events to the SQS queue reduces the operational overhead of managing EC2 instances and EBS volumes. Amazon S3 can serve static content such as HTML, CSS, JavaScript, and media files directly from S3 buckets. Amazon S3 can also trigger AWS Lambda functions through S3 event notifications when new objects are created or existing objects are updated or deleted. AWS Lambda can process the SQS queue with an AWS Lambda function that calls the Amazon Rekognition API to categorize the videos. This solution eliminates the need for custom recognition software and third-party dependencies.

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<https://docs.aws.amazon.com/AmazonS3/latest/userguide/WebsiteHosting.html> 4:

<https://docs.aws.amazon.com/AmazonS3/latest/userguide/NotificationHowTo.html> 5:

<https://docs.aws.amazon.com/rekognition/latest/dg/what-is.html> 6: <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/Welcome.html>

#### NEW QUESTION 122

- (Exam Topic 1)

A company is processing videos in the AWS Cloud by using Amazon EC2 instances in an Auto Scaling group. It takes 30 minutes to process a video. Several EC2 instances scale in and out depending on the number of videos in an Amazon Simple Queue Service (Amazon SQS) queue.

The company has configured the SQS queue with a redrive policy that specifies a target dead-letter queue and a maxReceiveCount of 1. The company has set the visibility timeout for the SQS queue to 1 hour. The company has set up an Amazon CloudWatch alarm to notify the development team when there are messages in the dead-letter queue.

Several times during the day, the development team receives notification that messages are in the dead-letter queue and that videos have not been processed properly. An investigation finds no errors in the application logs.

How can the company solve this problem?

- A. Turn on termination protection for the EC2 instances.
- B. Update the visibility timeout for the SQS queue to 3 hours.
- C. Configure scale-in protection for the instances during processing.
- D. Update the redrive policy and set maxReceiveCount to 0.

**Answer: B**

#### Explanation:

The best solution for this problem is to update the visibility timeout for the SQS queue to 3 hours. This is because when the visibility timeout is set to 1 hour, it means that if the EC2 instance doesn't process the message within an hour, it will be moved to the dead-letter queue. By increasing the visibility timeout to 3 hours, this should give the EC2 instance enough time to process the message before it gets moved to the dead-letter queue. Additionally, configuring scale-in protection for the EC2 instances during processing will help to ensure that the instances are not terminated while the messages are being processed.

#### NEW QUESTION 123

- (Exam Topic 1)

A retail company is operating its ecommerce application on AWS. The application runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The company uses an Amazon RDS DB instance as the database backend. Amazon CloudFront is configured with one origin that points to the ALB. Static content is cached. Amazon Route 53 is used to host all public zones.

After an update of the application, the ALB occasionally returns a 502 status code (Bad Gateway) error. The root cause is malformed HTTP headers that are returned to the ALB. The webpage returns successfully when a solutions architect reloads the webpage immediately after the error occurs.

While the company is working on the problem, the solutions architect needs to provide a custom error page instead of the standard ALB error page to visitors.

Which combination of steps will meet this requirement with the LEAST amount of operational overhead? (Choose two.)

- A. Create an Amazon S3 bucket.
- B. Configure the S3 bucket to host a static webpage.
- C. Upload the custom error pages to Amazon S3.
- D. Create an Amazon CloudWatch alarm to invoke an AWS Lambda function if the ALB health check response Target.FailedHealthChecks is greater than 0. Configure the Lambda function to modify the forwarding rule at the ALB to point to a publicly accessible web server.
- E. Modify the existing Amazon Route 53 records by adding health check.
- F. Configure a fallback target if the health check fails.
- G. Modify DNS records to point to a publicly accessible webpage.
- H. Create an Amazon CloudWatch alarm to invoke an AWS Lambda function if the ALB health check response Elb.InternalError is greater than 0. Configure the Lambda function to modify the forwarding rule at the ALB to point to a publicly accessible web server.



- I. Add a custom error response by configuring a CloudFront custom error pag
- J. Modify DNS records to point to a publicly accessible web page.

**Answer:** CE

**Explanation:**

"Save your custom error pages in a location that is accessible to CloudFront. We recommend that you store them in an Amazon S3 bucket, and that you don't store them in the same place as the rest of your website or application's content. If you store the custom error pages on the same origin as your website or application, and the origin starts to return 5xx errors, CloudFront can't get the custom error pages because the origin server is unavailable."  
<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/GeneratingCustomErrorResponses.htm>

**NEW QUESTION 128**

- (Exam Topic 1)

A solutions architect needs to implement a client-side encryption mechanism for objects that will be stored in a new Amazon S3 bucket. The solutions architect created a CMK that is stored in AWS Key Management Service (AWS KMS) for this purpose.

The solutions architect created the following IAM policy and attached it to an IAM role:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "DownloadUpload",
      "Action": [
        "s3:GetObject",
        "s3:GetObjectVersion",
        "s3:PutObject",
        "s3:PutObjectAcl"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:s3:::BucketName/*"
    },
    {
      "Sid": "KMSAccess",
      "Action": [
        "kms:Decrypt",
        "kms:Encrypt"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:kms:Region:Account:key/Key ID"
    }
  ]
}
```

During tests, the solutions architect was able to successfully get existing test objects in the S3 bucket. However, attempts to upload a new object resulted in an error message. The error message stated that the action was forbidden.

Which action must the solutions architect add to the IAM policy to meet all the requirements?

- A. kms:GenerateDataKey
- B. kms:GetKeyPolicy
- C. kms:GetPublicKey
- D. kms:SKJn

**Answer:** A

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/s3-access-denied-error-kms/>

"An error occurred (AccessDenied) when calling the PutObject operation: Access Denied" This error message indicates that your IAM user or role needs permission for the kms:GenerateDataKey action.

**NEW QUESTION 129**

- (Exam Topic 1)

A company is planning to migrate 1,000 on-premises servers to AWS. The servers run on several VMware clusters in the company's data center. As part of the migration plan, the company wants to gather server metrics such as CPU details, RAM usage, operating system information, and running processes. The company then wants to query and analyze the data.

Which solution will meet these requirements?

- A. Deploy and configure the AWS Agentless Discovery Connector virtual appliance on the on-premises host
- B. Configure Data Exploration in AWS Migration Hub
- C. Use AWS Glue to perform an ETL job against the data
- D. Query the data by using Amazon S3 Select.
- E. Export only the VM performance information from the on-premises host
- F. Directly import the required data into AWS Migration Hub
- G. Update any missing information in Migration Hub
- H. Query the data by using Amazon QuickSight.
- I. Create a script to automatically gather the server information from the on-premises host
- J. Use the AWS CLI to run the put-resource-attributes command to store the detailed server data in AWS Migration Hub
- K. Query the data directly in the Migration Hub console.
- L. Deploy the AWS Application Discovery Agent to each on-premises server
- M. Configure Data Exploration in AWS Migration Hub
- N. Use Amazon Athena to run predefined queries against the data in Amazon S3.

**Answer:** D

**Explanation:**

➤ it covers all the requirements mentioned in the question, it will allow collecting the detailed metrics, including process information and it provides a way to query



and analyze the data using Amazon Athena.

### NEW QUESTION 132

- (Exam Topic 1)

A company's solutions architect is reviewing a web application that runs on AWS. The application references static assets in an Amazon S3 bucket in the us-east-1 Region. The company needs resiliency across multiple AWS Regions. The company already has created an S3 bucket in a second Region. Which solution will meet these requirements with the LEAST operational overhead?

- A. Configure the application to write each object to both S3 bucket
- B. Set up an Amazon Route 53 public hosted zone with a record set by using a weighted routing policy for each S3 bucket
- C. Configure the application to reference the objects by using the Route 53 DNS name.
- D. Create an AWS Lambda function to copy objects from the S3 bucket in us-east-1 to the S3 bucket in the second Region
- E. Invoke the Lambda function each time an object is written to the S3 bucket in us-east-1. Set up an Amazon CloudFront distribution with an origin group that contains the two S3 buckets as origins.
- F. Configure replication on the S3 bucket in us-east-1 to replicate objects to the S3 bucket in the second Region Set up an Amazon CloudFront distribution with an origin group that contains the two S3 buckets as origins.
- G. Configure replication on the S3 bucket in us-east-1 to replicate objects to the S3 bucket in the second Region
- H. If failover is required, update the application code to load S3 objects from the S3 bucket in the second Region.

**Answer:** C

#### Explanation:

[https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/high\\_availability\\_origin\\_failover.html](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/high_availability_origin_failover.html)

### NEW QUESTION 134

- (Exam Topic 1)

A company is planning to host a web application on AWS and works to load balance the traffic across a group of Amazon EC2 instances. One of the security requirements is to enable end-to-end encryption in transit between the client and the web server. Which solution will meet this requirement?

- A. Place the EC2 instances behind an Application Load Balancer (ALB) Provision an SSL certificate using AWS Certificate Manager (ACM), and associate the SSL certificate with the ALB
- B. Export the SSL certificate and install it on each EC2 instance
- C. Configure the ALB to listen on port 443 and to forward traffic to port 443 on the instances.
- D. Associate the EC2 instances with a target group
- E. Provision an SSL certificate using AWS Certificate Manager (ACM). Create an Amazon CloudFront distribution and configure it to use the SSL certificate
- F. Set CloudFront to use the target group as the origin server
- G. Place the EC2 instances behind an Application Load Balancer (ALB). Provision an SSL certificate using AWS Certificate Manager (ACM), and associate the SSL certificate with the ALB
- H. Provision a third-party SSL certificate and install it on each EC2 instance
- I. Configure the ALB to listen on port 443 and to forward traffic to port 443 on the instances.
- J. Place the EC2 instances behind a Network Load Balancer (NLB). Provision a third-party SSL certificate and install it on the NLB and on each EC2 instance
- K. Configure the NLB to listen on port 443 and to forward traffic to port 443 on the instances.

**Answer:** A

#### Explanation:

➤ Option A is correct because placing the EC2 instances behind an Application Load Balancer (ALB) and associating an SSL certificate from AWS Certificate Manager (ACM) with the ALB enables encryption in transit between the client and the ALB. Exporting the SSL certificate and installing it on each EC2 instance enables encryption in transit between the ALB and the web server. Configuring the ALB to listen on port 443 and to forward traffic to port 443 on the instances ensures that HTTPS is used for both connections. This solution achieves end-to-end encryption in transit for the web application.

References: 1: <https://docs.aws.amazon.com/elasticloadbalancing/latest/application/introduction.html> 2:

<https://docs.aws.amazon.com/acm/latest/userguide/acm-overview.html> 3: <https://docs.aws.amazon.com/elasticloadbalancing/latest/application/load-balancer-target-groups.html> : <https://aws.amazon.com/certificate-manager/faqs/> : <https://docs.aws.amazon.com/elasticloadbalancing/latest/network/introduction.html>

### NEW QUESTION 137

- (Exam Topic 1)

A financial company is planning to migrate its web application from on premises to AWS. The company uses a third-party security tool to monitor the inbound traffic to the application. The company has used the security tool for the last 15 years, and the tool has no cloud solutions available from its vendor. The company's security team is concerned about how to integrate the security tool with AWS technology.

The company plans to deploy the application migration to AWS on Amazon EC2 instances. The EC2 instances will run in an Auto Scaling group in a dedicated VPC. The company needs to use the security tool to inspect all packets that come in and out of the VPC. This inspection must occur in real time and must not affect the application's performance. A solutions architect must design a target architecture on AWS that is highly available within an AWS Region.

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

- A. Deploy the security tool on EC2 instances in a new Auto Scaling group in the existing VPC.
- B. Deploy the web application behind a Network Load Balancer.
- C. Deploy an Application Load Balancer in front of the security tool instances.
- D. Provision a Gateway Load Balancer for each Availability Zone to redirect the traffic to the security tool.
- E. Provision a transit gateway to facilitate communication between VPCs.

**Answer:** AD

#### Explanation:

Option A, Deploy the security tool on EC2 instances in a new Auto Scaling group in the existing VPC, allows the company to use its existing security tool while still running it within the AWS environment. This ensures that all packets coming in and out of the VPC are inspected by the security tool in real time. Option D, Provision a Gateway Load Balancer for each Availability Zone to redirect the traffic to the security tool, allows for high availability within an AWS Region. By provisioning a Gateway Load Balancer for each Availability Zone, the traffic is redirected to the security tool in the event of any failures or outages. This ensures that the security tool is always available to inspect the traffic, even in the event of a failure.

#### NEW QUESTION 142

- (Exam Topic 1)

A company has introduced a new policy that allows employees to work remotely from their homes if they connect by using a VPN. The company is hosting internal applications with VPCs in multiple AWS accounts. Currently, the applications are accessible from the company's on-premises office network through an AWS Site-to-Site VPN connection. The VPC in the company's main AWS account has peering connections established with VPCs in other AWS accounts.

A solutions architect must design a scalable AWS Client VPN solution for employees to use while they work from home.

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

- A. Create a Client VPN endpoint in each AWS account. Configure required routing that allows access to internal applications.
- B. Create a Client VPN endpoint in the main AWS account. Configure required routing that allows access to internal applications.
- C. Create a Client VPN endpoint in the main AWS account. Provision a transit gateway that is connected to each AWS account. Configure required routing that allows access to internal applications.
- D. Create a Client VPN endpoint in the main AWS account. Establish connectivity between the Client VPN endpoint and the AWS Site-to-Site VPN.

**Answer: C**

#### Explanation:

<https://docs.aws.amazon.com/vpn/latest/clientvpn-admin/scenario-peered.html>

#### NEW QUESTION 147

- (Exam Topic 1)

A solutions architect is designing the data storage and retrieval architecture for a new application that a company will be launching soon. The application is designed to ingest millions of small records per minute from devices all around the world. Each record is less than 4 KB in size and needs to be stored in a durable location where it can be retrieved with low latency. The data is ephemeral and the company is required to store the data for 120 days only, after which the data can be deleted.

The solutions architect calculates that, during the course of a year, the storage requirements would be about 10-15 TB.

Which storage strategy is the MOST cost-effective and meets the design requirements?

- A. Design the application to store each incoming record as a single .csv file in an Amazon S3 bucket to allow for indexed retrieval.
- B. Configure a lifecycle policy to delete data older than 120 days.
- C. Design the application to store each incoming record in an Amazon DynamoDB table properly configured for the scale.
- D. Configure the DynamoDB Time to Live (TTL) feature to delete records older than 120 days.
- E. Design the application to store each incoming record in a single table in an Amazon RDS MySQL database.
- F. Run a nightly cron job that executes a query to delete any records older than 120 days.
- G. Design the application to batch incoming records before writing them to an Amazon S3 bucket.
- H. Update the metadata for the object to contain the list of records in the batch and use the Amazon S3 metadata search feature to retrieve the data.
- I. Configure a lifecycle policy to delete the data after 120 days.

**Answer: B**

#### Explanation:

DynamoDB with TTL, cheaper for sustained throughput of small items + suited for fast retrievals. S3 cheaper for storage only, much higher costs with writes. RDS not designed for this use case.

#### NEW QUESTION 149

- (Exam Topic 1)

A company is running several workloads in a single AWS account. A new company policy states that engineers can provision only approved resources and that engineers must use AWS CloudFormation to provision these resources. A solutions architect needs to create a solution to enforce the new restriction on the IAM role that the engineers use for access.

What should the solutions architect do to create the solution?

- A. Upload AWS CloudFormation templates that contain approved resources to an Amazon S3 bucket. Update the IAM policy for the engineers' IAM role to only allow access to Amazon S3 and AWS CloudFormation.
- B. Use AWS CloudFormation templates to provision resources.
- C. Update the IAM policy for the engineers' IAM role with permissions to only allow provisioning of approved resources and AWS CloudFormation.
- D. Use AWS CloudFormation templates to create stacks with approved resources.
- E. Update the IAM policy for the engineers' IAM role with permissions to only allow AWS CloudFormation actions.
- F. Create a new IAM policy with permission to provision approved resources, and assign the policy to a new IAM service role.
- G. Assign the IAM service role to AWS CloudFormation during stack creation.
- H. Provision resources in AWS CloudFormation stack.
- I. Update the IAM policy for the engineers' IAM role to only allow access to their own AWS CloudFormation stack.

**Answer: B**

#### Explanation:

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/security-best-practices.html#use-iam-to-c>

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/using-iam-service-role.html>

#### NEW QUESTION 152

- (Exam Topic 1)

A digital marketing company has multiple AWS accounts that belong to various teams. The creative team uses an Amazon S3 bucket in its AWS account to securely store images and media files that are used as content for the company's marketing campaigns. The creative team wants to share the S3 bucket with the strategy team so that the strategy team can view the objects.

A solutions architect has created an IAM role that is named `strategy_reviewer` in the Strategy account. The solutions architect also has set up a custom AWS Key Management Service (AWS KMS) key in the Creative account and has associated the key with the S3 bucket. However, when users from the Strategy account assume the IAM role and try to access objects in the S3 bucket, they receive an `AccessDenied` error.

The solutions architect must ensure that users in the Strategy account can access the S3 bucket. The solution must provide these users with only the minimum permissions that they need.

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

- A. Create a bucket policy that includes read permissions for the S3 bucket
- B. Set the principal of the bucket policy to the account ID of the Strategy account
- C. Update the strategy\_reviewer IAM role to grant full permissions for the S3 bucket and to grant decrypt permissions for the custom KMS key.
- D. Update the custom KMS key policy in the Creative account to grant decrypt permissions to the strategy\_reviewer IAM role.
- E. Create a bucket policy that includes read permissions for the S3 bucket
- F. Set the principal of the bucket policy to an anonymous user.
- G. Update the custom KMS key policy in the Creative account to grant encrypt permissions to the strategy\_reviewer IAM role.
- H. Update the strategy\_reviewer IAM role to grant read permissions for the S3 bucket and to grant decrypt permissions for the custom KMS key

**Answer:** ACF

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/cross-account-access-denied-error-s3/>

**NEW QUESTION 154**

- (Exam Topic 1)

A company is planning to store a large number of archived documents and make the documents available to employees through the corporate intranet. Employees will access the system by connecting through a client VPN service that is attached to a VPC. The data must not be accessible to the public.

The documents that the company is storing are copies of data that is held on physical media elsewhere. The number of requests will be low. Availability and speed of retrieval are not concerns of the company.

Which solution will meet these requirements at the LOWEST cost?

- A. Create an Amazon S3 bucket
- B. Configure the S3 bucket to use the S3 One Zone-Infrequent Access (S3 One Zone-IA) storage class as default
- C. Configure the S3 bucket for website hosting
- D. Create an S3 interface endpoint
- E. Configure the S3 bucket to allow access only through that endpoint.
- F. Launch an Amazon EC2 instance that runs a web server
- G. Attach an Amazon Elastic File System (Amazon EFS) file system to store the archived data in the EFS One Zone-Infrequent Access (EFS One Zone-IA) storage class. Configure the instance security groups to allow access only from private networks.
- H. Launch an Amazon EC2 instance that runs a web server. Attach an Amazon Elastic Block Store (Amazon EBS) volume to store the archived data.
- I. Use the Cold HDD (sc1) volume type
- J. Configure the instance security groups to allow access only from private networks.
- K. Create an Amazon S3 bucket
- L. Configure the S3 bucket to use the S3 Glacier Deep Archive storage class as default
- M. Configure the S3 bucket for website hosting
- N. Create an S3 interface endpoint
- O. Configure the S3 bucket to allow access only through that endpoint.

**Answer:** D

**Explanation:**

The S3 Glacier Deep Archive storage class is the lowest-cost storage class offered by Amazon S3, and it is designed for archival data that is accessed infrequently and for which retrieval time of several hours is acceptable. S3 interface endpoint for the VPC ensures that access to the bucket is only from resources within the VPC and this will meet the requirement of not being accessible to the public. And also, S3 bucket can be configured for website hosting, and this will allow employees to access the documents through the corporate intranet. Using an EC2 instance and a file system or block store would be more expensive and unnecessary because the number of requests to the data will be low and availability and speed of retrieval are not concerns. Additionally, using Amazon S3 bucket will provide durability, scalability and availability of data.

**NEW QUESTION 157**

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