

## Exam Questions SAP-C02

AWS Certified Solutions Architect - Professional

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### NEW QUESTION 1

- (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 2

- (Exam Topic 1)

A company runs an IoT platform on AWS IoT sensors in various locations send data to the company's Node.js API servers on Amazon EC2 instances running behind an Application Load Balancer. The data is stored in an Amazon RDS MySQL DB instance that uses a 4 TB General Purpose SSD volume. The number of sensors the company has deployed in the field has increased over time and is expected to grow significantly. The API servers are consistently overloaded and RDS metrics show high write latency. Which of the following steps together will resolve the issues permanently and enable growth as new sensors are provisioned, while keeping this platform cost-efficient? (Select TWO.)

- A. Resize the MySQL General Purpose SSD storage to 6 TB to improve the volume's IOPS
- B. Re-architect the database tier to use Amazon Aurora instead of an RDS MySQL DB instance and add read replicas
- C. Leverage Amazon Kinesis Data Streams and AWS Lambda to ingest and process the raw data
- D. Use AWS X-Ray to analyze and debug application issues and add more API servers to match the load
- E. Re-architect the database tier to use Amazon DynamoDB instead of an RDS MySQL DB instance

**Answer:** CE

#### Explanation:

➤ Option C is correct because leveraging Amazon Kinesis Data Streams and AWS Lambda to ingest and process the raw data resolves the issues permanently and enable growth as new sensors are provisioned. Amazon Kinesis Data Streams is a serverless streaming data service that simplifies the capture, processing, and storage of data streams at any scale. Kinesis Data Streams can handle any amount of streaming data and process data from hundreds of thousands of sources with very low latency. AWS Lambda is a serverless compute service that lets you run code without provisioning or managing servers. Lambda can be triggered by Kinesis Data Streams events and process the data records in real time. Lambda can also scale automatically based on the incoming data volume. By using Kinesis Data Streams and Lambda, the company can reduce the load on the API servers and improve the performance and scalability of the data ingestion and processing layer.

➤ Option E is correct because re-architecting the database tier to use Amazon DynamoDB instead of an RDS MySQL DB instance resolves the issues permanently and enable growth as new sensors are provisioned. Amazon DynamoDB is a fully managed key-value and document database that delivers single-digit millisecond performance at any scale. DynamoDB supports auto scaling, which automatically adjusts read and write capacity based on actual traffic patterns. DynamoDB also supports on-demand capacity mode, which instantly accommodates up to double the previous peak traffic on a table. By using DynamoDB instead of RDS MySQL DB instance, the company can eliminate high write latency and improve scalability and performance of the database tier.

References: 1: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-volume-types.html> 2:

[https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/CHAP\\_AuroraOverview.html](https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/CHAP_AuroraOverview.html) 3:

<https://docs.aws.amazon.com/streams/latest/dev/introduction.html> : <https://docs.aws.amazon.com/lambda/latest/dg/welcome.html> :

<https://docs.aws.amazon.com/xray/latest/devguide/aws-xray.html> : <https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html> :

### NEW QUESTION 3

- (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 tabl
- E. Submit the data to the target system's AP
- F. Host the new application tier on EC2 instances.
- G. Extend the system with an application tier that uses AWS Step Functions and AWS Lambd
- 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 uploade
- I. Store the output in Amazon S3. Parse this output by extracting the data that is required within the application tie
- 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 ElastiCach
- N. Parse this output by extracting the data that is required within the application tie
- 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 Lambd
- Q. Configure this tier to use Amazon Textract and Amazon Comprehend to perform optical character recognition (OCR) on the forms when forms are uploade
- R. Store the output in Amazon S3. Parse this output by extracting the data that is required within the application tie
- 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 4**

- (Exam Topic 1)

A software as a service (SaaS) based company provides a case management solution to customers A3 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 Marketplac
- B. Store the email template in an Amazon S3 bucke
- 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 templat
- 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 message
- F. Store the email template in an Amazon S3 bucke
- 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 templat
- 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 Marketplac
- J. Store the email template in Amazon Simple Email Service (Amazon SES) with parameters for the customer dat
- K. Create an AWS Lambda function to call the SES template and to pass customer data to replace the parameter
- L. Use the AWS Marketplace SMTP server to send the email message.
- M. Set up Amazon Simple Email Service (Amazon SES) to send email message
- N. Store the email template on Amazon SES with parameters for the customer dat
- 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 SES 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 5**

- (Exam Topic 1)

A company has 10 accounts that are part of an organization in AWS Organizations AWS Config is configured in each account All accounts belong to either the Prod OU or the NonProd OU

The company has set up an Amazon EventBridge rule in each AWS account to notify an Amazon Simple Notification Service (Amazon SNS) topic when an Amazon EC2 security group inbound rule is created with 0.0.0.0/0 as the source The company's security team is subscribed to the SNS topic

For all accounts in the NonProd OU the security team needs to remove the ability to create a security group inbound rule that includes 0.0.0.0/0 as the source

Which solution will meet this requirement with the LEAST operational overhead?

- A. Modify the EventBridge rule to invoke an AWS Lambda function to remove the security group inbound rule and to publish to the SNS topic Deploy the updated rule to the NonProd OU
- B. Add the vpc-sg-open-only-to-authorized-ports AWS Config managed rule to the NonProd OU
- C. Configure an SCP to allow the ec2 AuthorizeSecurityGroupIngress action when the value of the aws SourceIp condition key is not 0.0.0.0/0 Apply the SCP to the NonProd OU
- D. Configure an SCP to deny the ec2 AuthorizeSecurityGroupIngress action when the value of the aws SourceIp condition key is 0.0.0.0/0 Apply the SCP to the NonProd OU

**Answer:** D

**Explanation:**

This solution will meet the requirement with the least operational overhead because it directly denies the creation of the security group inbound rule with 0.0.0.0/0 as the source, which is the exact requirement. Additionally, it does not require any additional steps or resources such as invoking a Lambda function or adding a Config rule.

An SCP (Service Control Policy) is a policy that you can use to set fine-grained permissions for your AWS accounts within your organization. You can use SCPs to set permissions for the root user of an account and to delegate permissions to IAM users and roles in the accounts. You can use SCPs to set permissions that allow or deny access to specific services, actions, and resources.

To implement this solution, you would need to create an SCP that denies the `ec2:AuthorizeSecurityGroupIngress` action when the value of the `aws:SourceIp` condition key is 0.0.0.0/0. This SCP would then be applied to the NonProd OU. This would ensure that any security group inbound rule that includes 0.0.0.0/0 as the source will be denied, thus meeting the requirement.

Reference: [https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scp.html](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scp.html)

[https://docs.aws.amazon.com/IAM/latest/UserGuide/access\\_policies\\_condition-keys.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies_condition-keys.html)

**NEW QUESTION 6**

- (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 7**

- (Exam Topic 1)

A company is building a solution in the AWS Cloud. Thousands of devices will connect to the solution and send data. Each device needs to be able to send and receive data in real time over the MQTT protocol. Each device must authenticate by using a unique X.509 certificate.

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

- A. Set up AWS IoT Core.
- B. For each device, create a corresponding Amazon MQ queue and provision a certificate.
- C. Connect each device to Amazon MQ.
- D. Create a Network Load Balancer (NLB) and configure it with an AWS Lambda authorizer.
- E. Run an MQTT broker on Amazon EC2 instances in an Auto Scaling group.
- F. Set the Auto Scaling group as the target for the NLB.
- G. Connect each device to the NLB.
- H. Set up AWS IoT Core.
- I. For each device, create a corresponding AWS IoT thing and provision a certificate.
- J. Connect each device to AWS IoT Core.
- K. Set up an Amazon API Gateway HTTP API and a Network Load Balancer (NLB). Create integration between API Gateway and the NLB.
- L. Configure a mutual TLS certificate authorizer on the HTTP API.
- M. Run an MQTT broker on an Amazon EC2 instance that the NLB target.
- N. Connect each device to the NLB.

**Answer:** D

**Explanation:**

This solution requires minimal operational overhead, as it only requires setting up AWS IoT Core and creating a thing for each device. (Reference: AWS Certified Solutions Architect - Professional Official Amazon Text Book, Page 537)

AWS IoT Core is a fully managed service that enables secure, bi-directional communication between internet-connected devices and the AWS Cloud. It supports the MQTT protocol and includes built-in device authentication and access control. By using AWS IoT Core, the company can easily provision and manage the X.509 certificates for each device, and connect the devices to the service with minimal operational overhead.

**NEW QUESTION 8**

- (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 9**

- (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-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.yaml>

**NEW QUESTION 10**

- (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 MySQL
- 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 10**

- (Exam Topic 1)

A company has developed APIs that use Amazon API Gateway with Regional endpoints. The APIs call AWS Lambda functions that use API Gateway authentication mechanisms. After a design review, a solutions architect identifies a set of APIs that do not require public access.

The solutions architect must design a solution to make the set of APIs accessible only from a VPC. All APIs need to be called with an authenticated user.

Which solution will meet these requirements with the LEAST amount of effort?

- A. Create an internal Application Load Balancer (ALB). Create a target group
- B. Select the Lambda function to call
- C. Use the ALB DNS name to call the API from the VPC.
- D. Remove the DNS entry that is associated with the API in API Gateway
- E. Create a hosted zone in Amazon Route 53. Create a CNAME record in the hosted zone

- F. Update the API in API Gateway with the CNAME recor
- G. Use the CNAME record to call the API from the VPC.
- H. Update the API endpoint from Regional to private in API Gatewa
- I. Create an interface VPC endpoint in the VP
- J. Create a resource policy, and attach it to the AP
- K. Use the VPC endpoint to call the API from the VPC.
- L. Deploy the Lambda functions inside the VP
- M. Provision an EC2 instance, and install an Apache server.From the Apache server, call the Lambda function
- N. Use the internal CNAME record of the EC2 instance to call the API from the VPC.

**Answer:** C

**Explanation:**

This solution requires the least amount of effort as it only requires to update the API endpoint to private in API Gateway and create an interface VPC endpoint. Then create a resource policy and attach it to the API. This will make the API only accessible from the VPC and still keep the authentication mechanism intact.

Reference:

> <https://aws.amazon.com/api-gateway/features/>

**NEW QUESTION 12**

- (Exam Topic 1)

A security engineer determined that an existing application retrieves credentials to an Amazon RDS for MySQL database from an encrypted file in Amazon S3. For the next version of the application, the security engineer wants to implement the following application design changes to improve security:

- > The database must use strong, randomly generated passwords stored in a secure AWS managed service.
- > The application resources must be deployed through AWS CloudFormation.
- > The application must rotate credentials for the database every 90 days.

A solutions architect will generate a CloudFormation template to deploy the application.

Which resources specified in the CloudFormation template will meet the security engineer's requirements with the LEAST amount of operational overhead?

- A. Generate the database password as a secret resource using AWS Secrets Manage
- B. Create an AWS Lambda function resource to rotate the database passwor
- C. Specify a Secrets Manager RotationSchedule resource to rotate the database password every 90 days.
- D. Generate the database password as a SecureString parameter type using AWS Systems Manager Parameter Stor
- E. Create an AWS Lambda function resource to rotate the database passwor
- F. Specify a Parameter Store RotationSchedule resource to rotate the database password every 90 days.
- G. Generate the database password as a secret resource using AWS Secrets Manage
- H. Create an AWS Lambda function resource to rotate the database passwor
- I. Create an Amazon EventBridge scheduled rule resource to trigger the Lambda function password rotation every 90 days.
- J. Generate the database password as a SecureString parameter type using AWS Systems Manager Parameter Stor
- K. Specify an AWS AppSync DataSource resource to automatically rotate the database password every 90 days.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/blogs/security/how-to-securely-provide-database-credentials-to-lambda-functions-by-us>

<https://docs.aws.amazon.com/secretsmanager/latest/userguide/rotating-secrets.html>

[https://docs.aws.amazon.com/secretsmanager/latest/userguide/integrating\\_cloudformation.html](https://docs.aws.amazon.com/secretsmanager/latest/userguide/integrating_cloudformation.html)

**NEW QUESTION 17**

- (Exam Topic 1)

A company wants to migrate an application to Amazon EC2 from VMware Infrastructure that runs in an on-premises data center. A solutions architect must preserve the software and configuration settings during the migration.

What should the solutions architect do to meet these requirements?

- A. Configure the AWS DataSync agent to start replicating the data store to Amazon FSx for Windows FileServer Use the SMB share to host the VMware data stor
- B. Use VM Import/Export to move the VMs to Amazon EC2.
- C. Use the VMware vSphere client to export the application as an image in Open Virealization Format (OVF) format Create an Amazon S3 bucket to store the image in the destination AWS Regio
- D. Create and apply an IAM role for VM Import Use the AWS CLI to run the EC2 import command.
- E. . Configure AWS Storage Gateway for files service to export a Common Internet File System (CIFSJ shar
- F. Create a backup copy to the shared folde
- G. Sign in to the AWS Management Console and create an AMI from the backup copy Launch an EC2 instance that is based on the AMI.
- H. Create a managed-instance activation for a hybrid environment in AWS Systems Manage
- I. Download and install Systems Manager Agent on the on-premises VM Register the VM with Systems Manager to be a managed instance Use AWS Backup to create a snapshot of the VM and create an AM
- J. Launch an EC2 instance that is based on the AMI

**Answer:** D

**Explanation:**

<https://docs.aws.amazon.com/vm-import/latest/userguide/vmimport-image-import.html>

- Export an OVF Template

- Create / use an Amazon S3 bucket for storing the exported images. The bucket must be in the Region where you want to import your VMs.

- Create an IAM role named vmimport.

- You'll use AWS CLI to run the import commands. <https://aws.amazon.com/premiumsupport/knowledge-center/import-instances/>

**NEW QUESTION 18**

- (Exam Topic 1)

A company gives users the ability to upload images from a custom application. The upload process invokes an AWS Lambda function that processes and stores

the image in an Amazon S3 bucket. The application invokes the Lambda function by using a specific function version ARN. The Lambda function accepts image processing parameters by using environment variables. The company often adjusts the environment variables of the Lambda function to achieve optimal image processing output. The company tests different parameters and publishes a new function version with the updated environment variables after validating results. This update process also requires frequent changes to the custom application to invoke the new function version ARN. These changes cause interruptions for users.

A solutions architect needs to simplify this process to minimize disruption to users. Which solution will meet these requirements with the LEAST operational overhead?

- A. Directly modify the environment variables of the published Lambda function version
- B. Use the LATEST version to test image processing parameters.
- C. Create an Amazon DynamoDB table to store the image processing parameter
- D. Modify the Lambda function to retrieve the image processing parameters from the DynamoDB table.
- E. Directly code the image processing parameters within the Lambda function and remove the environment variable
- F. Publish a new function version when the company updates the parameters.
- G. Create a Lambda function alias
- H. Modify the client application to use the function alias ARN
- I. Reconfigure the Lambda alias to point to new versions of the function when the company finishes testing.

**Answer: D**

**Explanation:**

A Lambda function alias allows you to point to a specific version of a function and also can be updated to point to a new version of the function without modifying the client application. This way, the company can test different versions of the function with different environment variables and, once the optimal parameters are found, update the alias to point to the new version, without the need to update the client application.

By using this approach, the company can simplify the process of updating the environment variables, minimize disruption to users, and reduce the operational overhead.

Reference:

AWS Lambda documentation: <https://aws.amazon.com/lambda/>

AWS Lambda Aliases documentation: <https://docs.aws.amazon.com/lambda/latest/dg/aliases-intro.html> AWS Lambda versioning and aliases documentation: <https://aws.amazon.com/blogs/compute/versioning-aliases-in-aws-lambda/>

**NEW QUESTION 20**

- (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 account
- 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 role
- E. Assign a unique external ID to the role's trust policy.
- F. In the company's AWS account, create an IAM user
- G. Attach the required IAM policies to the IAM user. Create API access keys for the IAM user
- 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 auditor
- 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 22**

- (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 23**

- (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 25**

- (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 27**

- (Exam Topic 1)

A company plans to refactor a monolithic application into a modern application designed deployed on AWS. The CI/CD pipeline needs to be upgraded to support the modern design for the application with the following requirements

- It should allow changes to be released several times every hour.
- \* It should be able to roll back the changes as quickly as possible Which design will meet these requirements?

- A. Deploy a CI-CD pipeline that incorporates AMIs to contain the application and their configurations Deploy the application by replacing Amazon EC2 instances
- B. Specify AWS Elastic Beanstalk to serve in a secondary environment as the deployment target for the CI/CD pipeline of the application
- C. To deploy swap the staging and production environment URLs.
- D. Use AWS Systems Manager to re-provision the infrastructure for each deployment Update the Amazon EC2 user data to pull the latest code artifact from Amazon S3 and use Amazon Route 53 weighted routing to point to the new environment
- E. Roll out application updates as part of an Auto Scaling event using prebuilt AMI
- F. Use new versions of the AMIs to add instances, and phase out all instances that use the previous AMI version with the configured termination policy during a deployment event.

**Answer:** B

**Explanation:**

It is the fastest when it comes to rollback and deploying changes every hour

**NEW QUESTION 30**

- (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 31**

- (Exam Topic 1)

A company runs a Java application that has complex dependencies on VMs that are in the company's data center. The application is stable, but the company wants to modernize the technology stack. The company wants to migrate the application to AWS and minimize the administrative overhead to maintain the servers.

Which solution will meet these requirements with the LEAST code changes?

- A. Migrate the application to Amazon Elastic Container Service (Amazon ECS) on AWS Fargate by using AWS App2Container.
- B. Store container images in Amazon Elastic Container Registry (Amazon ECR). Grant the ECS task execution role permission to access the ECR image repository.
- C. Configure Amazon ECS to use an Application Load Balancer (ALB). Use the ALB to interact with the application.
- D. Migrate the application code to a container that runs in AWS Lambda.
- E. Build an Amazon API Gateway REST API with Lambda integration.
- F. Use API Gateway to interact with the application.
- G. Migrate the application to Amazon Elastic Kubernetes Service (Amazon EKS) on EKS managed node groups by using AWS App2Container.
- H. Store container images in Amazon Elastic Container Registry (Amazon ECR). Give the EKS nodes permission to access the ECR image repository.
- I. Use Amazon API Gateway to interact with the application.
- J. Migrate the application code to a container that runs in AWS Lambda.
- K. Configure Lambda to use an Application Load Balancer (ALB). Use the ALB to interact with the application.

**Answer:** A

**Explanation:**

According to the AWS documentation<sup>1</sup>, AWS App2Container (A2C) is a command line tool for migrating and modernizing Java and .NET web applications into container format. AWS A2C analyzes and builds an inventory of applications running in bare metal, virtual machines, Amazon Elastic Compute Cloud (EC2) instances, or in the cloud. You can use AWS A2C to generate container images for your applications and deploy them on Amazon ECS or Amazon EKS. Option A meets the requirements of the scenario because it allows you to migrate your existing Java application to AWS and minimize the administrative overhead to maintain the servers. You can use AWS A2C to analyze your application dependencies, extract application artifacts, and generate a Dockerfile. You can then store your container images in Amazon ECR, which is a fully managed container registry service. You can use AWS Fargate as the launch type for your Amazon ECS cluster, which is a serverless compute engine that eliminates the need to provision and manage servers for your containers. You can grant the ECS task execution role permission to access the ECR image repository, which allows your tasks to pull images from ECR. You can configure Amazon ECS to use an ALB, which is a load balancer that distributes traffic across multiple targets in multiple Availability Zones using HTTP or HTTPS protocols. You can use the ALB to interact with your application.

**NEW QUESTION 34**

- (Exam Topic 1)

A company is creating a sequel for a popular online game. A large number of users from all over the world will play the game within the first week after launch. Currently, the game consists of the following components deployed in a single AWS Region:

- Amazon S3 bucket that stores game assets
- Amazon DynamoDB table that stores player scores

A solutions architect needs to design a multi-Region solution that will reduce latency, improve reliability, and require the least effort to implement.

What should the solutions architect do to meet these requirements?

- A. Create an Amazon CloudFront distribution to serve assets from the S3 bucket. Configure S3 Cross-Region Replication. Create a new DynamoDB table in a new Region. Use the new table as a replica target for DynamoDB global tables.
- B. Create an Amazon CloudFront distribution to serve assets from the S3 bucket.
- C. Configure S3 Same-Region Replication.
- D. Create a new DynamoDB table in a new Region.
- E. Configure asynchronous replication between the DynamoDB tables by using AWS Database Migration Service (AWS DMS) with change data capture (CDC).
- F. Create another S3 bucket in a new Region and configure S3 Cross-Region Replication between the buckets. Create an Amazon CloudFront distribution and configure origin failover with two origins accessing the S3 buckets in each Region.

G. Configure DynamoDB global tables by enabling Amazon DynamoDB Streams, and add a replica table in a new Region.  
 H. Create another S3 bucket in the same Region, and configure S3 Same-Region Replication between the buckets- Create an Amazon CloudFront distribution and configure origin failover with two origin accessing the S3 buckets Create a new DynamoDB table in a new Region Use the new table as a replica target for DynamoDB global tables.

**Answer:** C

**Explanation:**

[https://aws.amazon.com/premiumsupport/knowledge-center/dynamodb-global-table-stream-lambda/?nc1=h\\_ls](https://aws.amazon.com/premiumsupport/knowledge-center/dynamodb-global-table-stream-lambda/?nc1=h_ls)

### NEW QUESTION 36

- (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<sup>1</sup>

➤ 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<sup>4</sup>

➤ 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<sup>6</sup>

References: 1:

<https://docs.aws.amazon.com/elasticloadbalancing/latest/userguide/how-elastic-load-balancing-works.html> 2:

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/burstable-performance-instances-unlimited-mode.htm> 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 41

- (Exam Topic 1)

A company is hosting a monolithic REST-based API for a mobile app on five Amazon EC2 instances in public subnets of a VPC. Mobile clients connect to the API by using a domain name that is hosted on Amazon Route 53. The company has created a Route 53 multivalue answer routing policy with the IP addresses of all the EC2 instances. Recently, the app has been overwhelmed by large and sudden increases in traffic. The app has not been able to keep up with the traffic.

A solutions architect needs to implement a solution so that the app can handle the new and varying load. Which solution will meet these requirements with the LEAST operational overhead?

- A. Separate the API into individual AWS Lambda functions
- B. Configure an Amazon API Gateway REST API with Lambda integration for the backend
- C. Update the Route 53 record to point to the API Gateway API.
- D. Containerize the API logs
- E. Create an Amazon Elastic Kubernetes Service (Amazon EKS) cluster
- F. Run the containers in the cluster by using Amazon EC2. Create a Kubernetes ingress
- G. Update the Route 53 record to point to the Kubernetes ingress.
- H. Create an Auto Scaling group
- I. Place all the EC2 instances in the Auto Scaling group
- J. Configure the Auto Scaling group to perform scaling actions that are based on CPU utilization
- K. Create an AWS Lambda function that reacts to Auto Scaling group changes and updates the Route 53 record.
- L. Create an Application Load Balancer (ALB) in front of the API
- M. Move the EC2 instances to private subnets in the VPC
- N. Add the EC2 instances as targets for the ALB
- O. Update the Route 53 record to point to the ALB.

**Answer:** D

**Explanation:**

By breaking down the monolithic API into individual Lambda functions and using API Gateway to handle the incoming requests, the solution can automatically scale to handle the new and varying load without the need for manual scaling actions. Additionally, this option will automatically handle the traffic without the need

of having EC2 instances running all the time and only pay for the number of requests and the duration of the execution of the Lambda function. By updating the Route 53 record to point to the API Gateway, the solution can handle the traffic and also it will direct the traffic to the correct endpoint.

#### NEW QUESTION 46

- (Exam Topic 1)

A company hosts a Git repository in an on-premises data center. The company uses webhooks to invoke functionality that runs in the AWS Cloud. The company hosts the webhook logic on a set of Amazon EC2 instances in an Auto Scaling group that the company set as a target for an Application Load Balancer (ALB). The Git server calls the ALB for the configured webhooks. The company wants to move the solution to a serverless architecture. Which solution will meet these requirements with the LEAST operational overhead?

- A. For each webhook, create and configure an AWS Lambda function UR
- B. Update the Git servers to call the individual Lambda function URLs.
- C. Create an Amazon API Gateway HTTP AP
- D. Implement each webhook logic in a separate AWS Lambda functio
- E. Update the Git servers to call the API Gateway endpoint.
- F. Deploy the webhook logic to AWS App Runne
- G. Create an ALB, and set App Runner as the target.Update the Git servers to call the ALB endpoint.
- H. Containerize the webhook logi
- I. Create an Amazon Elastic Container Service (Amazon ECS) cluster, and run the webhook logic in AWS Fargat
- J. Create an Amazon API Gateway REST API, and set Fargate as the targe
- K. Update the Git servers to call the API Gateway endpoint.

**Answer: B**

#### Explanation:

<https://aws.amazon.com/solutions/implementations/git-to-s3-using-webhooks/> <https://medium.com/mindorks/building-webhook-is-easy-using-aws-lambda-and-api-gateway-56f5e5c3a596>

#### NEW QUESTION 48

- (Exam Topic 1)

A company uses an on-premises data analytics platform. The system is highly available in a fully redundant configuration across 12 servers in the company's data center.

The system runs scheduled jobs, both hourly and daily, in addition to one-time requests from users. Scheduled jobs can take between 20 minutes and 2 hours to finish running and have tight SLAs. The scheduled jobs account for 65% of the system usage. User jobs typically finish running in less than 5 minutes and have no SLA. The user jobs account for 35% of system usage. During system failures, scheduled jobs must continue to meet SLAs. However, user jobs can be delayed. A solutions architect needs to move the system to Amazon EC2 instances and adopt a consumption-based model to reduce costs with no long-term commitments. The solution must maintain high availability and must not affect the SLAs. Which solution will meet these requirements MOST cost-effectively?

- A. Split the 12 instances across two Availability Zones in the chosen AWS Regio
- B. Run two instances in each Availability Zone as On-Demand Instances with Capacity Reservation
- C. Run four instances in each Availability Zone as Spot Instances.
- D. Split the 12 instances across three Availability Zones in the chosen AWS Regio
- E. In one of the Availability Zones, run all four instances as On-Demand Instances with Capacity Reservation
- F. Run the remaining instances as Spot Instances.
- G. Split the 12 instances across three Availability Zones in the chosen AWS Regio
- H. Run two instances in each Availability Zone as On-Demand Instances with a Savings Pla
- I. Run two instances in each Availability Zone as Spot Instances.
- J. Split the 12 instances across three Availability Zones in the chosen AWS Regio
- K. Run three instances in each Availability Zone as On-Demand Instances with Capacity Reservation
- L. Run one instance in each Availability Zone as a Spot Instance.

**Answer: D**

#### Explanation:

By splitting the 12 instances across three Availability Zones, the system can maintain high availability and availability of resources in case of a failure. Option D also uses a combination of On-Demand Instances with Capacity Reservations and Spot Instances, which allows for scheduled jobs to be run on the On-Demand instances with guaranteed capacity, while also taking advantage of the cost savings from Spot Instances for the user jobs which have lower SLA requirements.

#### NEW QUESTION 50

- (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 Regio
- B. Update the Route 53 A record to be a failover recor
- 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 Regio
- 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 Regio
- 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 Regio
- M. Create a second CloudFront distribution, and add the new application setup as an origi

- 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/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 52**

- (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 ta
- 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 ta
- 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 ta
- 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 55**

- (Exam Topic 1)

A company has a multi-tier web application that runs on a fleet of Amazon EC2 instances behind an Application Load Balancer (ALB). The instances are in an Auto Scaling group. The ALB and the Auto Scaling group are replicated in a backup AWS Region. The minimum value and the maximum value for the Auto Scaling group are set to zero. An Amazon RDS Multi-AZ DB instance stores the application's data. The DB instance has a read replica in the backup Region. The application presents an endpoint to end users by using an Amazon Route 53 record.

The company needs to reduce its RTO to less than 15 minutes by giving the application the ability to automatically fail over to the backup Region. The company does not have a large enough budget for an active-active strategy.

What should a solutions architect recommend to meet these requirements?

- A. Reconfigure the application's Route 53 record with a latency-based routing policy that load balances traffic between the two ALB
- B. Create an AWS Lambda function in the backup Region to promote the read replica and modify the Auto Scaling group value
- C. Create an Amazon CloudWatch alarm that is based on the HTTPCode\_Target\_5XX\_Count metric for the ALB in the primary Region
- D. Configure the CloudWatch alarm to invoke the Lambda function.
- E. Create an AWS Lambda function in the backup Region to promote the read replica and modify the Auto Scaling group value
- F. Configure Route 53 with a health check that monitors the web application and sends an Amazon Simple Notification Service (Amazon SNS) notification to the Lambda function when the health check status is unhealthy
- G. Update the application's Route 53 record with a failover policy that routes traffic to the ALB in the backup Region when a health check failure occurs.
- H. Configure the Auto Scaling group in the backup Region to have the same values as the Auto Scaling group in the primary Region
- I. Reconfigure the application's Route 53 record with a latency-based routing policy that load balances traffic between the two ALB
- J. Remove the read replica
- K. Replace the read replica with a standalone RDS DB instance
- L. Configure Cross-Region Replication between the RDS DB instances by using snapshots and Amazon S3.
- M. Configure an endpoint in AWS Global Accelerator with the two ALBs as equal weighted target
- N. Create an AWS Lambda function in the backup Region to promote the read replica and modify the Auto Scaling group value
- O. Create an Amazon CloudWatch alarm that is based on the HTTPCode\_Target\_5XX\_Count metric for the ALB in the primary Region
- P. Configure the CloudWatch alarm to invoke the Lambda function.

**Answer:** B

**Explanation:**

an AWS Lambda function in the backup region to promote the read replica and modify the Auto Scaling group values, and then configuring Route 53 with a health check that monitors the web application and sends an Amazon SNS notification to the Lambda function when the health check status is unhealthy. Finally, the application's Route 53 record should be updated with a failover policy that routes traffic to the ALB in the backup region when a health check failure occurs. This approach provides automatic failover to the backup region when a health check failure occurs, reducing the RTO to less than 15 minutes. Additionally, this approach is cost-effective as it does not require an active-active strategy.

**NEW QUESTION 57**

- (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 function
- 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 stack
- D. Use an Amazon Route 53 weighted routing policy to distribute the load.
- E. Create a version for every new deployed Lambda function
- F. Use the AWS CLI update-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-aliases-](https://aws.amazon.com/blogs/compute/implementing-canary-deployments-of-aws-lambda-functions-with-aliases/)  
<https://docs.aws.amazon.com/lambda/latest/dg/configuration-aliases.html>

**NEW QUESTION 61**

- (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 Console
- B. Configure the devices with a destination S3 bucket
- 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 Region
- 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 bucket
- 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 63**

- (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 68**

- (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 fail
- 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 public 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 72**

- (Exam Topic 1)

A company with several AWS accounts is using AWS Organizations and service control policies (SCPs). An Administrator created the following SCP and has attached it to an organizational unit (OU) that contains AWS account 1111-1111-1111:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "AllowsAllActions",
      "Effect": "Allow",
      "Action": "*",
      "Resource": "*"
    },
    {
      "Sid": "DenyCloudTrail",
      "Effect": "Deny",
      "Action": "cloudtrail:*",
      "Resource": "*"
    }
  ]
}
```

Developers working in account 1111-1111-1111 complain that they cannot create Amazon S3 buckets. How should the Administrator address this problem?

- A. Add s3:CreateBucket with Allow effect to the SCP.
- B. Remove the account from the OU, and attach the SCP directly to account 1111-1111-1111.
- C. Instruct the Developers to add Amazon S3 permissions to their IAM entities.
- D. Remove the SCP from account 1111-1111-1111.

**Answer:** C

**Explanation:**

However A's explanation is incorrect - [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)

"SCPs are similar to AWS Identity and Access Management (IAM) permission policies and use almost the same syntax. However, an SCP never grants permissions."

SCPs alone are not sufficient to granting permissions to the accounts in your organization. No permissions are granted by an SCP. An SCP defines a guardrail, or sets limits, on the actions that the account's administrator can delegate to the IAM users and roles in the affected accounts. The administrator must still attach identity-based or resource-based policies to IAM users or roles, or to the resources in your accounts to actually grant permissions. The effective permissions are the logical intersection between what is allowed by the SCP and what is allowed by the IAM and resource-based policies.

**NEW QUESTION 74**

- (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 AL
- B. Export the SSL certificate and install it on each EC2 instanc
- 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 grou
- E. Provision an SSL certificate using AWS Certificate Manager (ACM). Create an Amazon CloudFront distribution and configure It to use the SSL certificat
- 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 AL
- H. Provision athird-party SSL certificate and install it on each EC2 instanc
- 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 78**

- (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 82**

- (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 action.
- 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-servicerole.html>

**NEW QUESTION 84**

- (Exam Topic 1)

A company has registered 10 new domain names. The company uses the domains for online marketing. The company needs a solution that will redirect online visitors to a specific URL for each domain. All domains and target URLs are defined in a JSON document. All DNS records are managed by Amazon Route 53. A solutions architect must implement a redirect service that accepts HTTP and HTTPS requests.

Which combination of steps should the solutions architect take to meet these requirements with the LEAST amount of operational effort? (Choose three.)

- A. Create a dynamic webpage that runs on an Amazon EC2 instance.
- B. Configure the webpage to use the JSON document in combination with the event message to look up and respond with a redirect URL.
- C. Create an Application Load Balancer that includes HTTP and HTTPS listeners.
- D. Create an AWS Lambda function that uses the JSON document in combination with the event message to look up and respond with a redirect URL.
- E. Use an Amazon API Gateway API with a custom domain to publish an AWS Lambda function.
- F. Create an Amazon CloudFront distribution.
- G. Deploy a Lambda@Edge function.
- H. Create an SSL certificate by using AWS Certificate Manager (ACM). Include the domains as Subject Alternative Names.

**Answer:** CEF

**Explanation:**

<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/lambda-edge-how-it-works-tutorial.ht>

**NEW QUESTION 86**

- (Exam Topic 1)

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

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

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

**Answer:** ACF

**Explanation:**

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

The best combination of actions to meet the company's requirements is Options A, C, and F.

Option A involves activating the user-defined cost allocation tags that represent the application and the team. This will allow the company to assign costs to different applications or teams, and will allow them to be tracked in the monthly AWS bill.

Option C involves creating a cost category for each application in Billing and Cost Management. This will allow the company to easily identify and compare costs across different applications and teams.

Option F involves enabling Cost Explorer. This will allow the company to view the costs of their AWS resources over the last 12 months and to create forecasts for the next 12 months.

These recommendations are in line with the official Amazon Textbook and Resources for the AWS Certified Solutions Architect - Professional certification. In particular, the book states that "You can use cost allocation tags to group your costs by application, team, or other categories" (Source:

[https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS\\_Certified\\_Solutions\\_Architect\\_Professiona](https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS_Certified_Solutions_Architect_Professiona) Additionally, the book states that "Cost Explorer enables you to view the costs of your AWS resources over the last 12 months and to create forecasts for the next 12 months" (Source:

[https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS\\_Certified\\_Solutions\\_Architect\\_Professiona](https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS_Certified_Solutions_Architect_Professiona)

**NEW QUESTION 91**

- (Exam Topic 1)

A weather service provides high-resolution weather maps from a web application hosted on AWS in the eu-west-1 Region. The weather maps are updated frequently and stored in Amazon S3 along with static HTML content. The web application is fronted by Amazon CloudFront.

The company recently expanded to serve users in the us-east-1 Region, and these new users report that viewing their respective weather maps is slow from time to time.

Which combination of steps will resolve the us-east-1 performance issues? (Choose two.)

- A. Configure the AWS Global Accelerator endpoint for the S3 bucket in eu-west-1. Configure endpoint groups for TCP ports 80 and 443 in us-east-1.
- B. Create a new S3 bucket in us-east-1. Configure S3 cross-Region replication to synchronize from the S3 bucket in eu-west-1.
- C. Use Lambda@Edge to modify requests from North America to use the S3 Transfer Acceleration endpoint in us-east-1.
- D. Use Lambda@Edge to modify requests from North America to use the S3 bucket in us-east-1.
- E. Configure the AWS Global Accelerator endpoint for us-east-1 as an origin on the CloudFront distributio
- F. Use Lambda@Edge to modify requests from North America to use the new origin.

**Answer:** BD

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2016/04/transfer-files-into-amazon-s3-up-to-300-percent-faster/>

**NEW QUESTION 92**

- (Exam Topic 1)

A company has hundreds of AWS accounts. The company recently implemented a centralized internal process for purchasing new Reserved Instances and modifying existing Reserved Instances. This process requires all business units that want to purchase or modify Reserved Instances to submit requests to a dedicated team for procurement. Previously, business units directly purchased or modified Reserved Instances in their own respective AWS accounts autonomously.

A solutions architect needs to enforce the new process in the most secure way possible.

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

- A. Ensure that all AWS accounts are part of an organization in AWS Organizations with all features enabled.
- B. Use AWS Config to report on the attachment of an IAM policy that denies access to the ec2:PurchaseReservedInstancesOffering action and the ec2:ModifyReservedInstances action.
- C. In each AWS account, create an IAM policy that denies the ec2:PurchaseReservedInstancesOffering action and the ec2:ModifyReservedInstances action.
- D. Create an SCP that denies the ec2:PurchaseReservedInstancesOffering action and the ec2:ModifyReservedInstances actio
- E. Attach the SCP to each OU of the organization.
- F. Ensure that all AWS accounts are part of an organization in AWS Organizations that uses the consolidated billing feature.

**Answer:** AD

**Explanation:**

All features – The default feature set that is available to AWS Organizations. It includes all the functionality of consolidated billing, plus advanced features that give

you more control over accounts in your organization. For example, when all features are enabled the management account of the organization has full control over what member accounts can do. The management account can apply SCPs to restrict the services and actions that users (including the root user) and roles in an account can access. [https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_getting-started\\_concepts.html#feature-set](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_getting-started_concepts.html#feature-set)

### NEW QUESTION 93

- (Exam Topic 1)

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

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

Which data migration strategy should the company use?

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

**Answer: B**

#### Explanation:

<https://aws.amazon.com/storagegateway/file/>

<https://docs.aws.amazon.com/fsx/latest/WindowsGuide/migrate-files-to-fsx-datasync.html> <https://docs.aws.amazon.com/systems-manager/latest/userguide/prereqs-operating-systems.html#prereqs-os-win>

### NEW QUESTION 94

- (Exam Topic 1)

A company runs a serverless application in a single AWS Region. The application accesses external URLs and extracts metadata from those sites. The company uses an Amazon Simple Notification Service (Amazon SNS) topic to publish URLs to an Amazon Simple Queue Service (Amazon SQS) queue. An AWS Lambda function uses the queue as an event source and processes the URLs from the queue. Results are saved to an Amazon S3 bucket.

The company wants to process each URL in other Regions to compare possible differences in site localization. URLs must be published from the existing Region. Results must be written to the existing S3 bucket in the current Region.

Which combination of changes will produce multi-Region deployment that meets these requirements? (Select TWO.)

- A. Deploy the SQS queue with the Lambda function to other Regions.
- B. Subscribe the SNS topic in each Region to the SQS queue.
- C. Subscribe the SQS queue in each Region to the SNS topics in each Region.
- D. Configure the SQS queue to publish URLs to SNS topics in each Region.
- E. Deploy the SNS topic and the Lambda function to other Regions.

**Answer: AC**

#### Explanation:

<https://docs.aws.amazon.com/sns/latest/dg/sns-cross-region-delivery.html>

### NEW QUESTION 96

- (Exam Topic 1)

A global media company is planning a multi-Region deployment of an application. Amazon DynamoDB global tables will back the deployment to keep the user experience consistent across the two continents where users are concentrated. Each deployment will have a public Application Load Balancer (ALB). The company manages public DNS internally. The company wants to make the application available through an apex domain.

Which solution will meet these requirements with the LEAST effort?

- A. Migrate public DNS to Amazon Route 53. Create CNAME records for the apex domain to point to the ALB.
- B. Use a geolocation routing policy to route traffic based on user location.
- C. Place a Network Load Balancer (NLB) in front of the ALB.
- D. Migrate public DNS to Amazon Route 53. Create a CNAME record for the apex domain to point to the NLB's static IP address.
- E. Use a geolocation routing policy to route traffic based on user location.
- F. Create an AWS Global Accelerator accelerator with multiple endpoint groups that target endpoints in appropriate AWS Region.
- G. Use the accelerator's static IP address to create a record in public DNS for the apex domain.
- H. Create an Amazon API Gateway API that is backed by AWS Lambda in one of the AWS Regions. Configure a Lambda function to route traffic to application deployments by using the round robin method.
- I. Create CNAME records for the apex domain to point to the API's URL.

**Answer: C**

#### Explanation:

AWS Global Accelerator is a service that directs traffic to optimal endpoints (in this case, the Application Load Balancer) based on the health of the endpoints and network routing. It allows you to create an accelerator that directs traffic to multiple endpoint groups, one for each Region where the application is deployed. The accelerator uses the AWS global network to optimize the traffic routing to the healthy endpoint.

By using Global Accelerator, the company can use a single static IP address for the apex domain, and traffic will be directed to the optimal endpoint based on the user's location, without the need for additional load balancers or routing policies.

Reference:

AWS Global Accelerator documentation: <https://aws.amazon.com/global-accelerator/Routing-User-Traffic-to-the-Optimal-AWS-Region-using-Global-Accelerator-documentation/>

<https://aws.amazon.com/blogs/networking-and-content-delivery/routing-user-traffic-to-the-optimal-aws-region-u>

### NEW QUESTION 98

- (Exam Topic 1)

An adventure company has launched a new feature on its mobile app. Users can use the feature to upload their hiking and raftering photos and videos anytime. The photos and videos are stored in Amazon S3 Standard storage in an S3 bucket and are served through Amazon CloudFront.

The company needs to optimize the cost of the storage. A solutions architect discovers that most of the uploaded photos and videos are accessed infrequently after 30 days. However, some of the uploaded photos and videos are accessed frequently after 30 days. The solutions architect needs to implement a solution that maintains millisecond retrieval availability of the photos and videos at the lowest possible cost. Which solution will meet these requirements?

- A. Configure S3 Intelligent-Tiering on the S3 bucket.
- B. Configure an S3 Lifecycle policy to transition image objects and video objects from S3 Standard to S3 Glacier Deep Archive after 30 days.
- C. Replace Amazon S3 with an Amazon Elastic File System (Amazon EFS) file system that is mounted on Amazon EC2 instances.
- D. Add a Cache-Control: max-age header to the S3 image objects and S3 video object
- E. Set the header to 30 days.

**Answer:** A

**Explanation:**

Amazon S3 Intelligent-Tiering is a storage class that automatically moves objects between two access tiers based on changing access patterns. Objects that are accessed frequently are stored in the frequent access tier and objects that are accessed infrequently are stored in the infrequent access tier. This allows for cost optimization without requiring manual intervention. This makes it an ideal solution for the scenario described, as it can automatically move objects that are infrequently accessed after 30 days to a lower-cost storage tier while still maintaining millisecond retrieval availability.

**NEW QUESTION 100**

- (Exam Topic 1)

A company has an on-premises website application that provides real estate information for potential renters and buyers. The website uses a Java backend and a NOSQL MongoDB database to store subscriber data.

The company needs to migrate the entire application to AWS with a similar structure. The application must be deployed for high availability, and the company cannot make changes to the application

Which solution will meet these requirements?

- A. use an Amazon Aurora DB cluster as the database for the subscriber dat
- B. Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application.
- C. Use MongoDB on Amazon EC2 instances as the database for the subscriber dat
- D. Deploy EC2 instances in an Auto Scaling group in a single Availability Zone for the Java backend application.
- E. Configure Amazon DocumentD3 (with MongoDB compatibility) with appropriately sized instances in multiple Availability Zones as the database for the subscriber dat
- F. Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application.
- G. Configure Amazon DocumentDB (with MongoDB compatibility) in on-demand capacity mode in multiple Availability Zones as the database for the subscriber dat
- H. Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application.

**Answer:** C

**Explanation:**

On-demand capacity mode is the function of Dynamodb.

<https://aws.amazon.com/blogs/news/running-spiky-workloads-and-optimizing-costs-by-more-than-90-using-ama>

Amazon DocumentDB Elastic Clusters <https://aws.amazon.com/blogs/news/announcing-amazon-documentdb-elastic-clusters/>

Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application. This will provide high availability and scalability, while allowing the company to retain the same database structure as the original application.

**NEW QUESTION 101**

- (Exam Topic 1)

A retail company has structured its AWS accounts to be part of an organization in AWS Organizations. The company has set up consolidated billing and has mapped its departments to the following OUs: Finance. Sales. Human Resources <HR>. Marketing, and Operations. Each OU has multiple AWS accounts, one for each environment within a department. These environments are development, test, pre-production, and production.

The HR department is releasing a new system that will launch in 3 months. In preparation, the HR department has purchased several Reserved Instances (RIs) in its production AWS account. The HR department will install the new application on this account. The HR department wants to make sure that other departments cannot share the RI discounts.

Which solution will meet these requirements?

- A. In the AWS Billing and Cost Management console for the HR department's production account, turn off R1 sharing.
- B. Remove the HR department's production AWS account from the organizatio
- C. Add the account to the consolidating billing configuration only.
- D. In the AWS Billing and Cost Management console, use the organization's management account to turn off R1 sharing for the HR department's production AWS account.
- E. Create an SCP in the organization to restrict access to the RI
- F. Apply the SCP to the OUs of the other departments.

**Answer:** C

**Explanation:**

You can use the management account of the organization in AWS Billing and Cost Management console to turn off RI sharing for the HR department's production AWS account. This will prevent other departments from sharing the RI discounts and ensure that only the HR department can use the RIs purchased in their production account.

**NEW QUESTION 103**

- (Exam Topic 1)

A health insurance company stores personally identifiable information (PII) in an Amazon S3 bucket. The company uses server-side encryption with S3 managed encryption keys (SSE-S3) to encrypt the objects. According to a new requirement, all current and future objects in the S3 bucket must be encrypted by keys that the company's security team manages. The S3 bucket does not have versioning enabled. Which solution will meet these requirements?

- A. In the S3 bucket properties, change the default encryption to SSE-S3 with a customer managed ke
- B. Use the AWS CLI to re-upload all objects in the S3 bucke

- C. Set an S3 bucket policy to deny unencrypted PutObject requests.
- D. In the S3 bucket properties, change the default encryption to server-side encryption with AWS KMS managed encryption keys (SSE-KMS). Set an S3 bucket policy to deny unencrypted PutObject request
- E. Use the AWS CLI to re-upload all objects in the S3 bucket.
- F. In the S3 bucket properties, change the default encryption to server-side encryption with AWS KMS managed encryption keys (SSE-KMS). Set an S3 bucket policy to automatically encrypt objects on GetObject and PutObject requests.
- G. In the S3 bucket properties, change the default encryption to AES-256 with a customer managed key. Attach a policy to deny unencrypted PutObject requests to any entities that access the S3 bucket
- H. Use the AWS CLI to re-upload all objects in the S3 bucket.

**Answer:** D

**Explanation:**

<https://docs.aws.amazon.com/AmazonS3/latest/userguide/ServerSideEncryptionCustomerKeys.html> Clearly says we need following header for SSE-C x-amz-server-side-encryption-customer-algorithm Use this header to specify the encryption algorithm. The header value must be AES256.

**NEW QUESTION 105**

- (Exam Topic 1)

A video processing company has an application that downloads images from an Amazon S3 bucket, processes the images, stores a transformed image in a second S3 bucket, and updates metadata about the image in an Amazon DynamoDB table. The application is written in Node.js and runs by using an AWS Lambda function. The Lambda function is invoked when a new image is uploaded to Amazon S3.

The application ran without incident for a while. However, the size of the images has grown significantly. The Lambda function is now failing frequently with timeout errors. The function timeout is set to its maximum value. A solutions architect needs to refactor the application's architecture to prevent invocation failures. The company does not want to manage the underlying infrastructure.

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

- A. Modify the application deployment by building a Docker image that contains the application code. Publish the image to Amazon Elastic Container Registry (Amazon ECR).
- B. Create a new Amazon Elastic Container Service (Amazon ECS) task definition with a compatibility type of AWS Fargate
- C. Configure the task definition to use the new image in Amazon Elastic Container Registry (Amazon ECR). Adjust the Lambda function to invoke an ECS task by using the ECS task definition when a new file arrives in Amazon S3.
- D. Create an AWS Step Functions state machine with a Parallel state to invoke the Lambda function. Increase the provisioned concurrency of the Lambda function.
- E. Create a new Amazon Elastic Container Service (Amazon ECS) task definition with a compatibility type of Amazon EC2. Configure the task definition to use the new image in Amazon Elastic Container Registry (Amazon ECR). Adjust the Lambda function to invoke an ECS task by using the ECS task definition when a new file arrives in Amazon S3.
- F. Modify the application to store images on Amazon Elastic File System (Amazon EFS) and to store metadata on an Amazon RDS DB instance
- G. Adjust the Lambda function to mount the EFS file share.

**Answer:** AB

**Explanation:**

A. Modify the application deployment by building a Docker image that contains the application code. Publish the image to Amazon Elastic Container Registry (Amazon ECR). - This step is necessary to package the application code in a container and make it available for running on ECS. B. Create a new Amazon Elastic Container Service (Amazon ECS) task definition with a compatibility type of AWS Fargate. Configure the task definition to use the new image in Amazon Elastic Container Registry (Amazon ECR). Adjust the Lambda function to invoke an ECS task by using the ECS task definition when a new file arrives in Amazon S3.

**NEW QUESTION 109**

- (Exam Topic 1)

A company runs a new application as a static website in Amazon S3. The company has deployed the application to a production AWS account and uses Amazon CloudFront to deliver the website. The website calls an Amazon API Gateway REST API. An AWS Lambda function backs each API method.

The company wants to create a CSV report every 2 weeks to show each API Lambda function's recommended configured memory, recommended cost, and the price difference between current configurations and the recommendations. The company will store the reports in an S3 bucket.

Which solution will meet these requirements with the LEAST development time?

- A. Create a Lambda function that extracts metrics data for each API Lambda function from Amazon CloudWatch Logs for the 2-week period. Collate the data into tabular form
- B. Store the data as a \_csvfile in an S3 bucket
- C. Create an Amazon EventBridge rule to schedule the Lambda function to run every 2 weeks.
- D. Opt in to AWS Compute Optimizer
- E. Create a Lambda function that calls the ExportLambdaFunctionRecommendations operation
- F. Export the \_csv file to an S3 bucket
- G. Create an Amazon EventBridge rule to schedule the Lambda function to run every 2 weeks.
- H. Opt in to AWS Compute Optimizer
- I. Set up enhanced infrastructure metrics
- J. Within the Compute Optimizer console, schedule a job to export the Lambda recommendations to a \_csvfile. Store the file in an S3 bucket every 2 weeks.
- K. Purchase the AWS Business Support plan for the production account
- L. Opt in to AWS Compute Optimizer for AWS Trusted Advisor check
- M. In the Trusted Advisor console, schedule a job to export the cost optimization checks to a \_csvfile. Store the file in an S3 bucket every 2 weeks.

**Answer:** B

**Explanation:**

[https://docs.aws.amazon.com/compute-optimizer/latest/APIReference/API\\_ExportLambdaFunctionRecommendations.html](https://docs.aws.amazon.com/compute-optimizer/latest/APIReference/API_ExportLambdaFunctionRecommendations.html)

**NEW QUESTION 114**

- (Exam Topic 1)

A company wants to use AWS to create a business continuity solution in case the company's main on-premises application fails. The application runs on physical servers that also run other applications. The on-premises application that the company is planning to migrate uses a MySQL database as a data store. All the company's on-premises applications use operating systems that are compatible with Amazon EC2.

Which solution will achieve the company's goal with the LEAST operational overhead?

- A. Install the AWS Replication Agent on the source servers, including the MySQL server
- B. Set up replication for all server
- C. Launch test instances for regular drill
- D. Cut over to the test instances to fail over the workload in the case of a failure event.
- E. Install the AWS Replication Agent on the source servers, including the MySQL server
- F. Initialize AWS Elastic Disaster Recovery in the target AWS Region
- G. Define the launch setting
- H. Frequently perform failover and fallback from the most recent point in time.
- I. Create AWS Database Migration Service (AWS DMS) replication servers and a target Amazon Aurora MySQL DB cluster to host the databases
- J. Create a DMS replication task to copy the existing data to the target DB cluster
- K. Create a local AWS Schema Conversion Tool (AWS SCT) change data capture (CDC) task to keep the data synchronized
- L. Install the rest of the software on EC2 instances by starting with a compatible base AMI.
- M. Deploy an AWS Storage Gateway Volume Gateway on-premise
- N. Mount volumes on all on-premise servers
- O. Install the application and the MySQL database on the new volume
- P. Take regular snapshots
- Q. Install all the software on EC2 instances by starting with a compatible base AMI
- R. Launch a Volume Gateway on an EC2 instance
- S. Restore the volumes from the latest snapshot
- T. Mount the new volumes on the EC2 instances in the case of a failure event.

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/drs/latest/userguide/what-is-drs.html> <https://docs.aws.amazon.com/drs/latest/userguide/recovery-workflow-gs.html>

**NEW QUESTION 115**

- (Exam Topic 1)

A company is running an application in the AWS Cloud. Recent application metrics show inconsistent response times and a significant increase in error rates. Calls to third-party services are causing the delays. Currently, the application calls third-party services synchronously by directly invoking an AWS Lambda function.

A solutions architect needs to decouple the third-party service calls and ensure that all the calls are eventually completed.

Which solution will meet these requirements?

- A. Use an Amazon Simple Queue Service (Amazon SQS) queue to store events and invoke the Lambda function.
- B. Use an AWS Step Functions state machine to pass events to the Lambda function.
- C. Use an Amazon EventBridge rule to pass events to the Lambda function.
- D. Use an Amazon Simple Notification Service (Amazon SNS) topic to store events and invoke the Lambda function.

**Answer:** A

**Explanation:**

Using an SQS queue to store events and invoke the Lambda function will decouple the third-party service calls and ensure that all the calls are eventually completed. SQS allows you to store messages in a queue and process them asynchronously, which eliminates the need for the application to wait for a response from the third-party service. The messages will be stored in the SQS queue until they are processed by the Lambda function, even if the Lambda function is currently unavailable or busy. This will ensure that all the calls are eventually completed, even if there are delays or errors.

AWS Step Functions state machines can also be used to pass events to the Lambda function, but it would require additional management and configuration to set up the state machine, which would increase operational overhead.

Amazon EventBridge rule can also be used to pass events to the Lambda function, but it would not provide the same level of decoupling and reliability as SQS.

Using Amazon Simple Notification Service (Amazon SNS) topic to store events and invoke the Lambda function, is similar to SQS, but SNS is a publish-subscribe messaging service and SQS is a queue service. SNS is used for sending messages to multiple recipients, SQS is used for sending messages to a single recipient, so SQS is more appropriate for this use case.

References:

- > [AWS SQS](#)
- > [AWS Step Functions](#)
- > [AWS EventBridge](#)
- > [AWS SNS](#)

**NEW QUESTION 117**

- (Exam Topic 1)

A company is developing a new service that will be accessed using TCP on a static port. A solutions architect must ensure that the service is highly available, has redundancy across Availability Zones, and is accessible using the DNS name `myservice.com`, which is publicly accessible. The service must use fixed address assignments so other companies can add the addresses to their allow lists.

Assuming that resources are deployed in multiple Availability Zones in a single Region, which solution will meet these requirements?

- A. Create Amazon EC2 instances with an Elastic IP address for each instance. Create a Network Load Balancer (NLB) and expose the static TCP port. Register EC2 instances with the NLB. Create a new name server record set named `myservice.com`, and assign the Elastic IP addresses of the EC2 instances to the record set. Provide the Elastic IP addresses of the EC2 instances to the other companies to add to their allow lists.
- B. Create an Amazon ECS cluster and a service definition for the application. Create and assign public IP addresses for the ECS cluster. Create a Network Load Balancer (NLB) and expose the TCP port. Create a target group and assign the ECS cluster name to the NLB. Create a new A record set named `myservice.com` and assign the public IP addresses of the ECS cluster to the record set. Provide the public IP addresses of the ECS cluster to the other companies to add to their allow lists.
- C. Create Amazon EC2 instances for the service. Create one Elastic IP address for each Availability Zone. Create a Network Load Balancer (NLB) and expose the assigned TCP port. Assign the Elastic IP addresses to the NLB for each Availability Zone. Create a target group and register the EC2 instances with the NLB. Create a new A (alias) record set named `myservice.com`, and assign the NLB DNS name to the record set.
- D. Create an Amazon ECS cluster and a service definition for the application. Create and assign public IP address for each host in the cluster. Create an Application Load Balancer (ALB) and expose the static TCP port. Create a target group and assign the ECS service definition name to the ALB. Create a new CNAME record set and associate the public IP addresses to the record set. Provide the Elastic IP addresses of the Amazon EC2 instances to the other companies to add to their allow lists.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-to-elb-load-balancer.html>

Create a Network Load Balancer (NLB) and expose the assigned TCP port. Assign the Elastic IP addresses to the NLB for each Availability Zone. Create a target group and register the EC2 instances with the NLB. Create a new A (alias) record set named my.service.com, and assign the NLB DNS name to the record set. As it uses the NLB as the resource in the A-record, traffic will be routed through the NLB, and it will automatically route the traffic to the healthy instances based on the health checks and also it provides the fixed address assignments as the other companies can add the NLB's Elastic IP addresses to their allow lists.

**NEW QUESTION 121**

- (Exam Topic 1)

A solutions architect is auditing the security setup of an AWS Lambda function for a company. The Lambda function retrieves the latest changes from an Amazon Aurora database. The Lambda function and the database run in the same VPC. Lambda environment variables are providing the database credentials to the Lambda function.

The Lambda function aggregates data and makes the data available in an Amazon S3 bucket that is configured for server-side encryption with AWS KMS managed encryption keys (SSE-KMS). The data must not travel across the internet. If any database credentials become compromised, the company needs a solution that minimizes the impact of the compromise.

What should the solutions architect recommend to meet these requirements?

- A. Enable IAM database authentication on the Aurora DB cluster
- B. Change the IAM role for the Lambda function to allow the function to access the database by using IAM database authentication
- C. Deploy a gateway VPC endpoint for Amazon S3 in the VPC.
- D. Enable IAM database authentication on the Aurora DB cluster
- E. Change the IAM role for the Lambda function to allow the function to access the database by using IAM database authentication
- F. Enforce HTTPS on the connection to Amazon S3 during data transfers.
- G. Save the database credentials in AWS Systems Manager Parameter Store
- H. Set up password rotation on the credentials in Parameter Store
- I. Change the IAM role for the Lambda function to allow the function to access Parameter Store
- J. Modify the Lambda function to retrieve the credentials from Parameter Store
- K. Deploy a gateway VPC endpoint for Amazon S3 in the VPC.
- L. Save the database credentials in AWS Secrets Manager
- M. Set up password rotation on the credentials in Secrets Manager
- N. Change the IAM role for the Lambda function to allow the function to access Secrets Manager
- O. Modify the Lambda function to retrieve the credentials from Secrets Manager
- P. Enforce HTTPS on the connection to Amazon S3 during data transfers.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/UsingWithRDS.IAMDBAuth.html>

**NEW QUESTION 123**

- (Exam Topic 1)

A start up company hosts a fleet of Amazon EC2 instances in private subnets using the latest Amazon Linux 2 AMI. The company's engineers rely heavily on SSH access to the instances for troubleshooting.

The company's existing architecture includes the following:

- A VPC with private and public subnets, and a NAT gateway
- Site-to-Site VPN for connectivity with the on-premises environment
- EC2 security groups with direct SSH access from the on-premises environment

The company needs to increase security controls around SSH access and provide auditing of commands executed by the engineers.

Which strategy should a solutions architect use?

- A. Install and configure EC2 Instance Connect on the fleet of EC2 instances
- B. Remove all security group rules attached to EC2 instances that allow inbound TCP on port 22. Advise the engineers to remotely access the instances by using the EC2 Instance Connect CLI.
- C. Update the EC2 security groups to only allow inbound TCP on port 22 to the IP addresses of the engineer's device
- D. Install the Amazon CloudWatch agent on all EC2 instances and send operating system audit logs to CloudWatch Logs.
- E. Update the EC2 security groups to only allow inbound TCP on port 22 to the IP addresses of the engineer's device
- F. Enable AWS Config for EC2 security group resource change
- G. Enable AWS Firewall Manager and apply a security group policy that automatically remediates changes to rules.
- H. Create an IAM role with the AmazonSSMManagedInstanceCore managed policy attached
- I. Attach the IAM role to all the EC2 instances
- J. Remove all security group rules attached to the EC2 instances that allow inbound TCP on port 22. Have the engineers install the AWS Systems Manager Session Manager plugin for their devices and remotely access the instances by using the start-session API call from Systems Manager.

**Answer:** D

**Explanation:**

Allows client machines to be able to connect to Session Manager using the AWS CLI instead of going through the AWS EC2 or AWS Server Manager console.

<https://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager-working-with-install-plugin.html> <https://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager-working-with-install-plugin.html>

**NEW QUESTION 128**

- (Exam Topic 1)

A solutions architect is investigating an issue in which a company cannot establish new sessions in Amazon Workspaces. An initial analysis indicates that the issue involves user profiles. The Amazon Workspaces environment is configured to use Amazon FSx for Windows File Server as the profile share storage. The FSx for Windows File Server file system is configured with 10 TB of storage.

The solutions architect discovers that the file system has reached its maximum capacity. The solutions architect must ensure that users can regain access. The solution also must prevent the problem from occurring again.

Which solution will meet these requirements?

- A. Remove old user profiles to create spac
- B. Migrate the user profiles to an Amazon FSx for Lustre file system.
- C. Increase capacity by using the update-file-system comman
- D. Implement an Amazon CloudWatch metric that monitors free spac
- E. Use Amazon EventBridge to invoke an AWS Lambda function to increase capacity as required.
- F. Monitor the file system by using the FreeStorageCapacity metric in Amazon CloudWatc
- G. Use AWS Step Functions to increase the capacity as required.
- H. Remove old user profiles to create spac
- I. Create an additional FSx for Windows File Server file system.Update the user profile redirection for 50% of the users to use the new file system.

**Answer: B**

**Explanation:**

➤ It can prevent the issue from happening again by monitoring the file system with the FreeStorageCapacity metric in Amazon CloudWatch and using Amazon EventBridge to invoke an AWS Lambda function to increase the capacity as required. This ensures that the file system always has enough free space to store user profiles and avoids reaching maximum capacity.

**NEW QUESTION 133**

- (Exam Topic 1)

A company wants to use a third-party software-as-a-service (SaaS) application. The third-party SaaS application is consumed through several API calls. The third-party SaaS application also runs on AWS inside a VPC.

The company will consume the third-party SaaS application from inside a VPC. The company has internal security policies that mandate the use of private connectivity that does not traverse the internet. No resources that run in the company VPC are allowed to be accessed from outside the company's VPC. All permissions must conform to the principles of least privilege.

Which solution meets these requirements?

- A. Create an AWS PrivateLink interface VPC endpoint
- B. Connect this endpoint to the endpoint service that the third-party SaaS application provide
- C. Create a security group to limit the access to the endpoint
- D. Associate the security group with the endpoint.
- E. Create an AWS Site-to-Site VPN connection between the third-party SaaS application and the company VP
- F. Configure network ACLs to limit access across the VPN tunnels.
- G. Create a VPC peering connection between the third-party SaaS application and the company VPUUpdate route tables by adding the needed routes for the peering connection.
- H. Create an AWS PrivateLink endpoint servic
- I. Ask the third-party SaaS provider to create an interface VPC endpoint for this endpoint servic
- J. Grant permissions for the endpoint service to the specific account of the third-party SaaS provider.

**Answer: A**

**Explanation:**

Reference architecture - <https://docs.aws.amazon.com/vpc/latest/privatelink/privatelink-access-saas.html> Note from documentation that Interface Endpoint is at client side

**NEW QUESTION 137**

- (Exam Topic 1)

A company has deployed an application on AWS Elastic Beanstalk. The application uses Amazon Aurora for the database layer. An Amazon CloudFront distribution serves web requests and includes the Elastic Beanstalk domain name as the origin server. The distribution is configured with an alternate domain name that visitors use when they access the application.

Each week, the company takes the application out of service for routine maintenance. During the time that the application is unavailable, the company wants visitors to receive an informational message instead of a CloudFront error message.

A solutions architect creates an Amazon S3 bucket as the first step in the process.

Which combination of steps should the solutions architect take next to meet the requirements? (Choose three.)

- A. Upload static informational content to the S3 bucket.
- B. Create a new CloudFront distributio
- C. Set the S3 bucket as the origin.
- D. Set the S3 bucket as a second origin in the original CloudFront distributio
- E. Configure the distribution and the S3 bucket to use an origin access identity (OAI).
- F. During the weekly maintenance, edit the default cache behavior to use the S3 origi
- G. Revert the change when the maintenance is complete.
- H. During the weekly maintenance, create a cache behavior for the S3 origin on the new distributio
- I. Set the path pattern to \ Set the precedence to 0. Delete the cache behavior when the maintenance is complete.
- J. During the weekly maintenance, configure Elastic Beanstalk to serve traffic from the S3 bucket.

**Answer: ACD**

**Explanation:**

The company wants to serve static content from an S3 bucket during the maintenance period. To do this, the following steps are required:

- Upload static informational content to the S3 bucket. This will provide the source of the content that will be served to the visitors.
- Set the S3 bucket as a second origin in the original CloudFront distribution. Configure the distribution and the S3 bucket to use an origin access identity (OAI). This will allow CloudFront to access the S3 bucket securely and prevent public access to the bucket.
- During the weekly maintenance, edit the default cache behavior to use the S3 origin. Revert the change when the maintenance is complete. This will redirect all web requests to the S3 bucket instead of the Elastic Beanstalk domain name.

The other options are not correct because:

- Creating a new CloudFront distribution is not necessary and would require changing the alternate domain name configuration.
- Creating a cache behavior for the S3 origin on a new distribution would not work because the visitors would still access the original distribution using the alternate domain name.

> Configuring Elastic Beanstalk to serve traffic from the S3 bucket is not possible and would not achieve the desired result.

References:

> <https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/distribution-web-values-specify>.

#### NEW QUESTION 140

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