



# Amazon-Web-Services

## Exam Questions DOP-C02

AWS Certified DevOps Engineer - Professional

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### NEW QUESTION 1

A DevOps engineer needs to apply a core set of security controls to an existing set of AWS accounts. The accounts are in an organization in AWS Organizations. Individual teams will administer individual accounts by using the AdministratorAccess AWS managed policy. For all accounts, AWS CloudTrail and AWS Config must be turned on in all available AWS Regions. Individual account administrators must not be able to edit or delete any of the baseline resources. However, individual account administrators must be able to edit or delete their own CloudTrail trails and AWS Config rules. Which solution will meet these requirements in the MOST operationally efficient way?

- A. Create an AWS CloudFormation template that defines the standard account resource
- B. Deploy the template to all accounts from the organization's management account by using CloudFormation StackSet
- C. Set the stack policy to deny Update:Delete actions.
- D. Enable AWS Control Tower
- E. Enroll the existing accounts in AWS Control Tower
- F. Grant the individual account administrators access to CloudTrail and AWS Config.
- G. Designate an AWS Config management account
- H. Create AWS Config recorders in all accounts by using AWS CloudFormation StackSet
- I. Deploy AWS Config rules to the organization by using the AWS Config management account
- J. Create a CloudTrail organization trail in the organization's management account
- K. Deny modification or deletion of the AWS Config recorders by using an SCP.
- L. Create an AWS CloudFormation template that defines the standard account resource
- M. Deploy the template to all accounts from the organization's management account by using CloudFormation StackSets. Create an SCP that prevents updates or deletions to CloudTrail resources or AWS Config resources unless the principal is an administrator of the organization's management account.

**Answer:** D

### NEW QUESTION 2

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 3

A company deploys a web application on Amazon EC2 instances that are behind an Application Load Balancer (ALB). The company stores the application code in an AWS CodeCommit repository. When code is merged to the main branch, an AWS Lambda function invokes an AWS CodeBuild project. The CodeBuild project packages the code, stores the packaged code in AWS CodeArtifact, and invokes AWS Systems Manager Run Command to deploy the packaged code to the EC2 instances. Previous deployments have resulted in defects, EC2 instances that are not running the latest version of the packaged code, and inconsistencies between instances.

Which combination of actions should a DevOps engineer take to implement a more reliable deployment solution? (Select TWO.)

- A. Create a pipeline in AWS CodePipeline that uses the CodeCommit repository as a source provider
- B. Configure pipeline stages that run the CodeBuild project in parallel to build and test the application
- C. In the pipeline, pass the CodeBuild project output artifact to an AWS CodeDeploy action.
- D. Create a pipeline in AWS CodePipeline that uses the CodeCommit repository as a source provider
- E. Create separate pipeline stages that run a CodeBuild project to build and then test the application
- F. In the pipeline, pass the CodeBuild project output artifact to an AWS CodeDeploy action.
- G. Create an AWS CodeDeploy application and a deployment group to deploy the packaged code to the EC2 instances
- H. Configure the ALB for the deployment group.
- I. Create individual Lambda functions that use AWS CodeDeploy instead of Systems Manager to run build, test, and deploy actions.
- J. Create an Amazon S3 bucket
- K. Modify the CodeBuild project to store the packages in the S3 bucket instead of in CodeArtifact
- L. Use deploy actions in CodeDeploy to deploy the artifact to the EC2 instances.

**Answer:** AC

#### Explanation:

To implement a more reliable deployment solution, a DevOps engineer should take the following actions:

? Create a pipeline in AWS CodePipeline that uses the CodeCommit repository as a source provider. Configure pipeline stages that run the CodeBuild project in parallel to build and test the application. In the pipeline, pass the CodeBuild project output artifact to an AWS CodeDeploy action. This action will improve the deployment reliability by automating the entire process from code commit to deployment, reducing human errors and inconsistencies. By running the build and test stages in parallel, the pipeline can also speed up the delivery time and provide faster feedback. By using CodeDeploy as the deployment action, the pipeline can leverage the features of CodeDeploy, such as traffic shifting, health checks, rollback, and deployment configuration<sup>123</sup>

? Create an AWS CodeDeploy application and a deployment group to deploy the packaged code to the EC2 instances. Configure the ALB for the deployment group. This action will improve the deployment reliability by using CodeDeploy to orchestrate the deployment across multiple EC2 instances behind an ALB. CodeDeploy can perform blue/green deployments or in-place deployments with traffic shifting, which can minimize downtime and reduce risks. CodeDeploy can also monitor the health of the instances during and after the deployment, and automatically roll back if any issues are detected. By configuring the ALB for the deployment group, CodeDeploy can register and deregister instances from the load balancer as needed, ensuring that only healthy instances receive traffic<sup>45</sup>

The other options are not correct because they do not improve the deployment reliability or follow best practices. Creating separate pipeline stages that run a CodeBuild project to build and then test the application is not a good option because it will increase the pipeline execution time and delay the feedback loop. Creating individual Lambda functions that use CodeDeploy instead of Systems Manager to run build, test, and deploy actions is not a valid option because it will add unnecessary complexity and cost to the solution. Lambda functions are not designed for long-running tasks such as building or deploying applications. Creating an Amazon S3 bucket and modifying the CodeBuild project to store the packages in the S3 bucket instead of in CodeArtifact is not a necessary option because it will not affect the deployment reliability. CodeArtifact is a secure, scalable, and cost-effective package management service that can store and share software packages for application development<sup>67</sup>

References:

- ? 1: What is AWS CodePipeline? - AWS CodePipeline
- ? 2: Create a pipeline in AWS CodePipeline - AWS CodePipeline
- ? 3: Deploy an application with AWS CodeDeploy - AWS CodePipeline
- ? 4: What is AWS CodeDeploy? - AWS CodeDeploy
- ? 5: Configure an Application Load Balancer for your blue/green deployments - AWS CodeDeploy
- ? 6: What is AWS Lambda? - AWS Lambda
- ? 7: What is AWS CodeArtifact? - AWS CodeArtifact

#### NEW QUESTION 4

A company is adopting AWS CodeDeploy to automate its application deployments for a Java-Apache Tomcat application with an Apache Webserver. The development team started with a proof of concept, created a deployment group for a developer environment, and performed functional tests within the application. After completion, the team will create additional deployment groups for staging and production.

The current log level is configured within the Apache settings, but the team wants to change this configuration dynamically when the deployment occurs, so that they can set different log level configurations depending on the deployment group without having a different application revision for each group.

How can these requirements be met with the LEAST management overhead and without requiring different script versions for each deployment group?

- A. Tag the Amazon EC2 instances depending on the deployment group
- B. Then place a script into the application revision that calls the metadata service and the EC2 API to identify which deployment group the instance is part of
- C. Use this information to configure the log level setting
- D. Reference the script as part of the AfterInstall lifecycle hook in the appspec.yml file.
- E. Create a script that uses the CodeDeploy environment variable DEPLOYMENT\_GROUP\_NAME to identify which deployment group the instance is part of
- F. Use this information to configure the log level setting
- G. Reference this script as part of the BeforeInstall lifecycle hook in the appspec.yml file.
- H. Create a CodeDeploy custom environment variable for each environment
- I. Then place a script into the application revision that checks this environment variable to identify which deployment group the instance is part of
- J. Use this information to configure the log level setting
- K. Reference this script as part of the ValidateService lifecycle hook in the appspec.yml file.
- L. Create a script that uses the CodeDeploy environment variable DEPLOYMENT\_GROUP\_ID to identify which deployment group the instance is part of to configure the log level setting
- M. Reference this script as part of the Install lifecycle hook in the appspec.yml file.

**Answer: B**

#### Explanation:

The following are the steps that the company can take to change the log level dynamically when the deployment occurs:

- ? Create a script that uses the CodeDeploy environment variable DEPLOYMENT\_GROUP\_NAME to identify which deployment group the instance is part of.
- ? Use this information to configure the log level settings.
- ? Reference this script as part of the BeforeInstall lifecycle hook in the appspec.yml file.

The DEPLOYMENT\_GROUP\_NAME environment variable is automatically set by CodeDeploy when the deployment is triggered. This means that the script does not need to call the metadata service or the EC2 API to identify the deployment group.

This solution is the least complex and requires the least management overhead. It also does not require different script versions for each deployment group.

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

- ? Option A is incorrect because it would require tagging the Amazon EC2 instances, which would be a manual and time-consuming process.
- ? Option C is incorrect because it would require creating a custom environment variable for each environment. This would be a complex and error-prone process.
- ? Option D is incorrect because it would use the DEPLOYMENT\_GROUP\_ID environment variable. However, this variable is not automatically set by CodeDeploy, so the script would need to call the metadata service or the EC2 API to get the deployment group ID. This would add complexity and overhead to the solution.

#### NEW QUESTION 5

A development team is using AWS CodeCommit to version control application code and AWS CodePipeline to orchestrate software deployments. The team has decided to use a remote main branch as the trigger for the pipeline to integrate code changes. A developer has pushed code changes to the CodeCommit repository, but noticed that the pipeline had no reaction, even after 10 minutes.

Which of the following actions should be taken to troubleshoot this issue?

- A. Check that an Amazon EventBridge rule has been created for the main branch to trigger the pipeline.
- B. Check that the CodePipeline service role has permission to access the CodeCommit repository.
- C. Check that the developer's IAM role has permission to push to the CodeCommit repository.
- D. Check to see if the pipeline failed to start because of CodeCommit errors in Amazon CloudWatch Logs.

**Answer: A**

#### Explanation:



When you create a pipeline from CodePipeline during the step-by-step it creates a CloudWatch Event rule for a given branch and repo like this:

```
{
  "source": [ "aws.codecommit"
],
  "detail-type": [
    "CodeCommit Repository State Change"
  ],
  "resources": [
    "arn:aws:codecommit:us-east-1:xxxxx:repo-name"
  ],
  "detail": {
    "event": [ "referenceCreated", "referenceUpdated"
  ],
  "referenceType": [ "branch"
  ],
  "referenceName": [ "master"
  ]
}
}
```

<https://docs.aws.amazon.com/codepipeline/latest/userguide/pipelines-trigger-source-repo-changes-console.html>

#### NEW QUESTION 6

A company has a mobile application that makes HTTP API calls to an Application Load Balancer (ALB). The ALB routes requests to an AWS Lambda function. Many different versions of the application are in use at any given time, including versions that are in testing by a subset of users. The version of the application is defined in the user-agent header that is sent with all requests to the API.

After a series of recent changes to the API, the company has observed issues with the application. The company needs to gather a metric for each API operation by response code for each version of the application that is in use. A DevOps engineer has modified the Lambda function to extract the API operation name, version information from the user-agent header and response code.

Which additional set of actions should the DevOps engineer take to gather the required metrics?

- A. Modify the Lambda function to write the API operation name, response code, and version number as a log line to an Amazon CloudWatch Logs log group
- B. Configure a CloudWatch Logs metric filter that increments a metric for each API operation name
- C. Specify response code and application version as dimensions for the metric.
- D. Modify the Lambda function to write the API operation name, response code, and version number as a log line to an Amazon CloudWatch Logs log group
- E. Configure a CloudWatch Logs Insights query to populate CloudWatch metrics from the log line
- F. Specify response code and application version as dimensions for the metric.
- G. Configure the ALB access logs to write to an Amazon CloudWatch Logs log group
- H. Modify the Lambda function to respond to the ALB with the API operation name, response code, and version number as response metadata
- I. Configure a CloudWatch Logs metric filter that increments a metric for each API operation name
- J. Specify response code and application version as dimensions for the metric.
- K. Configure AWS X-Ray integration on the Lambda function
- L. Modify the Lambda function to create an X-Ray subsegment with the API operation name, response code, and version number
- M. Configure X-Ray insights to extract an aggregated metric for each API operation name and to publish the metric to Amazon CloudWatch
- N. Specify response code and application version as dimensions for the metric.

**Answer:** A

#### Explanation:

"Note that the metric filter is different from a log insights query, where the experience is interactive and provides immediate search results for the user to investigate.

No automatic action can be invoked from an insights query. Metric filters, on the other hand, will generate metric data in the form of a time series. This lets you create alarms that integrate into your ITSM processes, execute AWS Lambda functions, or even create anomaly detection models."

<https://aws.amazon.com/blogs/mt/quantify-custom-application-metrics-with-amazon-cloudwatch-logs-and-metric-filters/>

#### NEW QUESTION 7

A DevOps engineer has automated a web service deployment by using AWS CodePipeline with the following steps:

- 1) An AWS CodeBuild project compiles the deployment artifact and runs unit tests.
- 2) An AWS CodeDeploy deployment group deploys the web service to Amazon EC2 instances in the staging environment.
- 3) A CodeDeploy deployment group deploys the web service to EC2 instances in the production environment.

The quality assurance (QA) team requests permission to inspect the build artifact before the deployment to the production environment occurs. The QA team wants to run an internal penetration testing tool to conduct manual tests. The tool will be invoked by a REST API call.

Which combination of actions should the DevOps engineer take to fulfill this request? (Choose two.)

- A. Insert a manual approval action between the test actions and deployment actions of the pipeline.
- B. Modify the buildspec.yml file for the compilation stage to require manual approval before completion.
- C. Update the CodeDeploy deployment groups so that they require manual approval to proceed.
- D. Update the pipeline to directly call the REST API for the penetration testing tool.
- E. Update the pipeline to invoke an AWS Lambda function that calls the REST API for the penetration testing tool.

**Answer:** AE

#### NEW QUESTION 8

A large enterprise is deploying a web application on AWS. The application runs on Amazon

EC2 instances behind an Application Load Balancer. The instances run in an Auto Scaling group across multiple Availability Zones. The application stores data in an Amazon RDS for Oracle DB instance and Amazon DynamoDB. There are separate environments for development testing and production.

What is the MOST secure and flexible way to obtain password credentials during deployment?

- A. Retrieve an access key from an AWS Systems Manager securestring parameter to access AWS service
- B. Retrieve the database credentials from a Systems Manager SecureString parameter.

- C. Launch the EC2 instances with an EC2 1AM role to access AWS services Retrieve the database credentials from AWS Secrets Manager.
- D. Retrieve an access key from an AWS Systems Manager plaintext parameter to access AWS service
- E. Retrieve the database credentials from a Systems Manager SecureString parameter.
- F. Launch the EC2 instances with an EC2 1AM role to access AWS services Store the database passwords in an encrypted config file with the application artifacts.

**Answer: B**

**Explanation:**

AWS Secrets Manager is a secrets management service that helps you protect access to your applications, services, and IT resources. This service enables you to easily rotate, manage, and retrieve database credentials, API keys, and other secrets throughout their lifecycle. Using Secrets Manager, you can secure and manage secrets used to access resources in the AWS Cloud, on third-party services, and on-premises. SSM parameter store and AWS Secret manager are both a secure option. However, Secrets manager is more flexible and has more options like password generation. Reference:  
<https://www.1strategy.com/blog/2019/02/28/aws-parameter-store-vs-aws-secrets-manager/>

**NEW QUESTION 9**

A company recently launched multiple applications that use Application Load Balancers. Application response time often slows down when the applications experience problems A DevOps engineer needs to Implement a monitoring solution that alerts the company when the applications begin to perform slowly The DevOps engineer creates an Amazon Simple Notification Semce (Amazon SNS) topic and subscribe the company's email address to the topic What should the DevOps engineer do next to meet the requirements?

- A. Create an Amazon EventBridge rule that invokes an AWS Lambda function to query the applications on a 5-minute interval Configure the Lambda function to publish a notification to the SNS topic when the applications return errors.
- B. Create an Amazon CloudWatch Synthetics canary that runs a custom script to query the applications on a 5-minute interval
- C. Configure the canary to use the SNS topic when the applications return errors.
- D. Create an Amazon CloudWatch alarm that uses the AWS/ApplicabonELB namespace RequestCountPerTarget metric Configure the CloudWatch alarm to send a notification when the number of connections becomes greater than the configured number of threads that the application supports Configure the CloudWatch alarm to use the SNS topic.
- E. Create an Amazon CloudWatch alarm that uses the AWS/ApplicationELB namespace RequestCountPerTarget metric Configure the CloudWatch alarm to send a notification when the average response time becomes greater than the longest response time that the application supports Configure the CloudWatch alarm to use the SNS topic

**Answer: B**

**Explanation:**

? Option A is incorrect because creating an Amazon EventBridge rule that invokes an AWS Lambda function to query the applications on a 5-minute interval is not a valid solution. EventBridge rules can only trigger Lambda functions based on events, not on time intervals. Moreover, querying the applications on a 5-minute interval might incur unnecessary costs and network overhead, and might not detect performance issues in real time.

? Option B is correct because creating an Amazon CloudWatch Synthetics canary that runs a custom script to query the applications on a 5-minute interval is a valid solution. CloudWatch Synthetics canaries are configurable scripts that monitor endpoints and APIs by simulating customer behavior. Canaries can run as often as once per minute, and can measure the latency and availability of the applications. Canaries can also send notifications to an Amazon SNS topic when they detect errors or performance issues<sup>1</sup>.

? Option C is incorrect because creating an Amazon CloudWatch alarm that uses the AWS/ApplicationELB namespace RequestCountPerTarget metric is not a valid solution. The RequestCountPerTarget metric measures the number of requests completed or connections made per target in a target group<sup>2</sup>. This metric does not reflect the application response time, which is the requirement. Moreover, configuring the CloudWatch alarm to send a notification when the number of connections becomes greater than the configured number of threads that the application supports is not a valid way to measure the application performance, as it depends on the application design and implementation.

? Option D is incorrect because creating an Amazon CloudWatch alarm that uses the AWS/ApplicationELB namespace RequestCountPerTarget metric is not a valid solution, for the same reason as option C. The RequestCountPerTarget metric does not reflect the application response time, which is the requirement. Moreover, configuring the CloudWatch alarm to send a notification when the average response time becomes greater than the longest response time that the application supports is not a valid way to measure the application performance, as it does not account for variability or outliers in the response time distribution.

References:

? 1: Using synthetic monitoring

? 2: Application Load Balancer metrics

**NEW QUESTION 10**

A company manages multiple AWS accounts by using AWS Organizations with OUS for the different business divisions, The company is updating their corporate network to use new IP address ranges. The company has 10 Amazon S3 buckets in different AWS accounts. The S3 buckets store reports for the different divisions. The S3 bucket configurations allow only private corporate network IP addresses to access the S3 buckets.

A DevOps engineer needs to change the range of IP addresses that have permission to access the contents of the S3 buckets The DevOps engineer also needs to revoke the permissions of two OUS in the company

Which solution will meet these requirements?

- A. Create a new SCP that has two statements, one that allows access to the new range of IP addresses for all the S3 buckets and one that denies access to the old range of IP addresses for all the S3 bucket
- B. Set a permissions boundary for the OrganzauonAccountAccessRole role In the two OUS to deny access to the S3 buckets.
- C. Create a new SCP that has a statement that allows only the new range of IP addresses to access the S3 bucket
- D. Create another SCP that denies access to the S3 bucket
- E. Attach the second SCP to the two OUS
- F. On all the S3 buckets, configure resource-based policies that allow only the new range of IP addresses to access the S3 bucket
- G. Create a new SCP that denies access to the S3 bucket
- H. Attach the SCP to the two OUs.
- I. On all the S3 buckets, configure resource-based policies that allow only the new range of IP addresses to access the S3 bucket
- J. Set a permissions boundary for the OrganizationAccountAccessRole role in the two OUS to deny access to the S3 buckets.

**Answer: C**

**Explanation:**

The correct answer is C.

A comprehensive and detailed explanation is:

? Option A is incorrect because creating a new SCP that has two statements, one that allows access to the new range of IP addresses for all the S3 buckets and one that denies access to the old range of IP addresses for all the S3 buckets, is not a valid solution. SCPs are not resource-based policies, and they cannot

specify the S3 buckets or the IP addresses as resources or conditions. SCPs can only control the actions that can be performed by the principals in the organization, not the access to specific resources. Moreover, setting a permissions boundary for the OrganizationAccountAccessRole role in the two OUs to deny access to the S3 buckets is not sufficient to revoke the permissions of the two OUs, as there might be other roles or users in those OUs that can still access the S3 buckets.

? Option B is incorrect because creating a new SCP that has a statement that allows

only the new range of IP addresses to access the S3 buckets is not a valid solution, for the same reason as option A. SCPs are not resource-based policies, and they cannot specify the S3 buckets or the IP addresses as resources or conditions. Creating another SCP that denies access to the S3 buckets and attaching it to the two OUs is also not a valid solution, as SCPs cannot specify the S3 buckets as resources either.

? Option C is correct because it meets both requirements of changing the range of IP addresses that have permission to access the contents of the S3 buckets and revoking the permissions of two OUs in the company. On all the S3 buckets, configuring resource-based policies that allow only the new range of IP addresses to access the S3 buckets is a valid way to update the IP address ranges, as resource-based policies can specify both resources and conditions.

Creating a new SCP that denies access to the S3 buckets and attaching it to the two OUs is also a valid way to revoke the permissions of those OUs, as SCPs can deny actions such as s3:PutObject or s3:GetObject on any resource.

? Option D is incorrect because setting a permissions boundary for the OrganizationAccountAccessRole role in the two OUs to deny access to the S3 buckets is not sufficient to revoke the permissions of the two OUs, as there might be other roles or users in those OUs that can still access the S3 buckets. A permissions boundary is a policy that defines the maximum permissions that an IAM entity can have. However, it does not revoke any existing permissions that are granted by other policies.

References:

? AWS Organizations

? S3 Bucket Policies

? Service Control Policies

? Permissions Boundaries

### NEW QUESTION 10

A company runs a workload on Amazon EC2 instances. The company needs a control that requires the use of Instance Metadata Service Version 2 (IMDSv2) on all EC2 instances in the AWS account. If an EC2 instance does not prevent the use of Instance Metadata Service Version 1 (IMDSv1), the EC2 instance must be terminated.

Which solution will meet these requirements?

- A. Set up AWS Config in the account
- B. Use a managed rule to check EC2 instance
- C. Configure the rule to remediate the findings by using AWS Systems Manager Automation to terminate the instance.
- D. Create a permissions boundary that prevents the ec2:RunInstance action if the ec2:MetadataHttpTokens condition key is not set to a value of require
- E. Attach the permissions boundary to the IAM role that was used to launch the instance.
- F. Set up Amazon Inspector in the account
- G. Configure Amazon Inspector to activate deep inspection for EC2 instance
- H. Create an Amazon EventBridge rule for an Inspector2 finding
- I. Set an AWS Lambda function as the target to terminate the instance.
- J. Create an Amazon EventBridge rule for the EC2 instance launch successful event
- K. Send the event to an AWS Lambda function to inspect the EC2 metadata and to terminate the instance.

**Answer:** B

#### Explanation:

To implement a control that requires the use of IMDSv2 on all EC2 instances in the account, the DevOps engineer can use a permissions boundary. A permissions boundary is a policy that defines the maximum permissions that an IAM entity can have. The DevOps engineer can create a permissions boundary that prevents the ec2:RunInstance action if the ec2:MetadataHttpTokens condition key is not set to a value of required. This condition key enforces the use of IMDSv2 on EC2 instances. The DevOps engineer can attach the permissions boundary to the IAM role that was used to launch the instance. This way, any attempt to launch an EC2 instance without using IMDSv2 will be denied by the permissions boundary.

### NEW QUESTION 15

A company's developers use Amazon EC2 instances as remote workstations. The company is concerned that users can create or modify EC2 security groups to allow unrestricted inbound access.

A DevOps engineer needs to develop a solution to detect when users create unrestricted security group rules. The solution must detect changes to security group rules in near real time, remove unrestricted rules, and send email notifications to the security team. The DevOps engineer has created an AWS Lambda function that checks for security group ID from input, removes rules that grant unrestricted access, and sends notifications through Amazon Simple Notification Service (Amazon SNS).

What should the DevOps engineer do next to meet the requirements?

- A. Configure the Lambda function to be invoked by the SNS topic
- B. Create an AWS CloudTrail subscription for the SNS topic
- C. Configure a subscription filter for security group modification events.
- D. Create an Amazon EventBridge scheduled rule to invoke the Lambda function
- E. Define a schedule pattern that runs the Lambda function every hour.
- F. Create an Amazon EventBridge event rule that has the default event bus as the source
- G. Define the rule's event pattern to match EC2 security group creation and modification event
- H. Configure the rule to invoke the Lambda function.
- I. Create an Amazon EventBridge custom event bus that subscribes to events from all AWS services
- J. Configure the Lambda function to be invoked by the custom event bus.

**Answer:** C

#### Explanation:

To meet the requirements, the DevOps engineer should create an Amazon EventBridge event rule that has the default event bus as the source. The rule's event pattern should match EC2 security group creation and modification events, and it should be configured to invoke the Lambda function. This solution will allow for near real-time detection of security group rule changes and will trigger the Lambda function to remove any unrestricted rules and send email notifications to the security team. <https://repost.aws/knowledge-center/monitor-security-group-changes-ec2>

### NEW QUESTION 19

A company is launching an application. The application must use only approved AWS services. The account that runs the application was created less than 1 year



ago and is assigned to an AWS Organizations OU.

The company needs to create a new Organizations account structure. The account structure must have an appropriate SCP that supports the use of only services that are currently active in the AWS account.

The company will use AWS Identity and Access Management (IAM) Access Analyzer in the solution.

Which solution will meet these requirements?

- A. Create an SCP that allows the services that IAM Access Analyzer identifies
- B. Create an OU for the account
- C. Move the account into the new OU
- D. Attach the new SCP to the new OU
- E. Detach the default FullAWSAccess SCP from the new OU.
- F. Create an SCP that denies the services that IAM Access Analyzer identifies
- G. Create an OU for the account
- H. Move the account into the new OU
- I. Attach the new SCP to the new OU.
- J. Create an SCP that allows the services that IAM Access Analyzer identifies
- K. Attach the new SCP to the organization's root.
- L. Create an SCP that allows the services that IAM Access Analyzer identifies
- M. Create an OU for the account
- N. Move the account into the new OU
- O. Attach the new SCP to the management account
- P. Detach the default FullAWSAccess SCP from the new OU.

**Answer:** A

**Explanation:**

To meet the requirements of creating a new Organizations account structure with an appropriate SCP that supports the use of only services that are currently active in the AWS account, the company should use the following solution:

? Create an SCP that allows the services that IAM Access Analyzer identifies. IAM Access Analyzer is a service that helps identify potential resource-access risks by analyzing resource-based policies in the AWS environment. IAM Access Analyzer can also generate IAM policies based on access activity in the AWS CloudTrail logs. By using IAM Access Analyzer, the company can create an SCP that grants only the permissions that are required for the application to run, and denies all other services. This way, the company can enforce the use of only approved AWS services and reduce the risk of unauthorized access<sup>12</sup>

? Create an OU for the account. Move the account into the new OU. An OU is a container for accounts within an organization that enables you to group accounts that have similar business or security requirements. By creating an OU for the account, the company can apply policies and manage settings for the account as a group. The company should move the account into the new OU to make it subject to the policies attached to the OU<sup>3</sup>

? Attach the new SCP to the new OU. Detach the default FullAWSAccess SCP from the new OU. An SCP is a type of policy that specifies the maximum permissions for an organization or organizational unit (OU). By attaching the new SCP to the new OU, the company can restrict the services that are available to all accounts in that OU, including the account that runs the application. The company should also detach the default FullAWSAccess SCP from the new OU, because this policy allows all actions on all AWS services and might override or conflict with the new SCP<sup>45</sup>

The other options are not correct because they do not meet the requirements or follow best practices. Creating an SCP that denies the services that IAM Access Analyzer identifies is not a good option because it might not cover all possible services that are not approved or required for the application. A deny policy is also more difficult to maintain and update than an allow policy. Creating an SCP that allows the services that IAM Access Analyzer identifies and attaching it to the organization's root is not a good option because it might affect other accounts and OUs in the organization that have different service requirements or approvals. Creating an SCP that allows the services that IAM Access Analyzer identifies and attaching it to the management account is not a valid option because SCPs cannot be attached directly to accounts, only to OUs or roots.

References:

? 1: Using AWS Identity and Access Management Access Analyzer - AWS Identity and Access Management

? 2: Generate a policy based on access activity - AWS Identity and Access Management

? 3: Organizing your accounts into OUs - AWS Organizations

? 4: Service control policies - AWS Organizations

? 5: How SCPs work - AWS Organizations

**NEW QUESTION 24**

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 25

A company manages AWS accounts for application teams in AWS Control Tower. Individual application teams are responsible for securing their respective AWS accounts.

A DevOps engineer needs to enable Amazon GuardDuty for all AWS accounts in which the application teams have not already enabled GuardDuty. The DevOps engineer is using AWS CloudFormation StackSets from the AWS Control Tower management account.

How should the DevOps engineer configure the CloudFormation template to prevent failure during the StackSets deployment?

- A. Create a CloudFormation custom resource that invokes an AWS Lambda function.
- B. Configure the Lambda function to conditionally enable GuardDuty if GuardDuty is not already enabled in the accounts.
- C. Use the Conditions section of the CloudFormation template to enable GuardDuty in accounts where GuardDuty is not already enabled.
- D. Use the CloudFormation Fn::GetAtt intrinsic function to check whether GuardDuty is already enabled. If GuardDuty is not already enabled, use the Resources section of the CloudFormation template to enable GuardDuty.
- E. Manually discover the list of AWS account IDs where GuardDuty is not enabled. Use the CloudFormation Fn::ImportValue intrinsic function to import the list of account IDs into the CloudFormation template to skip deployment for the listed AWS accounts.

**Answer:** A

#### Explanation:

This solution will meet the requirements because it will use a CloudFormation custom resource to execute custom logic during the stack set operation. A custom resource is a resource that you define in your template and that is associated with an AWS Lambda function. The Lambda function runs whenever the custom resource is created, updated, or deleted, and can perform any actions that are supported by the AWS SDK. In this case, the Lambda function can use the GuardDuty API to check whether GuardDuty is already enabled in each target account, and if not, enable it. This way, the DevOps engineer can avoid deploying the stack set to accounts that already have GuardDuty enabled, and prevent failure during the deployment.

#### NEW QUESTION 30

A company has chosen AWS to host a new application. The company needs to implement a multi-account strategy. A DevOps engineer creates a new AWS account and an organization in AWS Organizations. The DevOps engineer also creates the OU structure for the organization and sets up a landing zone by using AWS Control Tower.

The DevOps engineer must implement a solution that automatically deploys resources for new accounts that users create through AWS Control Tower Account Factory. When a user creates a new account, the solution must apply AWS CloudFormation templates and SCPs that are customized for the OU or the account to automatically deploy all the resources that are attached to the account. All the OUs are enrolled in AWS Control Tower.

Which solution will meet these requirements in the MOST automated way?

- A. Use AWS Service Catalog with AWS Control Tower.
- B. Create portfolios and products in AWS Service Catalog.
- C. Grant granular permissions to provision these resources.
- D. Deploy SCPs by using the AWS CLI and JSON documents.
- E. Deploy CloudFormation stack sets by using the required template.
- F. Enable automatic deployment.
- G. Deploy stack instances to the required account.
- H. Deploy a CloudFormation stack set to the organization's management account to deploy SCPs.
- I. Create an Amazon EventBridge rule to detect the CreateManagedAccount event.
- J. Configure AWS Service Catalog as the target to deploy resources to any new account.
- K. Deploy SCPs by using the AWS CLI and JSON documents.
- L. Deploy the Customizations for AWS Control Tower (CfCT) solution.
- M. Use an AWS CodeCommit repository as the source.
- N. In the repository, create a custom package that includes the CloudFormation templates and the SCP JSON documents.

**Answer:** D

#### Explanation:

The CfCT solution is designed for the exact purpose stated in the question. It extends the capabilities of AWS Control Tower by providing you with a way to automate resource provisioning and apply custom configurations across all AWS accounts created in the Control Tower environment. This enables the company to implement additional account customizations when new accounts are provisioned via the Control Tower Account Factory. The CloudFormation templates and SCPs can be added to a CodeCommit repository and will be automatically deployed to new accounts when they are created. This provides a highly automated solution that does not require manual intervention to deploy resources and SCPs to new accounts.

#### NEW QUESTION 32

A company has deployed a critical application in two AWS Regions. The application uses an Application Load Balancer (ALB) in both Regions. The company has Amazon Route 53 alias DNS records for both ALBs.

The company uses Amazon Route 53 Application Recovery Controller to ensure that the application can fail over between the two Regions. The Route 53 ARC configuration includes a routing control for both Regions. The company uses Route 53 ARC to perform quarterly disaster recovery (DR) tests.

During the most recent DR test, a DevOps engineer accidentally turned off both routing controls. The company needs to ensure that at least one routing control is turned on at all times.

Which solution will meet these requirements?

- A. In Route 53 ARC, create a new assertion safety rule.
- B. Apply the assertion safety rule to the two routing controls.
- C. Configure the rule with the ATLEAST type with a threshold of 1.
- D. In Route 53 ARC, create a new gating safety rule.
- E. Apply the assertion safety rule to the two routing controls.
- F. Configure the rule with the OR type with a threshold of 1.
- G. In Route 53 ARC, create a new resource set.

- I. Configure the resource set with an AWS: Route53: HealthCheck resource type
- J. Specify the ARNs of the two routing controls as the target resource
- K. Create a new readiness check for the resource set.
- L. In Route 53 ARC, create a new resource set
- M. Configure the resource set with an AWS: Route53RecoveryReadiness: DNSTargetResource resource type
- N. Add the domain names of the two Route 53 alias DNS records as the target resource
- O. Create a new readiness check for the resource set.

**Answer: A**

**Explanation:**

The correct solution is to create a new assertion safety rule in Route 53 ARC and apply it to the two routing controls. An assertion safety rule is a type of safety rule that ensures that a minimum number of routing controls are always enabled. The ATLEAST type of assertion safety rule specifies the minimum number of routing controls that must be enabled for the rule to evaluate as healthy. By setting the threshold to 1, the rule ensures that at least one routing control is always turned on. This prevents the scenario where both routing controls are accidentally turned off and the application becomes unavailable in both Regions.

The other solutions are incorrect because they do not use safety rules to prevent both routing controls from being turned off. A gating safety rule is a type of safety rule that prevents routing control state changes that violate the rule logic. The OR type of gating safety rule specifies that one or more routing controls must be enabled for the rule to evaluate as healthy. However, this rule does not prevent a user from turning off both routing controls manually. A resource set is a collection of resources that are tested for readiness by Route 53 ARC. A readiness check is a test that verifies that all the resources in a resource set are operational.

However, these concepts are not related to routing control states or safety rules. Therefore, creating a new resource set and a new readiness check will not ensure that at least one routing control is turned on at all times. References:

- ? Routing control in Amazon Route 53 Application Recovery Controller
- ? Viewing and updating routing control states in Route 53 ARC
- ? Creating a control panel in Route 53 ARC
- ? Creating safety rules in Route 53 ARC

**NEW QUESTION 35**

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 38**

A company requires its internal business teams to launch resources through pre-approved AWS CloudFormation templates only. The security team requires automated monitoring when resources drift from their expected state.

Which strategy should be used to meet these requirements?

- A. Allow users to deploy CloudFormation stacks using a CloudFormation service role only.
- B. Use CloudFormation drift detection to detect when resources have drifted from their expected state.
- C. Allow users to deploy CloudFormation stacks using a CloudFormation service role only.
- D. Use AWS Config rules to detect when resources have drifted from their expected state.
- E. Allow users to deploy CloudFormation stacks using AWS Service Catalog only.
- F. Enforce the use of a launch constraint.
- G. Use AWS Config rules to detect when resources have drifted from their expected state.

- H. Allow users to deploy CloudFormation stacks using AWS Service Catalog only
- I. Enforce the use of a template constraint
- J. Use Amazon EventBridge notifications to detect when resources have drifted from their expected state.

**Answer: C**

**Explanation:**

The correct answer is C. Allowing users to deploy CloudFormation stacks using AWS Service Catalog only and enforcing the use of a launch constraint is the best way to ensure that the internal business teams launch resources through pre-approved CloudFormation templates only. AWS Service Catalog is a service that enables organizations to create and manage catalogs of IT services that are approved for use on AWS. A launch constraint is a rule that specifies the role that AWS Service Catalog assumes when launching a product.

By using a launch constraint, the DevOps engineer can control the permissions that the users have when launching a product. Using AWS Config rules to detect when resources have drifted from their expected state is the best way to automate the monitoring of the resources. AWS Config is a service that enables you to assess, audit, and evaluate the configurations of your AWS resources. AWS Config rules are custom or managed rules that AWS Config uses to evaluate whether your AWS resources comply with your desired configurations. By using AWS Config rules, the DevOps engineer can track the changes in the resources and identify any non-compliant resources.

Option A is incorrect because allowing users to deploy CloudFormation stacks using a CloudFormation service role only is not the best way to ensure that the internal business teams launch resources through pre-approved CloudFormation templates only. A CloudFormation service role is an IAM role that CloudFormation assumes to create, update, or delete the stack resources. By using a CloudFormation service role, the DevOps engineer can control the permissions that CloudFormation has when acting on the resources, but not the permissions that the users have when launching a stack. Therefore, option A does not prevent the users from launching resources that are not approved by the company. Using CloudFormation drift detection to detect when resources have drifted from their expected state is a valid way to monitor the resources, but it is not as automated and scalable as using AWS Config rules. CloudFormation drift detection is a feature that enables you to detect whether a stack's actual configuration differs, or has drifted, from its expected configuration. To use this feature, the DevOps engineer would need to manually initiate a drift detection operation on the stack or the stack resources, and then view the drift status and details in the CloudFormation console or API.

Option B is incorrect because allowing users to deploy CloudFormation stacks using a CloudFormation service role only is not the best way to ensure that the internal business teams launch resources through pre-approved CloudFormation templates only, as explained in option A. Using AWS Config rules to detect when resources have drifted from their expected state is a valid way to monitor the resources, as explained in option C. Option D is incorrect because enforcing the use of a template constraint is not the best way to ensure that the internal business teams launch resources through pre-approved CloudFormation templates only. A template constraint is a rule that defines the values or properties that users can specify when launching a product. By using a template constraint, the DevOps engineer can control the parameters that the users can provide when launching a product, but not the permissions that the users have when launching a product. Therefore, option D does not prevent the users from launching resources that are not approved by the company. Using Amazon EventBridge notifications to detect when resources have drifted from their expected state is a less reliable and consistent solution than using AWS Config rules. Amazon EventBridge is a service that enables you to connect your applications with data from a variety of sources. Amazon EventBridge can deliver a stream of real-time data from event sources, such as AWS services, and route

that data to targets, such as AWS Lambda functions. However, to use this solution, the DevOps engineer would need to configure the event source, the event bus, the event rule, and the event target for each resource type that needs to be monitored, which is more complex and error-prone than using AWS Config rules.

**NEW QUESTION 42**

A company's application teams use AWS CodeCommit repositories for their applications.

The application teams have repositories in multiple AWS accounts. All accounts are in an organization in AWS Organizations.

Each application team uses AWS IAM Identity Center (AWS Single Sign-On) configured with an external IdP to assume a developer IAM role. The developer role allows the application teams to use Git to work with the code in the repositories.

A security audit reveals that the application teams can modify the main branch in any repository. A DevOps engineer must implement a solution that allows the application teams to modify the main branch of only the repositories that they manage.

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

- A. Update the SAML assertion to pass the user's team name
- B. Update the IAM role's trust policy to add an access-team session tag that has the team name.
- C. Create an approval rule template for each team in the Organizations management account
- D. Associate the template with all the repositories
- E. Add the developer role ARN as an approver.
- F. Create an approval rule template for each account
- G. Associate the template with all repositories
- H. Add the "aws:ResourceTag/access-team": "\$ ;{aws:PrincipalTag/access-team}" condition to the approval rule template.
- I. For each CodeCommit repository, add an access-team tag that has the value set to the name of the associated team.
- J. Attach an SCP to the account
- K. Include the following statement:



```
{
  "Effect": "Deny",
  "Action": [
    "codecommit:GitPush",
    "codecommit:PutFile",
    "codecommit:Merge*"
  ],
  "Resource": "*",
  "Condition": {
    "StringEqualsIfExists": {
      "codecommit:References": ["refs/heads/main"]
    },
    "StringNotEquals": {
      "aws:ResourceTag/access-team": "$ ;{aws:PrincipalTag/access-team}"
    },
    "Null": {
      "codecommit:References": "false"
    }
  }
}
```

L. Create an IAM permissions boundary in each account

M. Include the following statement: {

```
  "Effect": "Allow",
  "Action": [
    "codecommit:GitPush",
    "codecommit:PutFile",
    "codecommit:Merge*"
  ],
  "Resource": "*",
  "Condition": {
    "StringEqualsIfExists": {
      "codecommit:References": ["refs/heads/main"]
    },
    "StringNotEquals": {
      "aws:ResourceTag/access-team": "$ ;{aws:PrincipalTag/access-team}"
    },
    "Null": {
      "codecommit:References": "false"
    }
  }
}
```

**Answer:** ADF

#### Explanation:

Short Explanation: To meet the requirements, the DevOps engineer should update the SAML assertion to pass the user's team name, update the IAM role's trust policy to add an access-team session tag that has the team name, create an IAM permissions boundary in each account, and for each CodeCommit repository, add an access-team tag that has the value set to the name of the associated team.

References:

? Updating the SAML assertion to pass the user's team name allows the DevOps engineer to use IAM tags to identify which team a user belongs to. This can help enforce fine-grained access control based on the user's team membership<sup>1</sup>.

? Updating the IAM role's trust policy to add an access-team session tag that has the team name allows the DevOps engineer to use IAM condition keys to restrict access based on the session tag value<sup>2</sup>. For example, the DevOps engineer can use the aws:PrincipalTag condition key to match the access-team tag of the user with the access-team tag of the repository<sup>3</sup>.

? Creating an IAM permissions boundary in each account allows the DevOps engineer to set the maximum permissions that an identity-based policy can grant to an IAM entity. An entity's permissions boundary allows it to perform only the actions that are allowed by both its identity-based policies and its permissions boundaries<sup>4</sup>. For example, the DevOps engineer can use a permissions boundary policy to limit the actions that a user can perform on CodeCommit repositories based on their access-team tag<sup>5</sup>.

? For each CodeCommit repository, adding an access-team tag that has the value set to the name of the associated team allows the DevOps engineer to use resource tags to identify which team manages a repository. This can help enforce fine-grained access control based on the resource tag value<sup>6</sup>.

? The other options are incorrect because:

#### NEW QUESTION 46

An ecommerce company is receiving reports that its order history page is experiencing delays in reflecting the processing status of orders. The order processing system consists of an AWS Lambda function that uses reserved concurrency. The Lambda function processes order messages from an Amazon Simple Queue Service (Amazon SQS) queue and inserts processed orders into an Amazon DynamoDB table. The DynamoDB table has auto scaling enabled for read and write capacity.

Which actions should a DevOps engineer take to resolve this delay? (Choose two.)

- A. Check the ApproximateAgeOfOldestMessage metric for the SQS queue
- B. Increase the Lambda function concurrency limit.
- C. Check the ApproximateAgeOfOldestMessage metric for the SQS queue
- D. Configure a redrive policy on the SQS queue.



- D. Check the NumberOfMessagesSent metric for the SQS queue
- E. Increase the SQS queue visibility timeout.
- F. Check the WriteThrottleEvents metric for the DynamoDB tabl
- G. Increase the maximum write capacity units (WCUs) for the table's scaling policy.
- H. Check the Throttles metric for the Lambda functio
- I. Increase the Lambda function timeout.

**Answer:** AD

**Explanation:**

A: If the ApproximateAgeOfOldestMessages indicate that orders are remaining in the SQS queue for longer than expected, the reserved concurrency limit may be set too small to keep up with the number of orders entering the queue and is being throttled. D: The DynamoDB table is using Auto Scaling. With Auto Scaling, you create a scaling policy that specifies whether you want to scale read capacity or write capacity (or both), and the minimum and maximum provisioned capacity unit settings for the table. The ThottledWriteRequests metric will indicate if there is a throttling issue on the DynamoDB table, which can be resolved by increasing the maximum write capacity units for the table's Auto Scaling policy. <https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/AutoScaling.html>

**NEW QUESTION 51**

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 52**

A company's security policies require the use of security hardened AMIS in production environments. A DevOps engineer has used EC2 Image Builder to create a pipeline that builds the AMIs on a recurring schedule. The DevOps engineer needs to update the launch templates of the companys Auto Scaling groups. The Auto Scaling groups must use the newest AMIS during the launch of Amazon EC2 instances. Which solution will meet these requirements with the MOST operational efficiency?

- A. Configure an Amazon EventBridge rule to receive new AMI events from Image Builde
- B. Target an AWS Systems Manager Run Command document that updates the launch templates of the Auto Scaling groups with the newest AMI ID.
- C. Configure an Amazon EventBridge rule to receive new AMI events from Image Builde
- D. Target an AWS Lambda function that updates the launch templates of the Auto Scaling groups with the newest AMI ID.
- E. Configure the launch template to use a value from AWS Systems Manager Parameter Store for the AMI I
- F. Configure the Image Builder pipeline to update the Parameter Store value with the newest AMI ID.
- G. Configure the Image Builder distribution settings to update the launch templates with the newest AMI I
- H. Configure the Auto Scaling groups to use the newest version of the launch template.

**Answer:** C

**Explanation:**

? The most operationally efficient solution is to use AWS Systems Manager Parameter Store<sup>1</sup> to store the AMI ID and reference it in the launch template<sup>2</sup>. This way, the launch template does not need to be updated every time a new AMI is created by Image Builder. Instead, the Image Builder pipeline can update the Parameter Store value with the newest AMI ID<sup>3</sup>, and the Auto Scaling group can launch instances using the latest value from Parameter Store.

? The other solutions require updating the launch template or creating a new version of it every time a new AMI is created, which adds complexity and overhead. Additionally, using EventBridge rules and Lambda functions or Run Command documents introduces additional dependencies and potential points of failure.

References: 1: AWS Systems Manager Parameter Store 2: Using AWS Systems Manager parameters instead of AMI IDs in launch templates 3: Update an SSM parameter with 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 attache
- B. Once the application is installed and running, run a script to disassociate the Elastic IP addresses afterwards.
- C. Set up a NAT gatewa
- D. Deploy the EC2 instances to a private subne
- 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 repositor
- 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 61

A DevOps engineer is working on a data archival project that requires the migration of on-premises data to an Amazon S3 bucket. The DevOps engineer develops a script that incrementally archives on-premises data that is older than 1 month to Amazon S3. Data that is transferred to Amazon S3 is deleted from the on-premises location. The script uses the S3 PutObject operation.

During a code review the DevOps engineer notices that the script does not verify whether the data was successfully copied to Amazon S3. The DevOps engineer must update the script to ensure that data is not corrupted during transmission. The script must use MD5 checksums to verify data integrity before the on-premises data is deleted.

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

- A. Check the returned response for the Versioned Compare the returned Versioned against the MD5 checksum.
- B. Include the MD5 checksum within the Content-MD5 parameter
- C. Check the operation's return status to find out if an error was returned.
- D. Include the checksum digest within the tagging parameter as a URL query parameter.
- E. Check the returned response for the ETag
- F. Compare the returned ETag against the MD5 checksum.
- G. Include the checksum digest within the Metadata parameter as a name-value pair. After upload use the S3 HeadObject operation to retrieve metadata from the object.

**Answer:** BD

#### Explanation:

<https://docs.aws.amazon.com/AmazonS3/latest/userguide/checking-object-integrity.html>

#### NEW QUESTION 64

A company that runs many workloads on AWS has an Amazon EBS spend that has increased over time. The DevOps team notices there are many unattached EBS volumes. Although there are workloads where volumes are detached, volumes over 14 days old are stale and no longer needed. A DevOps engineer has been tasked with creating automation that deletes unattached EBS volumes that have been unattached for 14 days.

Which solution will accomplish this?

- A. Configure the AWS Config ec2-volume-in-use-check managed rule with a configuration changes trigger type and an Amazon EC2 volume resource target.
- B. Create a new Amazon CloudWatch Events rule scheduled to execute an AWS Lambda function in 14 days to delete the specified EBS volume.
- C. Use Amazon EC2 and Amazon Data Lifecycle Manager to configure a volume lifecycle policy.
- D. Set the interval period for unattached EBS volumes to 14 days and set the retention rule to delete.
- E. Set the policy target volumes as \*.
- F. Create an Amazon CloudWatch Events rule to execute an AWS Lambda function daily.
- G. The Lambda function should find unattached EBS volumes and tag them with the current date, and delete unattached volumes that have tags with dates that are more than 14 days old.
- H. Use AWS Trusted Advisor to detect EBS volumes that have been detached for more than 14 days.
- I. Execute an AWS Lambda function that creates a snapshot and then deletes the EBS volume.

**Answer:** C

#### Explanation:

The requirement is to create automation that deletes unattached EBS volumes that have been unattached for 14 days. To do this, the DevOps engineer needs to use the following steps:

? Create an Amazon CloudWatch Events rule to execute an AWS Lambda function

daily. CloudWatch Events is a service that enables event-driven architectures by delivering events from various sources to targets. Lambda is a service that lets you

run code without provisioning or managing servers. By creating a CloudWatch Events rule that executes a Lambda function daily, the DevOps engineer can schedule a recurring task to check and delete unattached EBS volumes.

? The Lambda function should find unattached EBS volumes and tag them with the

current date, and delete unattached volumes that have tags with dates that are more than 14 days old. The Lambda function can use the EC2 API to list and filter unattached EBS volumes based on their state and tags. The function can then tag each unattached volume with the current date using the create-tags command.

The function can also compare the tag value with the current date and delete any unattached volume that has been tagged more than 14 days ago using the delete-volume command.

#### NEW QUESTION 65

A company wants to deploy a workload on several hundred Amazon EC2 instances. The company will provision the EC2 instances in an Auto Scaling group by using a launch template.

The workload will pull files from an Amazon S3 bucket, process the data, and put the results into a different S3 bucket. The EC2 instances must have least-privilege permissions and must use temporary security credentials.

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

- A. Create an IAM role that has the appropriate permissions for S3 bucket
- B. Add the IAM role to an instance profile.
- C. Update the launch template to include the IAM instance profile.
- D. Create an IAM user that has the appropriate permissions for Amazon S3. Generate a secret key and token.
- E. Create a trust anchor and profile
- F. Attach the IAM role to the profile.
- G. Update the launch template
- H. Modify the user data to use the new secret key and token.

**Answer:** AB

#### Explanation:

To meet the requirements of deploying a workload on several hundred EC2 instances with least-privilege permissions and temporary security credentials, the company should use an IAM role and an instance profile. An IAM role is a way to grant permissions to an entity that you trust, such as an EC2 instance. An

instance profile is a container for an IAM role that you can use to pass role information to an EC2 instance when the instance starts. By using an IAM role and an instance profile, the EC2 instances can automatically receive temporary security credentials from the AWS Security Token Service (STS) and use them to access the S3 buckets. This way, the company does not need to manage or rotate any long-term credentials, such as IAM users or access keys. To use an IAM role and an instance profile, the company should create an IAM role that has the appropriate permissions for S3 buckets. The permissions should allow the EC2 instances to read from the source S3 bucket and write to the destination S3 bucket. The company should also create a trust policy for the IAM role that specifies that EC2 is allowed to assume the role. Then, the company should add the IAM role to an instance profile. An instance profile can have only one IAM role, so the company does not need to create multiple roles or profiles for this scenario. Next, the company should update the launch template to include the IAM instance profile. A launch template is a way to save launch parameters for EC2 instances, such as the instance type, security group, user data, and IAM instance profile. By using a launch template, the company can ensure that all EC2 instances in the Auto Scaling group have consistent configuration and permissions. The company should specify the name or ARN of the IAM instance profile in the launch template. This way, when the Auto Scaling group launches new EC2 instances based on the launch template, they will automatically receive the IAM role and its permissions through the instance profile. The other options are not correct because they do not meet the requirements or follow best practices. Creating an IAM user and generating a secret key and token is not a good option because it involves managing long-term credentials that need to be rotated regularly. Moreover, embedding credentials in user data is not secure because user data is visible to anyone who can describe the EC2 instance. Creating a trust anchor and profile is not a valid option because trust anchors are used for certificate-based authentication, not for IAM roles or instance profiles. Modifying user data to use a new secret key and token is also not a good option because it requires updating user data every time the credentials change, which is not scalable or efficient.

References:

- ? 1: AWS Certified DevOps Engineer - Professional Certification | AWS Certification | AWS
- ? 2: DevOps Resources - Amazon Web Services (AWS)
- ? 3: Exam Readiness: AWS Certified DevOps Engineer - Professional
- ? : IAM Roles for Amazon EC2 - AWS Identity and Access Management
- ? : Working with Instance Profiles - AWS Identity and Access Management
- ? : Launching an Instance Using a Launch Template - Amazon Elastic Compute Cloud
- ? : Temporary Security Credentials - AWS Identity and Access Management

#### NEW QUESTION 70

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 applicatio
- B. Use AWS CodeDeploy to deploy the Lambda functions with the Canary10Percent15Minutes Deployment Preference Typ
- 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 resource
- 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 resource
- 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 versio
- 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 74

A company hosts a security auditing application in an AWS account. The auditing application uses an IAM role to access other AWS accounts. All the accounts are in the same organization in AWS Organizations.

A recent security audit revealed that users in the audited AWS accounts could modify or delete the auditing application's IAM role. The company needs to prevent any modification to the auditing application's IAM role by any entity other than a trusted administrator IAM role.

Which solution will meet these requirements?

- A. Create an SCP that includes a Deny statement for changes to the auditing application's IAM rol
- B. Include a condition that allows the trusted administrator IAM role to make change
- C. Attach the SCP to the root of the organization.
- D. Create an SCP that includes an Allow statement for changes to the auditing application's IAM role by the trusted administrator IAM rol
- E. Include a Deny statement for changes by all other IAM principal
- F. Attach the SCP to the IAM service in each AWS account where the auditing application has an IAM role.
- G. Create an IAM permissions boundary that includes a Deny statement for changes to the auditing application's IAM rol
- H. Include a condition that allows the trusted administrator IAM role to make change
- I. Attach the permissions boundary to the audited AWS accounts.
- J. Create an IAM permissions boundary that includes a Deny statement for changes to the auditing application's IAM rol
- K. Include a condition that allows the trusted administrator IAM role to make change



L. Attach the permissions boundary to the auditing application's IAM role in the AWS accounts.

**Answer:** A

**Explanation:**

[https://docs.aws.amazon.com/organizations/latest/userguide/orgs\\_manage\\_policies\\_scps.html?icmpid=docs\\_orgs\\_console](https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps.html?icmpid=docs_orgs_console)

SCPs (Service Control Policies) are the best way to restrict permissions at the organizational level, which in this case would be used to restrict modifications to the IAM role used by the auditing application, while still allowing trusted administrators to make changes to it. Options C and D are not as effective because IAM permission boundaries are applied to IAM entities (users, groups, and roles), not the account itself, and must be applied to all IAM entities in the account.

**NEW QUESTION 78**

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
- 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 82**

A rapidly growing company wants to scale for developer demand for AWS development environments. Development environments are created manually in the AWS Management Console. The networking team uses AWS CloudFormation to manage the networking infrastructure, exporting stack output values for the Amazon VPC and all subnets. The development environments have common standards, such as Application Load Balancers, Amazon EC2 Auto Scaling groups, security groups, and Amazon DynamoDB tables.

To keep up with demand, the DevOps engineer wants to automate the creation of development environments. Because the infrastructure required to support the application is expected to grow, there must be a way to easily update the deployed infrastructure. CloudFormation will be used to create a template for the development environments.

Which approach will meet these requirements and quickly provide consistent AWS environments for developers?

- A. Use Fn::ImportValue intrinsic functions in the Resources section of the template to retrieve Virtual Private Cloud (VPC) and subnet value
- B. Use CloudFormation StackSets for the development environments, using the Count input parameter to indicate the number of environments needed
- C. Use the UpdateStackSet command to update existing development environments.
- D. Use nested stacks to define common infrastructure component
- E. To access the exported values, use TemplateURL to reference the networking team's template
- F. To retrieve Virtual Private Cloud (VPC) and subnet values, use Fn::ImportValue intrinsic functions in the Parameters section of the root template
- G. Use the CreateChangeSet and ExecuteChangeSet commands to update existing development environments.
- H. Use nested stacks to define common infrastructure component
- I. Use Fn::ImportValue intrinsic functions with the resources of the nested stack to retrieve Virtual Private Cloud (VPC) and subnet value
- J. Use the CreateChangeSet and ExecuteChangeSet commands to update existing development environments.
- K. Use Fn::ImportValue intrinsic functions in the Parameters section of the root template to retrieve Virtual Private Cloud (VPC) and subnet value
- L. Define the development resources in the order they need to be created in the CloudFormation nested stack
- M. Use the CreateChangeSet
- N. and ExecuteChangeSet commands to update existing development environments.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-importvalue.html>

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-importvalue.html> CF of network exports the VPC, subnet or needed information CF of application imports the above information to its stack and UpdateChangeSet/ ExecuteChangeSet

**NEW QUESTION 86**

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 90**

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 yaml 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 93**

A company manages multiple AWS accounts in AWS Organizations. The company's security policy states that AWS account root user credentials for member accounts must not be used. The company monitors access to the root user credentials.

A recent alert shows that the root user in a member account launched an Amazon EC2 instance. A DevOps engineer must create an SCP at the organization's root level that will prevent the root user in member accounts from making any AWS service API calls.

Which SCP will meet these requirements?

A)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "*",
      "Resource": "*",
      "Condition": {
        "StringNotLike": { "aws:PrincipalArn": "arn:aws:iam::*:root" }
      }
    }
  ]
}
```

B)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Deny",
      "Action": "*",
      "Resource": "*",
      "Principal": { "AWS": "arn:aws:iam::*:root" }
    }
  ]
}
```

C)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Deny",
      "Action": "*",
      "Resource": "*",
      "Condition": {
        "StringLike": { "aws:PrincipalArn": "arn:aws:iam::*:root" }
      }
    }
  ]
}
```

D)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": "*",
      "Resource": "*",
      "Principal": "root"
    }
  ]
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

**Answer: D**

#### NEW QUESTION 98

An application running on a set of Amazon EC2 instances in an Auto Scaling group requires a configuration file to operate. The instances are created and maintained with AWS CloudFormation. A DevOps engineer wants the instances to have the latest configuration file when launched and wants changes to the configuration file to be reflected on all the instances with a minimal delay when the CloudFormation template is updated. Company policy requires that application configuration files be maintained along with AWS infrastructure configuration files in source control.

Which solution will accomplish this?

- A. In the CloudFormation template add an AWS Config rule
- B. Place the configuration file content in the rule's InputParameters property and set the Scope property to the EC2 Auto Scaling group
- C. Add an AWS Systems Manager Resource Data Sync resource to the template to poll for updates to the configuration.
- D. In the CloudFormation template add an EC2 launch template resource
- E. Place the configuration file content in the launch template
- F. Configure the cfn-init script to run when the instance is launched and configure the cfn-hup script to poll for updates to the configuration.
- G. In the CloudFormation template add an EC2 launch template resource
- H. Place the configuration file content in the launch template
- I. Add an AWS Systems Manager Resource Data Sync resource to the template to poll for updates to the configuration.
- J. In the CloudFormation template add CloudFormation intrinsic metadata
- K. Place the configuration file content in the metadata
- L. Configure the cfn-init script to run when the instance is launched and configure the cfn-hup script to poll for updates to the configuration.

**Answer: D**

#### Explanation:

Use the AWS::CloudFormation::Init type to include metadata on an Amazon EC2 instance for the cfn-init helper script. If your template calls the cfn-init script, the script looks for resource metadata rooted in the AWS::CloudFormation::Init metadata key. Reference: <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resource-init.html>

#### NEW QUESTION 103

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 CloudFormation
- 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:\* action
- 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 permission
- J. Use the new service role during stack deployments.

**Answer: D**

#### Explanation:

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

#### NEW QUESTION 108

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 112

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 113

A developer is maintaining a fleet of 50 Amazon EC2 Linux servers. The servers are part of an Amazon EC2 Auto Scaling group, and also use Elastic Load Balancing for load balancing.

Occasionally, some application servers are being terminated after failing ELB HTTP health checks. The developer would like to perform a root cause analysis on the issue, but before being able to access application logs, the server is terminated.

How can log collection be automated?

- A. Use Auto Scaling lifecycle hooks to put instances in a Pending:Wait stat
- B. Create an Amazon CloudWatch alarm for EC2 Instance Terminate Successful and trigger an AWS Lambda function that invokes an SSM Run Command script to collect logs, push them to Amazon S3, and complete the lifecycle action once logs are collected.
- C. Use Auto Scaling lifecycle hooks to put instances in a Terminating:Wait stat
- D. Create an AWS Config rule for EC2 Instance-terminate Lifecycle Action and trigger a step function that invokes a script to collect logs, push them to Amazon S3, and complete the lifecycle action once logs are collected.
- E. Use Auto Scaling lifecycle hooks to put instances in a Terminating:Wait stat
- F. Create an Amazon CloudWatch subscription filter for EC2 Instance Terminate Successful and trigger a CloudWatch agent that invokes a script to collect logs, push them to Amazon S3, and complete the lifecycle action once logs are collected.
- G. Use Auto Scaling lifecycle hooks to put instances in a Terminating:Wait stat
- H. Create an Amazon EventBridge rule for EC2 Instance-terminate Lifecycle Action and trigger an AWS Lambda function that invokes an SSM Run Command script to collect logs, push them to Amazon S3, and complete the lifecycle action once logs are collected.

**Answer: D**

#### Explanation:

<https://blog.fourninecloud.com/auto-scaling-lifecycle-hooks-to-export-server-logs-when-instance-terminating-58e06d7c0d6a>

#### NEW QUESTION 114

A company uses AWS Organizations to manage multiple accounts. Information security policies require that all unencrypted Amazon EBS volumes be marked as non-compliant. A DevOps engineer needs to automatically deploy the solution and ensure that this compliance check is always present.

Which solution will accomplish this?

- A. Create an AWS CloudFormation template that defines an AWS Inspector rule to check whether EBS encryption is enable
- B. Save the template to an Amazon S3 bucket that has been shared with all accounts within the compan
- C. Update the account creation script pointing to the CloudFormation template in Amazon S3.
- D. Create an AWS Config organizational rule to check whether EBS encryption is enabled and deploy the rule using the AWS CL
- E. Create and apply an SCP to prohibit stopping and deleting AWS Config across the organization.



- F. Create an SCP in Organization
- G. Set the policy to prevent the launch of Amazon EC2 instances without encryption on the EBS volumes using a conditional expression
- H. Apply the SCP to all AWS account
- I. Use Amazon Athena to analyze the AWS CloudTrail output, looking for events that deny an ec2: RunInstances action.
- J. Deploy an IAM role to all accounts from a single trusted account
- K. Build a pipeline with AWS CodePipeline with a stage in AWS Lambda to assume the IAM role, and list all EBS volumes in the account
- L. Publish a report to Amazon S3.

**Answer: B**

**Explanation:**

<https://docs.aws.amazon.com/config/latest/developerguide/ec2-ebs-encryption-by-default.html>

**NEW QUESTION 119**

A company has an application that includes AWS Lambda functions. The Lambda functions run Python code that is stored in an AWS CodeCommit repository. The company has recently experienced failures in the production environment because of an error in the Python code. An engineer has written unit tests for the Lambda functions to help avoid releasing any future defects into the production environment.

The company's DevOps team needs to implement a solution to integrate the unit tests into an existing AWS CodePipeline pipeline. The solution must produce reports about the unit tests for the company to view.

Which solution will meet these requirements?

- A. Associate the CodeCommit repository with Amazon CodeGuru Reviewer
- B. Create a new AWS CodeBuild project
- C. In the CodePipeline pipeline, configure a test stage that uses the new CodeBuild project
- D. Create a buildspec.yml file in the CodeCommit repository
- E. In the buildspec.yml file, define the actions to run a CodeGuru review.
- F. Create a new AWS CodeBuild project
- G. In the CodePipeline pipeline, configure a test stage that uses the new CodeBuild project
- H. Create a CodeBuild report group
- I. Create a buildspec.yml file in the CodeCommit repository
- J. In the buildspec.yml file, define the actions to run the unit tests with an output of JUNITXML in the build phase section. Configure the test reports to be uploaded to the new CodeBuild report group.
- K. Create a new AWS CodeArtifact repository
- L. Create a new AWS CodeBuild project
- M. In the CodePipeline pipeline, configure a test stage that uses the new CodeBuild project
- N. Create an appspec.yml file in the original CodeCommit repository
- O. In the appspec.yml file, define the actions to run the unit tests with an output of CUCUMBERJSON in the build phase section
- P. Configure the test reports to be sent to the new CodeArtifact repository.
- Q. Create a new AWS CodeBuild project
- R. In the CodePipeline pipeline, configure a test stage that uses the new CodeBuild project
- S. Create a new Amazon S3 bucket
- T. Create a buildspec.yml file in the CodeCommit repository
- . In the buildspec.yml file, define the actions to run the unit tests with an output of HTML in the phases section
- . In the reports section, upload the test reports to the S3 bucket.

**Answer: B**

**Explanation:**

The correct answer is B. Creating a new AWS CodeBuild project and configuring a test stage in the AWS CodePipeline pipeline that uses the new CodeBuild project is the best way to integrate the unit tests into the existing pipeline. Creating a CodeBuild report group and uploading the test reports to the new CodeBuild report group will produce reports about the unit tests for the company to view. Using JUNITXML as the output format for the unit tests is supported by CodeBuild and will generate a valid report. Option A is incorrect because Amazon CodeGuru Reviewer is a service that provides automated code reviews and recommendations for improving code quality and performance. It is not a tool for running unit tests or producing test reports. Therefore, option A will not meet the requirements.

Option C is incorrect because AWS CodeArtifact is a service that provides secure, scalable, and cost-effective artifact management for software development. It is not a tool for running unit tests or producing test reports. Moreover, option C uses CUCUMBERJSON as the output format for the unit tests, which is not supported by CodeBuild and will not generate a valid report.

Option D is incorrect because uploading the test reports to an Amazon S3 bucket is not the best way to produce reports about the unit tests for the company to view. CodeBuild has a built-in feature to create and manage test reports, which is more convenient and efficient than using S3. Furthermore, option D uses HTML as the output format for the unit tests, which is not supported by CodeBuild and will not generate a valid report.

**NEW QUESTION 122**

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 Change
- 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 Change
- 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 125**

A company is divided into teams. Each team has an AWS account and all the accounts are in an organization in AWS Organizations. Each team must retain full administrative rights to its AWS account. Each team also must be allowed to access only AWS services that the company approves for use. AWS services must gain approval through a request and approval process.

How should a DevOps engineer configure the accounts to meet these requirements?

- A. Use AWS CloudFormation StackSets to provision IAM policies in each account to deny access to restricted AWS service.
- B. In each account, configure AWS Config rules that ensure that the policies are attached to IAM principals in the account.
- C. Use AWS Control Tower to provision the accounts into OUs within the organization. Configure AWS Control Tower to enable AWS IAM Identity Center (AWS Single Sign-On). Configure IAM Identity Center to provide administrative access. Include deny policies on user roles for restricted AWS services.
- D. Place all the accounts under a new top-level OU within the organization. Create an SCP that denies access to restricted AWS services. Attach the SCP to the OU.
- E. Create an SCP that allows access to only approved AWS service.
- F. Attach the SCP to the root OU of the organization.
- G. Remove the FullAWSAccess SCP from the root OU of the organization.

**Answer: C**

**Explanation:**

<https://docs.aws.amazon.com/vpc/latest/userguide/managed-prefix-lists.html> A managed prefix list is a set of one or more CIDR blocks. You can use prefix lists to make it easier to configure and maintain your security groups and route tables. <https://docs.aws.amazon.com/vpc/latest/userguide/sharing-managed-prefix-lists.html> With AWS Resource Access Manager (AWS RAM), the owner of a prefix list can share a prefix list with the following: Specific AWS accounts inside or outside of its organization in AWS Organizations An organizational unit inside its organization in AWS Organizations An entire organization in AWS Organizations

**NEW QUESTION 128**

A company's application uses a fleet of Amazon EC2 On-Demand Instances to analyze and process data. The EC2 instances are in an Auto Scaling group. The Auto Scaling group is a target group for an Application Load Balancer (ALB). The application analyzes critical data that cannot tolerate interruption. The application also analyzes noncritical data that can withstand interruption.

The critical data analysis requires quick scalability in response to real-time application demand. The noncritical data analysis involves memory consumption. A DevOps engineer must implement a solution that reduces scale-out latency for the critical data. The solution also must process the noncritical data.

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

- A. For the critical data, modify the existing Auto Scaling group.
- B. Create a warm pool instance in the stopped state.
- C. Define the warm pool size.
- D. Create a new version of the launch template that has detailed monitoring enabled.
- E. Use Spot Instances.
- F. For the critical data, modify the existing Auto Scaling group.
- G. Create a warm pool instance in the stopped state.
- H. Define the warm pool size.
- I. Create a new version of the launch template that has detailed monitoring enabled.
- J. Use On-Demand Instances.
- K. For the critical data.
- L. Modify the existing Auto Scaling group.
- M. Create a lifecycle hook to ensure that bootstrap scripts are completed successfully.
- N. Ensure that the application on the instances is ready to accept traffic before the instances are registered.
- O. Create a new version of the launch template that has detailed monitoring enabled.
- P. For the noncritical data, create a second Auto Scaling group that uses a launch template.
- Q. Configure the launch template to install the unified Amazon CloudWatch agent and to configure the CloudWatch agent with a custom memory utilization metric.
- R. Use Spot Instance.
- S. Add the new Auto Scaling group as the target group for the ALB.
- T. Modify the application to use two target groups for critical data and noncritical data.
- U. For the noncritical data, create a second Auto Scaling group.
- V. Choose the predefined memory utilization metric type for the target tracking scaling policy.
- W. Use Spot Instance.
- X. Add the new Auto Scaling group as the target group for the ALB.
- Y. Modify the application to use two target groups for critical data and noncritical data.

**Answer: BD**

**Explanation:**

? For the critical data, using a warm pool<sup>1</sup> can reduce the scale-out latency by having pre-initialized EC2 instances ready to serve the application traffic. Using On-Demand Instances can ensure that the instances are always available and not interrupted by Spot interruptions<sup>2</sup>.

? For the noncritical data, using a second Auto Scaling group with Spot Instances can reduce the cost and leverage the unused capacity of EC2<sup>3</sup>. Using a launch template with the CloudWatch agent<sup>4</sup> can enable the collection of memory utilization metrics, which can be used to scale the group based on the memory demand. Adding the second group as a target group for the ALB and modifying the application to use two target groups can enable routing the traffic based on the data type.

References: 1: Warm pools for Amazon EC2 Auto Scaling 2: Amazon EC2 On-Demand Capacity Reservations 3: Amazon EC2 Spot Instances 4: Metrics collected by the CloudWatch agent

**NEW QUESTION 133**

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 138**

A company is using an AWS CodeBuild project to build and package an application. The packages are copied to a shared Amazon S3 bucket before being deployed across multiple AWS accounts.

The buildspec.yml file contains the following:

```
version: 0.2
phases:
  build:
    commands:
      - go build -o myapp
  post_build:
    commands:
      - aws s3 cp --acl authenticated-read myapp s3://artifacts/
```

The DevOps engineer has noticed that anybody with an AWS account is able to download the artifacts.

What steps should the DevOps engineer take to stop this?

- A. Modify the post\_build command to use --acl public-read and configure a bucket policy that grants read access to the relevant AWS accounts only.
- B. Configure a default ACL for the S3 bucket that defines the set of authenticated users as the relevant AWS accounts only and grants read-only access.
- C. Create an S3 bucket policy that grants read access to the relevant AWS accounts and denies read access to the principal “\*”.
- D. Modify the post\_build command to remove --acl authenticated-read and configure a bucket policy that allows read access to the relevant AWS accounts only.

**Answer:** D

**Explanation:**

When setting the flag authenticated-read in the command line, the owner gets FULL\_CONTROL. The AuthenticatedUsers group (Anyone with an AWS account) gets READ access. Reference: <https://docs.aws.amazon.com/AmazonS3/latest/userguide/acl-overview.html>

**NEW QUESTION 139**

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 144**

A company that uses electronic health records is running a fleet of Amazon EC2 instances with an Amazon Linux operating system. As part of patient privacy requirements, the company must ensure continuous compliance for patches for operating system and applications running on the EC2 instances.

How can the deployments of the operating system and application patches be automated using a default and custom repository?

- A. Use AWS Systems Manager to create a new patch baseline including the custom repository.
- B. Run the AWS-RunPatchBaseline document using the run command to verify and install patches.
- C. Use AWS Direct Connect to integrate the corporate repository and deploy the patches using Amazon CloudWatch scheduled events, then use the CloudWatch dashboard to create reports.

- D. Use yum-config-manager to add the custom repository under /etc/yum.repos.d and run yum-config-manager-enable to activate the repository.
- E. Use AWS Systems Manager to create a new patch baseline including the corporate repositor
- F. Run the AWS-AmazonLinuxDefaultPatchBaseline document using the run command to verify and install patches.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/systems-manager/latest/userguide/patch-manager-how-it-works-alt-source-repository.html>

**NEW QUESTION 145**

A Company uses AWS CodeCommit for source code control. Developers apply their changes to various feature branches and create pull requests to move those changes to the main branch when the changes are ready for production.

The developers should not be able to push changes directly to the main branch. The company applied the AWSCodeCommitPowerUser managed policy to the developers' IAM role, and now these developers can push changes to the main branch directly on every repository in the AWS account.

What should the company do to restrict the developers' ability to push changes to the main branch directly?

- A. Create an additional policy to include a Deny rule for the GitPush and PutFile action
- B. Include a restriction for the specific repositories in the policy repositories in the policy statement with a condition that references the main branch.
- A Create an additional policy to include a Deny rule for the GitPush and PutFile actions Include a restriction for the specific repositories in the policy statement with a condition that references the main branch
- C. Remove the IAM policy, and add an AWSCodeCommitReadOnly managed polic
- D. Add an Allow rule for the GitPush and PutFile actions for the specific repositories in the policy statement with a condition that references the mam branch.
- E. Modify the IAM policy Include a Deny rule for the GitPush and PutFile actions for the specific repositories in the policy statement with a condition that references the main branch.
- F. Create an additional policy to include an Allow rule for the GitPush and PutFile action
- G. Include a restriction for the specific repositories in the policy statement with a condition that references the feature branches.

**Answer:** A

**Explanation:**

By default, the AWSCodeCommitPowerUser managed policy allows users to push changes to any branch in any repository in the AWS account. To restrict the developers' ability to push changes to the main branch directly, an additional policy is needed that explicitly denies these actions for the main branch.

The Deny rule should be included in a policy statement that targets the specific repositories and includes a condition that references the main branch. The policy statement should look something like this:

```
{
  "Effect": "Deny", "Action": [ "codecommit:GitPush", "codecommit:PutFile"
],
  "Resource": "arn:aws:codecommit:<region>:<account-id>:<repository-name>", "Condition": {
    "StringEqualsIfExists": { "codecommit:References": [ "refs/heads/main"
  ]
}
}
```

**NEW QUESTION 150**

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