

## SAP-C02 Dumps

### 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)

An application is using an Amazon RDS for MySQL Multi-AZ DB instance in the us-east-1 Region. After a failover test, the application lost the connections to the database and could not re-establish the connections. After a restart of the application, the application re-established the connections. A solutions architect must implement a solution so that the application can re-establish connections to the database without requiring a restart. Which solution will meet these requirements?

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

**Answer: B**

**Explanation:**

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

**NEW QUESTION 3**

- (Exam Topic 1)

A company runs a content management application on a single Windows Amazon EC2 instance in a development environment. The application reads and writes static content to a 2 TB Amazon Elastic Block Store (Amazon EBS) volume that is attached to the instance as the root device. The company plans to deploy this application in production as a highly available and fault-tolerant solution that runs on at least three EC2 instances across multiple Availability Zones. A solutions architect must design a solution that joins all the instances that run the application to an Active Directory domain. The solution also must implement Windows ACLs to control access to file contents. The application always must maintain exactly the same content on all running instances at any given point in time. Which solution will meet these requirements with the LEAST management overhead?

- A. Create an Amazon Elastic File System (Amazon EFS) file share
- B. Create an Auto Scaling group that extends across three Availability Zones and maintains a minimum size of three instances
- C. Implement a user data script to install the application, join the instance to the AD domain, and mount the EFS file share.
- D. Create a new AMI from the current EC2 instance that is running
- E. Create an Amazon FSx for Lustre file system
- F. Create an Auto Scaling group that extends across three Availability Zones and maintains a minimum size of three instances
- G. Implement a user data script to join the instance to the AD domain and mount the FSx for Lustre file system.
- H. Create an Amazon FSx for Windows File Server file system
- I. Create an Auto Scaling group that extends across three Availability Zones and maintains a minimum size of three instances
- J. Implement a user data script to install the application and mount the FSx for Windows File Server file system
- K. Perform a seamless domain join to join the instance to the AD domain.

- L. Create a new AMI from the current EC2 instance that is running
- M. Create an Amazon Elastic File System (Amazon EFS) file system
- N. Create an Auto Scaling group that extends across three Availability Zones and maintains a minimum size of three instances
- O. Perform a seamless domain join to join the instance to the AD domain.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/fsx/latest/WindowsGuide/what-is.html> [https://docs.aws.amazon.com/directoryservice/latest/admin-guide/ms\\_ad\\_join\\_instance.html](https://docs.aws.amazon.com/directoryservice/latest/admin-guide/ms_ad_join_instance.html)

**NEW QUESTION 4**

- (Exam Topic 1)

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

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

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

Which solution will meet these requirements?

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

**Answer:** D

**Explanation:**

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

**NEW QUESTION 5**

- (Exam Topic 1)

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

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

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

**Answer:** ADE

**Explanation:**

<https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/send-a-notification-when-an-iam-user-is-created.html>

**NEW QUESTION 6**

- (Exam Topic 1)

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

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

Which solution will meet these requirements MOST cost-effectively?

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

**Answer:** D

**Explanation:**

In this solution, the company can use Amazon SES to send email messages, which will minimize operational overhead as SES is a fully managed service that handles sending and receiving email messages. The company can store the email template on Amazon 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 7**

- (Exam Topic 1)

A company uses AWS Organizations for a multi-account setup in the AWS Cloud. The company uses AWS Control Tower for governance and uses AWS Transit Gateway for VPC connectivity across accounts.

In an AWS application account, the company's application team has deployed a web application that uses AWS Lambda and Amazon RDS. The company's database administrators have a separate DBA account and use the account to centrally manage all the databases across the organization. The database administrators use an Amazon EC2 instance that is deployed in the DBA account to access an RDS database that is deployed in the application account. The application team has stored the database credentials as secrets in AWS Secrets Manager in the application account. The application team is manually sharing the secrets with the database administrators. The secrets are encrypted by the default AWS managed key for Secrets Manager in the application account. A solutions architect needs to implement a solution that gives the database administrators access to the database and eliminates the need to manually share the secrets.

Which solution will meet these requirements?

- A. Use AWS Resource Access Manager (AWS RAM) to share the secrets from the application account with the DBA account
- B. In the DBA account, create an IAM role that is named DBA-Admin
- C. Grant the role the required permissions to access the shared secret
- D. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.
- E. In the application account, create an IAM role that is named DBA-Secret
- F. Grant the role the required permissions to access the secret
- G. In the DBA account, create an IAM role that is named DBA-Admin
- H. Grant the DBA-Admin role the required permissions to assume the DBA-Secret role in the application account
- I. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.
- J. In the DBA account, create an IAM role that is named DBA-Admin
- K. Grant the role the required permissions to access the secrets and the default AWS managed key in the application account
- L. In the application account, attach resource-based policies to the key to allow access from the DBA account
- M. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.
- N. In the DBA account, create an IAM role that is named DBA-Admin
- O. Grant the role the required permissions to access the secrets in the application account
- P. Attach an SCP to the application account to allow access to the secrets from the DBA account
- Q. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.

**Answer:** B

**Explanation:**

➤ Option B is correct because creating an IAM role in the application account that has permissions to access the secrets and creating an IAM role in the DBA account that has permissions to assume the role in the application account eliminates the need to manually share the secrets. This approach uses cross-account IAM roles to grant access to the secrets in the application account. The database administrators can assume the role in the application account from their EC2 instance in the DBA

account and retrieve the secrets without having to store them locally or share them manually

References: 1: <https://docs.aws.amazon.com/ram/latest/userguide/what-is.html> 2:

[https://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial\\_cross-account-with-roles.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html) 3:

<https://docs.aws.amazon.com/kms/latest/developerguide/concepts.html> : [https://docs.aws.amazon.com/secretsmanager/latest/userguide/tutorials\\_basic.html](https://docs.aws.amazon.com/secretsmanager/latest/userguide/tutorials_basic.html) :

<https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html>

**NEW QUESTION 8**

- (Exam Topic 1)

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

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

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

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

**Answer: C**

**Explanation:**

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

**NEW QUESTION 9**

- (Exam Topic 1)

A software company hosts an application on AWS with resources in multiple AWS accounts and Regions. The application runs on a group of Amazon EC2 instances in an application VPC located in the us-east-1 Region with an IPv4 CIDR block of 10.10.0.0/16. In a different AWS account, a shared services VPC is located in the us-east-2 Region with an IPv4 CIDR block of 10.10.10.0/24. When a cloud engineer uses AWS CloudFormation to attempt to peer the application VPC with the shared services VPC, an error message indicates a peering failure. Which factors could cause this error? (Choose two.)

- A. The IPv4 CIDR ranges of the two VPCs overlap
- B. The VPCs are not in the same Region
- C. One or both accounts do not have access to an Internet gateway
- D. One of the VPCs was not shared through AWS Resource Access Manager
- E. The IAM role in the peer acceptor account does not have the correct permissions

**Answer: AE**

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2017/11/announcing-support-for-inter-region-vpc-peering/>

**NEW QUESTION 10**

- (Exam Topic 1)

A company wants to migrate its workloads from on premises to AWS. The workloads run on Linux and Windows. The company has a large on-premises infrastructure that consists of physical machines and VMs that host numerous applications. The company must capture details about the system configuration, system performance, running processes and network configurations of its on-premises servers. The company also must divide the on-premises applications into groups for AWS migrations. The company needs recommendations for Amazon EC2 instance types so that the company can run its workloads on AWS in the most cost-effective manner. Which combination of steps should a solutions architect take to meet these requirements? (Select THREE.)

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

**Answer: ADE**

**Explanation:**

<https://docs.aws.amazon.com/application-discovery/latest/userguide/discovery-agent.html>  
<https://docs.aws.amazon.com/migrationhub/latest/ug/ec2-recommendations.html>

**NEW QUESTION 10**

- (Exam Topic 1)

A company has 50 AWS accounts that are members of an organization in AWS Organizations. Each account contains multiple VPCs. The company wants to use AWS Transit Gateway to establish connectivity between the VPCs in each member account. Each time a new member account is created, the company wants to automate the process of creating a new VPC and a transit gateway attachment. Which combination of steps will meet these requirements? (Select TWO)

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

G. From the management account, share the transit gateway with member accounts by using AWS Service Catalog

**Answer:** AC

**Explanation:**

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

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

**NEW QUESTION 12**

- (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 17**

- (Exam Topic 1)

A company manages multiple AWS accounts by using AWS Organizations. Under the root OU, the company has two OUs: Research and DataOps.

Because of regulatory requirements, all resources that the company deploys in the organization must reside in the ap-northeast-1 Region. Additionally, EC2 instances that the company deploys in the DataOps OU must use a predefined list of instance types

A solutions architect must implement a solution that applies these restrictions. The solution must maximize operational efficiency and must minimize ongoing maintenance

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

- A. Create an IAM role in one account under the DataOps OU Use the ec2 Instance Type condition key in an inline policy on the role to restrict access to specific instance types.
- B. Create an IAM user in all accounts under the root OU Use the aws RequestedRegion condition key in an inline policy on each user to restrict access to all AWS Regions except ap-northeast-1.
- C. Create an SCP Use the aws:RequestedRegion condition key to restrict access to all AWS Regions except ap-northeast-1 Apply the SCP to the root OU.
- D. Create an SCP Use the ec2:InstanceType condition key to restrict access to all AWS Regions except ap-northeast-1. Apply the SCP to the root OU
- E. the DataOps OU
- F. and the Research OU.
- G. Create an SCP Use the ec2:InstanceType condition key to restrict access to specific instance types Apply the SCP to the DataOps OU.

**Answer:** CE

**Explanation:**

[https://docs.aws.amazon.com/IAM/latest/UserGuide/reference\\_policies\\_examples\\_aws\\_deny-requested-region.h](https://docs.aws.amazon.com/IAM/latest/UserGuide/reference_policies_examples_aws_deny-requested-region.html)

[https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps\\_examples\\_ec2.html](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps_examples_ec2.html)

**NEW QUESTION 20**

- (Exam Topic 1)

A company has an application that runs on Amazon EC2 instances. A solutions architect is designing VPC infrastructure in an AWS Region where the application needs to access an Amazon Aurora DB cluster. The EC2 instances are all associated with the same security group. The DB cluster is associated with its own security group.

The solutions architect needs to add rules to the security groups to provide the application with least privilege access to the DB cluster.

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

- A. Add an inbound rule to the EC2 instances' security group
- B. Specify the DB cluster's security group as the source over the default Aurora port.
- C. Add an outbound rule to the EC2 instances' security group
- D. Specify the DB cluster's security group as the destination over the default Aurora port.
- E. Add an inbound rule to the DB cluster's security group
- F. Specify the EC2 instances' security group as the source over the default Aurora port.
- G. Add an outbound rule to the DB cluster's security group

- H. Specify the EC2 instances' security group as the destination over the default Aurora port.
- I. Add an outbound rule to the DB cluster's security group
- J. Specify the EC2 instances' security group as the destination over the ephemeral ports.

**Answer:** AB

**Explanation:**

\* B. Add an outbound rule to the EC2 instances' security group. Specify the DB cluster's security group as the destination over the default Aurora port. This allows the instances to make outbound connections to the DB cluster on the default Aurora port. C. Add an inbound rule to the DB cluster's security group. Specify the EC2 instances' security group as the source over the default Aurora port. This allows connections to the DB cluster from the EC2 instances on the default Aurora port.

**NEW QUESTION 24**

- (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 Manager
- B. Create an AWS Lambda function resource to rotate the database password
- 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 Store
- E. Create an AWS Lambda function resource to rotate the database password
- 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 Manager
- H. Create an AWS Lambda function resource to rotate the database password
- 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 Store
- 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 25**

- (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 store
- 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 Virtualization Format (OVF) format Create an Amazon S3 bucket to store the image in the destination AWS Region
- 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 (CIFS) share
- F. Create a backup copy to the shared folder
- 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 Manager
- 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 AMI
- 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 28**

- (Exam Topic 1)

An AWS partner company is building a service in AWS Organizations using its organization named org. This service requires the partner company to have access to AWS resources in a customer account, which is in a separate organization named org2 The company must establish least privilege security access using an API or command line tool to the customer account

What is the MOST secure way to allow org1 to access resources in org2?

- A. The customer should provide the partner company with their AWS account access keys to log in and perform the required tasks
- B. The customer should create an IAM user and assign the required permissions to the IAM user The customer should then provide the credentials to the partner company to log in and perform the required tasks.

- C. The customer should create an IAM role and assign the required permissions to the IAM role
- D. The partner company should then use the IAM role's Amazon Resource Name (ARN) when requesting access to perform the required tasks
- E. The customer should create an IAM role and assign the required permissions to the IAM role
- F. The partner company should then use the IAM role's Amazon Resource Name (ARN). Including the external ID in the IAM role's trust policy, when requesting access to perform the required tasks

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/IAM/latest/UserGuide/confused-deputy.html>

This is the most secure way to allow org1 to access resources in org2 because it allows for least privilege security access. The customer should create an IAM role and assign the required permissions to the IAM role. The partner company should then use the IAM role's Amazon Resource Name (ARN) and include the external ID in the IAM role's trust policy when requesting access to perform the required tasks. This ensures that the partner company can only access the resources that it needs and only from the specific customer account.

**NEW QUESTION 29**

- (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 30**

- (Exam Topic 1)

A company plans to refactor a monolithic application into a modern application designed for 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 as 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 32**

- (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 33

- (Exam Topic 1)

A company runs a Python script on an Amazon EC2 instance to process data. The script runs every 10 minutes. The script ingests files from an Amazon S3 bucket and processes the files. On average, the script takes approximately 5 minutes to process each file. The script will not reprocess a file that the script has already processed.

The company reviewed Amazon CloudWatch metrics and noticed that the EC2 instance is idle for approximately 40% of the time because of the file processing speed. The company wants to make the workload highly available and scalable. The company also wants to reduce long-term management overhead.

Which solution will meet these requirements MOST cost-effectively?

- A. Migrate the data processing script to an AWS Lambda function
- B. Use an S3 event notification to invoke the Lambda function to process the objects when the company uploads the objects.
- C. Create an Amazon Simple Queue Service (Amazon SQS) queue
- D. Configure Amazon S3 to send event notifications to the SQS queue
- E. Create an EC2 Auto Scaling group with a minimum size of one instance
- F. Update the data processing script to poll the SQS queue
- G. Process the S3 objects that the SQS message identifies.
- H. Migrate the data processing script to a container image
- I. Run the data processing container on an EC2 instance
- J. Configure the container to poll the S3 bucket for new objects and to process the resulting objects.
- K. Migrate the data processing script to a container image that runs on Amazon Elastic Container Service (Amazon ECS) on AWS Fargate
- L. Create an AWS Lambda function that calls the Fargate RunTaskAPI operation when the container processes the file
- M. Use an S3 event notification to invoke the Lambda function.

**Answer: D**

#### Explanation:

migrating the data processing script to an AWS Lambda function and using an S3 event notification to invoke the Lambda function to process the objects when the company uploads the objects. This solution meets the company's requirements of high availability and scalability, as well as reducing long-term management overhead, and is likely to be the most cost-effective option.

### 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 S3Cross-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 S3Same-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 origins 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 39

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

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 41**

- (Exam Topic 1)

A financial services company in North America plans to release a new online web application to its customers on AWS. The company will launch the application in the us-east-1 Region on Amazon EC2 instances. The application must be highly available and must dynamically scale to meet user traffic. The company also wants to implement a disaster recovery environment for the application in the us-west-1 Region by using active-passive failover.

Which solution will meet these requirements?

- A. Create a VPC in us-east-1 and a VPC in us-west-1. Configure VPC peering in the us-east-1 VPC.
- B. Create an Application Load Balancer (ALB) that extends across multiple Availability Zones in both VPCs. Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in both VPCs. Place the Auto Scaling group behind the ALB.
- C. Create a VPC in us-east-1 and a VPC in us-west-1. In the us-east-1 VPC, create an Application Load Balancer (ALB) that extends across multiple Availability Zones. In the us-west-1 VPC, create an Application Load Balancer (ALB) that extends across multiple Availability Zones. Place the Auto Scaling group behind the ALB. Set up the same configuration in the us-west-1 VPC.
- D. Create an Application Load Balancer (ALB) that extends across multiple Availability Zones in that VPC.
- E. Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in the us-east-1 VPC. Place the Auto Scaling group behind the ALB. Set up the same configuration in the us-west-1 VPC.
- F. Create an Amazon Route 53 hosted zone. Create separate records for each ALB. Enable health checks to ensure high availability between Regions.
- G. Create a VPC in us-east-1 and a VPC in us-west-1. In the us-east-1 VPC, create an Application Load Balancer (ALB) that extends across multiple Availability Zones. In the us-west-1 VPC, create an Application Load Balancer (ALB) that extends across multiple Availability Zones. Place the Auto Scaling group behind the ALB. Set up the same configuration in the us-west-1 VPC. Create an Amazon Route 53 hosted zone.
- H. Create an Application Load Balancer (ALB) that extends across multiple Availability Zones in that VPC. Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in the us-east-1 VPC. Place the Auto Scaling group behind the ALB. Set up the same configuration in the us-west-1 VPC. Create an Amazon Route 53 hosted zone.
- I. Create separate records for each ALB. Enable health checks and configure a failover routing policy for each record.
- J. Create a VPC in us-east-1 and a VPC in us-west-1. Configure VPC peering in the us-east-1 VPC.
- K. Create an Application Load Balancer (ALB) that extends across multiple Availability Zones. Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in both VPCs. Place the Auto Scaling group behind the ALB. Create an Amazon Route 53 hosted zone. Create a record for the ALB.

**Answer: C**

**Explanation:**

It's the one that handles failover while B (the one shown as the answer today) it almost the same but does not handle failover.

**NEW QUESTION 42**

- (Exam Topic 1)

A company has applications in an AWS account that is named Source. The account is in an organization in AWS Organizations. One of the applications uses AWS Lambda functions and stores inventory data in an Amazon Aurora database. The application deploys the Lambda functions by using a deployment package. The company has configured automated backups for Aurora.

The company wants to migrate the Lambda functions and the Aurora database to a new AWS account that is named Target. The application processes critical data, so the company must minimize downtime.

Which solution will meet these requirements?

- A. Download the Lambda function deployment package from the Source account.
- B. Use the deployment package and create new Lambda functions in the Target account.
- C. Share the automated Aurora DB cluster snapshot with the Target account.
- D. Download the Lambda function deployment package from the Source account.
- E. Use the deployment package and create new Lambda functions in the Target account. Share the Aurora DB cluster with the Target account by using AWS Resource Access Manager (AWS RAM). Grant the Target account permission to clone the Aurora DB cluster.
- F. Use AWS Resource Access Manager (AWS RAM) to share the Lambda functions and the Aurora DB cluster with the Target account.
- G. Grant the Target account permission to clone the Aurora DB cluster.
- H. Use AWS Resource Access Manager (AWS RAM) to share the Lambda functions with the Target account.
- I. Share the automated Aurora DB cluster snapshot with the Target account.

**Answer: C**

**Explanation:**

This solution uses a combination of AWS Resource Access Manager (RAM) and automated backups to migrate the Lambda functions and the Aurora database to the Target account while minimizing downtime. In this solution, the Lambda function deployment package is downloaded from the Source account and used to create new Lambda functions in the Target account. The Aurora DB cluster is shared with the Target account using AWS RAM and the Target account is granted permission to clone the Aurora DB cluster, allowing for a new copy of the Aurora database to be created in the Target account. This approach allows for the data to be migrated to the Target account while minimizing downtime, as the Target account can use the cloned Aurora database while the original Aurora database continues to be used in the Source account.

**NEW QUESTION 46**

- (Exam Topic 1)

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

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

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

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

**Answer:** C

**Explanation:**

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

**NEW QUESTION 51**

- (Exam Topic 1)

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

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

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

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

**Answer:** B

**Explanation:**

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

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

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

**NEW QUESTION 54**

- (Exam Topic 1)

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

Which solution meets these requirements?

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

**Answer:** A

**Explanation:**

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

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

**NEW QUESTION 58**

- (Exam Topic 1)

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

What should the solutions architect do to meet these requirements?

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

**Answer:** C

**Explanation:**

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

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

**NEW QUESTION 62**

- (Exam Topic 1)

A company has purchased appliances from different vendors. The appliances all have IoT sensors. The sensors send status information in the vendors' proprietary formats to a legacy application that parses the information into JSON. The parsing is simple, but each vendor has a unique format. Once daily, the application parses all the JSON records and stores the records in a relational database for analysis.

The company needs to design a new data analysis solution that can deliver faster and optimize costs. Which solution will meet these requirements?

- A. Connect the IoT sensors to AWS IoT Core
- B. Set a rule to invoke an AWS Lambda function to parse the information and save a .csv file to Amazon S3. Use AWS Glue to catalog the file
- C. Use Amazon Athena and Amazon QuickSight for analysis.
- D. Migrate the application server to AWS Fargate, which will receive the information from IoT sensors and parse the information into a relational format
- E. Save the parsed information to Amazon Redshift for analysis.
- F. Create an AWS Transfer for SFTP server
- G. Update the IoT sensor code to send the information as a .csv file through SFTP to the server
- H. Use AWS Glue to catalog the file
- I. Use Amazon Athena for analysis.
- J. Use AWS Snowball Edge to collect data from the IoT sensors directly to perform local analysis. Periodically collect the data into Amazon Redshift to perform global analysis.

**Answer:** A

**Explanation:**

➤ Connect the IoT sensors to AWS IoT Core. Set a rule to invoke an AWS Lambda function to parse the information and save a .csv file to Amazon S3. Use AWS Glue to catalog the files. Use Amazon Athena and Amazon QuickSight for analysis. This solution meets the requirement of faster analysis and cost optimization by using AWS IoT Core to collect data from the IoT sensors in real-time and then using AWS Glue and Amazon Athena for efficient data analysis. This solution involves connecting the IoT sensors to the AWS IoT Core, setting a rule to invoke an AWS Lambda function to parse the information, and saving a .csv file to Amazon S3. AWS Glue can be used to catalog the files and Amazon Athena and Amazon QuickSight can be used for analysis. This solution will enable faster and more cost-effective data analysis.

This solution is in line with the official Amazon Textbook and Resources for the AWS Certified Solutions Architect - Professional certification. In particular, the book states that: "AWS IoT Core can be used to ingest and process the data, AWS Lambda can be used to process and transform the data, and Amazon S3 can be used to store the data. AWS Glue can be used to catalog and access the data, Amazon Athena can be used to query the data, and Amazon QuickSight can be used to visualize the data." (Source: [https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS\\_Certified\\_Solutions\\_Architect\\_Professional](https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS_Certified_Solutions_Architect_Professional))

**NEW QUESTION 66**

- (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 69**

- (Exam Topic 1)

A company is using Amazon OpenSearch Service to analyze data. The company loads data into an OpenSearch Service cluster with 10 data nodes from an Amazon S3 bucket that uses S3 Standard storage. The data resides in the cluster for 1 month for read-only analysis. After 1 month, the company deletes the index that contains the data from the cluster. For compliance purposes, the company must retain a copy of all input data.

The company is concerned about ongoing costs and asks a solutions architect to recommend a new solution. Which solution will meet these requirements MOST cost-effectively?

- A. Replace all the data nodes with UltraWarm nodes to handle the expected capacity
- B. Transition the input data from S3 Standard to S3 Glacier Deep Archive when the company loads the data into the cluster.
- C. Reduce the number of data nodes in the cluster to 2. Add UltraWarm nodes to handle the expected capacity
- D. Configure the indexes to transition to UltraWarm when OpenSearch Service ingests the data
- E. Transition the input data to S3 Glacier Deep Archive after 1 month by using an S3 Lifecycle policy.
- F. Reduce the number of data nodes in the cluster to 2. Add UltraWarm nodes to handle the expected capacity
- G. Configure the indexes to transition to UltraWarm when OpenSearch Service ingests the data
- H. Add cold storage nodes to the cluster. Transition the indexes from UltraWarm to cold storage
- I. Delete the input data from the S3 bucket after 1 month by using an S3 Lifecycle policy.

- J. Reduce the number of data nodes in the cluster to 2. Add instance-backed data nodes to handle the expected capacity.  
K. Transition the input data from S3 Standard to S3 Glacier Deep Archive when the company loads the data into the cluster.

**Answer:** B

**Explanation:**

By reducing the number of data nodes in the cluster to 2 and adding UltraWarm nodes to handle the expected capacity, the company can reduce the cost of running the cluster. Additionally, configuring the indexes to transition to UltraWarm when OpenSearch Service ingests the data will ensure that the data is stored in the most cost-effective manner. Finally, transitioning the input data to S3 Glacier Deep Archive after 1 month by using an S3 Lifecycle policy will ensure that the data is retained for compliance purposes, while also reducing the ongoing costs.

**NEW QUESTION 73**

- (Exam Topic 1)

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

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

Which solution will meet these requirements?

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

**Answer:** D

**Explanation:**

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

**NEW QUESTION 78**

- (Exam Topic 1)

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

Which solution will meet this requirement?

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

**Answer:** A

**Explanation:**

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

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

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

**NEW QUESTION 83**

- (Exam Topic 1)

A company has an asynchronous HTTP application that is hosted as an AWS Lambda function. A public Amazon API Gateway endpoint invokes the Lambda function. The Lambda function and the API Gateway endpoint reside in the us-east-1 Region. A solutions architect needs to redesign the application to support failover to another AWS Region.

Which solution will meet these requirements?

- A. Create an API Gateway endpoint in the us-west-2 Region to direct traffic to the Lambda function in us-east-1. Configure Amazon Route 53 to use a failover routing policy to route traffic for the two API Gateway endpoints.
- B. Create an Amazon Simple Queue Service (Amazon SQS) queue
- C. Configure API Gateway to direct traffic to the SQS queue instead of to the Lambda function
- D. Configure the Lambda function to pull messages from the queue for processing.
- E. Deploy the Lambda function to the us-west-2 Region
- F. Create an API Gateway endpoint in us-west-2 to direct traffic to the Lambda function in us-west-2. Configure AWS Global Accelerator and an Application Load Balancer to manage traffic across the two API Gateway endpoints.
- G. Deploy the Lambda function and an API Gateway endpoint to the us-west-2 Region
- H. Configure Amazon Route 53 to use a failover routing policy to route traffic for the two API Gateway endpoints.

**Answer: B**

**Explanation:**

This solution allows for deploying the Lambda function and API Gateway endpoint to another region, providing a failover option in case of any issues in the primary region. Using Route 53's failover routing policy allows for automatic routing of traffic to the healthy endpoint, ensuring that the application is available even in case of issues in one region. This solution provides a cost-effective and simple way to implement failover while minimizing operational overhead.

**NEW QUESTION 87**

- (Exam Topic 1)

A video streaming company recently launched a mobile app for video sharing. The app uploads various files to an Amazon S3 bucket in the us-east-1 Region. The files range in size from 1 GB to 10 GB.

Users who access the app from Australia have experienced uploads that take long periods of time. Sometimes the files fail to completely upload for these users. A solutions architect must improve the app's performance for these uploads.

Which solutions will meet these requirements? (Select TWO.)

- A. Enable S3 Transfer Acceleration on the S3 bucket. Configure the app to use the Transfer Acceleration endpoint for uploads.
- B. Configure an S3 bucket in each Region to receive the upload.
- C. Use S3 Cross-Region Replication to copy the files to the distribution S3 bucket.
- D. Set up Amazon Route 53 with latency-based routing to route the uploads to the nearest S3 bucket Region.
- E. Configure the app to break the video files into chunks. Use a multipart upload to transfer files to Amazon S3.
- F. Modify the app to add random prefixes to the files before uploading.

**Answer: AD**

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/s3-upload-large-files/>

Enabling S3 Transfer Acceleration on the S3 bucket and configuring the app to use the Transfer Acceleration endpoint for uploads will improve the app's performance for these uploads by leveraging Amazon CloudFront's globally distributed edge locations to accelerate the uploads. Breaking the video files into chunks and using a multipart upload to transfer files to Amazon S3 will also improve the app's performance by allowing parts of the file to be uploaded in parallel, reducing the overall upload time.

**NEW QUESTION 90**

- (Exam Topic 1)

A company needs to implement a patching process for its servers. The on-premises servers and Amazon EC2 instances use a variety of tools to perform patching. Management requires a single report showing the patch status of all the servers and instances.

Which set of actions should a solutions architect take to meet these requirements?

- A. Use AWS Systems Manager to manage patches on the on-premises servers and EC2 instances.
- B. Use Systems Manager to generate patch compliance reports.
- C. Use AWS OpsWorks to manage patches on the on-premises servers and EC2 instances.
- D. Use Amazon QuickSight integration with OpsWorks to generate patch compliance reports.
- E. Use an Amazon EventBridge (Amazon CloudWatch Events) rule to apply patches by scheduling an AWS Systems Manager patch remediation job.
- F. Use Amazon Inspector to generate patch compliance reports.
- G. Use AWS OpsWorks to manage patches on the on-premises servers and EC2 instances.
- H. Use AWS X-Ray to post the patch status to AWS Systems Manager OpsCenter to generate patch compliance reports.

**Answer: A**

**Explanation:**

<https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-patch.html>

**NEW QUESTION 91**

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

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

What should the solutions architect do to meet these requirements?

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

**Answer: D**

**Explanation:**

<https://docs.aws.amazon.com/vpc/latest/privatelink/vpc-endpoints-access.html> <https://aws.amazon.com/premiumsupport/knowledge-center/vpc-reduce-nat-gateway-transfer-costs/>

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

**NEW QUESTION 96**

- (Exam Topic 1)

A company used Amazon EC2 instances to deploy a web fleet to host a blog site. The EC2 instances are behind an Application Load Balancer (ALB) and are configured in an Auto Scaling group. The web application stores all blog content on an Amazon EFS volume.

The company recently added a feature for bloggers to add video to their posts, attracting 10 times the previous user traffic. At peak times of day, users report buffering and timeout issues while attempting to reach the site or watch videos.

Which is the MOST cost-efficient and scalable deployment that will resolve the issues for users?

- A. Reconfigure Amazon EFS to enable maximum I/O.
- B. Update the blog site to use instance store volumes for storage.
- C. Copy the site contents to the volumes at launch and to Amazon S3 at shutdown.
- D. Configure an Amazon CloudFront distribution.
- E. Point the distribution to an S3 bucket, and migrate the videos from EFS to Amazon S3.
- F. Set up an Amazon CloudFront distribution for all site contents, and point the distribution at the ALB.

**Answer: C**

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/cloudfront-https-connection-fails/> Using an Amazon S3 bucket

Using a MediaStore container or a MediaPackage channel Using an Application Load Balancer

Using a Lambda function URL

Using Amazon EC2 (or another custom origin)

Using CloudFront origin groups <https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/restrict-access-to-load-balancer.html>

**NEW QUESTION 101**

- (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 105**

- (Exam Topic 1)

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

The company's infrastructure team has a dedicated infrastructure account that has a VPC. The infrastructure team must use this account to manage the network. Individual accounts cannot have the ability to manage their own networks. However, individual accounts must be able to create AWS resources within subnets. Which combination of actions should the solutions architect perform to meet these requirements? (Select TWO.)

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

**Answer:** AE

**Explanation:**

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

#### NEW QUESTION 110

- (Exam Topic 1)

A company has an organization in AWS Organizations. The company is using AWS Control Tower to deploy a landing zone for the organization. The company wants to implement governance and policy enforcement. The company must implement a policy that will detect Amazon RDS DB instances that are not encrypted at rest in the company's production OU.

Which solution will meet this requirement?

- A. Turn on mandatory guardrails in AWS Control Tower
- B. Apply the mandatory guardrails to the production OU.
- C. Enable the appropriate guardrail from the list of strongly recommended guardrails in AWS Control Tower
- D. Apply the guardrail to the production OU.
- E. Use AWS Config to create a new mandatory guardrail
- F. Apply the rule to all accounts in the production OU.
- G. Create a custom SCP in AWS Control Tower
- H. Apply the SCP to the production OU.

**Answer:** B

**Explanation:**

AWS Control Tower provides a set of "strongly recommended guardrails" that can be enabled to implement governance and policy enforcement. One of these guardrails is "Encrypt Amazon RDS instances" which will detect RDS DB instances that are not encrypted at rest. By enabling this guardrail and applying it to the production OU, the company will be able to enforce encryption for RDS instances in the production environment.

#### NEW QUESTION 111

- (Exam Topic 1)

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

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

**Answer:** C

**Explanation:**

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

#### NEW QUESTION 115

- (Exam Topic 1)

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

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

**Answer:** C

**Explanation:**

<https://aws.amazon.com/blogs/aws/new-use-aws-cloudformation-stacksets-for-multiple-accounts-in-an-aws-org> AWS Organizations allows the management of multiple AWS accounts as a single entity and AWS CloudFormation StackSets allows creating, updating, and deleting stacks across multiple accounts and regions in an organization. This solution allows creating a single CloudFormation template that can be deployed across multiple accounts and regions, and also allows for the management of access and permissions for the different accounts through the use of IAM roles and policies in the management account.

**NEW QUESTION 118**

- (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 organization
- 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 121**

- (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 key
- B. Use the AWS CLI to re-upload all objects in the S3 bucket
- 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 125**

- (Exam Topic 1)

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

Which strategy should the solutions architect use?

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

**Answer:** C

**Explanation:**

step function could run a scheduled task when triggered by eventbridge, but why would you add that layer of complexity just to run aws batch when you could directly invoke it through eventbridge. The link provided - <https://aws.amazon.com/pt/blogs/compute/orchestrating-high-performance-computing-with-aws-step-functions/> - makes sense only for HPC, this is a single instance that needs to be run

**NEW QUESTION 129**

- (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 133**

- (Exam Topic 1)

A company has an organization that has many AWS accounts in AWS Organizations. A solutions architect must improve how the company manages common security group rules for the AWS accounts in the organization.

The company has a common set of IP CIDR ranges in an allow list in each AWS account to allow access to and from the company's on-premises network.

Developers within each account are responsible for adding new IP CIDR ranges to their security groups. The security team has its own AWS account. Currently, the security team notifies the owners of the other AWS accounts when changes are made to the allow list.

The solutions architect must design a solution that distributes the common set of CIDR ranges across all accounts.

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

- A. Set up an Amazon Simple Notification Service (Amazon SNS) topic in the security team's AWS account
- B. Deploy an AWS Lambda function in each AWS account
- C. Configure the Lambda function to run every time an SNS topic receives a message
- D. Configure the Lambda function to take an IP address as input and add it to a list of security groups in the account
- E. Instruct the security team to distribute changes by publishing messages to its SNS topic.
- F. Create new customer-managed prefix lists in each AWS account within the organization
- G. Populate the prefix lists in each account with all internal CIDR range
- H. Notify the owner of each AWS account to allow the new customer-managed prefix list IDs in their accounts in their security group
- I. Instruct the security team to share updates with each AWS account owner.
- J. Create a new customer-managed prefix list in the security team's AWS account
- K. Populate the customer-managed prefix list with all internal CIDR range
- L. Share the customer-managed prefix list with the organization by using AWS Resource Access Manager
- M. Notify the owner of each AWS account to allow the new customer-managed prefix list ID in their security groups.
- N. Create an IAM role in each account in the organization
- O. Grant permissions to update security groups. Deploy an AWS Lambda function in the security team's AWS account
- P. Configure the Lambda function to take a list of internal IP addresses as input, assume a role in each organization account, and add the list of IP addresses to the security groups in each account.

**Answer:** C

**Explanation:**

Create a new customer-managed prefix list in the security team's AWS account. Populate the customer-managed prefix list with all internal CIDR ranges. Share the customer-managed prefix list with the organization by using AWS Resource Access Manager. Notify the owner of each AWS account to allow the new customer-managed prefix list ID in their security groups. This solution meets the requirements with the least amount of operational overhead as it requires the security team to create and maintain a single customer-managed prefix list, and share it with the organization using AWS Resource Access Manager. The owners of each AWS account are then responsible for allowing the prefix list in their security groups, which eliminates the need for the security team to manually notify each account owner when changes are made. This solution also eliminates the need for a separate AWS Lambda function in each account, reducing the overall complexity of the solution.

**NEW QUESTION 138**

- (Exam Topic 1)

A company recently completed the migration from an on-premises data center to the AWS Cloud by using a replatforming strategy. One of the migrated servers is running a legacy Simple Mail Transfer Protocol (SMTP) service that a critical application relies upon. The application sends outbound email messages to the company's customers. The legacy SMTP server does not support TLS encryption and uses TCP port 25. The application can use SMTP only.

The company decides to use Amazon Simple Email Service (Amazon SES) and to decommission the legacy SMTP server. The company has created and validated the SES domain. The company has lifted the SES limits.

What should the company do to modify the application to send email messages from Amazon SES?

- A. Configure the application to connect to Amazon SES by using TLS Wrapper

- B. Create an IAM role that has ses:SendEmail and ses:SendRawEmail permission
- C. Attach the IAM role to an Amazon EC2 instance.
- D. Configure the application to connect to Amazon SES by using STARTTL
- E. Obtain Amazon SES SMTP credential
- F. Use the credentials to authenticate with Amazon SES.
- G. Configure the application to use the SES API to send email message
- H. Create an IAM role that has ses:SendEmail and ses:SendRawEmail permission
- I. Use the IAM role as a service role for Amazon SES.
- J. Configure the application to use AWS SDKs to send email message
- K. Create an IAM user for Amazon SE
- L. Generate API access key
- M. Use the access keys to authenticate with Amazon SES.

**Answer:** B

**Explanation:**

To set up a STARTTLS connection, the SMTP client connects to the Amazon SES SMTP endpoint on port 25, 587, or 2587, issues an EHLO command, and waits for the server to announce that it supports the STARTTLS SMTP extension. The client then issues the STARTTLS command, initiating TLS negotiation. When negotiation is complete, the client issues an EHLO command over the new encrypted connection, and the SMTP session proceeds normally. To set up a TLS Wrapper connection, the SMTP client connects to the Amazon SES SMTP endpoint on port 465 or 2465. The server presents its certificate, the client issues an EHLO command, and the SMTP session proceeds normally.

<https://docs.aws.amazon.com/ses/latest/dg/smtp-connect.html>

**NEW QUESTION 142**

- (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 cluste
- B. Change the IAM role for the Lambda function to allow the function to access the database by using IAM database authenticatio
- C. Deploy a gateway VPC endpoint for Amazon S3 in the VPC.
- D. Enable IAM database authentication on the Aurora DB cluste
- E. Change the IAM role for the Lambda function to allow the function to access the database by using IAM database authenticatio
- F. Enforce HTTPS on the connection to Amazon S3 during data transfers.
- G. Save the database credentials in AWS Systems Manager Parameter Stor
- H. Set up password rotation on the credentials in Parameter Stor
- I. Change the IAM role for the Lambda function to allow the function to access Parameter Stor
- J. Modify the Lambda function to retrieve the credentials from Parameter Stor
- K. Deploy a gateway VPC endpoint for Amazon S3 in the VPC.
- L. Save the database credentials in AWS Secrets Manage
- M. Set up password rotation on the credentials in Secrets Manage
- N. Change the IAM role for the Lambda function to allow the function to access Secrets Manage
- O. Modify the Lambda function to retrieve the credentials Om Secrets Manage
- 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 146**

- (Exam Topic 1)

A company is hosting an image-processing service on AWS in a VPC. The VPC extends across two Availability Zones. Each Availability Zone contains one public subnet and one private subnet.

The service runs on Amazon EC2 instances in the private subnets. An Application Load Balancer in the public subnets is in front of the service. The service needs to communicate with the internet and does so through two NAT gateways. The service uses Amazon S3 for image storage. The EC2 instances retrieve approximately 1 GB of data from an S3 bucket each day.

The company has promoted the service as highly secure. A solutions architect must reduce cloud expenditures as much as possible without compromising the service's security posture or increasing the time spent on ongoing operations.

Which solution will meet these requirements?

- A. Replace the NAT gateways with NAT instance
- B. In the VPC route table, create a route from the private subnets to the NAT instances.
- C. Move the EC2 instances to the public subnet
- D. Remove the NAT gateways.
- E. Set up an S3 gateway VPC endpoint in the VP
- F. Attach an endpoint policy to the endpoint to allow the required actions on the S3 bucket.
- G. Attach an Amazon Elastic File System (Amazon EFS) volume to the EC2 instance
- H. Host the image on the EFS volume.

**Answer:** C

**Explanation:**

Create Amazon S3 gateway endpoint in the VPC and add a VPC endpoint policy. This VPC endpoint policy will have a statement that allows S3 access only via access points owned by the organization.

**NEW QUESTION 151**

- (Exam Topic 1)

A company is running an event ticketing platform on AWS and wants to optimize the platform's cost-effectiveness. The platform is deployed on Amazon Elastic Kubernetes Service (Amazon EKS) with Amazon EC2 and is backed by an Amazon RDS for MySQL DB instance. The company is developing new application features to run on Amazon EKS with AWS Fargate. The platform experiences infrequent high peaks in demand. The surges in demand depend on event dates. Which solution will provide the MOST cost-effective setup for the platform?

- A. Purchase Standard Reserved Instances for the EC2 instances that the EKS cluster uses in its baseline loa
- B. Scale the cluster with Spot Instances to handle peak
- C. Purchase 1-year All Upfront Reserved Instances for the database to meet predicted peak load for the year.
- D. Purchase Compute Savings Plans for the predicted medium load of the EKS cluste
- E. Scale the cluster with On-Demand Capacity Reservations based on event dates for peak
- F. Purchase 1-year No Upfront Reserved Instances for the database to meet the predicted base loa
- G. Temporarily scale out database read replicas during peaks.
- H. Purchase EC2 Instance Savings Plans for the predicted base load of the EKS cluste
- I. Scale the cluster with Spot Instances to handle peak
- J. Purchase 1-year All Upfront Reserved Instances for the database to meet the predicted base loa
- K. Temporarily scale up the DB instance manually during peaks.
- L. Purchase Compute Savings Plans for the predicted base load of the EKS cluste
- M. Scale the cluster with Spot Instances to handle peak
- N. Purchase 1-year All Upfront Reserved Instances for the database to meet the predicted base loa
- O. Temporarily scale up the DB instance manually during peaks.

**Answer: B**

**Explanation:**

They all mention using spot instances and EKS based on EC2. A spot instance is not appropriate for a production server and the company is developing new application designed for AWS Fargate, which means we must plan the future cost improvement including AWS Fargate.  
<https://aws.amazon.com/savingsplans/compute-pricing/>

**NEW QUESTION 155**

- (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 159**

- (Exam Topic 2)

A company runs a processing engine in the AWS Cloud The engine processes environmental data from logistics centers to calculate a sustainability index The company has millions of devices in logistics centers that are spread across Europe The devices send information to the processing engine through a RESTful API The API experiences unpredictable bursts of traffic The company must implement a solution to process all data that the devices send to the processing engine Data loss is unacceptable Which solution will meet these requirements?

- A. Create an Application Load Balancer (ALB) for the RESTful API Create an Amazon Simple Queue Service (Amazon SQS) queue Create a listener and a target group for the ALB Add the SQS queue as the target Use a container that runs in Amazon Elastic Container Service (Amazon ECS) with the Fargate launch type to process messages in the queue
- B. Create an Amazon API Gateway HTTP API that implements the RESTful API Create an Amazon Simple Queue Service (Amazon SQS) queue Create an API Gateway service integration with the SQS queue Create an AWS Lambda function to process messages in the SQS queue
- C. Create an Amazon API Gateway REST API that implements the RESTful API Create a fleet of Amazon EC2 instances in an Auto Scaling group Create an API Gateway Auto Scaling group proxy integration Use the EC2 instances to process incoming data
- D. Create an Amazon CloudFront distribution for the RESTful API Create a data stream in Amazon Kinesis Data Streams Set the data stream as the origin for the distribution Create an AWS Lambda function to consume and process data in the data stream

**Answer: A**

**Explanation:**

it will use the ALB to handle the unpredictable bursts of traffic and route it to the SQS queue. The SQS queue will act as a buffer to store incoming data temporarily and the container running in Amazon ECS with the Fargate launch type will process messages in the queue. This approach will ensure that all data is processed

and prevent data loss.

**NEW QUESTION 160**

- (Exam Topic 2)

A company runs a customer service center that accepts calls and automatically sends all customers a managed, interactive, two-way experience survey by text message.

The applications that support the customer service center run on machines that the company hosts in an on-premises data center. The hardware that the company uses is old, and the company is experiencing downtime with the system. The company wants to migrate the system to AWS to improve reliability.

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

- A. Use Amazon Connect to replace the old call center hardware
- B. Use Amazon Pinpoint to send text message surveys to customers.
- C. Use Amazon Connect to replace the old call center hardware
- D. Use Amazon Simple Notification Service (Amazon SNS) to send text message surveys to customers.
- E. Migrate the call center software to Amazon EC2 instances that are in an Auto Scaling group
- F. Use the EC2 instances to send text message surveys to customers.
- G. Use Amazon Pinpoint to replace the old call center hardware and to send text message surveys to customers.

**Answer:** A

**Explanation:**

Amazon Connect is a cloud-based contact center service that allows you to set up a virtual call center for your business. It provides an easy-to-use interface for managing customer interactions through voice and chat. Amazon Connect integrates with other AWS services, such as Amazon S3 and Amazon Kinesis, to help you collect, store, and analyze customer data for insights into customer behavior and trends. On the other hand, Amazon Pinpoint is a marketing automation and analytics service that allows you to engage with your customers across different channels, such as email, SMS, push notifications, and voice. It helps you create personalized campaigns based on user behavior and enables you to track user engagement and retention. While both services allow you to communicate with your customers, they serve different purposes. Amazon Connect is focused on customer support and service, while Amazon Pinpoint is focused on marketing and engagement.

**NEW QUESTION 163**

- (Exam Topic 2)

A telecommunications company is running an application on AWS. The company has set up an AWS Direct Connect connection between the company's on-premises data center and AWS. The company deployed the application on Amazon EC2 instances in multiple Availability Zones behind an internal Application Load Balancer (ALB). The company's clients connect from the on-premises network by using HTTPS. The TLS terminates in the ALB. The company has multiple target groups and uses path-based routing to forward requests based on the URL path.

The company is planning to deploy an on-premises firewall appliance with an allow list that is based on IP address. A solutions architect must develop a solution to allow traffic flow to AWS from the on-premises network so that the clients can continue to access the application.

Which solution will meet these requirements?

- A. Configure the existing ALB to use static IP addresses
- B. Assign IP addresses in multiple Availability Zones to the ALB
- C. Add the ALB IP addresses to the firewall appliance.
- D. Create a Network Load Balancer (NLB). Associate the NLB with one static IP address in multiple Availability Zones
- E. Create an ALB-type target group for the NLB and add the existing ALB. Add the NLB IP addresses to the firewall appliance
- F. Update the clients to connect to the NLB.
- G. Create a Network Load Balancer (NLB). Associate the NLB with one static IP address in multiple Availability Zones
- H. Add the existing target groups to the NLB
- I. Update the clients to connect to the NLB
- J. Delete the ALB. Add the NLB IP addresses to the firewall appliance.
- K. Create a Gateway Load Balancer (GWLB). Assign static IP addresses to the GWLB in multiple Availability Zones
- L. Create an ALB-type target group for the GWLB and add the existing ALB
- M. Add the GWLB IP addresses to the firewall appliance
- N. Update the clients to connect to the GWLB.

**Answer:** B

**Explanation:**

The company should create a Network Load Balancer (NLB) and associate it with one static IP address in multiple Availability Zones. The company should also create an ALB-type target group for the NLB and add the existing ALB. The company should add the NLB IP addresses to the firewall appliance and update the clients to connect to the NLB. This solution will allow traffic flow to AWS from the on-premises network by using static IP addresses that can be added to the firewall appliance's allow list. The NLB will forward requests to the ALB, which will use path-based routing to forward requests to the target groups.

**NEW QUESTION 165**

- (Exam Topic 2)

A company has built a high performance computing (HPC) cluster in AWS for a tightly coupled workload that generates a large number of shared files stored in Amazon EFS. The cluster was performing well when the number of Amazon EC2 instances in the cluster was 100. However, when the company increased the cluster size to 1,000 EC2 instances, overall performance was well below expectations.

Which collection of design choices should a solutions architect make to achieve the maximum performance from the HPC cluster? (Select THREE.)

- A. Ensure the HPC cluster is launched within a single Availability Zone.
- B. Launch the EC2 instances and attach elastic network interfaces in multiples of four.
- C. Select EC2 Instance types with an Elastic Fabric Adapter (EFA) enabled.
- D. Ensure the cluster is launched across multiple Availability Zones.
- E. Replace Amazon EFS with multiple Amazon EBS volumes in a RAID array.
- F. Replace Amazon EFS with Amazon FSx for Lustre.

**Answer:** ACF

**Explanation:**

\* A. High performance computing (HPC) workload cluster should be in a single AZ.

\* C. Elastic Fabric Adapter (EFA) is a network device that you can attach to your Amazon EC2 instances to accelerate High Performance Computing (HPC)

\* F. Amazon FSx for Lustre - Use it for workloads where speed matters, such as machine learning, high performance computing (HPC), video processing, and financial modeling.

Cluster – packs instances close together inside an Availability Zone. This strategy enables workloads to achieve the low-latency network performance necessary for tightly-coupled node-to-node communication that is typical of HPC applications.

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/placement-groups.html>

**NEW QUESTION 167**

- (Exam Topic 2)

A company needs to establish a connection from its on-premises data center to AWS. The company needs to connect all of its VPCs that are located in different AWS Regions with transitive routing capabilities between VPC networks. The company also must reduce network outbound traffic costs, increase bandwidth throughput, and provide a consistent network experience for end users.

Which solution will meet these requirements?

- A. Create an AWS Site-to-Site VPN connection between the on-premises data center and a new central VPC
- B. Create VPC peering connections that initiate from the central VPC to all other VPCs.
- C. Create an AWS Direct Connect connection between the on-premises data center and AWS
- D. Provision a transit VIF, and connect it to a Direct Connect gateway
- E. Connect the Direct Connect gateway to all the other VPCs by using a transit gateway in each Region.
- F. Create an AWS Site-to-Site VPN connection between the on-premises data center and a new central VPC
- G. Use a transit gateway with dynamic routing
- H. Connect the transit gateway to all other VPCs.
- I. Create an AWS Direct Connect connection between the on-premises data center and AWS. Establish an AWS Site-to-Site VPN connection between all VPCs in each Region
- J. Create VPC peering connections that initiate from the central VPC to all other VPCs.

**Answer: B**

**Explanation:**

Transit GW + Direct Connect GW + Transit VIF + enabled SiteLink if two different DX locations <https://aws.amazon.com/blogs/networking-and-content-delivery/introducing-aws-direct-connect-sitelink/>

**NEW QUESTION 171**

- (Exam Topic 2)

A company runs an application on a fleet of Amazon EC2 instances that are in private subnets behind an internet-facing Application Load Balancer (ALB). The ALB is the origin for an Amazon CloudFront distribution. An AWS WAF web ACL that contains various AWS managed rules is associated with the CloudFront distribution.

The company needs a solution that will prevent internet traffic from directly accessing the ALB. Which solution will meet these requirements with the LEAST operational overhead?

- A. Create a new web ACL that contains the same rules that the existing web ACL contain
- B. Associate the new web ACL with the ALB.
- C. Associate the existing web ACL with the ALB.
- D. Add a security group rule to the ALB to allow traffic from the AWS managed prefix list for CloudFront only.
- E. Add a security group rule to the ALB to allow only the various CloudFront IP address ranges.

**Answer: C**

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2022/02/amazon-cloudfront-managed-prefix-list/>

**NEW QUESTION 174**

- (Exam Topic 2)

A company has many separate AWS accounts and uses no central billing or management. Each AWS account hosts services for different departments in the company. The company has a Microsoft Azure Active Directory that is deployed.

A solution architect needs to centralize billing and management of the company's AWS accounts. The company wants to start using identify federation instead of manual user management. The company also wants to use temporary credentials instead of long-lived access keys.

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

- A. Create a new AWS account to serve as a management account
- B. Deploy an organization in AWS Organization
- C. Invite each existing AWS account to join the organization
- D. Ensure that each account accepts the invitation.
- E. Configure each AWS Account's email address to be aws+<account id>@example.com so that account management email messages and invoices are sent to the same place.
- F. Deploy AWS IAM Identity Center (AWS Single Sign-On) in the management account
- G. Connect IAM Identity Center to the Azure Active Directory
- H. Configure IAM Identity Center for automatic synchronization of users and groups.
- I. Deploy an AWS Managed Microsoft AD directory in the management account
- J. Share the directory with all other accounts in the organization by using AWS Resource Access Manager (AWS RAM).
- K. Create AWS IAM Identity Center (AWS Single Sign-On) permission set
- L. Attach the permission sets to the appropriate IAM Identity Center groups and AWS accounts.
- M. Configure AWS Identity and Access Management (IAM) in each AWS account to use AWS Managed Microsoft AD for authentication and authorization.

**Answer: ACE**

**NEW QUESTION 178**

- (Exam Topic 2)

A company has millions of objects in an Amazon S3 bucket. The objects are in the S3 Standard storage class. All the S3 objects are accessed frequently. The

number of users and applications that access the objects is increasing rapidly. The objects are encrypted with server-side encryption with AWS KMS Keys (SSE-KMS).

A solutions architect reviews the company's monthly AWS invoice and notices that AWS KMS costs are increasing because of the high number of requests from Amazon S3. The solutions architect needs to optimize costs with minimal changes to the application.

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

- A. Create a new S3 bucket that has server-side encryption with customer-provided keys (SSE-C) as the encryption typ
- B. Copy the existing objects to the new S3 bucke
- C. Specify SSE-C.
- D. Create a new S3 bucket that has server-side encryption with Amazon S3 managed keys (SSE-S3) as the encryption typ
- E. Use S3 Batch Operations to copy the existing objects to the new S3 bucke
- F. Specify SSE-S3.
- G. Use AWS CloudHSM to store the encryption key
- H. Create a new S3 bucke
- I. Use S3 Batch Operations to copy the existing objects to the new S3 bucke
- J. Encrypt the objects by using the keys from CloudHSM.
- K. Use the S3 Intelligent-Tiering storage class for the S3 bucke
- L. Create an S3 Intelligent-Tiering archive configuration to transition objects that are not accessed for 90 days to S3 Glacier Deep Archive.

**Answer: B**

**Explanation:**

To reduce the volume of Amazon S3 calls to AWS KMS, use Amazon S3 bucket keys, which are protected encryption keys that are reused for a limited time in Amazon S3. Bucket keys can reduce costs for AWS KMS requests by up to 99%. You can configure a bucket key for all objects in an Amazon S3 bucket, or for a specific object in an Amazon S3 bucket. [https://docs.aws.amazon.com/fr\\_fr/kms/latest/developerguide/services-s3.html](https://docs.aws.amazon.com/fr_fr/kms/latest/developerguide/services-s3.html)

**NEW QUESTION 180**

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