

## Exam Questions SAP-C02

AWS Certified Solutions Architect - Professional

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### NEW QUESTION 1

- (Exam Topic 1)

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

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

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

**Answer: C**

#### Explanation:

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

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

### NEW QUESTION 2

- (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 3

- (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-Secre
- F. Grant the role the required permissions to access the secret
- G. In the DBA account, create an IAM role that is named DBA-Admi
- 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-Admi
- 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-Admi
- 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 manually2  
 References: 1: <https://docs.aws.amazon.com/iam/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 4**

- (Exam Topic 1)

A company has migrated an application from on premises to AWS. The application frontend is a static website that runs on two Amazon EC2 instances behind an Application Load Balancer (ALB). The application backend is a Python application that runs on three EC2 instances behind another ALB. The EC2 instances are large, general purpose On-Demand Instances that were sized to meet the on-premises specifications for peak usage of the application. The application averages hundreds of thousands of requests each month. However, the application is used mainly during lunchtime and receives minimal traffic during the rest of the day.

A solutions architect needs to optimize the infrastructure cost of the application without negatively affecting the application availability. Which combination of steps will meet these requirements? (Choose two.)

- A. Change all the EC2 instances to compute optimized instances that have the same number of cores as the existing EC2 instances.
- B. Move the application frontend to a static website that is hosted on Amazon S3.
- C. Deploy the application frontend by using AWS Elastic Beanstalk
- D. Use the same instance type for the nodes.
- E. Change all the backend EC2 instances to Spot Instances.
- F. Deploy the backend Python application to general purpose burstable EC2 instances that have the same number of cores as the existing EC2 instances.

**Answer: BD**

**Explanation:**

Moving the application frontend to a static website that is hosted on Amazon S3 will save cost as S3 is cheaper than running EC2 instances. Using Spot instances for the backend EC2 instances will also save cost, as they are significantly cheaper than On-Demand instances. This will be suitable for the application, as it has minimal traffic during the rest of the day, and the availability of spot instances will not negatively affect the application's availability.  
 Reference:  
 Amazon S3 pricing: <https://aws.amazon.com/s3/pricing/>  
 Amazon EC2 Spot Instances documentation: <https://aws.amazon.com/ec2/spot/> AWS Elastic Beanstalk documentation: <https://aws.amazon.com/elasticbeanstalk/>  
 Amazon Elastic Compute Cloud (EC2) pricing: <https://aws.amazon.com/ec2/pricing/>

**NEW QUESTION 5**

- (Exam Topic 1)

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

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

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

**Answer: ABE**

**Explanation:**

<https://docs.aws.amazon.com/config/latest/developerguide/config-rule-multi-account-deployment.html>  
<https://docs.aws.amazon.com/config/latest/developerguide/aggregate-data.html>  
[https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps\\_examples\\_tagging.htm](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps_examples_tagging.htm)

**NEW QUESTION 6**

- (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](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resource-ec2-transitgatewayattachment.html)

### NEW QUESTION 7

- (Exam Topic 1)

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

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

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

**Answer:** D

**Explanation:**

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

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

### NEW QUESTION 8

- (Exam Topic 1)

A company is migrating some of its applications to AWS. The company wants to migrate and modernize the applications quickly after it finalizes networking and security strategies. The company has set up an AWS Direct Connect connection in a central network account.

The company expects to have hundreds of AWS accounts and VPCs in the near future. The corporate network must be able to access the resources on AWS seamlessly and also must be able to communicate with all the VPCs. The company also wants to route its cloud resources to the internet through its on-premises data center.

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

- A. Create a Direct Connect gateway in the central account
- B. In each of the accounts, create an association proposal by using the Direct Connect gateway and the account ID for every virtual private gateway.
- C. Create a Direct Connect gateway and a transit gateway in the central network account
- D. Attach the transit gateway to the Direct Connect gateway by using a transit VIF.
- E. Provision an internet gateway
- F. Attach the internet gateway to subnet
- G. Allow internet traffic through the gateway.
- H. Share the transit gateway with other account
- I. Attach VPCs to the transit gateway.
- J. Provision VPC peering as necessary.
- K. Provision only private subnet
- L. Open the necessary route on the transit gateway and customer gateway to allow outbound internet traffic from AWS to flow through NAT services that run in the data center.

**Answer:** BDF

**Explanation:**

- Option A is incorrect because creating a Direct Connect gateway in the central account and creating an association proposal by using the Direct Connect gateway and the account ID for every virtual private gateway does not enable active-passive failover between the regions. A Direct Connect gateway is a globally available resource that enables you to connect your AWS Direct Connect connection over a private virtual interface (VIF) to one or more VPCs in any AWS Region. A virtual private gateway is the VPN concentrator on the Amazon side of a VPN connection. You can associate a Direct Connect gateway with either a transit gateway or a virtual private gateway. However, a Direct Connect gateway does not provide any load balancing or failover capabilities by itself
- Option B is correct because creating a Direct Connect gateway and a transit gateway in the central network account and attaching the transit gateway to the Direct Connect gateway by using a transit VIF meets the requirement of enabling the corporate network to access the resources on AWS seamlessly and also to communicate with all the VPCs. A transit VIF is a type of private VIF that you can use to connect your AWS Direct Connect connection to a transit gateway or a Direct Connect gateway. A transit gateway is a network transit hub that you can use to interconnect your VPCs and on-premises networks. By using a transit VIF, you can route traffic between your on-premises network and multiple VPCs across different AWS accounts and Regions through a single connection
- Option C is incorrect because provisioning an internet gateway, attaching the internet gateway to subnets, and allowing internet traffic through the gateway does not meet the requirement of routing cloud resources to the internet through its on-premises data center. An internet gateway is a horizontally scaled, redundant, and highly available VPC component that allows communication between your VPC and the internet. An internet gateway serves two purposes: to provide a target in your VPC route tables for internet-routable traffic, and to perform network address translation (NAT) for instances that have been assigned public IPv4 addresses. By using an internet gateway, you are routing cloud resources directly to the internet, not through your on-premises data center.
- Option D is correct because sharing the transit gateway with other accounts and attaching VPCs to the transit gateway meets the requirement of enabling the corporate network to access the resources on AWS seamlessly and also to communicate with all the VPCs. You can share your transit gateway with other AWS accounts within the same organization by using AWS Resource Access Manager (AWS RAM). This allows you to centrally manage connectivity from multiple accounts without having to create individual peering connections between VPCs or duplicate network appliances in each account. You can attach VPCs from different accounts and Regions to your shared transit gateway and enable routing between them.
- Option E is incorrect because provisioning VPC peering as necessary does not meet the requirement of enabling the corporate network to access the resources on AWS seamlessly and also to communicate with all the VPCs. VPC peering is a networking connection between two VPCs that enables you to route traffic between them using private IPv4 addresses or IPv6 addresses. You can create a VPC peering connection between your own VPCs, or with a VPC in another AWS account within a single Region. However, VPC peering does not allow you to route traffic from your on-premises network to your VPCs or between multiple Regions. You would need to create multiple VPN connections or Direct Connect connections for each VPC peering connection, which increases operational complexity and costs.
- Option F is correct because provisioning only private subnets, opening the necessary route on the transit gateway and customer gateway to allow outbound internet traffic from AWS to flow through NAT services that run in the data center meets the requirement of routing cloud resources to the internet through its on-premises data center. A private subnet is a subnet that's associated with a route table that has no route to an internet gateway. Instances in a private subnet can communicate with other instances in the same VPC but cannot access resources on the internet directly. To enable outbound internet access from instances in private subnets, you can use NAT devices such as NAT gateways or NAT instances that are deployed in public subnets. A public subnet is a subnet that's associated with a route table that has a route to an internet gateway. Alternatively, you can use your on-premises data center as a NAT device by configuring routes on your transit gateway and customer gateway that direct outbound internet traffic from your private subnets through your VPN connection or Direct Connect connection. This way, you can route cloud resources to the internet through your on-premises data center instead of using an internet gateway.

References: 1:

<https://docs.aws.amazon.com/directconnect/latest/UserGuide/direct-connect-gateways-intro.html> 2:

<https://docs.aws.amazon.com/directconnect/latest/UserGuide/direct-connect-transit-virtual-interfaces.html> 3: <https://docs.aws.amazon.com/vpc/latest/tgw/what-is-transit-gateway.html> : [https://docs.aws.amazon.com/vpc/latest/userguide/VPC\\_Internet\\_Gateway.html](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Internet_Gateway.html) : <https://docs.aws.amazon.com/vpc/latest/tgw/tgw-sharing.html> : <https://docs.aws.amazon.com/vpc/latest/peering/what-is-vpc-peering.html> : [https://docs.aws.amazon.com/vpc/latest/userguide/VPC\\_Scenario2.html](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Scenario2.html) : [https://docs.aws.amazon.com/vpc/latest/userguide/VPC\\_Scenario3.html](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Scenario3.html) : [https://docs.aws.amazon.com/vpc/latest/userguide/VPC\\_NAT\\_Instance.html](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_NAT_Instance.html) : [https://docs.aws.amazon.com/vpc/latest/userguide/VPC\\_NAT\\_Gateway.html](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_NAT_Gateway.html)

### NEW QUESTION 9

- (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 10

- (Exam Topic 1)

A publishing company's design team updates the icons and other static assets that an ecommerce web application uses. The company serves the icons and assets from an Amazon S3 bucket that is hosted in the company's production account. The company also uses a development account that members of the design team can access.

After the design team tests the static assets in the development account, the design team needs to load the assets into the S3 bucket in the production account. A solutions architect must provide the design team with access to the production account without exposing other parts of the web application to the risk of unwanted changes.

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

- A. In the production account, create a new IAM policy that allows read and write access to the S3 bucket.

- B. In the development account, create a new IAM policy that allows read and write access to the S3 bucket.
- C. In the production account, create a role
- D. Attach the new policy to the role
- E. Define the development account as a trusted entity.
- F. In the development account, create a role
- G. Attach the new policy to the role
- H. Define the production account as a trusted entity.
- I. In the development account, create a group that contains all the IAM users of the design team
- J. Attach a different IAM policy to the group to allow the sts:AssumeRole action on the role in the production account.
- K. In the development account, create a group that contains all the IAM users of the design team
- L. Attach a different IAM policy to the group to allow the sts:AssumeRole action on the role in the development account.

**Answer:** ACE

**Explanation:**

- > A. In the production account, create a new IAM policy that allows read and write access to the S3 bucket. The policy grants the necessary permissions to access the assets in the production S3 bucket.
  - > C. In the production account, create a role. Attach the new policy to the role. Define the development account as a trusted entity. By creating a role and attaching the policy, and then defining the development account as a trusted entity, the development account can assume the role and access the production S3 bucket with the read and write permissions.
  - > E. In the development account, create a group that contains all the IAM users of the design team. Attach a different IAM policy to the group to allow the sts:AssumeRole action on the role in the production account. The IAM policy attached to the group allows the design team members to assume the role created in the production account, thereby giving them access to the production S3 bucket.
- Step 1: Create a role in the Production Account; create the role in the Production account and specify the Development account as a trusted entity. You also limit the role permissions to only read and write access to the productionapp bucket. Anyone granted permission to use the role can read and write to the productionapp bucket. Step 2: Grant access to the role Sign in as an administrator in the Development account and allow the AssumeRole action on the UpdateApp role in the Production account. So, recap, production account you create the policy for S3, and you set development account as a trusted entity. Then on the development account you allow the sts:assumeRole action on the role in production account. [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)

**NEW QUESTION 10**

- (Exam Topic 1)

A company wants to migrate to AWS. The company wants to use a multi-account structure with centrally managed access to all accounts and applications. The company also wants to keep the traffic on a private network. Multi-factor authentication (MFA) is required at login, and specific roles are assigned to user groups. The company must create separate accounts for development, staging, production, and shared network. The production account and the shared network account must have connectivity to all accounts. The development account and the staging account must have access only to each other. Which combination of steps should a solutions architect take to meet these requirements? (Choose three.)

- A. Deploy a landing zone environment by using AWS Control Tower
- B. Enroll accounts and invite existing accounts into the resulting organization in AWS Organizations.
- C. Enable AWS Security Hub in all accounts to manage cross-account access
- D. Collect findings through AWS CloudTrail to force MFA login.
- E. Create transit gateways and transit gateway VPC attachments in each account
- F. Configure appropriate route tables.
- G. Set up and enable AWS IAM Identity Center (AWS Single Sign-On). Create appropriate permission sets with required MFA for existing accounts.
- H. Enable AWS Control Tower in all accounts to manage routing between accounts
- I. Collect findings through AWS CloudTrail to force MFA login.
- J. Create IAM users and groups
- K. Configure MFA for all users
- L. Set up Amazon Cognito user pools and identity pools to manage access to accounts and between accounts.

**Answer:** ACD

**Explanation:**

The correct answer would be options A, C and D, because they address the requirements outlined in the question. A. Deploying a landing zone environment using AWS Control Tower and enrolling accounts in an organization in AWS Organizations allows for a centralized management of access to all accounts and applications. C. Creating transit gateways and transit gateway VPC attachments in each account and configuring appropriate route tables allows for private network traffic, and ensures that the production account and shared network account have connectivity to all accounts, while the development and staging accounts have access only to each other. D. Setting up and enabling AWS IAM Identity Center (AWS Single Sign-On) and creating appropriate permission sets with required MFA for existing accounts allows for multi-factor authentication at login and specific roles to be assigned to user groups.

**NEW QUESTION 15**

- (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 20**

- (Exam Topic 1)

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

Which solution will provide the HIGHEST availability for the database?

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

**Answer:** D

**Explanation:**

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

**NEW QUESTION 24**

- (Exam Topic 1)

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

Which solution will meet these requirements?

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

**Answer:** B

**Explanation:**

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

Reference:

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

**NEW QUESTION 29**

- (Exam Topic 1)

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

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

Which solution will meet these requirements at the LOWEST cost?

- A. Create an Amazon S3 bucke
- B. Configure the S3 bucket to use the S3 One Zone-Infrequent Access (S3 One Zone-IA) storage class as default
- C. Configure the S3 bucket for website hostin
- D. Create an S3 interface endpoint
- E. Configure the S3 bucket to allow access only through that endpoint.
- F. Launch an Amazon EC2 instance that runs a web serve
- G. Attach an Amazon Elastic File System (Amazon EFS) file system to store the archived data in the EFS One Zone-Infrequent Access (EFS One Zone-IA) storage class Configure the instance security groups to allow access only from private networks.
- H. Launch an Amazon EC2 instance that runs a web server Attach an Amazon Elastic Block Store (Amazon EBS) volume to store the archived dat

- I. Use the Cold HDD (sc1) volume typ
- J. Configure the instance security groups to allow access only from private networks.
- K. Create an Amazon S3 bucket
- L. Configure the S3 bucket to use the S3 Glacier Deep Archive storage class as default
- M. Configure the S3 bucket for website hosting
- N. Create an S3 interface endpoint
- O. Configure the S3 bucket to allow access only through that endpoint.

**Answer:** D

**Explanation:**

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

**NEW QUESTION 33**

- (Exam Topic 1)

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

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

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

**Answer:** BCF

**Explanation:**

➤ Option A is incorrect because creating an SCP to set a fixed monthly account usage limit is not possible.

SCPs are policies that specify the services and actions that users and roles can use in the member accounts of an AWS Organization. SCPs cannot enforce budget limits or prevent users from launching costly services or running services unnecessarily1

➤ Option B is correct because using AWS Budgets to create a fixed monthly budget for each developer's account as part of the account creation process meets the requirement of giving developers a fixed monthly budget to limit their AWS costs. AWS Budgets allows you to plan your service usage, service costs, and instance reservations. You can create budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount2

➤ Option C is correct because creating an SCP to deny access to costly services and components meets the requirement of ensuring that developers are not launching costly services or running services unnecessarily. SCPs can restrict access to certain AWS services or actions based on conditions such as region, resource tags, or request time. For example, an SCP can deny access to Amazon Redshift clusters or Amazon EC2 instances with certain instance types1

➤ Option D is incorrect because creating an IAM policy to deny access to costly services and components is not sufficient to meet the requirement of ensuring that developers are not launching costly services or running services unnecessarily. IAM policies can only control access to resources within a single AWS account. If developers have multiple accounts or can create new accounts, they can bypass the IAM policy restrictions. SCPs can apply across multiple accounts within an AWS Organization and prevent users from creating new accounts that do not comply with the SCP rules3

➤ Option E is incorrect because creating an AWS Budgets alert action to terminate services when the budgeted amount is reached is not possible. AWS Budgets alert actions can only perform one of the following actions: apply an IAM policy, apply an SCP, or send a notification through Amazon SNS. AWS Budgets alert actions cannot terminate services directly.

➤ Option F is correct because creating an AWS Budgets alert action to send an Amazon SNS notification when the budgeted amount is reached and invoking an AWS Lambda function to terminate all services meets the requirement of giving developers a fixed monthly budget to limit their AWS costs. AWS Budgets alert actions can send notifications through Amazon SNS when a budget threshold is breached. Amazon SNS can trigger an AWS Lambda function that can perform custom logic such as terminating all services in the developer's account. This way, developers cannot exceed their budget limit and incur additional costs.

References: 1: [https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps.html](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps.html) 2

: <https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/budgets-create.html> 3: <https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html> :

<https://docs.aws.amazon.com/cost-management/latest/userguide/budgets-actions.html> : <https://docs.aws.amazon.com/sns/latest/dg/sns-lambda.html> :

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

**NEW QUESTION 36**

- (Exam Topic 1)

A company's solutions architect is reviewing a new internally developed application in a sandbox AWS account. The application uses an AWS Auto Scaling group of Amazon EC2 instances that have an IAM instance profile attached. Part of the application logic creates and accesses secrets from AWS Secrets Manager. The company has an AWS Lambda function that calls the application API to test the functionality. The company also has created an AWS CloudTrail trail in the account. The application's developer has attached the SecretsManagerReadOnlyAccess AWS managed IAM policy to an IAM role. The IAM role is associated with the instance profile that is attached to the EC2 instances. The solutions architect has invoked the Lambda function for testing.

The solutions architect must replace the SecretsManagerReadOnlyAccess policy with a new policy that provides least privilege access to the Secrets Manager actions that the application requires.

What is the MOST operationally efficient solution that meets these requirements?

- A. Generate a policy based on CloudTrail events for the IAM role. Use the generated policy output to create a new IAM policy. Use the newly generated IAM policy to replace the SecretsManagerReadOnlyAccess policy that is attached to the IAM role.

- B. Create an analyzer in AWS Identity and Access Management Access Analyzer Use the IAM role's Access Advisor findings to create a new IAM policy Use the newly created IAM policy to replace the SecretsManagerReadWnte policy that is attached to the IAM role
- C. Use the aws cloudtrail lookup-events AWS CLI command to filter and export CloudTrail events that are related to Secrets Manager Use a new IAM policy that contains the actions from CloudTrail to replace the SecretsManagerReadWnte policy that is attached to the IAM role
- D. Use the IAM policy simulator to generate an IAM policy for the IAM role Use the newly generated IAM policy to replace the SecretsManagerReadWnte policy that is attached to the IAM role

**Answer:** B

**Explanation:**

The IAM policy simulator will generate a policy that contains only the necessary permissions for the application to access Secrets Manager, providing the least privilege necessary to get the job done. This is the most efficient solution as it will not require additional steps such as analyzing CloudTrail events or manually creating and testing an IAM policy.

You can use the IAM policy simulator to generate an IAM policy for an IAM role by specifying the role and the API actions and resources that the application or service requires. The simulator will then generate an IAM policy that grants the least privilege access to those actions and resources.

Once you have generated an IAM policy using the simulator, you can replace the existing SecretsManagerReadWnte policy that is attached to the IAM role with the newly generated policy. This will ensure that the application or service has the least privilege access to the Secrets Manager actions that it requires.

You can access the IAM policy simulator through the IAM console, AWS CLI, and AWS SDKs. Here is the link for more information:

[https://docs.aws.amazon.com/IAM/latest/UserGuide/access\\_policies\\_simulator.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies_simulator.html)

**NEW QUESTION 38**

- (Exam Topic 1)

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

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

- A. Pre-warming Elastic Load Balancers, using a bigger instance type, changing all Amazon EBS volumes to GP2 volumes.
- B. Performing a one-time migration of the database cluster to Amazon RD
- C. and creating several additional read replicas to handle the load during end of month
- D. Using Amazon CioudWatch with AWS Lambda to change the typ
- E. size, or IOPS of Amazon EBS volumes in the cluster based on a specific CloudWatch metric
- F. Replacing all existing Amazon EBS volumes with new PIOPS volumes that have the maximum available storage size and I/O per second by taking snapshots before the end of the month and reverting back afterwards.

**Answer:** B

**Explanation:**

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

**NEW QUESTION 43**

- (Exam Topic 1)

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

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

- A. Migrate the application to Amazon Elastic Container Service (Amazon ECS) on AWS Fargate by using AWS App2Containe
- B. Store container images in Amazon Elastic Container Registry (Amazon ECR). Grant the ECS task execution role permission 10 access the ECR image repositor
- C. Configure Amazon ECS to use an Application Load Balancer (ALB). Use the ALB to interact with the application.
- D. Migrate the application code to a container that runs in AWS Lambd
- E. Build an Amazon API Gateway REST API with Lambda integratio
- F. Use API Gateway to interact with the application.
- G. Migrate the application to Amazon Elastic Kubernetes Service (Amazon EKS) on EKS managed node groups by using AWS App2Containe
- H. Store container images in Amazon Elastic Container Registry (Amazon ECR). Give the EKS nodes permission to access the ECR image repositor
- I. Use Amazon API Gateway to interact with the application.
- J. Migrate the application code to a container that runs in AWS Lambd
- K. Configure Lambda to use an Application Load Balancer (ALB). Use the ALB to interact with the application.

**Answer:** A

**Explanation:**

According to the AWS documentation<sup>1</sup>, AWS App2Container (A2C) is a command line tool for migrating and modernizing Java and .NET web applications into container format. AWS A2C analyzes and builds an inventory of applications running in bare metal, virtual machines, Amazon Elastic Compute Cloud (EC2) instances, or in the cloud. You can use AWS A2C to generate container images for your applications and deploy them on Amazon ECS or Amazon EKS.

Option A meets the requirements of the scenario because it allows you to migrate your existing Java application to AWS and minimize the administrative overhead to maintain the servers. You can use AWS A2C to analyze your application dependencies, extract application artifacts, and generate a Dockerfile. You can then store your container images in Amazon ECR, which is a fully managed container registry service. You can use AWS Fargate as the launch type for your Amazon ECS cluster, which is a serverless compute engine that eliminates the need to provision and manage servers for your containers. You can grant the ECS task execution role permission to access the ECR image repository, which allows your tasks to pull images from ECR. You can configure Amazon ECS to use an ALB, which is a load balancer that distributes traffic across multiple targets in multiple Availability Zones using HTTP or HTTPS protocols. You can use the ALB to interact with your application.

**NEW QUESTION 44**

- (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 45**

- (Exam Topic 1)

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

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

A solutions architect needs to design a multi-Region solution that will reduce latency improve reliability, and require the least effort to implement. What should the solutions architect do to meet these requirements?

- A. Create an Amazon CloudFront distribution to serve assets from the S3 bucket. Configure S3 Cross-Region Replication. Create a new DynamoDB table in a new Region. Use the new table as a replica target for DynamoDB global tables.
- B. Create an Amazon CloudFront distribution to serve assets from the S3 bucket.
- C. Configure S3 Same-Region Replication.
- D. Create a new DynamoDB table in a new Region.
- E. Configure asynchronous replication between the DynamoDB tables by using AWS Database Migration Service (AWS DMS) with change data capture (CDC).
- F. Create another S3 bucket in a new Region and configure S3 Cross-Region Replication between the buckets. Create an Amazon CloudFront distribution and configure origin failover with two origins accessing the S3 buckets in each Region.
- G. Configure DynamoDB global tables by enabling Amazon DynamoDB Streams, and add a replica table in a new Region.
- H. Create another S3 bucket in the same Region, and configure S3 Same-Region Replication between the buckets. Create an Amazon CloudFront distribution and configure origin failover with two 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 48**

- (Exam Topic 1)

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

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

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

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

**Answer:** ADF

**Explanation:**

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

➤ Option D is correct because modifying the DB instance to create a Multi-AZ deployment that extends across two Availability Zones can improve the availability and durability of the RDS for MariaDB.

database. Multi-AZ deployments provide enhanced data protection and minimize downtime by automatically failing over to a standby replica in another Availability Zone in case of a planned or unplanned outage<sup>4</sup>

➤ Option F is correct because creating a replication group for the ElastiCache for Redis cluster and enabling Multi-AZ on the cluster can improve the availability and fault tolerance of the in-memory data store. A replication group consists of a primary node and up to five read-only replica nodes that are synchronized with the primary node using asynchronous replication. Multi-AZ allows automatic failover to one of the replicas if the primary node fails or becomes unreachable<sup>6</sup>

References: 1:

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

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

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

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

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

### NEW QUESTION 50

- (Exam Topic 1)

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

The system runs scheduled jobs, both hourly and daily, in addition to one-time requests from users. Scheduled jobs can take between 20 minutes and 2 hours to finish running and have tight SLAs. The scheduled jobs account for 65% of the system usage. User jobs typically finish running in less than 5 minutes and have no SLA. The user jobs account for 35% of system usage. During system failures, scheduled jobs must continue to meet SLAs. However, user jobs can be delayed.

A solutions architect needs to move the system to Amazon EC2 instances and adopt a consumption-based model to reduce costs with no long-term commitments. The solution must maintain high availability and must not affect the SLAs.

Which solution will meet these requirements MOST cost-effectively?

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

**Answer: D**

#### Explanation:

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

### NEW QUESTION 52

- (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 store's 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 57

- (Exam Topic 1)

A company that has multiple AWS accounts is using AWS Organizations. The company's AWS accounts host VPCs, Amazon EC2 instances, and containers. The company's compliance team has deployed a security tool in each VPC where the company has deployments. The security tools run on EC2 instances and send information to the AWS account that is dedicated for the compliance team. The company has tagged all the compliance-related resources with a key of

“costCenter” and a value of “compliance”.

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

What should a solutions architect do to meet these requirements?

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

**Answer:** A

**Explanation:**

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

**NEW QUESTION 60**

- (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\\_Professiona](https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS_Certified_Solutions_Architect_Professional))

**NEW QUESTION 65**

- (Exam Topic 1)

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

The company needs to reduce its RTO to less than 15 minutes by giving the application the ability to automatically fail over to the backup Region. The company does not have a large enough budget for an active-active strategy. What should a solutions architect recommend to meet these requirements?

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

- N. Create an AWS Lambda function in the backup Region to promote the read replica and modify the Auto Scaling group value
- O. Create an Amazon CloudWatch alarm that is based on the HTTPCode\_Target\_5XX\_Count metric for the ALB in the primary Region
- P. Configure the CloudWatch alarm to invoke the Lambda function.

**Answer:** B

**Explanation:**

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

**NEW QUESTION 69**

- (Exam Topic 1)

A solutions architect needs to copy data from an Amazon S3 bucket in an AWS account to a new S3 bucket in a new AWS account. The solutions architect must implement a solution that uses the AWS CLI.

Which combination of steps will successfully copy the data? (Choose three.)

- A. Create a bucket policy to allow the source bucket to list its contents and to put objects and set object ACLs in the destination bucket
- B. Attach the bucket policy to the destination bucket.
- C. Create a bucket policy to allow a user in the destination account to list the source bucket's contents and read the source bucket's object
- D. Attach the bucket policy to the source bucket.
- E. Create an IAM policy in the source account
- F. Configure the policy to allow a user in the source account to list contents and get objects in the source bucket, and to list contents, put objects, and set object ACLs in the destination bucket
- G. Attach the policy to the user
- H. Create an IAM policy in the destination account
- I. Configure the policy to allow a user in the destination account to list contents and get objects in the source bucket, and to list contents, put objects, and set object ACLs in the destination bucket
- J. Attach the policy to the user.
- K. Run the aws s3 sync command as a user in the source account
- L. Specify the source and destination buckets to copy the data.
- M. Run the aws s3 sync command as a user in the destination account
- N. Specify the source and destination buckets to copy the data.

**Answer:** BDF

**Explanation:**

Step B is necessary so that the user in the destination account has the necessary permissions to access the source bucket and list its contents, read its objects. Step D is needed so that the user in the destination account has the necessary permissions to access the destination bucket and list contents, put objects, and set object ACLs. Step F is necessary because the aws s3 sync command needs to be run using the IAM user credentials from the destination account, so that the objects will have the appropriate permissions for the user in the destination account once they are copied.

**NEW QUESTION 71**

- (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 header
- 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 76**

- (Exam Topic 1)

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

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

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

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

**Answer:** D

**Explanation:**

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

### NEW QUESTION 79

- (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 82

- (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 83

- (Exam Topic 1)

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

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

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

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

- A. Create a bucket policy that includes read permissions for the S3 bucket.

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

**Answer:** ACF

**Explanation:**

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

**NEW QUESTION 85**

- (Exam Topic 1)

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

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

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

**Answer:** ACF

**Explanation:**

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

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

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

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

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

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

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

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

**NEW QUESTION 86**

- (Exam Topic 1)

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

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

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

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

**Answer:** BD

**Explanation:**

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

**NEW QUESTION 90**

- (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 95**

- (Exam Topic 1)

A company has an environment that has a single AWS account. A solutions architect is reviewing the environment to recommend what the company could improve specifically in terms of access to the AWS Management Console. The company's IT support workers currently access the console for administrative tasks, authenticating with named IAM users that have been mapped to their job role.

The IT support workers no longer want to maintain both their Active Directory and IAM user accounts. They want to be able to access the console by using their existing Active Directory credentials. The solutions architect is using AWS Single Sign-On (AWS SSO) to implement this functionality.

Which solution will meet these requirements MOST cost-effectively?

- A. Create an organization in AWS Organization
- B. Turn on the AWS SSO feature in Organizations Create and configure a directory in AWS Directory Service for Microsoft Active Directory (AWS Managed Microsoft AD) with a two-way trust to the company's on-premises Active Director
- C. Configure AWS SSO and set the AWS Managed Microsoft AD directory as the identity source
- D. Create permission sets and map them to the existing groups within the AWS Managed Microsoft AD directory.
- E. Create an organization in AWS Organization
- F. Turn on the AWS SSO feature in Organizations Create and configure an AD Connector to connect to the company's on-premises Active Director
- G. Configure AWS SSO and select the AD Connector as the identity source
- H. Create permission sets and map them to the existing groups within the company's Active Directory.
- I. Create an organization in AWS Organization
- J. Turn on all features for the organization
- K. Create and configure a directory in AWS Directory Service for Microsoft Active Directory (AWS Managed Microsoft AD) with a two-way trust to the company's on-premises Active Director
- L. Configure AWS SSO and select the AWS Managed Microsoft AD directory as the identity source
- M. Create permission sets and map them to the existing groups within the AWS Managed Microsoft AD directory.
- N. Create an organization in AWS Organization
- O. Turn on all features for the organization
- P. Create and configure an AD Connector to connect to the company's on-premises Active Director
- Q. Configure AWS SSO and select the AD Connector as the identity source
- R. Create permission sets and map them to the existing groups within the company's Active Directory.

**Answer:** D

**Explanation:**

[https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_org\\_support-all-features.html](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_org_support-all-features.html)

<https://docs.aws.amazon.com/singlesignon/latest/userguide/get-started-prereqs-considerations.html>

**NEW QUESTION 96**

- (Exam Topic 1)

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

Which solution will meet these requirements with the LEAST effort?

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

**Answer:** C

**Explanation:**

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

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

Reference:

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

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

**NEW QUESTION 97**

- (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 102

- (Exam Topic 1)

A company is storing data in several Amazon DynamoDB tables. A solutions architect must use a serverless architecture to make the data accessible publicly through a simple API over HTTPS. The solution must scale automatically in response to demand. Which solutions meet these requirements? (Choose two.)

- A. Create an Amazon API Gateway REST API.
- B. Configure this API with direct integrations to DynamoDB by using API Gateway's AWS integration type.
- C. Create an Amazon API Gateway HTTP API.
- D. Configure this API with direct integrations to DynamoDB by using API Gateway's AWS integration type.
- E. Create an Amazon API Gateway HTTP API.
- F. Configure this API with integrations to AWS Lambda functions that return data from the DynamoDB tables.
- G. Create an accelerator in AWS Global Accelerator.
- H. Configure this accelerator with AWS Lambda@Edge function integrations that return data from the DynamoDB tables.
- I. Create a Network Load Balance.
- J. Configure listener rules to forward requests to the appropriate AWS Lambda functions.

**Answer:** AC

**Explanation:**

<https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-overview-developer-experience.htm>

#### NEW QUESTION 105

- (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 108

- (Exam Topic 1)

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

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

What should the solutions architect recommend to meet these requirements?

- A. Enable IAM database authentication on the Aurora DB cluster.
- B. Change the IAM role for the Lambda function to allow the function to access the database by using IAM database authentication.
- C. Deploy a gateway VPC endpoint for Amazon S3 in the VPC.
- D. Enable IAM database authentication on the Aurora DB cluster.
- E. Change the IAM role for the Lambda function to allow the function to access the database by using IAM database authentication.

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

**Answer:** A

**Explanation:**

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

**NEW QUESTION 113**

- (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 VPC
- 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 118**

- (Exam Topic 1)

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

The company's existing architecture includes the following:

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

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

Which strategy should a solutions architect use?

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

**Answer:** D

**Explanation:**

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

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

**NEW QUESTION 119**

- (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 121**

- (Exam Topic 2)

A solutions architect must provide a secure way for a team of cloud engineers to use the AWS CLI to upload objects into an Amazon S3 bucket Each cloud engineer has an IAM user. IAM access keys and a virtual multi-factor authentication (MFA) device The IAM users for the cloud engineers are in a group that is named S3-access The cloud engineers must use MFA to perform any actions in Amazon S3  
 Which solution will meet these requirements?

- A. Attach a policy to the S3 bucket to prompt the 1AM user for an MFA code when the 1AM user performs actions on the S3 bucket Use 1AM access keys with the AWS CLI tocall Amazon S3
- B. Update the trust policy for the S3-access group to require principals to use MFA when principals assume the group Use 1AM access keys with the AWS CLI to call Amazon S3
- C. Attach a policy to the S3-access group to deny all S3 actions unless MFA is present Use 1AM accesskeys with the AWS CLI to call Amazon S3
- D. Attach a policy to the S3-access group to deny all S3 actions unless MFA is present Request temporary credentials from AWS Security Token Service (AWS STS) Attach the temporary credentials in a profile that Amazon S3 will reference when the user performs actions in Amazon S3

**Answer: D**

**Explanation:**

The company should attach a policy to the S3-access group to deny all S3 actions unless MFA is present. The company should request temporary credentials from AWS Security Token Service (AWS STS). The company should attach the temporary credentials in a profile that Amazon S3 will reference when the user performs actions in Amazon S3. This solution will meet the requirements because AWS STS is a service that enables you to request temporary, limited-privilege credentials for IAM users or for users that you authenticate (federated users). You can use MFA with AWS STS to provide an extra layer of security when requesting temporary credentials1. You can use the sts get-session-token AWS CLI command to request temporary credentials that include an MFA token2. You can then use these credentials with the AWS CLI to access Amazon S3 resources. To do this, you need to attach a policy to the IAM group that denies all S3 actions unless MFA is present3. You also need to create a profile in the AWS CLI configuration file that references the temporary credentials.

The other options are not correct because:

- Attaching a policy to the S3 bucket to prompt the IAM user for an MFA code when the IAM user performs actions on the S3 bucket would not work because policies attached to S3 buckets cannot enforce MFA authentication. Policies attached to S3 buckets are resource-based policies that define what actions can be performed on the bucket and by whom. They do not have any logic to prompt for an MFA code or verify it.
- Updating the trust policy for the S3-access group to require principals to use MFA when principals assume the group would not work because trust policies are used for roles, not groups. Trust policies are policies that define which principals can assume a role. They do not apply to groups, which are collections of IAM users that share permissions.
- Creating an Amazon Route 53 Resolver DNS Firewall domain list that contains the allowed domains and configuring a DNS Firewall rule group with rules to allow or block requests based on the domain list would not help with enforcing MFA authentication for Amazon S3 actions. Amazon Route 53 Resolver DNS Firewall is a feature that enables you to filter and regulate outbound DNS traffic for your VPC. You can create reusable collections of filtering rules in DNS Firewall rule groups and associate them with your VPCs. You can specify lists of domain names to allow or block, and you can customize the responses for the DNS queries that you block. This feature is useful for controlling access to sites and blocking DNS-level threats, but not for requiring MFA authentication.

References:

- [https://docs.aws.amazon.com/IAM/latest/UserGuide/id\\_credentials\\_temp.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_temp.html)
- [https://docs.aws.amazon.com/IAM/latest/UserGuide/id\\_credentials\\_mfa\\_enable\\_cliapi.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_mfa_enable_cliapi.html)
- [https://docs.aws.amazon.com/IAM/latest/UserGuide/id\\_credentials\\_mfa\\_sample-policies.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_mfa_sample-policies.html)
- <https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-profiles.html>
- <https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resolver-dns-firewall.html>

**NEW QUESTION 122**

- (Exam Topic 2)

A company uses AWS Organizations for a multi-account setup in the AWS Cloud. The company's finance team has a data processing application that uses AWS Lambda and Amazon DynamoDB. The company's marketing team wants to access the data that is stored in the DynamoDB table. The DynamoDB table contains confidential data. The marketing team can have access to only specific attributes of data in the DynamoDB table. The fi-nance team and the marketing team have separate AWS accounts.  
 What should a solutions architect do to provide the marketing team with the appropriate access to the DynamoDB table?

- A. Create an SCP to grant the marketing team's AWS account access to the specific attributes of the DynamoDB tabl
- B. Attach the SCP to the OU of the finance team.
- C. Create an IAM role in the finance team's account by using IAM policy conditions for specific DynamoDB attributes (fine-grained access con-trol). Establish trust with the marketing team's accoun
- D. In the mar-keting team's account, create an IAM role that has permissions to as-sume the IAM role in the finance team's account.
- E. Create a resource-based IAM policy that includes conditions for spe-cific DynamoDB attributes (fine-grained access control). Attach the policy to the DynamoDB

tabl

- F. In the marketing team's account, create an IAM role that has permissions to access the DynamoDB table in the finance team's account.
- G. Create an IAM role in the finance team's account to access the DynamoDB table
- H. Use an IAM permissions boundary to limit the access to the specific attribute
- I. In the marketing team's account, create an IAM role that has permissions to assume the IAM role in the finance team's account.

**Answer: C**

**Explanation:**

The company should create a resource-based IAM policy that includes conditions for specific DynamoDB attributes (fine-grained access control). The company should attach the policy to the DynamoDB table. In the marketing team's account, the company should create an IAM role that has permissions to access the DynamoDB table in the finance team's account. This solution will meet the requirements because a resource-based IAM policy is a policy that you attach to an AWS resource (such as a DynamoDB table) to control who can access that resource and what actions they can perform on it. You can use IAM policy conditions to specify fine-grained access control for DynamoDB items and attributes. For example, you can allow or deny access to specific attributes of all items in a table by matching on attribute names<sup>1</sup>. By creating a resource-based policy that allows access to only specific attributes of the DynamoDB table and attaching it to the table, the company can restrict access to confidential data. By creating an IAM role in the marketing team's account that has permissions to access the DynamoDB table in the finance team's account, the company can enable cross-account access. The other options are not correct because:

- Creating an SCP to grant the marketing team's AWS account access to the specific attributes of the DynamoDB table would not work because SCPs are policies that you can use with AWS Organizations to manage permissions in your organization's accounts. SCPs do not grant permissions; instead, they specify the maximum permissions that identities in an account can have<sup>2</sup>. SCPs cannot be used to specify fine-grained access control for DynamoDB items and attributes.
- Creating an IAM role in the finance team's account by using IAM policy conditions for specific DynamoDB attributes and establishing trust with the marketing team's account would not work because IAM roles are identities that you can create in your account that have specific permissions. You can use an IAM role to delegate access to users, applications, or services that don't normally have access to your AWS resources<sup>3</sup>. However, creating an IAM role in the finance team's account would not restrict access to specific attributes of the DynamoDB table; it would only allow cross-account access. The company would still need a resource-based policy attached to the table to enforce fine-grained access control.
- Creating an IAM role in the finance team's account to access the DynamoDB table and using an IAM permissions boundary to limit the access to the specific attributes would not work because IAM permissions boundaries are policies that you use to delegate permissions management to other users. You can use permissions boundaries to limit the maximum permissions that an identity-based policy can grant to an IAM entity (user or role)<sup>4</sup>. Permissions boundaries cannot be used to specify fine-grained access control for DynamoDB items and attributes.

References:

- <https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/specifying-conditions.html>
- [https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps.html](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps.html)
- [https://docs.aws.amazon.com/IAM/latest/UserGuide/id\\_roles.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html)
- [https://docs.aws.amazon.com/IAM/latest/UserGuide/access\\_policies\\_boundaries.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies_boundaries.html)

**NEW QUESTION 124**

- (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 addresses in multiple Availability Zone
- 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 addresses in multiple Availability Zone
- 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 Zone
- 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 128**

- (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 130**

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