



# Amazon-Web-Services

## Exam Questions DOP-C02

AWS Certified DevOps Engineer - Professional

### NEW QUESTION 1

A company's DevOps engineer uses AWS Systems Manager to perform maintenance tasks during maintenance windows. The company has a few Amazon EC2 instances that require a restart after notifications from AWS Health. The DevOps engineer needs to implement an automated solution to remediate these notifications. The DevOps engineer creates an Amazon EventBridge rule.

How should the DevOps engineer configure the EventBridge rule to meet these requirements?

- A. Configure an event source of AWS Health, a service of EC2, and an event type that indicates instance maintenance
- B. Target a Systems Manager document to restart the EC2 instance.
- C. Configure an event source of Systems Manager and an event type that indicates a maintenance window
- D. Target a Systems Manager document to restart the EC2 instance.
- E. Configure an event source of AWS Health, a service of EC2, and an event type that indicates instance maintenance
- F. Target a newly created AWS Lambda function that registers an automation task to restart the EC2 instance during a maintenance window.
- G. Configure an event source of EC2 and an event type that indicates instance maintenance
- H. Target a newly created AWS Lambda function that registers an automation task to restart the EC2 instance during a maintenance window.

**Answer:** C

#### Explanation:

AWS Health provides real-time events and information related to your AWS infrastructure. It can be integrated with Amazon EventBridge to act upon the health events automatically. If the maintenance notification from AWS Health indicates that an EC2 instance requires a restart, you can set up an EventBridge rule to respond to such events. In this case, the target of this rule would be a Lambda function that would trigger a Systems Manager automation to restart the EC2 instance during a maintenance window. Remember, AWS Health is the source of the events (not EC2 or Systems Manager), and AWS Lambda can be used to execute complex remediation tasks, such as scheduling maintenance tasks via Systems Manager.

The following are the steps involved in configuring the EventBridge rule to meet these requirements:

? Configure an event source of AWS Health, a service of EC2, and an event type that indicates instance maintenance.

? Target a newly created AWS Lambda function that registers an automation task to restart the EC2 instance during a maintenance window.

The AWS Lambda function will be triggered by the event from AWS Health. The function will then register an automation task to restart the EC2 instance during the next maintenance window.

### NEW QUESTION 2

A company requires an RPO of 2 hours and an RTO of 10 minutes for its data and application at all times. An application uses a MySQL database and Amazon EC2 web servers. The development team needs a strategy for failover and disaster recovery.

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

- A. Create an Amazon Aurora cluster in one Availability Zone across multiple Regions as the data store Use Aurora's automatic recovery capabilities in the event of a disaster
- B. Create an Amazon Aurora global database in two Regions as the data store
- C. In the event of a failure promote the secondary Region as the primary for the application.
- D. Create an Amazon Aurora multi-master cluster across multiple Regions as the data store
- E. Use a Network Load Balancer to balance the database traffic in different Regions.
- F. Set up the application in two Regions and use Amazon Route 53 failover-based routing that points to the Application Load Balancers in both Region
- G. Use health checks to determine the availability in a given Region
- H. Use Auto Scaling groups in each Region to adjust capacity based on demand.
- I. Set up the application in two Regions and use a multi-Region Auto Scaling group behind Application Load Balancers to manage the capacity based on demand
- J. In the event of a disaster adjust the Auto Scaling group's desired instance count to increase baseline capacity in the failover Region.

**Answer:** BD

### NEW QUESTION 3

A DevOps engineer is implementing governance controls for a company that requires its infrastructure to be housed within the United States. The engineer must restrict which AWS Regions can be used, and ensure an alert is sent as soon as possible if any activity outside the governance policy takes place. The controls should be automatically enabled on any new Region outside the United States (US).

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

- A. Create an AWS Organizations SCP that denies access to all non-global services in non-US Region
- B. Attach the policy to the root of the organization.
- C. Configure AWS CloudTrail to send logs to Amazon CloudWatch Logs and enable it for all Region
- D. Use a CloudWatch Logs metric filter to send an alert on any service activity in non-US Regions.
- E. Use an AWS Lambda function that checks for AWS service activity and deploy it to all Region
- F. Write an Amazon EventBridge rule that runs the Lambda function every hour, sending an alert if activity is found in a non-US Region.
- G. Use an AWS Lambda function to query Amazon Inspector to look for service activity in non-US Regions and send alerts if any activity is found.
- H. Write an SCP using the aws: RequestedRegion condition key limiting access to US Region
- I. Apply the policy to all users, groups, and roles

**Answer:** AB

#### Explanation:

To implement governance controls that restrict AWS service usage to within the United States and ensure alerts for any activity outside the governance policy, the following actions will meet the requirements:

? A. Create an AWS Organizations SCP that denies access to all non-global services in non-US Regions. Attach the policy to the root of the organization. This action will effectively prevent users and roles in all accounts within the organization from accessing services in non-US Regions<sup>12</sup>.

? B. Configure AWS CloudTrail to send logs to Amazon CloudWatch Logs and enable it for all Regions. Use a CloudWatch Logs metric filter to send an alert on any service activity in non-US Regions. This action will allow monitoring of all AWS Regions and will trigger alerts if any activity is detected in non-US Regions, ensuring that the governance team is notified as soon as possible<sup>3</sup>.

References:

? AWS Documentation on Service Control Policies (SCPs) and how they can be used to manage permissions and restrict access based on Regions<sup>12</sup>.

? AWS Documentation on monitoring CloudTrail log files with Amazon CloudWatch Logs to set up alerts for specific activities<sup>3</sup>.

#### NEW QUESTION 4

An application runs on Amazon EC2 instances behind an Application Load Balancer (ALB). A DevOps engineer is using AWS CodeDeploy to release a new version. The deployment fails during the AllowTraffic lifecycle event, but a cause for the failure is not indicated in the deployment logs. What would cause this?

- A. The appspec
- B. yml file contains an invalid script that runs in the AllowTraffic lifecycle hook.
- C. The user who initiated the deployment does not have the necessary permissions to interact with the ALB.
- D. The health checks specified for the ALB target group are misconfigured.
- E. The CodeDeploy agent was not installed in the EC2 instances that are part of the ALB target group.

**Answer:** C

#### Explanation:

This failure is typically due to incorrectly configured health checks in Elastic Load Balancing for the Classic Load Balancer, Application Load Balancer, or Network Load Balancer used to manage traffic for the deployment group. To resolve the issue, review and correct any errors in the health check configuration for the load balancer. <https://docs.aws.amazon.com/codedeploy/latest/userguide/troubleshooting-deployments.html#troubleshooting-deployments-allowtraffic-no-logs>

#### NEW QUESTION 5

A company uses Amazon S3 to store proprietary information. The development team creates buckets for new projects on a daily basis. The security team wants to ensure that all existing and future buckets have encryption logging and versioning enabled. Additionally, no buckets should ever be publicly read or write accessible. What should a DevOps engineer do to meet these requirements?

- A. Enable AWS CloudTrail and configure automatic remediation using AWS Lambda.
- B. Enable AWS Config rules and configure automatic remediation using AWS Systems Manager documents.
- C. Enable AWS Trusted Advisor and configure automatic remediation using Amazon EventBridge.
- D. Enable AWS Systems Manager and configure automatic remediation using Systems Manager documents.

**Answer:** B

#### Explanation:

<https://aws.amazon.com/blogs/mt/aws-config-auto-remediation-s3-compliance/> <https://aws.amazon.com/blogs/aws/aws-config-rules-dynamic-compliance-checking-for-cloud-resources/>

#### NEW QUESTION 6

A DevOps engineer is building an application that uses an AWS Lambda function to query an Amazon Aurora MySQL DB cluster. The Lambda function performs only read queries. Amazon EventBridge events invoke the Lambda function. As more events invoke the Lambda function each second, the database's latency increases and the database's throughput decreases. The DevOps engineer needs to improve the performance of the application. Which combination of steps will meet these requirements? (Select THREE.)

- A. Use Amazon RDS Proxy to create a proxy
- B. Connect the proxy to the Aurora cluster reader endpoint
- C. Set a maximum connections percentage on the proxy.
- D. Implement database connection pooling inside the Lambda code
- E. Set a maximum number of connections on the database connection pool.
- F. Implement the database connection opening outside the Lambda event handler code.
- G. Implement the database connection opening and closing inside the Lambda event handler code.
- H. Connect to the proxy endpoint from the Lambda function.
- I. Connect to the Aurora cluster endpoint from the Lambda function.

**Answer:** ACE

#### Explanation:

To improve the performance of the application, the DevOps engineer should use Amazon RDS Proxy, implement the database connection opening outside the Lambda event handler code, and connect to the proxy endpoint from the Lambda function. References:  
 ? Amazon RDS Proxy is a fully managed, highly available database proxy for Amazon Relational Database Service (RDS) that makes applications more scalable, more resilient to database failures, and more secure<sup>1</sup>. By using Amazon RDS Proxy, the DevOps engineer can reduce the overhead of opening and closing connections to the database, which can improve latency and throughput<sup>2</sup>.  
 ? The DevOps engineer should connect the proxy to the Aurora cluster reader endpoint, which allows read-only connections to one of the Aurora Replicas in the DB cluster<sup>3</sup>. This can help balance the load across multiple read replicas and improve performance for read-intensive workloads<sup>4</sup>.  
 ? The DevOps engineer should implement the database connection opening outside the Lambda event handler code, which means using a global variable to store the database connection object<sup>5</sup>. This can enable connection reuse across multiple invocations of the Lambda function, which can reduce latency and improve performance.  
 ? The DevOps engineer should connect to the proxy endpoint from the Lambda function, which is a unique URL that represents the proxy. This can allow the Lambda function to access the database through the proxy, which can provide benefits such as connection pooling, load balancing, failover handling, and enhanced security.  
 ? The other options are incorrect because:

#### NEW QUESTION 7

A company has a data ingestion application that runs across multiple AWS accounts. The accounts are in an organization in AWS Organizations. The company needs to monitor the application and consolidate access to the application. Currently the company is running the application on Amazon EC2 instances from several Auto Scaling groups. The EC2 instances have no access to the internet because the data is sensitive. Engineers have deployed the necessary VPC endpoints. The EC2 instances run a custom AMI that is built specifically for the application. To maintain and troubleshoot the application, system administrators need the ability to log in to the EC2 instances. This access must be automated and controlled centrally. The company's security team must receive a notification whenever the instances are accessed. Which solution will meet these requirements?

- A. Create an Amazon EventBridge rule to send notifications to the security team whenever a user logs in to an EC2 instance Use EC2 Instance Connect to log in to the instance
- B. Deploy Auto Scaling groups by using AWS Cloud Formation Use the cfn-init helper script to deploy appropriate VPC routes for external access Rebuild the custom AMI so that the custom AMI includes AWS Systems Manager Agent.
- C. Deploy a NAT gateway and a bastion host that has internet access Create a security group that allows incoming traffic on all the EC2 instances from the bastion host Install AWS Systems Manager Agent on all the EC2 instances Use Auto Scaling group lifecycle hooks for monitoring and auditing access Use Systems Manager Session Manager to log into the instances Send logs to a log group in Amazon CloudWatch Log
- D. Export data to Amazon S3 for auditing Send notifications to the security team by using S3 event notifications.
- E. Use EC2 Image Builder to rebuild the custom AMI Include the most recent version of AWS Systems Manager Agent in the Image Configure the Auto Scaling group to attach the AmazonSSMManagedInstanceCore role to all the EC2 instances Use Systems Manager Session Manager to log in to the instances Enable logging of session details to Amazon S3 Create an S3 event notification for new file uploads to send a message to the security team through an Amazon Simple Notification Service (Amazon SNS) topic.
- F. Use AWS Systems Manager Automation to build Systems Manager Agent into the custom AMI Configure AWS Config to attach an SCP to the root organization account to allow the EC2 instances to connect to Systems Manager Use Systems Manager Session Manager to log in to the instances Enable logging of session details to Amazon S3 Create an S3 event notification for new file uploads to send a message to the security team through an Amazon Simple Notification Service (Amazon SNS) topic.

**Answer: C**

**Explanation:**

Even if AmazonSSMManagedInstanceCore is a managed policy and not an IAM role I will go with C because this policy is to be attached to an IAM role for EC2 to access System Manager.

**NEW QUESTION 8**

A production account has a requirement that any Amazon EC2 instance that has been logged in to manually must be terminated within 24 hours. All applications in the production account are using Auto Scaling groups with the Amazon CloudWatch Logs agent configured. How can this process be automated?

- A. Create a CloudWatch Logs subscription to an AWS Step Functions applicatio
- B. Configure an AWS Lambda function to add a tag to the EC2 instance that produced the login event and mark the instance to be decommissioned
- C. Create an Amazon EventBridge rule to invoke a second Lambda function once a day that will terminate all instances with this tag.
- D. Create an Amazon CloudWatch alarm that will be invoked by the login event
- E. Send the notification to an Amazon Simple Notification Service (Amazon SNS) topic that the operations team is subscribed to, and have them terminate the EC2 instance within 24 hours.
- F. Create an Amazon CloudWatch alarm that will be invoked by the login event
- G. Configure the alarm to send to an Amazon Simple Queue Service (Amazon SQS) queue
- H. Use a group of worker instances to process messages from the queue, which then schedules an Amazon EventBridge rule to be invoked.
- I. Create a CloudWatch Logs subscription to an AWS Lambda function
- J. Configure the function to add a tag to the EC2 instance that produced the login event and mark the instance to be decommissioned
- K. Create an Amazon EventBridge rule to invoke a daily Lambda function that terminates all instances with this tag.

**Answer: D**

**Explanation:**

"You can use subscriptions to get access to a real-time feed of log events from CloudWatch Logs and have it delivered to other services such as an Amazon Kinesis stream, an Amazon Kinesis Data Firehose stream, or AWS Lambda for custom processing, analysis, or loading to other systems. When log events are sent to the receiving service, they are Base64 encoded and compressed with the gzip format." See <https://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/Subscriptions.html>

**NEW QUESTION 9**

A company has an application and a CI/CD pipeline. The CI/CD pipeline consists of an AWS CodePipeline pipeline and an AWS CodeBuild project. The CodeBuild project runs tests against the application as part of the build process and outputs a test report. The company must keep the test reports for 90 days. Which solution will meet these requirements?

- A. Add a new stage in the CodePipeline pipeline after the stage that contains the CodeBuild project
- B. Create an Amazon S3 bucket to store the report
- C. Configure an S3 deploy action type in the new CodePipeline stage with the appropriate path and format for the reports.
- D. Add a report group in the CodeBuild project buildspec file with the appropriate path and format for the report
- E. Create an Amazon S3 bucket to store the report
- F. Configure an Amazon EventBridge rule that invokes an AWS Lambda function to copy the reports to the S3 bucket when a build is complete
- G. Create an S3 Lifecycle rule to expire the objects after 90 days.
- H. Add a new stage in the CodePipeline pipeline
- I. Configure a test action type with the appropriate path and format for the report
- J. Configure the report expiration time to be 90 days in the CodeBuild project buildspec file.
- K. Add a report group in the CodeBuild project buildspec file with the appropriate path and format for the report
- L. Create an Amazon S3 bucket to store the report
- M. Configure the report group as an artifact in the CodeBuild project buildspec file
- N. Configure the S3 bucket as the artifact destination
- O. Set the object expiration to 90 days.

**Answer: B**

**Explanation:**

The correct solution is to add a report group in the AWS CodeBuild project buildspec file with the appropriate path and format for the reports. Then, create an Amazon S3 bucket to store the reports. You should configure an Amazon EventBridge rule that invokes an AWS Lambda function to copy the reports to the S3 bucket when a build is completed. Finally, create an S3 Lifecycle rule to expire the objects after 90 days. This approach allows for the automated transfer of reports to long-term storage and ensures they are retained for the required duration without manual intervention. References:  
 ? AWS CodeBuild User Guide on test reporting1.  
 ? AWS CodeBuild User Guide on working with report groups2.  
 ? AWS Documentation on using AWS CodePipeline with AWS CodeBuild3.

#### NEW QUESTION 10

A company has an organization in AWS Organizations. The organization includes workload accounts that contain enterprise applications. The company centrally manages users from an operations account. No users can be created in the workload accounts. The company recently added an operations team and must provide the operations team members with administrator access to each workload account.

Which combination of actions will provide this access? (Choose three.)

- A. Create a SysAdmin role in the operations account
- B. Attach the AdministratorAccess policy to the role
- C. Modify the trust relationship to allow the sts:AssumeRole action from the workload accounts.
- D. Create a SysAdmin role in each workload account
- E. Attach the AdministratorAccess policy to the role
- F. Modify the trust relationship to allow the sts:AssumeRole action from the operations account.
- G. Create an Amazon Cognito identity pool in the operations account
- H. Attach the SysAdmin role as an authenticated role.
- I. In the operations account, create an IAM user for each operations team member.
- J. In the operations account, create an IAM user group that is named SysAdmin
- K. Add an IAM policy that allows the sts:AssumeRole action for the SysAdmin role in each workload account
- L. Add all operations team members to the group.
- M. Create an Amazon Cognito user pool in the operations account
- N. Create an Amazon Cognito user for each operations team member.

**Answer:** BDE

#### Explanation:

[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

A company has enabled all features for its organization in AWS Organizations. The organization contains 10 AWS accounts. The company has turned on AWS CloudTrail in all the accounts. The company expects the number of AWS accounts in the organization to increase to 500 during the next year. The company plans to use multiple OUs for these accounts.

The company has enabled AWS Config in each existing AWS account in the organization.

A DevOps engineer must implement a solution that enables AWS Config automatically for all future AWS accounts that are created in the organization.

Which solution will meet this requirement?

- A. In the organization's management account, create an Amazon EventBridge rule that reacts to a CreateAccount API call
- B. Configure the rule to invoke an AWS Lambda function that enables trusted access to AWS Config for the organization.
- C. In the organization's management account, create an AWS CloudFormation stack set to enable AWS Config
- D. Configure the stack set to deploy automatically when an account is created through Organizations.
- E. In the organization's management account, create an SCP that allows the appropriate AWS Config API calls to enable AWS Config
- F. Apply the SCP to the root-level OU.
- G. In the organization's management account, create an Amazon EventBridge rule that reacts to a CreateAccount API call
- H. Configure the rule to invoke an AWS Systems Manager Automation runbook to enable AWS Config for the account.

**Answer:** B

#### Explanation:

<https://aws.amazon.com/about-aws/whats-new/2020/02/aws-cloudformation-stacksets-introduces-automatic-deployments-across-accounts-and-regions-through-aws-organizations/>

#### NEW QUESTION 14

A company has multiple member accounts that are part of an organization in AWS Organizations. The security team needs to review every Amazon EC2 security group and their inbound and outbound rules. The security team wants to programmatically retrieve this information from the member accounts using an AWS Lambda function in the management account of the organization.

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

- A. Create a trust relationship that allows users in the member accounts to assume the management account IAM role.
- B. Create a trust relationship that allows users in the management account to assume the IAM roles of the member accounts.
- C. Create an IAM role in each member account that has access to the AmazonEC2ReadOnlyAccess managed policy.
- D. Create an IAM role in each member account to allow the sts:AssumeRole action against the management account IAM role's ARN.
- E. Create an IAM role in the management account that allows the sts:AssumeRole action against the member account IAM role's ARN.
- F. Create an IAM role in the management account that has access to the AmazonEC2ReadOnlyAccess managed policy.

**Answer:** BCE

#### Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/lambda-function-assume-iam-role/> <https://kreuzwerker.de/post/aws-multi-account-setups-reloaded>

#### NEW QUESTION 16

A company has multiple accounts in an organization in AWS Organizations. The company's SecOps team needs to receive an Amazon Simple Notification Service (Amazon SNS) notification if any account in the organization turns off the Block Public Access feature on an Amazon S3 bucket. A DevOps engineer must implement this change without affecting the operation of any AWS accounts. The implementation must ensure that individual member accounts in the organization cannot turn off the notification.

Which solution will meet these requirements?

- A. Designate an account to be the delegated Amazon GuardDuty administrator account
- B. Turn on GuardDuty for all accounts across the organization
- C. In the GuardDuty administrator account, create an SNS topic
- D. Subscribe the SecOps team's email address to the SNS topic
- E. In the same account, create an Amazon EventBridge rule that uses an event pattern for GuardDuty findings and a target of the SNS topic.

- F. Create an AWS CloudFormation template that creates an SNS topic and subscribes the SecOps team's email address to the SNS topic
- G. In the template, include an Amazon EventBridge rule that uses an event pattern of CloudTrail activity for s3:PutBucketPublicAccessBlock and a target of the SNS topic
- H. Deploy the stack to every account in the organization by using CloudFormation StackSets.
- I. Turn on AWS Config across the organization
- J. In the delegated administrator account, create an SNS topic
- K. Subscribe the SecOps team's email address to the SNS topic
- L. Deploy a conformance pack that uses the s3-bucket-level-public-access-prohibited AWS Config managed rule in each account and uses an AWS Systems Manager document to publish an event to the SNS topic to notify the SecOps team.
- M. Turn on Amazon Inspector across the organization
- N. In the Amazon Inspector delegated administrator account, create an SNS topic
- O. Subscribe the SecOps team's email address to the SNS topic
- P. In the same account, create an Amazon EventBridge rule that uses an event pattern for public network exposure of the S3 bucket and publishes an event to the SNS topic to notify the SecOps team.

**Answer:** C

**Explanation:**

Amazon GuardDuty is primarily on threat detection and response, not configuration monitoring. A conformance pack is a collection of AWS Config rules and remediation actions that can be easily deployed as a single entity in an account and a Region or across an organization in AWS Organizations.  
<https://docs.aws.amazon.com/config/latest/developerguide/conformance-packs.html> <https://docs.aws.amazon.com/config/latest/developerguide/s3-account-level-public-access-blocks.html>

**NEW QUESTION 17**

A DevOps engineer is creating an AWS CloudFormation template to deploy a web service. The web service will run on Amazon EC2 instances in a private subnet behind an Application Load Balancer (ALB). The DevOps engineer must ensure that the service can accept requests from clients that have IPv6 addresses. What should the DevOps engineer do with the CloudFormation template so that IPv6 clients can access the web service?

- A. Add an IPv6 CIDR block to the VPC and the private subnet for the EC2 instance
- B. Create route table entries for the IPv6 network, use EC2 instance types that support IPv6, and assign IPv6 addresses to each EC2 instance.
- C. Assign each EC2 instance an IPv6 Elastic IP address
- D. Create a target group, and add the EC2 instances as target
- E. Create a listener on port 443 of the ALB, and associate the target group with the ALB.
- F. Replace the ALB with a Network Load Balancer (NLB). Add an IPv6 CIDR block to the VPC and subnets for the NLB, and assign the NLB an IPv6 Elastic IP address.
- G. Add an IPv6 CIDR block to the VPC and subnets for the ALB
- H. Create a listener on port 443, and specify the dualstack IP address type on the ALB
- I. Create a target group, and add the EC2 instances as target
- J. Associate the target group with the ALB.

**Answer:** D

**Explanation:**

it involves adding an IPv6 CIDR block to the VPC and subnets for the ALB and specifying the dualstack IP address type on the ALB listener. This allows the ALB to listen on both IPv4 and IPv6 addresses, and forward requests to the EC2 instances that are added as targets to the target group associated with the ALB.

**NEW QUESTION 22**

A company's application is currently deployed to a single AWS Region. Recently, the company opened a new office on a different continent. The users in the new office are experiencing high latency. The company's application runs on Amazon EC2 instances behind an Application Load Balancer (ALB) and uses Amazon DynamoDB as the database layer. The instances run in an EC2 Auto Scaling group across multiple Availability Zones. A DevOps engineer is tasked with minimizing application response times and improving availability for users in both Regions. Which combination of actions should be taken to address the latency issues? (Choose three.)

- A. Create a new DynamoDB table in the new Region with cross-Region replication enabled.
- B. Create new ALB and Auto Scaling group global resources and configure the new ALB to direct traffic to the new Auto Scaling group.
- C. Create new ALB and Auto Scaling group resources in the new Region and configure the new ALB to direct traffic to the new Auto Scaling group.
- D. Create Amazon Route 53 records, health checks, and latency-based routing policies to route to the ALB.
- E. Create Amazon Route 53 aliases, health checks, and failover routing policies to route to the ALB.
- F. Convert the DynamoDB table to a global table.

**Answer:** CDE

**Explanation:**

- C. Create new ALB and Auto Scaling group resources in the new Region and configure the new ALB to direct traffic to the new Auto Scaling group. This will allow users in the new Region to access the application with lower latency by reducing the network hops between the user and the application servers.
- \* D. Create Amazon Route 53 records, health checks, and latency-based routing policies to route to the ALB. This will enable Route 53 to route user traffic to the nearest healthy ALB, based on the latency between the user and the ALBs.
- \* F. Convert the DynamoDB table to a global table. This will enable reads and writes to the table in both Regions with low latency, improving the overall response time of the application

**NEW QUESTION 24**

A company has multiple AWS accounts. The company uses AWS IAM Identity Center (AWS Single Sign-On) that is integrated with AWS Toolkit for Microsoft Azure DevOps. The attributes for access control feature is enabled in IAM Identity Center.

The attribute mapping list contains two entries. The department key is mapped to `$(path:enterprise.department)`. The costCenter key is mapped to `$(path:enterprise.costCenter)`.

All existing Amazon EC2 instances have a department tag that corresponds to three company departments (d1, d2, d3). A DevOps engineer must create policies based on the matching attributes. The policies must minimize administrative effort and must grant each Azure AD user access to only the EC2 instances that are tagged with the user's respective department name.

Which condition key should the DevOps engineer include in the custom permissions policies to meet these requirements?

A.

```
"Condition": {
  "ForAllValues:StringEquals": {
    "aws:TagKeys": ["department"]
  }
}
```

B.

```
"Condition": {
  "StringEquals": {
    "aws:PrincipalTag/department": "$(aws:ResourceTag/department)"
  }
}
```

C.

```
"Condition": {
  "StringEquals": {
    "ec2:ResourceTag/department": "$(aws:PrincipalTag/department)"
  }
}
```

D.

```
"Condition": {
  "ForAllValues:StringEquals": {
    "ec2:ResourceTag/department": ["d1", "d2", "d3"]
  }
}
```

A.

**Answer: C**

**Explanation:**

<https://docs.aws.amazon.com/singlesignon/latest/userguide/configure-abac.html>

#### NEW QUESTION 29

A DevOps team uses AWS CodePipeline, AWS CodeBuild, and AWS CodeDeploy to deploy an application. The application is a REST API that uses AWS Lambda functions and Amazon API Gateway. Recent deployments have introduced errors that have affected many customers.

The DevOps team needs a solution that reverts to the most recent stable version of the application when an error is detected. The solution must affect the fewest customers possible.

Which solution will meet these requirements with the MOST operational efficiency?

- A. Set the deployment configuration in CodeDeploy to LambdaAllAtOnce. Configure automatic rollbacks on the deployment group. Create an Amazon CloudWatch alarm that detects HTTP Bad Gateway errors on API Gateway. Configure the deployment group to roll back when the number of alarms meets the alarm threshold.
- B. Set the deployment configuration in CodeDeploy to LambdaCanary10Percent10Minute.
- C. Configure automatic rollbacks on the deployment group. Create an Amazon CloudWatch alarm that detects HTTP Bad Gateway errors on API Gateway. Configure the deployment group to roll back when the number of alarms meets the alarm threshold.
- D. Set the deployment configuration in CodeDeploy to LambdaAllAtOnce. Configure manual rollbacks on the deployment group.
- E. Create an Amazon Simple Notification Service (Amazon SNS) topic to send notifications every time a deployment fails.
- F. Configure the SNS topic to invoke a new Lambda function that stops the current deployment and starts the most recent successful deployment.
- G. Set the deployment configuration in CodeDeploy to LambdaCanary10Percent10Minutes. Configure manual rollbacks on the deployment group. Create a metric filter on an Amazon CloudWatch log group for API Gateway to monitor HTTP Bad Gateway error.
- H. Configure the metric filter to invoke a new Lambda function that stops the current deployment and starts the most recent successful deployment.

**Answer: B**

**Explanation:**

? Option A is incorrect because setting the deployment configuration to LambdaAllAtOnce means that the new version of the application will be deployed to all Lambda functions at once, affecting all customers. This does not meet the requirement of affecting the fewest customers possible. Moreover, configuring automatic rollbacks on the deployment group is not operationally efficient, as it requires manual intervention to fix the errors and redeploy the application.

? Option B is correct because setting the deployment configuration to LambdaCanary10Percent10Minutes means that the new version of the application will be deployed to 10 percent of the Lambda functions first, and then to the remaining 90 percent after 10 minutes. This minimizes the impact of errors on customers, as only 10 percent of them will be affected by a faulty deployment. Configuring automatic rollbacks on the deployment group also meets the requirement of reverting to the most recent stable version of the application when an error is detected. Creating a CloudWatch alarm that detects HTTP Bad Gateway errors on API Gateway is a valid way to monitor the health of the application and trigger a rollback if needed.

? Option C is incorrect because setting the deployment configuration to LambdaAllAtOnce means that the new version of the application will be deployed to all Lambda functions at once, affecting all customers. This does not meet the requirement of affecting the fewest customers possible. Moreover, configuring manual

rollbacks on the deployment group is not operationally efficient, as it requires human intervention to stop the current deployment and start a new one. Creating an SNS topic to send notifications every time a deployment fails is not sufficient to detect errors in the application, as it does not monitor the API Gateway responses. ? Option D is incorrect because configuring manual rollbacks on the deployment group is not operationally efficient, as it requires human intervention to stop the current deployment and start a new one. Creating a metric filter on a CloudWatch log group for API Gateway to monitor HTTP Bad Gateway errors is a valid way to monitor the health of the application, but invoking a new Lambda function to perform a rollback is unnecessary and complex, as CodeDeploy already provides automatic rollback functionality.

References:

- ? AWS CodeDeploy Deployment Configurations
- ? [AWS CodeDeploy Rollbacks]
- ? Amazon CloudWatch Alarms

### NEW QUESTION 32

A DevOps team is merging code revisions for an application that uses an Amazon RDS Multi-AZ DB cluster for its production database. The DevOps team uses continuous integration to periodically verify that the application works. The DevOps team needs to test the changes before the changes are deployed to the production database.

Which solution will meet these requirements?

- A. Use a buildspec file in AWS CodeBuild to restore the DB cluster from a snapshot of the production database run integration tests, and drop the restored database after verification.
- B. Deploy the application to productio
- C. Configure an audit log of data control language (DCL) operations to capture database activities to perform if verification fails.
- D. Create a snapshot of the DB duster before deploying the application Use the Update requires Replacement property on the DB instance in AWS CloudFormation to deploy the application and apply the changes.
- E. Ensure that the DB cluster is a Multi-AZ deploymen
- F. Deploy the application with the update
- G. Fail over to the standby instance if verification fails.

**Answer:** A

#### Explanation:

This solution will meet the requirements because it will create a temporary copy of the production database using a snapshot, run the integration tests on the copy, and delete the copy after the tests are done. This way, the production database will not be affected by the code revisions, and the DevOps team can test the changes before deploying them to production. A buildspec file is a YAML file that contains the commands and settings that CodeBuild uses to run a build<sup>1</sup>. The buildspec file can specify the steps to restore the DB cluster from a snapshot, run the integration tests, and drop the restored database<sup>2</sup>

### NEW QUESTION 33

A company has multiple development groups working in a single shared AWS account. The Senior Manager of the groups wants to be alerted via a third-party API call when the creation of resources approaches the service limits for the account.

Which solution will accomplish this with the LEAST amount of development effort?

- A. Create an Amazon CloudWatch Event rule that runs periodically and targets an AWS Lambda functio
- B. Within the Lambda function, evaluate the current state of the AWS environment and compare deployed resource values to resource limits on the accoun
- C. Notify the Senior Manager if the account is approaching a service limit.
- D. Deploy an AWS Lambda function that refreshes AWS Trusted Advisor checks, and configure an Amazon CloudWatch Events rule to run the Lambda function periodical
- E. Create another CloudWatch Events rule with an event pattern matching Trusted Advisor events and a target Lambda functio
- F. In the target Lambda function, notify the Senior Manager.
- G. Deploy an AWS Lambda function that refreshes AWS Personal Health Dashboard checks, and configure an Amazon CloudWatch Events rule to run the Lambda function periodical
- H. Create another CloudWatch Events rule with an event pattern matching Personal Health Dashboard events and a target Lambda functio
- I. In the target Lambda function, notify the Senior Manager.
- J. Add an AWS Config custom rule that runs periodically, checks the AWS service limit status, and streams notifications to an Amazon SNS topi
- K. Deploy an AWS Lambda function that notifies the Senior Manager, and subscribe the Lambda function to the SNS topic.

**Answer:** B

#### Explanation:

To meet the requirements, the company needs to create a solution that alerts the Senior Manager when the creation of resources approaches the service limits for the account with the least amount of development effort. The company can use AWS Trusted Advisor, which is a service that provides best practice recommendations for cost optimization, performance, security, and service limits. The company can deploy an AWS Lambda function that refreshes Trusted Advisor checks, and configure an Amazon CloudWatch Events rule to run the Lambda function periodically. This will ensure that Trusted Advisor checks are up to date and reflect the current state of the account. The company can then create another CloudWatch Events rule with an event pattern matching Trusted Advisor events and a target Lambda function. The event pattern can filter for events related to service limit checks and their status. The target Lambda function can notify the Senior Manager via a third-party API call if the event indicates that the account is approaching or exceeding a service limit.

### NEW QUESTION 38

A company's development team uses AVMS Cloud Formation to deploy its application resources The team must use for an changes to the environment The team cannot use AWS Management Console or the AWS CLI to make manual changes directly.

The team uses a developer IAM role to access the environment The role is configured with the Administratoraccess managed policy. The company has created a new Cloudformationdeployment IAM role that has the following policy.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "elasticloadbalancing:*",
        "lambda:*",
        "dynamodb:*"
      ],
      "Resource": "*"
    }
  ]
}
```

The company wants ensure that only CloudFormation can use the new role. The development team cannot make any manual changes to the deployed resources. Which combination of steps meet these requirements? (Select THREE.)

- A. Remove the AdministratorAccess polic
- B. Assign the ReadOnlyAccess managed IAM policy to the developer rol
- C. Instruct the developers to use the CloudFormationDeployment role as a CloudFormation service role when the developers deploy new stacks.
- D. Update the trust of CloudFormationDeployment role to allow the developer IAM role to assume the CloudFormationDepoyment role.
- E. Configure the IAM to be to get and pass the CloudFormationDeployment role if cloudformation actions for resources,
- F. Update the trust Of the CloudFormationDepoyment role to anow the cloudformation.amazonaws.com AWS principal to perform the iam:AssumeR01e action
- G. Remove me Administratoraccess polic
- H. Assign the ReadOnly/Access managed IAM policy to the developer role Instruct the developers to assume the CloudFormatondeployment role when the developers new stacks
- I. Add an IAM policy to CloudFormationDeplyment to allow cloudformation \* on an Add a policy that allows the iam.PassR01e action for ARN of if iam PassedT0Service equal cloudformation.amazonaws.com

**Answer:** ADF

**Explanation:**

A comprehensive and detailed explanation is:

? Option A is correct because removing the AdministratorAccess policy and assigning the ReadOnlyAccess managed IAM policy to the developer role is a valid way to prevent the developers from making any manual changes to the deployed resources. The AdministratorAccess policy grants full access to all AWS resources and actions, which is not necessary for the developers. The ReadOnlyAccess policy grants read-only access to most AWS resources and actions, which is sufficient for the developers to view the status of their stacks. Instructing the developers to use the CloudFormationDeployment role as a CloudFormation service role when they deploy new stacks is also a valid way to ensure that only CloudFormation can use the new role. A CloudFormation service role is an IAM role that allows CloudFormation to make calls to resources in a stack on behalf of the user1. The user can specify a service role when they create or update a stack, and CloudFormation will use that role's credentials for all operations that are performed on that stack1.

? Option B is incorrect because updating the trust of CloudFormationDeployment role to allow the developer IAM role to assume the CloudFormationDeployment role is not a valid solution. This would allow the developers to manually assume the CloudFormationDeployment role and perform actions on the deployed resources, which is not what the company wants. The trust of CloudFormationDeployment role should only allow the cloudformation.amazonaws.com AWS principal to assume the role, as in option D.

? Option C is incorrect because configuring the IAM user to be able to get and pass the CloudFormationDeployment role if cloudformation actions for resources is not a valid solution. This would allow the developers to manually pass the CloudFormationDeployment role to other services or resources, which is not what the company wants. The IAM user should only be able to pass the CloudFormationDeployment role as a service role when they create or update a stack with CloudFormation, as in option A.

? Option D is correct because updating the trust of CloudFormationDeployment role to allow the cloudformation.amazonaws.com AWS principal to perform the iam:AssumeRole action is a valid solution. This allows CloudFormation to assume the CloudFormationDeployment role and access resources in other services on behalf of the user2. The trust policy of an IAM role defines which entities can assume the role2. By specifying cloudformation.amazonaws.com as the principal, you grant permission only to CloudFormation to assume this role.

? Option E is incorrect because instructing the developers to assume the CloudFormationDeployment role when they deploy new stacks is not a valid solution. This would allow the developers to manually assume the CloudFormationDeployment role and perform actions on the deployed resources, which is not what the company wants. The developers should only use the CloudFormationDeployment role as a service role when they deploy new stacks with CloudFormation, as in option A.

? Option F is correct because adding an IAM policy to CloudFormationDeployment that allows cloudformation:\* on all resources and adding a policy that allows the iam:PassRole action for ARN of CloudFormationDeployment if iam:PassedToService equals cloudformation.amazonaws.com are valid solutions. The first policy grants permission for CloudFormationDeployment to perform any action with any resource using cloudformation.amazonaws.com as a service principal3. The second policy grants permission for passing this role only if it is passed by cloudformation.amazonaws.com as a service principal4. This ensures that only CloudFormation can use this role.

References:

- ? 1: AWS CloudFormation service roles
- ? 2: How to use trust policies with IAM roles
- ? 3: AWS::IAM::Policy
- ? 4: IAM: Pass an IAM role to a specific AWS service

**NEW QUESTION 42**

A company provides an application to customers. The application has an Amazon API Gateway REST API that invokes an AWS Lambda function. On initialization, the Lambda function loads a large amount of data from an Amazon DynamoDB table. The data load process results in long cold-start times of 8-10 seconds. The DynamoDB table has DynamoDB Accelerator (DAX) configured.

Customers report that the application intermittently takes a long time to respond to requests. The application receives thousands of requests throughout the day. In

the middle of the day, the application experiences 10 times more requests than at any other time of the day. Near the end of the day, the application's request volume decreases to 10% of its normal total.

A DevOps engineer needs to reduce the latency of the Lambda function at all times of the day.

Which solution will meet these requirements?

- A. Configure provisioned concurrency on the Lambda function with a concurrency value of 1. Delete the DAX cluster for the DynamoDB table.
- B. Configure reserved concurrency on the Lambda function with a concurrency value of 0.
- C. Configure provisioned concurrency on the Lambda function.
- D. Configure AWS Application Auto Scaling on the Lambda function with provisioned concurrency values set to a minimum of 1 and a maximum of 100.
- E. Configure reserved concurrency on the Lambda function.
- F. Configure AWS Application Auto Scaling on the API Gateway API with a reserved concurrency maximum value of 100.

**Answer: C**

**Explanation:**

The following are the steps that the DevOps engineer should take to reduce the latency of the Lambda function at all times of the day:

? Configure provisioned concurrency on the Lambda function.

? Configure AWS Application Auto Scaling on the Lambda function with provisioned concurrency values set to a minimum of 1 and a maximum of 100.

The provisioned concurrency setting ensures that there is always a minimum number of Lambda function instances available to handle requests. The Application Auto Scaling setting will automatically scale the number of Lambda function instances up or down based on the demand for the application.

This solution will ensure that the Lambda function is able to handle the increased load during the middle of the day, while also keeping the cold-start latency low.

The following are the reasons why the other options are not correct:

? Option A is incorrect because it will not reduce the cold-start latency of the Lambda function.

? Option B is incorrect because it will not scale the number of Lambda function instances up or down based on demand.

? Option D is incorrect because it will only configure reserved concurrency on the API Gateway API, which will not affect the Lambda function.

**NEW QUESTION 43**

A company requires its developers to tag all Amazon Elastic Block Store (Amazon EBS) volumes in an account to indicate a desired backup frequency. This requirement includes EBS volumes that do not require backups. The company uses custom tags named Backup\_Frequency that have values of none, daily, or weekly that correspond to the desired backup frequency. An audit finds that developers are occasionally not tagging the EBS volumes.

A DevOps engineer needs to ensure that all EBS volumes always have the Backup\_Frequency tag so that the company can perform backups at least weekly unless a different value is specified.

Which solution will meet these requirements?

- A. Set up AWS Config in the account
- B. Create a custom rule that returns a compliance failure for all Amazon EC2 resources that do not have a Backup Frequency tag applied. Configure a remediation action that uses a custom AWS Systems Manager Automation runbook to apply the Backup\_Frequency tag with a value of weekly.
- C. Set up AWS Config in the account
- D. Use a managed rule that returns a compliance failure for EC2::Volume resources that do not have a Backup Frequency tag applied.
- E. Configure a remediation action that uses a custom AWS Systems Manager Automation runbook to apply the Backup\_Frequency tag with a value of weekly.
- F. Turn on AWS CloudTrail in the account
- G. Create an Amazon EventBridge rule that reacts to EBS CreateVolume event
- H. Configure a custom AWS Systems Manager Automation runbook to apply the Backup\_Frequency tag with a value of weekly.
- I. Specify the runbook as the target of the rule.
- J. Turn on AWS CloudTrail in the account
- K. Create an Amazon EventBridge rule that reacts to EBS CreateVolume events or EBS ModifyVolume event
- L. Configure a custom AWS Systems Manager Automation runbook to apply the Backup\_Frequency tag with a value of weekly.
- M. Specify the runbook as the target of the rule.

**Answer: B**

**Explanation:**

The following are the steps that the DevOps engineer should take to ensure that all EBS volumes always have the Backup\_Frequency tag so that the company can perform backups at least weekly unless a different value is specified:

? Set up AWS Config in the account.

? Use a managed rule that returns a compliance failure for EC2::Volume resources that do not have a Backup Frequency tag applied.

? Configure a remediation action that uses a custom AWS Systems Manager Automation runbook to apply the Backup\_Frequency tag with a value of weekly.

The managed rule AWS::Config::EBSVolumesWithoutBackupTag will return a compliance failure for any EBS volume that does not have the Backup\_Frequency tag applied. The remediation action will then use the Systems Manager Automation runbook to apply the Backup\_Frequency tag with a value of weekly to the EBS volume.

**NEW QUESTION 48**

A company is running an application on Amazon EC2 instances in an Auto Scaling group. Recently an issue occurred that prevented EC2 instances from launching successfully and it took several hours for the support team to discover the issue. The support team wants to be notified by email whenever an EC2 instance does not start successfully.

Which action will accomplish this?

- A. Add a health check to the Auto Scaling group to invoke an AWS Lambda function whenever an instance status is impaired.
- B. Configure the Auto Scaling group to send a notification to an Amazon SNS topic whenever a failed instance launch occurs.
- C. Create an Amazon CloudWatch alarm that invokes an AWS Lambda function when a failed AttachInstances Auto Scaling API call is made.
- D. Create a status check alarm on Amazon EC2 to send a notification to an Amazon SNS topic whenever a status check fail occurs.

**Answer: B**

**Explanation:**

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/ASGettingNotifications.html#auto-scaling-sns-notifications>

**NEW QUESTION 50**

An IT team has built an AWS CloudFormation template so others in the company can quickly and reliably deploy and terminate an application. The template creates an Amazon EC2 instance with a user data script to install the application and an Amazon S3 bucket that the application uses to serve static webpages.

while it is running.

All resources should be removed when the CloudFormation stack is deleted. However, the team observes that CloudFormation reports an error during stack deletion, and the S3 bucket created by the stack is not deleted.

How can the team resolve the error in the MOST efficient manner to ensure that all resources are deleted without errors?

- A. Add a DeletionPolicy attribute to the S3 bucket resource, with the value Delete forcing the bucket to be removed when the stack is deleted.
- B. Add a custom resource with an AWS Lambda function with the DependsOn attribute specifying the S3 bucket, and an IAM role
- C. Write the Lambda function to delete all objects from the bucket when RequestType is Delete.
- D. Identify the resource that was not deleted
- E. Manually empty the S3 bucket and then delete it.
- F. Replace the EC2 and S3 bucket resources with a single AWS OpsWorks Stacks resource
- G. Define a custom recipe for the stack to create and delete the EC2 instance and the S3 bucket.

**Answer: B**

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/cloudformation-s3-custom-resources/>

#### NEW QUESTION 55

A company runs its container workloads in AWS App Runner. A DevOps engineer manages the company's container repository in Amazon Elastic Container Registry (Amazon ECR).

The DevOps engineer must implement a solution that continuously monitors the container repository. The solution must create a new container image when the solution detects an operating system vulnerability or language package vulnerability.

Which solution will meet these requirements?

- A. Use EC2 Image Builder to create a container image pipeline
- B. Use Amazon ECR as the target repository
- C. Turn on enhanced scanning on the ECR repository
- D. Create an Amazon EventBridge rule to capture an Inspector2 finding event
- E. Use the event to invoke the image pipeline
- F. Re-upload the container to the repository.
- G. Use EC2 Image Builder to create a container image pipeline
- H. Use Amazon ECR as the target repository
- I. Enable Amazon GuardDuty Malware Protection on the container workload
- J. Create an Amazon EventBridge rule to capture a GuardDuty finding event
- K. Use the event to invoke the image pipeline.
- L. Create an AWS CodeBuild project to create a container image
- M. Use Amazon ECR as the target repository
- N. Turn on basic scanning on the repository
- O. Create an Amazon EventBridge rule to capture an ECR image action event
- P. Use the event to invoke the CodeBuild project
- Q. Re-upload the container to the repository.
- R. Create an AWS CodeBuild project to create a container image
- S. Use Amazon ECR as the target repository
- T. Configure AWS Systems Manager Compliance to scan all managed nodes
- U. Create an Amazon EventBridge rule to capture a configuration compliance state change event
- V. Use the event to invoke the CodeBuild project.

**Answer: A**

**Explanation:**

The solution that meets the requirements is to use EC2 Image Builder to create a container image pipeline, use Amazon ECR as the target repository, turn on enhanced scanning on the ECR repository, create an Amazon EventBridge rule to capture an Inspector2 finding event, and use the event to invoke the image pipeline. Re-upload the container to the repository.

This solution will continuously monitor the container repository for vulnerabilities using enhanced scanning, which is a feature of Amazon ECR that provides detailed information and guidance on how to fix security issues found in your container images. Enhanced scanning uses Inspector2, a security assessment service that integrates with Amazon ECR and generates findings for any vulnerabilities detected in your images. You can use Amazon EventBridge to create a rule that triggers an action when an Inspector2 finding event occurs. The action can be to invoke an EC2 Image Builder pipeline, which is a service that automates the creation of container images. The pipeline can use the latest patches and updates to build a new container image and upload it to the same ECR repository, replacing the vulnerable image.

The other options are not correct because they do not meet all the requirements or use services that are not relevant for the scenario.

Option B is not correct because it uses Amazon GuardDuty Malware Protection, which is a feature of GuardDuty that detects malicious activity and unauthorized behavior on your AWS accounts and resources. GuardDuty does not scan container images for vulnerabilities, nor does it integrate with Amazon ECR or EC2 Image Builder.

Option C is not correct because it uses basic scanning on the ECR repository, which only provides a summary of the vulnerabilities found in your container images. Basic scanning does not use Inspector2 or generate findings that can be captured by Amazon EventBridge. Moreover, basic scanning does not provide guidance on how to fix the vulnerabilities.

Option D is not correct because it uses AWS Systems Manager Compliance, which is a feature of Systems Manager that helps you monitor and manage the compliance status of your AWS resources based on AWS Config rules and AWS Security Hub standards. Systems Manager Compliance does not scan container images for vulnerabilities, nor does it integrate with Amazon ECR or EC2 Image Builder.

#### NEW QUESTION 57

To run an application, a DevOps engineer launches an Amazon EC2 instance with public IP addresses in a public subnet. A user data script obtains the application artifacts and installs them on the instances upon launch. A change to the security classification of the application now requires the instances to run with no access to the internet. While the instances launch successfully and show as healthy, the application does not seem to be installed.

Which of the following should successfully install the application while complying with the new rule?

- A. Launch the instances in a public subnet with Elastic IP addresses attached
- B. Once the application is installed and running, run a script to disassociate the Elastic IP addresses afterwards.
- C. Set up a NAT gateway
- D. Deploy the EC2 instances to a private subnet

- E. Update the private subnet's route table to use the NAT gateway as the default route.
- F. Publish the application artifacts to an Amazon S3 bucket and create a VPC endpoint for S3. Assign an IAM instance profile to the EC2 instances so they can read the application artifacts from the S3 bucket.
- G. Create a security group for the application instances and allow only outbound traffic to the artifact repository
- H. Remove the security group rule once the install is complete.

**Answer:** C

**Explanation:**

EC2 instances running in private subnets of a VPC can now have controlled access to S3 buckets, objects, and API functions that are in the same region as the VPC. You can use an S3 bucket policy to indicate which VPCs and which VPC Endpoints have access to your S3 buckets 1-  
<https://aws.amazon.com/pt/blogs/aws/new-vpc-endpoint-for-amazon-s3/>

**NEW QUESTION 62**

A company is implementing AWS CodePipeline to automate its testing process. The company wants to be notified when the execution state fails and used the following custom event pattern in Amazon EventBridge:

```
{
  "source": [
    "aws.codepipeline"
  ],
  "detail-type": [
    "CodePipeline Action Execution State Change"
  ],
  "detail": {
    "state": [
      "FAILED"
    ]
  },
  "type": {
    "category": ["Approval"]
  }
}
```

Which type of events will match this event pattern?

- A. Failed deploy and build actions across all the pipelines
- B. All rejected or failed approval actions across all the pipelines
- C. All the events across all pipelines
- D. Approval actions across all the pipelines

**Answer:** B

**Explanation:**

Action-level states in events

Action state	Description
STARTED	The action is currently running.
SUCCEEDED	The action was completed successfully.
FAILED	For Approval actions, the FAILED state means the action was either rejected by the reviewer or failed due to an incorrect action configuration.
CANCELED	The action was canceled because the pipeline structure was updated.

**NEW QUESTION 65**

A company has its AWS accounts in an organization in AWS Organizations. AWS Config is manually configured in each AWS account. The company needs to implement a solution to centrally configure AWS Config for all accounts in the organization. The solution also must record resource changes to a central account. Which combination of actions should a DevOps engineer perform to meet these requirements? (Choose two.)

- A. Configure a delegated administrator account for AWS Config
- B. Enable trusted access for AWS Config in the organization.
- C. Configure a delegated administrator account for AWS Config
- D. Create a service-linked role for AWS Config in the organization's management account.
- E. Create an AWS CloudFormation template to create an AWS Config aggregator
- F. Configure a CloudFormation stack set to deploy the template to all accounts in the organization.
- G. Create an AWS Config organization aggregator in the organization's management account
- H. Configure data collection from all AWS accounts in the organization and from all AWS Regions.
- I. Create an AWS Config organization aggregator in the delegated administrator account
- J. Configure data collection from all AWS accounts in the organization and from all AWS Regions.

**Answer:** AE

**Explanation:**

<https://aws.amazon.com/blogs/mt/org-aggregator-delegated-admin/> <https://docs.aws.amazon.com/organizations/latest/userguide/services-that-can-integrate-config.html>

**NEW QUESTION 69**

A company needs to ensure that flow logs remain configured for all existing and new VPCs in its AWS account. The company uses an AWS CloudFormation stack

to manage its VPCs. The company needs a solution that will work for any VPCs that any IAM user creates. Which solution will meet these requirements?

- A. Add the resource to the CloudFormation stack that creates the VPCs.
- B. Create an organization in AWS Organization
- C. Add the company's AWS account to the organization
- D. Create an SCP to prevent users from modifying VPC flow logs.
- E. Turn on AWS Config
- F. Create an AWS Config rule to check whether VPC flow logs are turned on
- G. Configure automatic remediation to turn on VPC flow logs.
- H. Create an IAM policy to deny the use of API calls for VPC flow logs
- I. Attach the IAM policy to all IAM users.

**Answer: C**

**Explanation:**

To meet the requirements of ensuring that flow logs remain configured for all existing and new VPCs in the AWS account, the company should use AWS Config and automatic remediation. AWS Config is a service that enables customers to assess, audit, and evaluate the configurations of their AWS resources. AWS Config continuously monitors and records the configuration changes of the AWS resources and evaluates them against desired configurations. Customers can use AWS Config rules to define the desired configuration state of their AWS resources and trigger actions when a resource configuration violates a rule.

One of the AWS Config rules that customers can use is `vpc-flow-logs-enabled`, which checks whether VPC flow logs are enabled for all VPCs in an AWS account. Customers can also configure automatic remediation for this rule, which means that AWS Config will automatically enable VPC flow logs for any VPCs that do not have them enabled. Customers can specify the destination (CloudWatch Logs or S3) and the traffic type (all, accept, or reject) for the flow logs as remediation parameters. By using AWS Config and automatic remediation, the company can ensure that flow logs remain configured for all existing and new VPCs in its AWS account, regardless of who creates them or how they are created.

The other options are not correct because they do not meet the requirements or follow best practices. Adding the resource to the CloudFormation stack that creates the VPCs is not a sufficient solution because it will only work for VPCs that are created by using the CloudFormation stack. It will not work for VPCs that are created by using other methods, such as the console or the API. Creating an organization in AWS Organizations and creating an SCP to prevent users from modifying VPC flow logs is not a good solution because it will not ensure that flow logs are enabled for all VPCs in the first place. It will only prevent users from disabling or changing flow logs after they are enabled. Creating an IAM policy to deny the use of API calls for VPC flow logs and attaching it to all IAM users is not a valid solution because it will prevent users from enabling or disabling flow logs at all.

It will also not work for VPCs that are created by using other methods, such as the console or CloudFormation.

References:

- ? 1: AWS::EC2::FlowLog - AWS CloudFormation
- ? 2: Amazon VPC Flow Logs extends CloudFormation Support to custom format subscriptions, 1-minute aggregation intervals and tagging
- ? 3: Logging IP traffic using VPC Flow Logs - Amazon Virtual Private Cloud
- ? : About AWS Config - AWS Config
- ? : `vpc-flow-logs-enabled` - AWS Config
- ? : Remediate Noncompliant Resources with AWS Config Rules - AWS Config

**NEW QUESTION 74**

A DevOps engineer is building a continuous deployment pipeline for a serverless application that uses AWS Lambda functions. The company wants to reduce the customer impact of an unsuccessful deployment. The company also wants to monitor for issues.

Which deploy stage configuration will meet these requirements?

- A. Use an AWS Serverless Application Model (AWS SAM) template to define the serverless application
- B. Use AWS CodeDeploy to deploy the Lambda functions with the Canary10Percent15Minutes Deployment Preference Type
- C. Use Amazon CloudWatch alarms to monitor the health of the functions.
- D. Use AWS CloudFormation to publish a new stack update, and include Amazon CloudWatch alarms on all resources
- E. Set up an AWS CodePipeline approval action for a developer to verify and approve the AWS CloudFormation change set.
- F. Use AWS CloudFormation to publish a new version on every stack update, and include Amazon CloudWatch alarms on all resources
- G. Use the `RoutingConfig` property of the `AWS::Lambda::Alias` resource to update the traffic routing during the stack update.
- H. Use AWS CodeBuild to add sample event payloads for testing to the Lambda function
- I. Publish a new version of the functions, and include Amazon CloudWatch alarm
- J. Update the production alias to point to the new version
- K. Configure rollbacks to occur when an alarm is in the ALARM state.

**Answer: D**

**Explanation:**

Use routing configuration on an alias to send a portion of traffic to a second function version. For example, you can reduce the risk of deploying a new version by configuring the alias to send most of the traffic to the existing version, and only a small percentage of traffic to the new version.

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

The following are the steps involved in the deploy stage configuration that will meet the requirements:

- ? Use AWS CodeBuild to add sample event payloads for testing to the Lambda functions.
- ? Publish a new version of the functions, and include Amazon CloudWatch alarms.
- ? Update the production alias to point to the new version.
- ? Configure rollbacks to occur when an alarm is in the ALARM state.

This configuration will help to reduce the customer impact of an unsuccessful deployment

by deploying the new version of the functions to a staging environment first. This will allow the DevOps engineer to test the new version of the functions before deploying it to production.

The configuration will also help to monitor for issues by including Amazon CloudWatch alarms. These alarms will alert the DevOps engineer if there are any problems with the new version of the functions.

**NEW QUESTION 77**

A company is performing vulnerability scanning for all Amazon EC2 instances across many accounts. The accounts are in an organization in AWS Organizations. Each account's VPCs are attached to a shared transit gateway. The VPCs send traffic to the internet through a central egress VPC. The company has enabled Amazon Inspector in a delegated administrator account and has enabled scanning for all member accounts.

A DevOps engineer discovers that some EC2 instances are listed in the "not scanning" tab in Amazon Inspector.

Which combination of actions should the DevOps engineer take to resolve this issue? (Choose three.)

- A. Verify that AWS Systems Manager Agent is installed and is running on the EC2 instances that Amazon Inspector is not scanning.
- B. Associate the target EC2 instances with security groups that allow outbound communication on port 443 to the AWS Systems Manager service endpoint.
- C. Grant inspector: StartAssessmentRun permissions to the IAM role that the DevOps engineer is using.
- D. Configure EC2 Instance Connect for the EC2 instances that Amazon Inspector is not scanning.
- E. Associate the target EC2 instances with instance profiles that grant permissions to communicate with AWS Systems Manager.
- F. Create a managed-instance activation code.
- G. Use the Activation Code and the Activation ID to register the EC2 instances.

**Answer:** ABE

**Explanation:**

<https://docs.aws.amazon.com/inspector/latest/user/scanning-ec2.html>

**NEW QUESTION 80**

A company uses an organization in AWS Organizations that has all features enabled. The company uses AWS Backup in a primary account and uses an AWS Key Management Service (AWS KMS) key to encrypt the backups.

The company needs to automate a cross-account backup of the resources that AWS Backup backs up in the primary account. The company configures cross-account backup in the Organizations management account. The company creates a new AWS account in the organization and configures an AWS Backup backup vault in the new account. The company creates a KMS key in the new account to encrypt the backups. Finally, the company configures a new backup plan in the primary account. The destination for the new backup plan is the backup vault in the new account.

When the AWS Backup job in the primary account is invoked, the job creates backups in the primary account. However, the backups are not copied to the new account's backup vault.

Which combination of steps must the company take so that backups can be copied to the new account's backup vault? (Select TWO.)

- A. Edit the backup vault access policy in the new account to allow access to the primary account.
- B. Edit the backup vault access policy in the primary account to allow access to the new account.
- C. Edit the backup vault access policy in the primary account to allow access to the KMS key in the new account.
- D. Edit the key policy of the KMS key in the primary account to share the key with the new account.
- E. Edit the key policy of the KMS key in the new account to share the key with the primary account.

**Answer:** AE

**Explanation:**

To enable cross-account backup, the company needs to grant permissions to both the backup vault and the KMS key in the destination account. The backup vault access policy in the destination account must allow the primary account to copy backups into the vault. The key policy of the KMS key in the destination account must allow the primary account to use the key to encrypt and decrypt the backups. These steps are described in the AWS documentation<sup>12</sup>. Therefore, the correct answer is A and E.

References:

? 1: Creating backup copies across AWS accounts - AWS Backup

? 2: Using AWS Backup with AWS Organizations - AWS Backup

**NEW QUESTION 81**

A company is hosting a web application in an AWS Region. For disaster recovery purposes, a second region is being used as a standby. Disaster recovery requirements state that session data must be replicated between regions in near-real time and 1% of requests should route to the secondary region to continuously verify system functionality. Additionally, if there is a disruption in service in the main region, traffic should be automatically routed to the secondary region, and the secondary region must be able to scale up to handle all traffic.

How should a DevOps engineer meet these requirements?

- A. In both regions, deploy the application on AWS Elastic Beanstalk and use Amazon DynamoDB global tables for session data.
- B. Use an Amazon Route 53 weighted routing policy with health checks to distribute the traffic across the regions.
- C. In both regions, launch the application in Auto Scaling groups and use DynamoDB for session data.
- D. Use a Route 53 failover routing policy with health checks to distribute the traffic across the regions.
- E. In both regions, deploy the application in AWS Lambda, exposed by Amazon API Gateway, and use Amazon RDS for PostgreSQL with cross-region replication for session data.
- F. Deploy the web application with client-side logic to call the API Gateway directly.
- G. In both regions, launch the application in Auto Scaling groups and use DynamoDB global tables for session data.
- H. Enable an Amazon CloudFront weighted distribution across region.
- I. Point the Amazon Route 53 DNS record at the CloudFront distribution.

**Answer:** D

**NEW QUESTION 85**

A highly regulated company has a policy that DevOps engineers should not log in to their Amazon EC2 instances except in emergencies. If a DevOps engineer does log in, the security team must be notified within 15 minutes of the occurrence.

Which solution will meet these requirements?

- A. Install the Amazon Inspector agent on each EC2 instance. Subscribe to Amazon EventBridge notifications. Invoke an AWS Lambda function to check if a message is about user logins. If it is, send a notification to the security team using Amazon SNS.
- B. Install the Amazon CloudWatch agent on each EC2 instance. Configure the agent to push all logs to Amazon CloudWatch Logs and set up a CloudWatch metric filter that searches for user login.
- C. If a login is found, send a notification to the security team using Amazon SNS.
- D. Set up AWS CloudTrail with Amazon CloudWatch Log.
- E. Subscribe CloudWatch Logs to Amazon Kinesis. Attach AWS Lambda to Kinesis to parse and determine if a log contains a user login. If it does, send a notification to the security team using Amazon SNS.
- F. Set up a script on each Amazon EC2 instance to push all logs to Amazon S3. Set up an S3 event to invoke an AWS Lambda function which invokes an Amazon Athena query to run.
- G. The Athena query checks for logins and sends the output to the security team using Amazon SNS.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/blogs/security/how-to-monitor-and-visualize-failed-ssh-access-attempts-to-amazon-ec2-linux-instances/>

**NEW QUESTION 89**

A company uses AWS CodeArtifact to centrally store Python packages. The CodeArtifact repository is configured with the following repository policy.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Action": [
        "codeartifact:DescribePackageVersion",
        "codeartifact:DescribeRepository",
        "codeartifact:GetPackageVersionReadme",
        "codeartifact:GetRepositoryEndpoint",
        "codeartifact:ListPackageVersionAssets",
        "codeartifact:ListPackageVersionDependencies",
        "codeartifact:ListPackageVersions",
        "codeartifact:ListPackages",
        "codeartifact:ReadFromRepository"
      ],
      "Effect": "Allow",
      "Resource": "*",
      "Principal": "*",
      "Condition": {
        "StringEquals": {
          "aws:PrincipalOrgID": [
            "o-xxxxxxxxxxxx"
          ]
        }
      }
    }
  ]
}
```

A development team is building a new project in an account that is in an organization in AWS Organizations. The development team wants to use a Python library that has already been stored in the CodeArtifact repository in the organization. The development team uses AWS CodePipeline and AWS CodeBuild to build the new application. The CodeBuild job that the development team uses to build the application is configured to run in a VPC. Because of compliance requirements the VPC has no internet connectivity.

The development team creates the VPC endpoints for CodeArtifact and updates the CodeBuild buildspec yml file. However, the development team cannot download the Python library from the repository.

Which combination of steps should a DevOps engineer take so that the development team can use Code Artifact? (Select TWO.)

- A. Create an Amazon S3 gateway endpoint. Update the route tables for the subnets that are running the CodeBuild job.
- B. Update the repository policy's Principal statement to include the ARN of the role that the CodeBuild project uses.
- C. Share the CodeArtifact repository with the organization by using AWS Resource Access Manager (AWS RAM).
- D. Update the role that the CodeBuild project uses so that the role has sufficient permissions to use the CodeArtifact repository.
- E. Specify the account that hosts the repository as the delegated administrator for CodeArtifact in the organization.

**Answer:** AD

**Explanation:**

"AWS CodeArtifact operates in multiple Availability Zones and stores artifact data and metadata in Amazon S3 and Amazon DynamoDB. Your encrypted data is redundantly stored across multiple facilities and multiple devices in each facility, making it highly available and highly durable."

<https://aws.amazon.com/codeartifact/features/> With no internet connectivity, a gateway endpoint becomes necessary to access S3.

**NEW QUESTION 94**

A DevOps engineer has implemented a CI/CO pipeline to deploy an AWS CloudFormation template that provisions a web application. The web application consists of an Application Load Balancer (ALB), a target group, a launch template that uses an Amazon Linux 2 AMI, an Auto Scaling group of Amazon EC2 instances, a security group, and an Amazon RDS for MySQL database. The launch template includes user data that specifies a script to install and start the application.

The initial deployment of the application was successful. The DevOps engineer made changes to update the version of the application with the user data. The CI/CD pipeline has deployed a new version of the template. However, the health checks on the ALB are now failing. The health checks have marked all targets as unhealthy.

During investigation, the DevOps engineer notices that the CloudFormation stack has a status of UPDATE\_COMPLETE. However, when the DevOps engineer connects to one of the EC2 instances and checks /var/log messages, the DevOps engineer notices that the Apache web server failed to start successfully because of a configuration error.

How can the DevOps engineer ensure that the CloudFormation deployment will fail if the user data fails to successfully finish running?

- A. Use the cfn-signal helper script to signal success or failure to CloudFormation. Use the WaitOnResourceSignals update policy within the CloudFormation template. Set an appropriate timeout for the update policy.
- B. Create an Amazon CloudWatch alarm for the UnhealthyHostCount metric.
- C. Include an appropriate alarm threshold for the target group. Create an Amazon Simple Notification Service (Amazon SNS) topic as the target to signal success or failure to CloudFormation.
- D. Create a lifecycle hook on the Auto Scaling group by using the AWS AutoScaling LifecycleHook resource. Create an Amazon Simple Notification Service (Amazon SNS) topic as the target to signal success or failure to CloudFormation. Set an appropriate timeout on the lifecycle hook.

E. Use the Amazon CloudWatch agent to stream the cloud-init logs Create a subscription filter that includes an AWS Lambda function with an appropriate invocation timeout Configure the Lambda function to use the SignalResource API operation to signal success or failure to CloudFormation.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-attribute-updatepolicy.html>

#### NEW QUESTION 95

A company wants to use a grid system for a proprietary enterprise m-memory data store on top of AWS. This system can run in multiple server nodes in any Linux-based distribution. The system must be able to reconfigure the entire cluster every time a node is added or removed. When adding or removing nodes an `/etc./cluster/nodes` config file must be updated listing the IP addresses of the current node members of that cluster.

The company wants to automate the task of adding new nodes to a cluster. What can a DevOps engineer do to meet these requirements?

- A. Use AWS OpsWorks Stacks to layer the server nodes of that cluste
- B. Create a Chef recipe that populates the content of the `'etc./cluster/nodes` config file and restarts the service by using the current members of the laye
- C. Assign that recipe to the Configure lifecycle event.
- D. Put the file nodes config in version contro
- E. Create an AWS CodeDeploy deployment configuration and deployment group based on an Amazon EC2 tag value for thecluster node
- F. When adding a new node to the cluster update the file with all tagged instances and make a commit in version contro
- G. Deploy the new file and restart the services.
- H. Create an Amazon S3 bucket and upload a version of the `/etc./cluster/nodes` config file Create a crontab script that will poll for that S3 file and download it frequentl
- I. Use a process manager such as Monit or system, to restart the cluster services when it detects that the new file was modifie
- J. When adding a node to the cluster edit the file's most recent members Upload the new file to the S3 bucket.
- K. Create a user data script that lists all members of the current security group of the cluster and automatically updates the `/etc/cluster/.` nodes confi
- L. Tile whenever a new instance is added to the cluster.

**Answer:** A

**Explanation:**

You can run custom recipes manually, but the best approach is usually to have AWS OpsWorks Stacks run them automatically. Every layer has a set of built-in recipes assigned each of five lifecycle events—Setup, Configure, Deploy, Undeploy, and Shutdown. Each time an event occurs for an instance, AWS OpsWorks Stacks runs the associated recipes for each of the instance's layers, which handle the corresponding tasks. For example, when an instance finishes booting, AWS OpsWorks Stacks triggers a Setup event. This event runs the associated layer's Setup recipes, which typically handle tasks such as installing and configuring packages

#### NEW QUESTION 98

A development team wants to use AWS CloudFormation stacks to deploy an application. However, the developer IAM role does not have the required permissions to provision the resources that are specified in the AWS CloudFormation template. A DevOps engineer needs to implement a solution that allows the developers to deploy the stacks. The solution must follow the principle of least privilege.

Which solution will meet these requirements?

- A. Create an IAM policy that allows the developers to provision the required resource
- B. Attach the policy to the developer IAM role.
- C. Create an IAM policy that allows full access to AWS CloudFormatio
- D. Attach the policy to the developer IAM role.
- E. Create an AWS CloudFormation service role that has the required permission
- F. Grant the developer IAM role a `cloudformation:* actio`
- G. Use the new service role during stack deployments.
- H. Create an AWS CloudFormation service role that has the required permission
- I. Grant the developer IAM role the `iam:PassRole` permissio
- J. Use the new service role during stack deployments.

**Answer:** D

**Explanation:**

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

#### NEW QUESTION 101

A company builds a container image in an AWS CodeBuild project by running Docker commands. After the container image is built, the CodeBuild project uploads the container image to an Amazon S3 bucket. The CodeBuild project has an IAM service role that has permissions to access the S3 bucket.

A DevOps engineer needs to replace the S3 bucket with an Amazon Elastic Container Registry (Amazon ECR) repository to store the container images. The DevOps engineer creates an ECR private image repository in the same AWS Region of the CodeBuild project. The DevOps engineer adjusts the IAM service role with the permissions that are necessary to work with the new ECR repository. The DevOps engineer also places new repository information into the `docker build` command and the `docker push` command that are used in the `buildspec.yml` file.

When the CodeBuild project runs a build job, the job fails when the job tries to access the ECR repository.

Which solution will resolve the issue of failed access to the ECR repository?

- A. Update the `buildspec.yml` file to log in to the ECR repository by using the `aws ecr get-login-password` AWS CLI command to obtain an authentication toke
- B. Update the `docker login` command to use the authentication token to access the ECR repository.
- C. Add an environment variable of type `SECRETS_MANAGER` to the CodeBuild projec
- D. In the environment variable, include the ARN of the CodeBuild project's IAM service rol
- E. Update the `buildspec.yml` file to use the new environment variable to log in with the `docker login` command to access the ECR repository.
- F. Update the ECR repository to be a public image repositor
- G. Add an ECR repository policy that allows the IAM service role to have access.
- H. Update the `buildspec.yml` file to use the AWS CLI to assume the IAM service role for ECR operation
- I. Add an ECR repository policy that allows the IAM service role to have access.

**Answer:** A

**Explanation:**

Update the buildspec.yml file to log in to the ECR repository by using the aws ecr get-login- password AWS CLI command to obtain an authentication token. Update the docker login command to use the authentication token to access the ECR repository. This is the correct solution. The aws ecr get-login-password AWS CLI command retrieves and displays an authentication token that can be used to log in to an ECR repository. The docker login command can use this token as a password to authenticate with the ECR repository. This way, the CodeBuild project can push and pull images from the ECR repository without any errors. For more information, see Using Amazon ECR with the AWS CLI and get-login-password.

**NEW QUESTION 106**

AnyCompany is using AWS Organizations to create and manage multiple AWS accounts AnyCompany recently acquired a smaller company, Example Corp. During the acquisition process, Example Corp's single AWS account joined AnyCompany's management account through an Organizations invitation. AnyCompany moved the new member account under an OU that is dedicated to Example Corp. AnyCompany's DevOps engineer has an IAM user that assumes a role that is named OrganizationAccountAccessRole to access member accounts. This role is configured with a full access policy When the DevOps engineer tries to use the AWS Management Console to assume the role in Example Corp's new member account, the DevOps engineer receives the following error message "Invalid information in one or more fields. Check your information or contact your administrator."

Which solution will give the DevOps engineer access to the new member account?

- A. In the management account, grant the DevOps engineer's IAM user permission to assume the OrganizationAccountAccessRole IAM role in the new member account.
- B. In the management account, create a new SCP In the SCP, grant the DevOps engineer's IAM user full access to all resources in the new member account
- C. Attach the SCP to the OU that contains the new member account,
- D. In the new member account, create a new IAM role that is named OrganizationAccountAccessRole
- E. Attach the AdministratorAccess AWS managed policy to the role
- F. In the role's trust policy, grant the management account permission to assume the role.
- G. In the new member account edit the trust policy for the OrganizationAccountAccessRole IAM role
- H. Grant the management account permission to assume the role.

**Answer: C**

**Explanation:**

The problem is that the DevOps engineer cannot assume the OrganizationAccountAccessRole IAM role in the new member account that joined AnyCompany's management account through an Organizations invitation. The solution is to create a new IAM role with the same name and trust policy in the new member account.

- ? Option A is incorrect, as it does not address the root cause of the error. The DevOps engineer's IAM user already has permission to assume the OrganizationAccountAccessRole IAM role in any member account, as this is the default role name that AWS Organizations creates when a new account joins an organization. The error occurs because the new member account does not have this role, as it was not created by AWS Organizations.
- ? Option B is incorrect, as it does not address the root cause of the error. An SCP is a policy that defines the maximum permissions for account members of an organization or organizational unit (OU). An SCP does not grant permissions to IAM users or roles, but rather limits the permissions that identity-based policies or resource-based policies grant to them. An SCP also does not affect how IAM roles are assumed by other principals.
- ? Option C is correct, as it addresses the root cause of the error. By creating a new IAM role with the same name and trust policy as the OrganizationAccountAccessRole IAM role in the new member account, the DevOps engineer can assume this role and access the account. The new role should have the AdministratorAccess AWS managed policy attached, which grants full access to all AWS resources in the account. The trust policy should allow the management account to assume the role, which can be done by specifying the management account ID as a principal in the policy statement.
- ? Option D is incorrect, as it assumes that the new member account already has the OrganizationAccountAccessRole IAM role, which is not true. The new member account does not have this role, as it was not created by AWS Organizations. Editing the trust policy of a non-existent role will not solve the problem.

**NEW QUESTION 108**

A company must encrypt all AMIs that the company shares across accounts. A DevOps engineer has access to a source account where an unencrypted custom AMI has been built. The DevOps engineer also has access to a target account where an Amazon EC2 Auto Scaling group will launch EC2 instances from the AMI. The DevOps engineer must share the AMI with the target account. The company has created an AWS Key Management Service (AWS KMS) key in the source account. Which additional steps should the DevOps engineer perform to meet the requirements? (Choose three.)

- A. In the source account, copy the unencrypted AMI to an encrypted AMI
- B. Specify the KMS key in the copy action.
- C. In the source account, copy the unencrypted AMI to an encrypted AMI
- D. Specify the default Amazon Elastic Block Store (Amazon EBS) encryption key in the copy action.
- E. In the source account, create a KMS grant that delegates permissions to the Auto Scaling group service-linked role in the target account.
- F. In the source account, modify the key policy to give the target account permissions to create a grant
- G. In the target account, create a KMS grant that delegates permissions to the Auto Scaling group service-linked role.
- H. In the source account, share the unencrypted AMI with the target account.
- I. In the source account, share the encrypted AMI with the target account.

**Answer: ADF**

**Explanation:**

The Auto Scaling group service-linked role must have a specific grant in the source account in order to decrypt the encrypted AMI. This is because the service-linked role does not have permissions to assume the default IAM role in the source account. The following steps are required to meet the requirements:

- ? In the source account, copy the unencrypted AMI to an encrypted AMI. Specify the KMS key in the copy action.
- ? In the source account, create a KMS grant that delegates permissions to the Auto Scaling group service-linked role in the target account.
- ? In the source account, share the encrypted AMI with the target account.
- ? In the target account, attach the KMS grant to the Auto Scaling group service-linked role.

The first three steps are the same as the steps that I described earlier. The fourth step is required to grant the Auto Scaling group service-linked role permissions to decrypt the AMI in the target account.

**NEW QUESTION 111**

A company uses AWS Secrets Manager to store a set of sensitive API keys that an AWS Lambda function uses. When the Lambda function is invoked, the Lambda function retrieves the API keys and makes an API call to an external service. The Secrets Manager secret is encrypted with the default AWS Key Management Service (AWS KMS) key.

A DevOps engineer needs to update the infrastructure to ensure that only the Lambda function's execution role can access the values in Secrets Manager. The solution must apply the principle of least privilege.

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

- A. Update the default KMS key for Secrets Manager to allow only the Lambda function's execution role to decrypt.
- B. Create a KMS customer managed key that trusts Secrets Manager and allows the Lambda function's execution role to decrypt.
- C. Update Secrets Manager to use the new customer managed key.
- D. Create a KMS customer managed key that trusts Secrets Manager and allows the account's :root principal to decrypt.
- E. Update Secrets Manager to use the new customer managed key.
- F. Ensure that the Lambda function's execution role has the KMS permissions scoped on the resource level.
- G. Configure the permissions so that the KMS key can encrypt the Secrets Manager secret.
- H. Remove all KMS permissions from the Lambda function's execution role.

**Answer:** BD

**Explanation:**

The requirement is to update the infrastructure to ensure that only the Lambda function's execution role can access the values in Secrets Manager. The solution must apply the principle of least privilege, which means granting the minimum permissions necessary to perform a task.

To do this, the DevOps engineer needs to use the following steps:

? Create a KMS customer managed key that trusts Secrets Manager and allows the Lambda function's execution role to decrypt. A customer managed key is a symmetric encryption key that is fully managed by the customer. The customer can define the key policy, which specifies who can use and manage the key. By creating a customer managed key, the DevOps engineer can restrict the decryption permission to only the Lambda function's execution role, and prevent other principals from accessing the secret values. The customer managed key also needs to trust Secrets Manager, which means allowing Secrets Manager to use the key to encrypt and decrypt secrets on behalf of the customer.

? Update Secrets Manager to use the new customer managed key. Secrets Manager allows customers to choose which KMS key to use for encrypting each secret. By default, Secrets Manager uses the default KMS key for Secrets Manager, which is a service-managed key that is shared by all customers in the same AWS Region. By updating Secrets Manager to use the new customer managed key, the DevOps engineer can ensure that only the Lambda function's execution role can decrypt the secret values using that key.

? Ensure that the Lambda function's execution role has the KMS permissions scoped on the resource level. The Lambda function's execution role is an IAM role that grants permissions to the Lambda function to access AWS services and resources. The role needs to have KMS permissions to use the customer managed key for decryption. However, to apply the principle of least privilege, the role should have the permissions scoped on the resource level, which means specifying the ARN of the customer managed key as a condition in the IAM policy statement. This way, the role can only use that specific key and not any other KMS keys in the account.

**NEW QUESTION 114**

A DevOps engineer manages a web application that runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The instances run in an EC2 Auto Scaling group across multiple Availability Zones. The engineer needs to implement a deployment strategy that:

Launches a second fleet of instances with the same capacity as the original fleet. Maintains the original fleet unchanged while the second fleet is launched. Transitions traffic to the second fleet when the second fleet is fully deployed. Terminates the original fleet automatically 1 hour after transition.

Which solution will satisfy these requirements?

- A. Use an AWS CloudFormation template with a retention policy for the ALB set to 1 hour.
- B. Update the Amazon Route 53 record to reflect the new ALB.
- C. Use two AWS Elastic Beanstalk environments to perform a blue/green deployment from the original environment to the new one.
- D. Create an application version lifecycle policy to terminate the original environment in 1 hour.
- E. Use AWS CodeDeploy with a deployment group configured with a blue/green deployment configuration. Select the option Terminate the original instances in the deployment group with a waiting period of 1 hour.
- F. Use AWS Elastic Beanstalk with the configuration set to Immutable.
- G. Create an .ebextension using the Resources key that sets the deletion policy of the ALB to 1 hour, and deploy the application.

**Answer:** C

**Explanation:**

[https://docs.aws.amazon.com/codedeploy/latest/APIReference/API\\_BlueInstanceTerminationOption.html](https://docs.aws.amazon.com/codedeploy/latest/APIReference/API_BlueInstanceTerminationOption.html)

The original revision termination settings are configured to wait 1 hour after traffic has been rerouted before terminating the blue task set.

<https://docs.aws.amazon.com/AmazonECS/latest/developerguide/deployment-type-bluegreen.html>

**NEW QUESTION 115**

A company wants to use AWS CloudFormation for infrastructure deployment. The company has strict tagging and resource requirements and wants to limit the deployment to two Regions. Developers will need to deploy multiple versions of the same application.

Which solution ensures resources are deployed in accordance with company policy?

- A. Create AWS Trusted Advisor checks to find and remediate unapproved CloudFormation StackSets.
- B. Create a CloudFormation drift detection operation to find and remediate unapproved CloudFormation StackSets.
- C. Create CloudFormation StackSets with approved CloudFormation templates.
- D. Create AWS Service Catalog products with approved CloudFormation templates.

**Answer:** D

**Explanation:**

Service catalog uses stacksets and can enforce tag and restrict resources AWS Customer case with tag enforcement

<https://aws.amazon.com/ko/blogs/apn/enforce-centralized-tag-compliance-using-aws-service-catalog-amazon-dynamodb-aws-lambda-and-amazon-cloudwatch-events/> And Youtube video showing how to restrict resources per user with portfolio <https://www.youtube.com/watch?v=LzvhTcqyog>

**NEW QUESTION 119**

A DevOps engineer is building a multistage pipeline with AWS CodePipeline to build, verify, stage, test, and deploy an application. A manual approval stage is required between the test stage and the deploy stage. The development team uses a custom chat tool with webhook support that requires near-real-time notifications.

How should the DevOps engineer configure status updates for pipeline activity and approval requests to post to the chat tool?

- A. Create an Amazon CloudWatch Logs subscription that filters on CodePipeline Pipeline Execution State Chang
- B. Publish subscription events to an Amazon Simple Notification Service (Amazon SNS) topic
- C. Subscribe the chat webhook URL to the SNS topic, and complete the subscription validation.
- D. Create an AWS Lambda function that is invoked by AWS CloudTrail event
- E. When a CodePipeline Pipeline Execution State Change event is detected, send the event details to the chat webhook URL.
- F. Create an Amazon EventBridge rule that filters on CodePipeline Pipeline Execution State Chang
- G. Publish the events to an Amazon Simple Notification Service (Amazon SNS) topic
- H. Create an AWS Lambda function that sends event details to the chat webhook URL
- I. Subscribe the function to the SNS topic.
- J. Modify the pipeline code to send the event details to the chat webhook URL at the end of each stage
- K. Parameterize the URL so that each pipeline can send to a different URL based on the pipeline environment.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/sns-lambda-webhooks-chime-slack-teams/>

**NEW QUESTION 123**

A company uses AWS Storage Gateway in file gateway mode in front of an Amazon S3 bucket that is used by multiple resources. In the morning when business begins, users do not see the objects processed by a third party the previous evening. When a DevOps engineer looks directly at the S3 bucket, the data is there, but it is missing in Storage Gateway.

Which solution ensures that all the updated third-party files are available in the morning?

- A. Configure a nightly Amazon EventBridge event to invoke an AWS Lambda function to run the RefreshCache command for Storage Gateway.
- B. Instruct the third party to put data into the S3 bucket using AWS Transfer for SFTP.
- C. Modify Storage Gateway to run in volume gateway mode.
- D. Use S3 Same-Region Replication to replicate any changes made directly in the S3 bucket to Storage Gateway.

**Answer:** A

**Explanation:**

[https://docs.aws.amazon.com/storagegateway/latest/APIReference/API\\_RefreshCache.html](https://docs.aws.amazon.com/storagegateway/latest/APIReference/API_RefreshCache.html) "It only updates the cached inventory to reflect changes in the inventory of the objects in the S3 bucket. This operation is only supported in the S3 File Gateway types."

**NEW QUESTION 126**

A company builds an application that uses an Application Load Balancer in front of Amazon EC2 instances that are in an Auto Scaling group. The application is stateless. The Auto Scaling group uses a custom AMI that is fully prebuilt. The EC2 instances do not have a custom bootstrapping process.

The AMI that the Auto Scaling group uses was recently deleted. The Auto Scaling group's scaling activities show failures because the AMI ID does not exist.

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

- A. Create a new launch template that uses the new AMI.
- B. Update the Auto Scaling group to use the new launch template.
- C. Reduce the Auto Scaling group's desired capacity to 0.
- D. Increase the Auto Scaling group's desired capacity by 1.
- E. Create a new AMI from a running EC2 instance in the Auto Scaling group.
- F. Create a new AMI by copying the most recent public AMI of the operating system that the EC2 instances use.

**Answer:** ABF

**Explanation:**

To restore the functionality of the Auto Scaling group after the AMI was deleted, the DevOps engineer needs to create a new AMI and update the Auto Scaling group to use it. The DevOps engineer can create a new AMI by copying the most recent public AMI of the operating system that the EC2 instances use. This will ensure that the new AMI has the same operating system as the custom AMI that was deleted. The DevOps engineer can then create a new launch template that uses the new AMI and update the Auto Scaling group to use the new launch template. This will allow the Auto Scaling group to launch new instances with the new AMI.

**NEW QUESTION 130**

A company plans to use Amazon CloudWatch to monitor its Amazon EC2 instances. The company needs to stop EC2 instances when the average of the NetworkPacketsIn metric is less than 5 for at least 3 hours in a 12-hour time window. The company must evaluate the metric every hour. The EC2 instances must continue to run if there is missing data for the NetworkPacketsIn metric during the evaluation period.

A DevOps engineer creates a CloudWatch alarm for the NetworkPacketsIn metric. The DevOps engineer configures a threshold value of 5 and an evaluation period of 1 hour.

Which set of additional actions should the DevOps engineer take to meet these requirements?

- A. Configure the Datapoints to Alarm value to be 3 out of 12. Configure the alarm to treat missing data as breaching the threshold
- B. Add an AWS Systems Manager action to stop the instance when the alarm enters the ALARM state.
- C. Configure the Datapoints to Alarm value to be 3 out of 12. Configure the alarm to treat missing data as not breaching the threshold
- D. Add an EC2 action to stop the instance when the alarm enters the ALARM state.
- E. Configure the Datapoints to Alarm value to be 9 out of 12. Configure the alarm to treat missing data as breaching the threshold
- F. Add an EC2 action to stop the instance when the alarm enters the ALARM state.
- G. Configure the Datapoints to Alarm value to be 9 out of 12. Configure the alarm to treat missing data as not breaching the threshold
- H. Add an AWS Systems Manager action to stop the instance when the alarm enters the ALARM state.

**Answer:** B

**Explanation:**

To meet the requirements, the DevOps engineer needs to configure the CloudWatch alarm to stop the EC2 instances when the average of the NetworkPacketsIn metric is less than 5 for at least 3 hours in a 12-hour time window. This means that the alarm should trigger when 3 out of 12 datapoints are below the threshold of 5. The alarm should also treat missing data as not breaching the threshold, so that the EC2 instances continue to run if there is no data for the metric during the evaluation period. The DevOps engineer can add an EC2 action to stop the instance when the alarm enters the ALARM state, which is a built-in action type for

CloudWatch alarms.

### NEW QUESTION 131

A company has developed a serverless web application that is hosted on AWS. The application consists of Amazon S3, Amazon API Gateway, several AWS Lambda functions, and an Amazon RDS for MySQL database. The company is using AWS CodeCommit to store the source code. The source code is a combination of AWS Serverless Application Model (AWS SAM) templates and Python code.

A security audit and penetration test reveal that user names and passwords for authentication to the database are hardcoded within CodeCommit repositories. A DevOps engineer must implement a solution to automatically detect and prevent hardcoded secrets.

What is the MOST secure solution that meets these requirements?

- A. Enable Amazon CodeGuru Profile
- B. Decorate the handler function with `@with_lambda_profiler()`. Manually review the recommendation report
- C. Write the secret to AWS Systems Manager Parameter Store as a secure string
- D. Update the SAM templates and the Python code to pull the secret from Parameter Store.
- E. Associate the CodeCommit repository with Amazon CodeGuru Reviewer
- F. Manually check the code review for any recommendation
- G. Choose the option to protect the secret
- H. Update the SAM templates and the Python code to pull the secret from AWS Secrets Manager.
- I. Enable Amazon CodeGuru Profile
- J. Decorate the handler function with `@with_lambda_profiler()`. Manually review the recommendation report
- K. Choose the option to protect the secret
- L. Update the SAM templates and the Python code to pull the secret from AWS Secrets Manager.
- M. Associate the CodeCommit repository with Amazon CodeGuru Reviewer
- N. Manually check the code review for any recommendation
- O. Write the secret to AWS Systems Manager Parameter Store as a string
- P. Update the SAM templates and the Python code to pull the secret from Parameter Store.

**Answer: B**

#### Explanation:

<https://docs.aws.amazon.com/codecommit/latest/userguide/how-to-amazon-codeguru-reviewer.html>

### NEW QUESTION 133

A company has multiple development teams in different business units that work in a shared single AWS account. All Amazon EC2 resources that are created in the account must include tags that specify who created the resources. The tagging must occur within the first hour of resource creation.

A DevOps engineer needs to add tags to the created resources that include the user ID that created the resource and the cost center ID. The DevOps engineer configures an AWS Lambda function with the cost center mappings to tag the resources. The DevOps engineer also sets up AWS CloudTrail in the AWS account.

An Amazon S3 bucket stores the CloudTrail event logs.

Which solution will meet the tagging requirements?

- A. Create an S3 event notification on the S3 bucket to invoke the Lambda function for `s3:ObjectTagging:Put` event
- B. Enable bucket versioning on the S3 bucket.
- C. Enable server access logging on the S3 bucket
- D. Create an S3 event notification on the S3 bucket for `s3:ObjectTagging` events
- E. Create a recurring hourly Amazon EventBridge scheduled rule that invokes the Lambda function
- F. Modify the Lambda function to read the logs from the S3 bucket
- G. Create an Amazon EventBridge rule that uses Amazon EC2 as the event source
- H. Configure the rule to match events delivered by CloudTrail
- I. Configure the rule to target the Lambda function

**Answer: D**

#### Explanation:

? Option A is incorrect because S3 event notifications do not support `s3:ObjectTagging:Put` events. S3 event notifications only support events related to object creation, deletion, replication, and restore. Moreover, enabling bucket versioning on the S3 bucket is not relevant to the tagging requirements, as it only keeps multiple versions of objects in the bucket.

? Option B is incorrect because enabling server access logging on the S3 bucket does not help with tagging the resources. Server access logging only records requests for access to the bucket or its objects. It does not capture the user ID or the cost center ID of the resources. Furthermore, creating an S3 event notification on the S3 bucket for `s3:ObjectTagging:Put` events is not possible, as explained in option A.

? Option C is incorrect because creating a recurring hourly Amazon EventBridge scheduled rule that invokes the Lambda function is not efficient or timely. The Lambda function would have to read the logs from the S3 bucket every hour and tag the resources accordingly, which could incur unnecessary costs and delays. A better solution would be to trigger the Lambda function as soon as a resource is created, rather than waiting for an hourly schedule.

? Option D is correct because creating an Amazon EventBridge rule that uses Amazon EC2 as the event source and matches events delivered by CloudTrail is a valid way to tag the resources. CloudTrail records all API calls made to AWS services, including EC2, and delivers them as events to EventBridge. The EventBridge rule can filter the events based on the user ID and the resource type, and then target the Lambda function to tag the resources with the cost center ID. This solution meets the tagging requirements in a timely and efficient manner.

References:

? S3 event notifications

? Server access logging

? Amazon EventBridge rules

? AWS CloudTrail

### NEW QUESTION 135

A company runs an application on Amazon EC2 instances. The company uses a series of AWS CloudFormation stacks to define the application resources. A developer performs updates by building and testing the application on a laptop and then uploading the build output and CloudFormation stack templates to Amazon S3. The developer's peers review the changes before the developer performs the CloudFormation stack update and installs a new version of the application onto the EC2 instances.

The deployment process is prone to errors and is time-consuming when the developer updates each EC2 instance with the new application. The company wants to automate as much of the application deployment process as possible while retaining a final manual approval step before the modification of the application or resources.

The company already has moved the source code for the application and the CloudFormation templates to AWS CodeCommit. The company also has created an AWS CodeBuild project to build and test the application.

Which combination of steps will meet the company's requirements? (Choose two.)

- A. Create an application group and a deployment group in AWS CodeDeploy
- B. Install the CodeDeploy agent on the EC2 instances.
- C. Create an application revision and a deployment group in AWS CodeDeploy
- D. Create an environment in CodeDeploy
- E. Register the EC2 instances to the CodeDeploy environment.
- F. Use AWS CodePipeline to invoke the CodeBuild job, run the CloudFormation update, and pause for a manual approval step
- G. After approval, start the AWS CodeDeploy deployment.
- H. Use AWS CodePipeline to invoke the CodeBuild job, create CloudFormation change sets for each of the application stacks, and pause for a manual approval step
- I. After approval, run the CloudFormation change sets and start the AWS CodeDeploy deployment.
- J. Use AWS CodePipeline to invoke the CodeBuild job, create CloudFormation change sets for each of the application stacks, and pause for a manual approval step
- K. After approval, start the AWS CodeDeploy deployment.

**Answer:** AD

**Explanation:**

A- <https://docs.aws.amazon.com/codedeploy/latest/userguide/codedeploy-agent.html> D - This option correctly utilizes AWS CodePipeline to invoke the CodeBuild job and create CloudFormation change sets. It adds a manual approval step before executing the change sets and starting the AWS CodeDeploy deployment. This ensures that the deployment process is automated while retaining the final manual approval step.

**NEW QUESTION 136**

A DevOps engineer is planning to deploy a Ruby-based application to production. The application needs to interact with an Amazon RDS for MySQL database and should have automatic scaling and high availability. The stored data in the database is critical and should persist regardless of the state of the application stack. The DevOps engineer needs to set up an automated deployment strategy for the application with automatic rollbacks. The solution also must alert the application team when a deployment fails.

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

- A. Deploy the application on AWS Elastic Beanstalk
- B. Deploy an Amazon RDS for MySQL DB instance as part of the Elastic Beanstalk configuration.
- C. Deploy the application on AWS Elastic Beanstalk
- D. Deploy a separate Amazon RDS for MySQL DB instance outside of Elastic Beanstalk.
- E. Configure a notification email address that alerts the application team in the AWS Elastic Beanstalk configuration.
- F. Configure an Amazon EventBridge rule to monitor AWS Health event
- G. Use an Amazon Simple Notification Service (Amazon SNS) topic as a target to alert the application team.
- H. Use the immutable deployment method to deploy new application versions.
- I. Use the rolling deployment method to deploy new application versions.

**Answer:** BDE

**Explanation:**

For deploying a Ruby-based application with requirements for interaction with an Amazon RDS for MySQL database, automatic scaling, high availability, and data persistence, the following steps will meet the requirements:

? B. Deploy the application on AWS Elastic Beanstalk. Deploy a separate Amazon RDS for MySQL DB instance outside of Elastic Beanstalk. This approach ensures that the database persists independently of the Elastic Beanstalk environment, which can be torn down and recreated without affecting the database.

? E. Use the immutable deployment method to deploy new application versions. Immutable deployments provide a zero-downtime deployment method that ensures that if any part of the deployment process fails, the environment is rolled back to the original state automatically.

? D. Configure an Amazon EventBridge rule to monitor AWS Health events. Use an Amazon Simple Notification Service (Amazon SNS) topic as a target to alert the application team. This setup allows for automated monitoring and alerting of the application team in case of deployment failures or other health events.

References:

? AWS Elastic Beanstalk documentation on deploying Ruby applications.

? AWS documentation on application auto-scaling.

? AWS documentation on automated deployment strategies with automatic rollbacks and alerts.

**NEW QUESTION 139**

A company needs a strategy for failover and disaster recovery of its data and application. The application uses a MySQL database and Amazon EC2 instances. The company requires a maximum RPO of 2 hours and a maximum RTO of 10 minutes for its data and application at all times.

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

- A. Create an Amazon Aurora Single-AZ cluster in multiple AWS Regions as the data store
- B. Use Aurora's automatic recovery capabilities in the event of a disaster.
- C. Create an Amazon Aurora global database in two AWS Regions as the data store
- D. In the event of a failure, promote the secondary Region to the primary for the application
- E. Update the application to use the Aurora cluster endpoint in the secondary Region.
- F. Create an Amazon Aurora cluster in multiple AWS Regions as the data store
- G. Use a Network Load Balancer to balance the database traffic in different Regions.
- H. Set up the application in two AWS Regions
- I. Use Amazon Route 53 failover routing that points to Application Load Balancers in both Regions
- J. Use health checks and Auto Scaling groups in each Region.
- K. Set up the application in two AWS Regions
- L. Configure AWS Global Accelerator to point to Application Load Balancers (ALBs) in both Regions
- M. Add both ALBs to a single endpoint group
- N. Use health checks and Auto Scaling groups in each Region.

**Answer:** BE

**Explanation:**

To meet the requirements of failover and disaster recovery, the company should use the following deployment strategies:

? Create an Amazon Aurora global database in two AWS Regions as the data store.

In the event of a failure, promote the secondary Region to the primary for the application. Update the application to use the Aurora cluster endpoint in the secondary Region. This strategy can provide a low RPO and RTO for the data, as Aurora global database replicates data with minimal latency across Regions and allows fast and easy failover<sup>12</sup>. The company can use the Amazon Aurora cluster endpoint to connect to the current primary DB cluster without needing to change any application code<sup>1</sup>.

? Set up the application in two AWS Regions. Configure AWS Global Accelerator to

point to Application Load Balancers (ALBs) in both Regions. Add both ALBs to a single endpoint group. Use health checks and Auto Scaling groups in each Region. This strategy can provide high availability and performance for the application, as AWS Global Accelerator uses the AWS global network to route traffic to the closest healthy endpoint<sup>3</sup>. The company can also use static IP addresses that are assigned by Global Accelerator as a fixed entry point for their application<sup>1</sup>. By using health checks and Auto Scaling groups, the company can ensure that their application can scale up or down based on demand and handle any instance failures<sup>4</sup>.

The other options are incorrect because:

? Creating an Amazon Aurora Single-AZ cluster in multiple AWS Regions as the data store would not provide a fast failover or disaster recovery solution, as the company would need to manually restore data from backups or snapshots in another Region in case of a failure.

? Creating an Amazon Aurora cluster in multiple AWS Regions as the data store and using a Network Load Balancer to balance the database traffic in different Regions would not work, as Network Load Balancers do not support cross-Region routing. Moreover, this strategy would not provide a consistent view of the data across Regions, as Aurora clusters do not replicate data automatically between Regions unless they are part of a global database.

? Setting up the application in two AWS Regions and using Amazon Route 53 failover routing that points to Application Load Balancers in both Regions would not provide a low RTO, as Route 53 failover routing relies on DNS resolution, which can take time to propagate changes across different DNS servers and clients. Moreover, this strategy would not provide deterministic routing, as Route 53 failover routing depends on DNS caching behavior, which can vary depending on different factors.

**NEW QUESTION 141**

A company is storing 100 GB of log data in csv format in an Amazon S3 bucket SQL developers want to query this data and generate graphs to visualize it. The SQL developers also need an efficient automated way to store metadata from the csv file.

Which combination of steps will meet these requirements with the LEAST amount of effort? (Select THREE.)

- A. Filter the data through AWS X-Ray to visualize the data.
- B. Filter the data through Amazon QuickSight to visualize the data.
- C. Query the data with Amazon Athena.
- D. Query the data with Amazon Redshift.
- E. Use the AWS Glue Data Catalog as the persistent metadata store.
- F. Use Amazon DynamoDB as the persistent metadata store.

**Answer:** BCE

**Explanation:**

<https://docs.aws.amazon.com/glue/latest/dg/components-overview.html>

**NEW QUESTION 146**

A company detects unusual login attempts in many of its AWS accounts. A DevOps engineer must implement a solution that sends a notification to the company's security team when multiple failed login attempts occur. The DevOps engineer has already created an Amazon Simple Notification Service (Amazon SNS) topic and has subscribed the security team to the SNS topic.

Which solution will provide the notification with the LEAST operational effort?

- A. Configure AWS CloudTrail to send log management events to an Amazon CloudWatch Logs log group
- B. Create a CloudWatch Logs metric filter to match failed ConsoleLogin event
- C. Create a CloudWatch alarm that is based on the metric filter
- D. Configure an alarm action to send messages to the SNS topic.
- E. Configure AWS CloudTrail to send log management events to an Amazon S3 bucket
- F. Create an Amazon Athena query that returns a failure if the query finds failed logins in the logs in the S3 bucket
- G. Create an Amazon EventBridge rule to periodically run the query
- H. Create a second EventBridge rule to detect when the query fails and to send a message to the SNS topic.
- I. Configure AWS CloudTrail to send log data events to an Amazon CloudWatch Logs log group
- J. Create a CloudWatch logs metric filter to match failed ConsoleLogin event
- K. Create a CloudWatch alarm that is based on the metric filter
- L. Configure an alarm action to send messages to the SNS topic.
- M. Configure AWS CloudTrail to send log data events to an Amazon S3 bucket
- N. Configure an Amazon S3 event notification for the s3:ObjectCreated event type
- O. Filter the event type by ConsoleLogin failed event
- P. Configure the event notification to forward to the SNS topic.

**Answer:** C

**Explanation:**

The correct answer is C. Configuring AWS CloudTrail to send log data events to an Amazon CloudWatch Logs log group and creating a CloudWatch logs metric filter to match failed ConsoleLogin events is the simplest and most efficient way to monitor and alert on failed login attempts. Creating a CloudWatch alarm that is based on the metric filter and configuring an alarm action to send messages to the SNS topic will ensure that the security team is notified when multiple failed login attempts occur. This solution requires the least operational effort compared to the other options.

Option A is incorrect because it involves configuring AWS CloudTrail to send log management events instead of log data events. Log management events are used to track changes to CloudTrail configuration, such as creating, updating, or deleting a trail. Log data events are used to track API activity in AWS accounts, such as login attempts. Therefore, option A will not capture the failed ConsoleLogin events.

Option B is incorrect because it involves creating an Amazon Athena query and two Amazon EventBridge rules to monitor and alert on failed login attempts. This is a more complex and costly solution than using CloudWatch logs and alarms. Moreover, option B relies on the query returning a failure, which may not happen if the query is executed successfully but does not find any failed logins.

Option D is incorrect because it involves configuring AWS CloudTrail to send log data events to an Amazon S3 bucket and configuring an Amazon S3 event notification for the s3:ObjectCreated event type. This solution will not work because the s3:ObjectCreated event type does not allow filtering by ConsoleLogin failed

events. The event notification will be triggered for any object created in the S3 bucket, regardless of the event type. Therefore, option D will generate a lot of false positives and unnecessary notifications. References:

? [AWS CloudTrail Log File Examples](#)

? [Creating CloudWatch Alarms for CloudTrail Events: Examples](#)

? [Monitoring CloudTrail Log Files with Amazon CloudWatch Logs](#)

#### **NEW QUESTION 148**

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