

Exam Questions AWS-Certified-DevOps-Engineer-Professional

Amazon AWS Certified DevOps Engineer Professional

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NEW QUESTION 1

A company has an application that runs on AWS Lambda and sends logs to Amazon CloudWatch Logs. An Amazon Kinesis data stream is subscribed to the log groups in CloudWatch Logs. A single consumer Lambda function processes the logs from the data stream and stores the logs in an Amazon S3 bucket. The company's DevOps team has noticed high latency during the processing and ingestion of some logs. Which combination of steps will reduce the latency? (Select THREE.)

- A. Create a data stream consumer with enhanced fan-out.
- B. Set the Lambda function that processes the logs as the consumer.
- C. Increase the ParallelizationFactor setting in the Lambda event source mapping.
- D. Configure reserved concurrency for the Lambda function that processes the logs.
- E. Increase the batch size in the Kinesis data stream.
- F. Turn off the ReportBatchItemFailures setting in the Lambda event source mapping.
- G. Increase the number of shards in the Kinesis data stream.

Answer: ABC

Explanation:

The latency in processing and ingesting logs can be caused by several factors, such as the throughput of the Kinesis data stream, the concurrency of the Lambda function, and the configuration of the event source mapping. To reduce the latency, the following steps can be taken:

? Create a data stream consumer with enhanced fan-out. Set the Lambda function that processes the logs as the consumer. This will allow the Lambda function to receive records from the data stream with dedicated throughput of up to 2 MB per second per shard, independent of other consumers¹. This will reduce the contention and delay in accessing the data stream.

? Increase the ParallelizationFactor setting in the Lambda event source mapping. This will allow the Lambda service to invoke more instances of the function concurrently to process the records from the data stream². This will increase the processing capacity and reduce the backlog of records in the data stream.

? Configure reserved concurrency for the Lambda function that processes the logs. This will ensure that the function has enough concurrency available to handle the increased load from the data stream³. This will prevent the function from being throttled by the account-level concurrency limit.

The other options are not effective or may have negative impacts on the latency. Option D is not suitable because increasing the batch size in the Kinesis data stream will increase the amount of data that the Lambda function has to process in each invocation, which may increase the execution time and latency⁴. Option E is not advisable because turning off the ReportBatchItemFailures setting in the Lambda event source mapping will prevent the Lambda service from retrying the failed records, which may result in data loss. Option F is not necessary because increasing the number of shards in the Kinesis data stream will increase the throughput of the data stream, but it will not affect the processing speed of the Lambda function, which is the bottleneck in this scenario.

References:

- ? 1: Using AWS Lambda with Amazon Kinesis Data Streams - AWS Lambda
- ? 2: AWS Lambda event source mappings - AWS Lambda
- ? 3: Managing concurrency for a Lambda function - AWS Lambda
- ? 4: AWS Lambda function scaling - AWS Lambda
- ? : AWS Lambda event source mappings - AWS Lambda
- ? : Scaling Amazon Kinesis Data Streams with AWS CloudFormation - Amazon Kinesis Data Streams

NEW QUESTION 2

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

What should a DevOps engineer do to meet these requirements?

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

Answer: B

Explanation:

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

NEW QUESTION 3

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

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

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

Answer: C

Explanation:

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

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

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

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

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

NEW QUESTION 4

A company is examining its disaster recovery capability and wants the ability to switch over its daily operations to a secondary AWS Region. The company uses AWS CodeCommit as a source control tool in the primary Region.

A DevOps engineer must provide the capability for the company to develop code in the secondary Region. If the company needs to use the secondary Region, developers can add an additional remote URL to their local Git configuration.

Which solution will meet these requirements?

- A. Create a CodeCommit repository in the secondary Region
- B. Create an AWS CodeBuild project to perform a Git mirror operation of the primary Region's CodeCommit repository to the secondary Region's CodeCommit repository
- C. Create an AWS Lambda function that invokes the CodeBuild project
- D. Create an Amazon EventBridge rule that reacts to merge events in the primary Region's CodeCommit repository
- E. Configure the EventBridge rule to invoke the Lambda function.
- F. Create an Amazon S3 bucket in the secondary Region
- G. Create an AWS Fargate task to perform a Git mirror operation of the primary Region's CodeCommit repository and copy the result to the S3 bucket
- H. Create an AWS Lambda function that initiates the Fargate task
- I. Create an Amazon EventBridge rule that reacts to merge events in the CodeCommit repository
- J. Configure the EventBridge rule to invoke the Lambda function.
- K. Create an AWS CodeArtifact repository in the secondary Region
- L. Create an AWS CodePipeline pipeline that uses the primary Region's CodeCommit repository for the source action
- M. Create a Cross-Region stage in the pipeline that packages the CodeCommit repository contents and stores the contents in the CodeArtifact repository when a pull request is merged into the CodeCommit repository.
- N. Create an AWS Cloud9 environment and a CodeCommit repository in the secondary Region
- O. Configure the primary Region's CodeCommit repository as a remote repository in the AWS Cloud9 environment
- P. Connect the secondary Region's CodeCommit repository to the AWS Cloud9 environment.

Answer: A

Explanation:

The best solution to meet the disaster recovery capability and allow developers to switch over to a secondary AWS Region for code development is option A. This involves creating a CodeCommit repository in the secondary Region and setting up an AWS CodeBuild project to perform a Git mirror operation of the primary Region's CodeCommit repository to the secondary Region's repository. An AWS Lambda function is then created to invoke the CodeBuild project. Additionally, an Amazon EventBridge rule is configured to react to merge events in the primary Region's CodeCommit repository and invoke the Lambda function¹². This setup ensures that the secondary Region's repository is always up-to-date with the primary repository, allowing for a seamless transition in case of a disaster recovery event¹.

References:

? AWS CodeCommit User Guide on resilience and disaster recovery¹.

? AWS Documentation on monitoring CodeCommit events in Amazon EventBridge and Amazon CloudWatch Events².

NEW QUESTION 5

A company is using an organization in AWS Organizations to manage multiple AWS accounts. The company's development team wants to use AWS Lambda functions to meet resiliency requirements and is rewriting all applications to work with Lambda functions that are deployed in a VPC. The development team is using Amazon Elastic File System (Amazon EFS) as shared storage in Account A in the organization.

The company wants to continue to use Amazon EFS with Lambda. Company policy requires all serverless projects to be deployed in Account B.

A DevOps engineer needs to reconfigure an existing EFS file system to allow Lambda functions to access the data through an existing EFS access point.

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

- A. Update the EFS file system policy to provide Account B with access to mount and write to the EFS file system in Account A.
- B. Create SCPs to set permission guardrails with fine-grained control for Amazon EFS.
- C. Create a new EFS file system in Account B. Use AWS Database Migration Service (AWS DMS) to keep data from Account A and Account B synchronized.
- D. Update the Lambda execution roles with permission to access the VPC and the EFS file system.
- E. Create a VPC peering connection to connect Account A to Account B.
- F. Configure the Lambda functions in Account B to assume an existing IAM role in Account A.

Answer: AEF

Explanation:

A Lambda function in one account can mount a file system in a different account. For this scenario, you configure VPC peering between the function VPC and the file system VPC. <https://docs.aws.amazon.com/lambda/latest/dg/services-efs.html> <https://aws.amazon.com/ru/blogs/storage/mount-amazon-efs-file-systems-cross-account-from-amazon-eks/>

* 1. Need to update the file system policy on EFS to allow mounting the file system into Account B.

File System Policy

```
$ cat file-system-policy.json
```

```
{
  "Statement": [
    {
      "Effect": "Allow", "Action": [
        "elasticfilesystem:ClientMount", "elasticfilesystem:ClientWrite"
      ],
      "Principal": {
        "AWS": "arn:aws:iam::<aws-account-id-A>:root" # Replace with AWS account ID of EKS cluster
      }
    }
  ]
}
```


- * 2. Need VPC peering between Account A and Account B as the pre-requisite
- * 3. Need to assume cross-account IAM role to describe the mounts so that a specific mount can be chosen.

NEW QUESTION 6

A company is using an Amazon Aurora cluster as the data store for its application. The Aurora cluster is configured with a single DB instance. The application performs read and write operations on the database by using the cluster's instance endpoint. The company has scheduled an update to be applied to the cluster during an upcoming maintenance window. The cluster must remain available with the least possible interruption during the maintenance window. What should a DevOps engineer do to meet these requirements?

- A. Add a reader instance to the Aurora cluster
- B. Update the application to use the Aurora cluster endpoint for write operation
- C. Update the Aurora cluster's reader endpoint for reads.
- D. Add a reader instance to the Aurora cluster
- E. Create a custom ANY endpoint for the cluster
- F. Update the application to use the Aurora cluster's custom ANY endpoint for read and write operations.
- G. Turn on the Multi-AZ option on the Aurora cluster
- H. Update the application to use the Aurora cluster endpoint for write operation
- I. Update the Aurora cluster's reader endpoint for reads.
- J. Turn on the Multi-AZ option on the Aurora cluster
- K. Create a custom ANY endpoint for the cluster
- L. Update the application to use the Aurora cluster's custom ANY endpoint for read and write operations.

Answer: C

Explanation:

To meet the requirements, the DevOps engineer should do the following:

- ? Turn on the Multi-AZ option on the Aurora cluster.
- ? Update the application to use the Aurora cluster endpoint for write operations.
- ? Update the Aurora cluster's reader endpoint for reads.

Turning on the Multi-AZ option will create a replica of the database in a different Availability Zone. This will ensure that the database remains available even if one of the Availability Zones is unavailable.

Updating the application to use the Aurora cluster endpoint for write operations will ensure that all writes are sent to both the primary and replica databases. This will ensure that the data is always consistent.

Updating the Aurora cluster's reader endpoint for reads will allow the application to read data from the replica database. This will improve the performance of the application during the maintenance window.

NEW QUESTION 7

A company is developing an application that will generate log events. The log events consist of five distinct metrics every one tenth of a second and produce a large amount of data. The company needs to configure the application to write the logs to Amazon Time stream. The company will configure a daily query against the Timestream table.

Which combination of steps will meet these requirements with the FASTEST query performance? (Select THREE.)

- A. Use batch writes to write multiple log events in a Single write operation
- B. Write each log event as a single write operation
- C. Treat each log as a single-measure record
- D. Treat each log as a multi-measure record
- E. Configure the memory store retention period to be longer than the magnetic store retention period
- F. Configure the memory store retention period to be shorter than the magnetic store retention period

Answer: ADF

Explanation:

A comprehensive and detailed explanation is:

? Option A is correct because using batch writes to write multiple log events in a single write operation is a recommended practice for optimizing the performance and cost of data ingestion in Timestream. Batch writes can reduce the number of network round trips and API calls, and can also take advantage of parallel processing by Timestream. Batch writes can also improve the compression ratio of data in the memory store and the magnetic store, which can reduce the storage costs and improve the query performance¹.

? Option B is incorrect because writing each log event as a single write operation is not a recommended practice for optimizing the performance and cost of data ingestion in Timestream. Writing each log event as a single write operation would increase the number of network round trips and API calls, and would also reduce the compression ratio of data in the memory store and the magnetic store. This would increase the storage costs and degrade the query performance¹.

? Option C is incorrect because treating each log as a single-measure record is not a recommended practice for optimizing the query performance in Timestream. Treating each log as a single-measure record would result in creating multiple records for each timestamp, which would increase the storage size and the query latency. Moreover, treating each log as a single-measure record would require using joins to query multiple measures for the same timestamp, which would add complexity and overhead to the query processing².

? Option D is correct because treating each log as a multi-measure record is a recommended practice for optimizing the query performance in Timestream. Treating each log as a multi-measure record would result in creating a single record for each timestamp, which would reduce the storage size and the query latency. Moreover, treating each log as a multi-measure record would allow querying multiple measures for the same timestamp without using joins, which would simplify and speed up the query processing².

? Option E is incorrect because configuring the memory store retention period to be longer than the magnetic store retention period is not a valid option in Timestream. The memory store retention period must always be shorter than or equal to the magnetic store retention period. This ensures that data is moved from the memory store to the magnetic store before it expires out of the memory store³.

? Option F is correct because configuring the memory store retention period to be shorter than the magnetic store retention period is a valid option in Timestream. The memory store retention period determines how long data is kept in the memory store, which is optimized for fast point-in-time queries. The magnetic store retention period determines how long data is kept in the magnetic store, which is optimized for fast analytical queries. By configuring these retention periods appropriately, you can balance your storage costs and query performance according to your application needs³.

References:

- ? 1: Batch writes
- ? 2: Multi-measure records vs. single-measure records
- ? 3: Storage

NEW QUESTION 8

A company uses an organization in AWS Organizations to manage its AWS accounts. The company recently acquired another company that has standalone AWS accounts. The acquiring company's DevOps team needs to consolidate the administration of the AWS accounts for both companies and retain full administrative control of the accounts. The DevOps team also needs to collect and group findings across all the accounts to implement and maintain a security posture. Which combination of steps should the DevOps team take to meet these requirements? (Select TWO.)

- A. Invite the acquired company's AWS accounts to join the organization
- B. Create an SCP that has full administrative privilege
- C. Attach the SCP to the management account.
- D. Invite the acquired company's AWS accounts to join the organization
- E. Create the OrganizationAccountAccessRole IAM role in the invited account
- F. Grant permission to the management account to assume the role.
- G. Use AWS Security Hub to collect and group findings across all account
- H. Use Security Hub to automatically detect new accounts as the accounts are added to the organization.
- I. Use AWS Firewall Manager to collect and group findings across all account
- J. Enable all features for the organization
- K. Designate an account in the organization as the delegated administrator account for Firewall Manager.
- L. Use Amazon Inspector to collect and group findings across all account
- M. Designate an account in the organization as the delegated administrator account for Amazon Inspector.

Answer: BC

Explanation:

The correct answer is B and C. Option B is correct because inviting the acquired company's AWS accounts to join the organization and creating the OrganizationAccountAccessRole IAM role in the invited accounts allows the management account to assume the role and gain full administrative access to the member accounts. Option C is correct because using AWS Security Hub to collect and group findings across all accounts enables the DevOps team to monitor and improve the security posture of the organization. Security Hub can automatically detect new accounts as the accounts are added to the organization and enable Security Hub for them. Option A is incorrect because creating an SCP that has full administrative privileges and attaching it to the management account does not grant the management account access to the member accounts. SCPs are used to restrict the permissions of the member accounts, not to grant permissions to the management account. Option D is incorrect because using AWS Firewall Manager to collect and group findings across all accounts is not a valid use case for Firewall Manager. Firewall Manager is used to centrally configure and manage firewall rules across the organization, not to collect and group security findings. Option E is incorrect because using Amazon Inspector to collect and group findings across all accounts is not a valid use case for Amazon Inspector. Amazon Inspector is used to assess the security and compliance of applications running on Amazon EC2 instances, not to collect and group security findings across accounts. References:

- ? Inviting an AWS account to join your organization
- ? Enabling and disabling AWS Security Hub
- ? Service control policies
- ? AWS Firewall Manager
- ? Amazon Inspector

NEW QUESTION 9

A company's DevOps engineer is working in a multi-account environment. The company uses AWS Transit Gateway to route all outbound traffic through a network operations account. In the network operations account all account traffic passes through a firewall appliance for inspection before the traffic goes to an internet gateway.

The firewall appliance sends logs to Amazon CloudWatch Logs and includes event severities of CRITICAL, HIGH, MEDIUM, LOW, and INFO. The security team wants to receive an alert if any CRITICAL events occur. What should the DevOps engineer do to meet these requirements?

- A. Create an Amazon CloudWatch Synthetics canary to monitor the firewall status
- B. If the firewall reaches a CRITICAL state or logs a CRITICAL event use a CloudWatch alarm to publish a notification to an Amazon Simple Notification Service (Amazon SNS) topic Subscribe the security team's email address to the topic.
- C. Create an Amazon CloudWatch metric filter by using a search for CRITICAL events Publish a custom metric for the findings
- D. Use a CloudWatch alarm based on the custom metric to publish a notification to an Amazon Simple Notification Service (Amazon SNS) topic
- E. Subscribe the security team's email address to the topic.
- F. Enable Amazon GuardDuty in the network operations account
- G. Configure GuardDuty to monitor flow logs Create an Amazon EventBridge event rule that is invoked by GuardDuty events that are CRITICAL Define an Amazon Simple Notification Service (Amazon SNS) topic as a target Subscribe the security team's email address to the topic.
- H. Use AWS Firewall Manager to apply consistent policies across all accounts
- I. Create an Amazon
- J. EventBridge event rule that is invoked by Firewall Manager events that are CRITICAL Define an Amazon Simple Notification Service (Amazon SNS) topic as a target Subscribe the security team's email address to the topic.

Answer: B

Explanation:

"The firewall appliance sends logs to Amazon CloudWatch Logs and includes event severities of CRITICAL, HIGH, MEDIUM, LOW, and INFO"

NEW QUESTION 10

A company is testing a web application that runs on Amazon EC2 instances behind an Application Load Balancer. The instances run in an Auto Scaling group across multiple Availability Zones. The company uses a blue green deployment process with immutable instances when deploying new software. During testing users are being automatically logged out of the application at random times. Testers also report that when a new version of the application is deployed all users are logged out. The development team needs a solution to ensure users remain logged in across scaling events and application deployments. What is the MOST operationally efficient way to ensure users remain logged in?

- A. Enable smart sessions on the load balancer and modify the application to check for an existing session.
- B. Enable session sharing on the load balancer and modify the application to read from the session store.
- C. Store user session information in an Amazon S3 bucket and modify the application to read session information from the bucket.
- D. Modify the application to store user session information in an Amazon ElastiCache cluster.

Answer: D

Explanation:

<https://aws.amazon.com/caching/session-management/>

NEW QUESTION 10

A DevOps engineer used an AWS Cloud Formation custom resource to set up AD Connector. The AWS Lambda function ran and created AD Connector, but Cloud Formation is not transitioning from CREATE_IN_PROGRESS to CREATE_COMPLETE.

Which action should the engineer take to resolve this issue?

- A. Ensure the Lambda function code has exited successfully.
- B. Ensure the Lambda function code returns a response to the pre-signed URL.
- C. Ensure the Lambda function IAM role has cloudformation UpdateStack permissions for the stack ARN.
- D. Ensure the Lambda function IAM role has ds ConnectDirectory permissions for the AWS account.

Answer: B

Explanation:

Reference: <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/crpg-ref-responses.html>

NEW QUESTION 12

A company has deployed an application in a production VPC in a single AWS account. The application is popular and is experiencing heavy usage. The company's security team wants to add additional security, such as AWS WAF, to the application deployment. However, the application's product manager is concerned about cost and does not want to approve the change unless the security team can prove that additional security is necessary.

The security team believes that some of the application's demand might come from users that have IP addresses that are on a deny list. The security team provides the deny list to a DevOps engineer. If any of the IP addresses on the deny list access the application, the security team wants to receive automated notification in near real time so that the security team can document that the application needs additional security. The DevOps engineer creates a VPC flow log for the production VPC.

Which set of additional steps should the DevOps engineer take to meet these requirements MOST cost-effectively?

- A. Create a log group in Amazon CloudWatch Log
- B. Configure the VPC flow log to capture accepted traffic and to send the data to the log group
- C. Create an Amazon CloudWatch metric filter for IP addresses on the deny list
- D. Create a CloudWatch alarm with the metric filter as input
- E. Set the period to 5 minutes and the datapoints to alarm to 1. Use an Amazon Simple Notification Service (Amazon SNS) topic to send alarm notices to the security team.
- F. Create an Amazon S3 bucket for log file
- G. Configure the VPC flow log to capture all traffic and to send the data to the S3 bucket
- H. Configure Amazon Athena to return all log files in the S3 bucket for IP addresses on the deny list
- I. Configure Amazon QuickSight to accept data from Athena and to publish the data as a dashboard that the security team can access
- J. Create a threshold alert of 1 for successful access
- K. Configure the alert to automatically notify the security team as frequently as possible when the alert threshold is met.
- L. Create an Amazon S3 bucket for log file
- M. Configure the VPC flow log to capture accepted traffic and to send the data to the S3 bucket
- N. Configure an Amazon OpenSearch Service cluster and domain for the log file
- O. Create an AWS Lambda function to retrieve the logs from the S3 bucket, format the logs, and load the logs into the OpenSearch Service cluster
- P. Schedule the Lambda function to run every 5 minutes
- Q. Configure an alert and condition in OpenSearch Service to send alerts to the security team through an Amazon Simple Notification Service (Amazon SNS) topic when access from the IP addresses on the deny list is detected.
- R. Create a log group in Amazon CloudWatch Log
- S. Create an Amazon S3 bucket to hold query results
- T. Configure the VPC flow log to capture all traffic and to send the data to the log group
- . Deploy an Amazon Athena CloudWatch connector in AWS Lambda
- . Connect the connector to the log group
- . Configure Athena to periodically query for all accepted traffic from the IP addresses on the deny list and to store the results in the S3 bucket
- . Configure an S3 event notification to automatically notify the security team through an Amazon Simple Notification Service (Amazon SNS) topic when new objects are added to the S3 bucket.

Answer: A

NEW QUESTION 16

A development team uses AWS CodeCommit for version control for applications. The development team uses AWS CodePipeline, AWS CodeBuild, and AWS CodeDeploy for CI/CD infrastructure. In CodeCommit, the development team recently merged pull requests that did not pass long-running tests in the code base. The development team needed to perform rollbacks to branches in the codebase, resulting in lost time and wasted effort.

A DevOps engineer must automate testing of pull requests in CodeCommit to ensure that reviewers more easily see the results of automated tests as part of the pull request review.

What should the DevOps engineer do to meet this requirement?

- A. Create an Amazon EventBridge rule that reacts to the pullRequestStatusChanged event
- B. Create an AWS Lambda function that invokes a CodePipeline pipeline with a CodeBuild action that runs the tests for the application
- C. Program the Lambda function to post the CodeBuild badge as a comment on the pull request so that developers will see the badge in their code review.
- D. Create an Amazon EventBridge rule that reacts to the pullRequestCreated event
- E. Create an AWS Lambda function that invokes a CodePipeline pipeline with a CodeBuild action that runs the tests for the application
- F. Program the Lambda function to post the CodeBuild test results as a comment on the pull request when the test results are complete.
- G. Create an Amazon EventBridge rule that reacts to pullRequestCreated and pullRequestSourceBranchUpdated event
- H. Create an AWS Lambda function that invokes a CodePipeline pipeline with a CodeBuild action that runs the tests for the application
- I. Program the Lambda function to post the CodeBuild badge as a comment on the pull request so that developers will see the badge in their code review.
- J. Create an Amazon EventBridge rule that reacts to the pullRequestStatusChanged event
- K. Create an AWS Lambda function that invokes a CodePipeline pipeline with a CodeBuild action that runs the tests for the application
- L. Program the Lambda function to post the CodeBuild test results as a comment on the pull request when the test results are complete.

Answer: C

Explanation:

<https://aws.amazon.com/es/blogs/devops/complete-ci-cd-with-aws-codecommit-aws-codebuild-aws-codedeploy-and-aws-codepipeline/>

NEW QUESTION 20

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

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

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

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

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

Answer: A

Explanation:

(A) When Docker communicates with an Amazon Elastic Container Registry (ECR) repository, it requires authentication. You can authenticate your Docker client to the Amazon ECR registry with the help of the AWS CLI (Command Line Interface). Specifically, you can use the `"aws ecr get-login-password"` command to get an authorization token and then use Docker's `"docker login"` command with that token to authenticate to the registry. You would need to perform these steps in your buildspec.yml file before attempting to push or pull images from/to the ECR repository.

NEW QUESTION 22

A DevOps engineer is planning to deploy a Ruby-based application to production. The application needs to interact with an Amazon RDS for MySQL database and should have automatic scaling and high availability. The stored data in the database is critical and should persist regardless of the state of the application stack.

The DevOps engineer needs to set up an automated deployment strategy for the application with automatic rollbacks. The solution also must alert the application team when a deployment fails.

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

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

Answer: BDE

Explanation:

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

? B. Deploy the application on AWS Elastic Beanstalk. Deploy a separate Amazon

RDS for MySQL DB instance outside of Elastic Beanstalk. This approach ensures that the database persists independently of the Elastic Beanstalk environment, which can be torn down and recreated without affecting the database¹²³.

? E. Use the immutable deployment method to deploy new application

versions. Immutable deployments provide a zero-downtime deployment method that ensures that if any part of the deployment process fails, the environment is rolled back to the original state automatically⁴.

? D. Configure an Amazon EventBridge rule to monitor AWS Health events. Use an

Amazon Simple Notification Service (Amazon SNS) topic as a target to alert the application team. This setup allows for automated monitoring and alerting of the application team in case of deployment failures or other health events⁵⁶.

References:

? AWS Elastic Beanstalk documentation on deploying Ruby applications¹.

? AWS documentation on application auto-scaling⁷.

? AWS documentation on automated deployment strategies with automatic rollbacks and alerts⁴⁵⁶.

NEW QUESTION 24

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

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

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

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

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

Answer: AD

Explanation:

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

NEW QUESTION 28

An AWS CodePipeline pipeline has implemented a code release process. The pipeline is integrated with AWS CodeDeploy to deploy versions of an application to multiple Amazon EC2 instances for each CodePipeline stage.

During a recent deployment the pipeline failed due to a CodeDeploy issue. The DevOps team wants to improve monitoring and notifications during deployment to decrease resolution times.

What should the DevOps engineer do to create notifications. When issues are discovered?

- A. Implement Amazon CloudWatch Logs for CodePipeline and CodeDeploy create an AWS Config rule to evaluate code deployment issues, and create an Amazon Simple Notification Service (Amazon SNS) topic to notify stakeholders of deployment issues.
- B. Implement Amazon EventBridge for CodePipeline and CodeDeploy create an AWS Lambda function to evaluate code deployment issues, and create an Amazon Simple Notification Service (Amazon SNS) topic to notify stakeholders of deployment issues.
- C. Implement AWS CloudTrail to record CodePipeline and CodeDeploy API call information create an AWS Lambda function to evaluate code deployment issues and create an Amazon Simple Notification Service (Amazon SNS) topic to notify stakeholders of deployment issues.
- D. Implement Amazon EventBridge for CodePipeline and CodeDeploy create an Amazon Simple Notification Service (Amazon SNS) topic to notify stakeholders of deployment issues.
- E. Implement Amazon EventBridge for CodePipeline and CodeDeploy create an Amazon Simple Notification Service (Amazon SNS) topic to notify stakeholders of deployment issues.
- F. Implement Amazon EventBridge for CodePipeline and CodeDeploy create an Amazon Simple Notification Service (Amazon SNS) topic to notify stakeholders of deployment issues.

Answer: B

Explanation:

AWS CloudWatch Events can be used to monitor events across different AWS resources, and a CloudWatch Event Rule can be created to trigger an AWS Lambda function when a deployment issue is detected in the pipeline. The Lambda function can then evaluate the issue and send a notification to the appropriate stakeholders through an Amazon SNS topic. This approach allows for real-time notifications and faster resolution times.

NEW QUESTION 33

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

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

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

Answer: A

Explanation:

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

NEW QUESTION 37

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 repositor

L. Create a new AWS CodeBuild projec

M. In the CodePipeline pipeline, configure a test stage that uses the new CodeBuild projec

N. Create an appspec.yml file in the original CodeCommit repositor

O. In the appspec.yml file, define the actions to run the unit tests with an output of CUCUMBERJSON in the build phase sectio

P. Configure the tests reports to be sent to the new CodeArtifact repository.

Q. Create a new AWS CodeBuild projec

R. In the CodePipeline pipeline, configure a test stage that uses the new CodeBuild projec

S. Create a new Amazon S3 bucke

T. Create a buildspec.yml file in the CodeCommit repositor

. In the buildspec.yml file, define the actions to run the unit tests with an output of HTML in the phases sectio

. 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 39

The security team depends on AWS CloudTrail to detect sensitive security issues in the company's AWS account. The DevOps engineer needs a solution to auto-remediate CloudTrail being turned off in an AWS account.

What solution ensures the LEAST amount of downtime for the CloudTrail log deliveries?

A. Create an Amazon EventBridge rule for the CloudTrail StopLogging even

B. Create an AWS Lambda (unction that uses the AWS SDK to call StartLogging on the ARN of the resource in which StopLogging was calle

C. Add the Lambda function ARN as a target to the EventBridge rule.

D. Deploy the AWS-managed CloudTrail-enabled AWS Config rule set with a periodic interval to 1 hou

E. Create an Amazon EventBridge rule tor AWS Config rules compliance chang

F. Create an AWS Lambda function that uses the AWS SDK to call StartLogging on the ARN of the resource in which StopLoggmng was calle

G. Add the Lambda function ARN as a target to the EventBridge rule.

H. Create an Amazon EventBridge rule for a scheduled event every 5 minute

I. Create an AWS Lambda function that uses the AWS SDK to call StartLogging on a CloudTrail trail in the AWS accoun

J. Add the Lambda function ARN as a target to the EventBridge rule.

K. Launch a t2 nano instance with a script running every 5 minutes that uses the AWS SDK to query CloudTrail in the current accoun

L. If the CloudTrail trail is disabled have the script re-enable the trail.

Answer: A

Explanation:

<https://aws.amazon.com/blogs/mt/monitor-changes-and-auto-enable-logging-in-aws-cloudtrail/>

NEW QUESTION 43

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

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

A. Create AWS Trusted Advisor checks to find and remediate unapproved CloudFormation StackSets.

B. Create a Cloud Formation drift detection operation to find and remediate unapproved CloudFormation StackSets.

C. Create CloudFormation StackSets with approved CloudFormation templates.

D. Create AWS Service Catalog products with approved CloudFormation templates.

Answer: D

Explanation:

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

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

NEW QUESTION 45

A company updated the AWS Cloud Formation template for a critical business application. The stack update process failed due to an error in the updated template and AWS CloudFormation automatically began the stack rollback process Later a DevOps engineer discovered that the application was still unavailable and that the stack was in the UPDATE_ROLLBACK_FAILED state.

Which combination of actions should the DevOps engineer perform so that the stack rollback can complete successfully? (Select TWO.)

A. Attach the AWSCloudFormationFullAccess IAM policy to the AWS CloudFormation role.

B. Automatically recover the stack resources by using AWS CloudFormation drift detection.

C. Issue a ContinueUpdateRollback command from the AWS CloudFormation console or the AWS CLI.

D. Manually adjust the resources to match the expectations of the stack.

E. Update the existing AWS CloudFormation stack by using the original template.

Answer: CD

Explanation:

<https://docs.aws.amazon.com/cli/latest/reference/cloudformation/continue-update-rollback.html> For a specified stack that is in the UPDATE_ROLLBACK_FAILED state, continues rolling it back to the UPDATE_ROLLBACK_COMPLETE state. Depending on the cause of the failure, you can manually fix the error and continue the rollback. By continuing the rollback, you can return your stack to a working state (the UPDATE_ROLLBACK_COMPLETE state), and then try to update the stack again.

NEW QUESTION 50

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 55

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 56

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

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

When the CodeBuild project runs a build job, the job fails when the job tries to access the ECR repository. Which solution will resolve the issue of failed access to the ECR repository?

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

Answer: A

Explanation:

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

NEW QUESTION 58

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

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

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

Answer: A

Explanation:

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

NEW QUESTION 61

An ecommerce company has chosen AWS to host its new platform. The company's DevOps team has started building an AWS Control Tower landing zone. The DevOps team has set the identity store within AWS IAM Identity Center (AWS Single Sign-On) to external identity provider (IdP) and has configured SAML 2.0. The DevOps team wants a robust permission model that applies the principle of least privilege. The model must allow the team to build and manage only the team's own resources.

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

- A. Create IAM policies that include the required permission
- B. Include the aws:PrincipalTag condition key.
- C. Create permission set
- D. Attach an inline policy that includes the required permissions and uses the aws:PrincipalTag condition key to scope the permissions.
- E. Create a group in the IdP
- F. Place users in the group
- G. Assign the group to accounts and the permission sets in IAM Identity Center.
- H. Create a group in the IdP
- I. Place users in the group
- J. Assign the group to OUs and IAM policies.
- K. Enable attributes for access control in IAM Identity Center
- L. Apply tags to user
- M. Map the tags as key-value pairs.
- N. Enable attributes for access control in IAM Identity Center
- O. Map attributes from the IdP as key-value pairs.

Answer: BCF

Explanation:

Using the principalTag in the Permission Set inline policy a logged in user belonging to a specific AD group in the IDP can be permitted access to perform operations on certain resources if their group matches the group used in the PrincipalTag. Basically you are narrowing the scope of privileges assigned via Permission policies conditionally based on whether the logged in user belongs to a specific AD Group in IDP. The mapping of the AD group to the request attributes can be done using SSO attributes where we can pass other attributes like the SAML token as well.

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

NEW QUESTION 62

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 ru
- G. The Athena query checks tor 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 65

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

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

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

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

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

Answer: AE

Explanation:

To enable cross-account backup, the company needs to grant permissions to both the backup vault and the KMS key in the destination account. The backup vault access policy in the destination account must allow the primary account to copy backups into the vault. The key policy of the KMS key in the destination account must allow the primary account to use the key to encrypt and decrypt the backups. These steps are described in the AWS documentation¹². Therefore, the correct answer is A and E.

References:

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

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

NEW QUESTION 66

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 neede
- 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 templat
- F. To retrieve Virtual Private Cloud (VPC) and subnet values, use Fn::ImportValue intrinsic functions in the Parameters section of the root templat
- 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 CreateChangeSe
- 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 71

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

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

Which solution will meet these requirements?

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

Answer: A

Explanation:

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

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

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

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

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

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

NEW QUESTION 72

A DevOps engineer needs to configure a blue green deployment for an existing three-tier application. The application runs on Amazon EC2 instances and uses an Amazon RDS database. The EC2 instances run behind an Application Load Balancer (ALB) and are in an Auto Scaling group.

The DevOps engineer has created a launch template and an Auto Scaling group for the blue environment. The DevOps engineer also has created a launch template and an Auto Scaling group for the green environment. Each Auto Scaling group deploys to a matching blue or green target group. The target group also specifies which software blue or green gets loaded on the EC2 instances. The ALB can be configured to send traffic to the blue environment's target group or the green environment's target group. An Amazon Route 53 record for www.example.com points to the ALB.

The deployment must move traffic all at once between the software on the blue environment's EC2 instances to the newly deployed software on the green environment's EC2 instances.

What should the DevOps engineer do to meet these requirements?

- A. Start a rolling restart to the Auto Scaling group for the green environment to deploy the new software on the green environment's EC2 instances. When the rolling restart is complete, use an AWS CLI command to update the ALB to send traffic to the green environment's target group.
- B. Use an AWS CLI command to update the ALB to send traffic to the green environment's target group.
- C. Then start a rolling restart of the Auto Scaling group for the green environment to deploy the new software on the green environment's EC2 instances.
- D. Update the launch template to deploy the green environment's software on the blue environment's EC2 instances. Keep the target groups and Auto Scaling groups unchanged in both environments. Perform a rolling restart of the blue environment's EC2 instances.
- E. Start a rolling restart of the Auto Scaling group for the green environment to deploy the new software on the green environment's EC2 instances. When the rolling restart is complete, update the Route 53 DNS to point to the green environment's endpoint on the ALB.

Answer: A

Explanation:

This solution will meet the requirements because it will use a rolling restart to gradually replace the EC2 instances in the green environment with new instances.

that have the new software version installed. A rolling restart is a process that terminates and launches instances in batches, ensuring that there is always a minimum number of healthy instances in service. This way, the green environment can be updated without affecting the availability or performance of the application. When the rolling restart is complete, the DevOps engineer can use an AWS CLI command to modify the listener rules of the ALB and change the default action to forward traffic to the green environment's target group. This will switch the traffic from the blue environment to the green environment all at once, as required by the question.

NEW QUESTION 73

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

Customers report that the application intermittently takes a long time to respond to requests. The application receives thousands of requests throughout the day. In the middle of the day, the application experiences 10 times more requests than at any other time of the day. Near the end of the day, the application's request volume decreases to 10% of its normal total.

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

Which solution will meet these requirements?

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

Answer: C

Explanation:

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

? Configure provisioned concurrency on the Lambda function.

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

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

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

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

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

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

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

NEW QUESTION 77

A company's DevOps engineer is creating an AWS Lambda function to process notifications from an Amazon Simple Notification Service (Amazon SNS) topic. The Lambda function will process the notification messages and will write the contents of the notification messages to an Amazon RDS Multi-AZ DB instance.

During testing a database administrator accidentally shut down the DB instance. While the database was down the company lost several of the SNS notification messages that were delivered during that time.

The DevOps engineer needs to prevent the loss of notification messages in the future. Which solutions will meet this requirement? (Select TWO.)

- A. Replace the RDS Multi-AZ DB instance with an Amazon DynamoDB table.
- B. Configure an Amazon Simple Queue Service (Amazon SQS) queue as a destination of the Lambda function.
- C. Configure an Amazon Simple Queue Service (Amazon SQS) dead-letter queue for the SNS topic.
- D. Subscribe an Amazon Simple Queue Service (Amazon SQS) queue to the SNS topic. Configure the Lambda function to process messages from the SQS queue.
- E. Replace the SNS topic with an Amazon EventBridge event bus. Configure an EventBridge rule on the new event bus to invoke the Lambda function for each event.

Answer: CD

Explanation:

These solutions will meet the requirement because they will prevent the loss of notification messages in the future. An Amazon SQS queue is a service that provides a reliable, scalable, and secure message queue for asynchronous communication between distributed components. You can use an SQS queue to buffer messages from an SNS topic and ensure that they are delivered and processed by a Lambda function, even if the function or the database is temporarily unavailable.

Option C will configure an SQS dead-letter queue for the SNS topic. A dead-letter queue is a queue that receives messages that could not be delivered to any subscriber after a specified number of retries. You can use a dead-letter queue to store and analyze failed messages, or to reprocess them later. This way, you can avoid losing messages that could not be delivered to the Lambda function due to network errors, throttling, or other issues. Option D will subscribe an SQS queue to the SNS topic and configure the Lambda function to process messages from the SQS queue. This will decouple the SNS topic from the Lambda function and provide more flexibility and control over the message delivery and processing. You can use an SQS queue to store messages from the SNS topic until they are ready to be processed by the Lambda function, and also to retry processing in case of failures. This way, you can avoid losing messages that could not be processed by the Lambda function due to database errors, timeouts, or other issues.

NEW QUESTION 82

A company's application development team uses Linux-based Amazon EC2 instances as bastion hosts. Inbound SSH access to the bastion hosts is restricted to specific IP addresses, as defined in the associated security groups. The company's security team wants to receive a notification if the security group rules are modified to allow SSH access from any IP address.

What should a DevOps engineer do to meet this requirement?

- A. Create an Amazon EventBridge rule with a source of aws.cloudtrail and the event name AuthorizeSecurityGroupIngress.
- B. Define an Amazon Simple Notification Service (Amazon SNS) topic as the target.
- C. Enable Amazon GuardDuty and check the findings for security groups in AWS Security Hub.
- D. Configure an Amazon EventBridge rule with a custom pattern that matches GuardDuty events with an output of NON_COMPLIANT.
- E. Define an Amazon Simple Notification Service (Amazon SNS) topic as the target.
- F. Create an AWS Config rule by using the restricted-ssh managed rule to check whether security groups disallow unrestricted incoming SSH traffic.
- G. Configure automatic remediation to publish a message to an Amazon Simple Notification Service (Amazon SNS) topic.

- H. Enable Amazon Inspector
- I. Include the Common Vulnerabilities and Exposures-1.1 rules package to check the security groups that are associated with the bastion host
- J. Configure Amazon Inspector to publish a message to an Amazon Simple Notification Service (Amazon SNS) topic.

Answer: A

Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/monitor-security-group-changes-ec2/>

NEW QUESTION 84

A company recently migrated its legacy application from on-premises to AWS. The application is hosted on Amazon EC2 instances behind an Application Load Balancer which is behind Amazon API Gateway. The company wants to ensure users experience minimal disruptions during any deployment of a new version of the application. The company also wants to ensure it can quickly roll back updates if there is an issue.

Which solution will meet these requirements with MINIMAL changes to the application?

- A. Introduce changes as a separate environment parallel to the existing one Configure API Gateway to use a canary release deployment to send a small subset of user traffic to the new environment.
- B. Introduce changes as a separate environment parallel to the existing one Update the application's DNS alias records to point to the new environment.
- C. Introduce changes as a separate target group behind the existing Application Load Balancer Configure API Gateway to route user traffic to the new target group in steps.
- D. Introduce changes as a separate target group behind the existing Application Load Balancer Configure API Gateway to route all traffic to the Application Load Balancer which then sends the traffic to the new target group.

Answer: A

Explanation:

API Gateway supports canary deployment on a deployment stage before you direct all traffic to that stage. A parallel environment means we will create a new ALB and a target group that will target a new set of EC2 instances on which the newer version of the app will be deployed. So the canary setting associated to the new version of the API will connect with the new ALB instance which in turn will direct the traffic to the new EC2 instances on which the newer version of the application is deployed.

NEW QUESTION 87

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

The attribute mapping list contains two entries. The department key is mapped to

`${path:enterprise.department}`. The costCenter key is mapped to

`${path:enterprise.costCenter}`.

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

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

A.

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

B.

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

C.

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

D.

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

A.

Answer: C

Explanation:

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

NEW QUESTION 91

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 AR
- B. create a new assertion safety rule
- C. Apply the assertion safety rule to the two routing control
- D. Configure the rule with the ATLEAST type with a threshold of 1.
- E. In Route 53 ARC, create a new gating safety rule
- F. Apply the assertion safety rule to the two routing control
- G. Configure the rule with the OR type with a threshold of 1.
- H. 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 95

A healthcare services company is concerned about the growing costs of software licensing for an application for monitoring patient wellness. The company wants to create an audit process to ensure that the application is running exclusively on Amazon EC2 Dedicated Hosts. A DevOps engineer must create a workflow to audit the application to ensure compliance.

What steps should the engineer take to meet this requirement with the LEAST administrative overhead?

- A. Use AWS Systems Manager Configuration Compliance
- B. Use calls to the put-compliance-items API action to scan and build a database of noncompliant EC2 instances based on their host placement configuration
- C. Use an Amazon DynamoDB table to store these instance IDs for fast access
- D. Generate a report through Systems Manager by calling the list-compliance-summaries API action.
- E. Use custom Java code running on an EC2 instance
- F. Set up EC2 Auto Scaling for the instance depending on the number of instances to be checked
- G. Send the list of noncompliant EC2 instance IDs to an Amazon SQS queue
- H. Set up another worker instance to process instance IDs from the SQS queue and write them to Amazon DynamoDB
- I. Use an AWS Lambda function to terminate noncompliant instance IDs obtained from the queue, and send them to an Amazon SNS email topic for distribution.
- J. Use AWS Config
- K. Identify all EC2 instances to be audited by enabling Config Recording on all Amazon EC2 resources for the region
- L. Create a custom AWS Config rule that triggers an AWS Lambda function by using the "config-rule-change-triggered" blueprint. Modify the Lambda evaluateCompliance() function to verify host placement to return a NON_COMPLIANT result if the instance is not running on an EC2 Dedicated Host

- M. Use the AWS Config report to address noncompliant instances.
- N. Use AWS CloudTrail
- O. Identify all EC2 instances to be audited by analyzing all calls to the EC2 RunCommand API action
- P. Invoke a AWS Lambda function that analyzes the host placement of the instance
- Q. Store the EC2 instance ID of noncompliant resources in an Amazon RDS for MySQL DB instance
- R. Generate a report by querying the RDS instance and exporting the query results to a CSV text file.

Answer: C

Explanation:

The correct answer is C. Using AWS Config to identify and audit all EC2 instances based on their host placement configuration is the most efficient and scalable solution to ensure compliance with the software licensing requirement. AWS Config is a service that enables you to assess, audit, and evaluate the configurations of your AWS resources. By creating a custom AWS Config rule that triggers a Lambda function to verify host placement, the DevOps engineer can automate the process of checking whether the instances are running on EC2 Dedicated Hosts or not. The Lambda function can return a NON_COMPLIANT result if the instance is not running on an EC2 Dedicated Host, and the AWS Config report can provide a summary of the compliance status of the instances. This solution requires the least administrative overhead compared to the other options.

Option A is incorrect because using AWS Systems Manager Configuration Compliance to scan and build a database of noncompliant EC2 instances based on their host placement configuration is a more complex and costly solution than using AWS Config. AWS Systems Manager Configuration Compliance is a feature of AWS Systems Manager that enables you to scan your managed instances for patch compliance and configuration inconsistencies. To use this feature, the DevOps engineer would need to install the Systems Manager Agent on each EC2 instance, create a State Manager association to run the put-compliance-items API action periodically, and use a DynamoDB table to store the instance IDs of noncompliant resources. This solution would also require more API calls and storage costs than using AWS Config.

Option B is incorrect because using custom Java code running on an EC2 instance to check and terminate noncompliant EC2 instances is a more cumbersome and error-prone solution than using AWS Config. This solution would require the DevOps engineer to write and maintain the Java code, set up EC2 Auto Scaling for the instance, use an SQS queue and another worker instance to process the instance IDs, use a Lambda function and an SNS topic to terminate and notify the noncompliant instances, and handle any potential failures or exceptions in the workflow. This solution would also incur more compute, storage, and messaging costs than using AWS Config.

Option D is incorrect because using AWS CloudTrail to identify and audit EC2 instances by analyzing the EC2 RunCommand API action is a less reliable and accurate solution than using AWS Config. AWS CloudTrail is a service that enables you to monitor and log the API activity in your AWS account. The EC2 RunCommand API action is used to execute commands on one or more EC2 instances. However, this API action does not necessarily indicate the host placement of the instance, and it may not capture all the instances that are running on EC2 Dedicated Hosts or not. Therefore, option D would not provide a comprehensive and consistent audit of the EC2 instances.

NEW QUESTION 96

A company uses AWS CodePipeline pipelines to automate releases of its application. A typical pipeline consists of three stages: build, test, and deployment. The company has been using a separate AWS CodeBuild project to run scripts for each stage. However, the company now wants to use AWS CodeDeploy to handle the deployment stage of the pipelines.

The company has packaged the application as an RPM package and must deploy the application to a fleet of Amazon EC2 instances. The EC2 instances are in an EC2 Auto Scaling group and are launched from a common AMI.

Which combination of steps should a DevOps engineer perform to meet these requirements? (Choose two.)

- A. Create a new version of the common AMI with the CodeDeploy agent installed
- B. Update the IAM role of the EC2 instances to allow access to CodeDeploy.
- C. Create a new version of the common AMI with the CodeDeploy agent installed
- D. Create an AppSpec file that contains application deployment scripts and grants access to CodeDeploy.
- E. Create an application in CodeDeploy
- F. Configure an in-place deployment type
- G. Specify the Auto Scaling group as the deployment target
- H. Add a step to the CodePipeline pipeline to use EC2 Image Builder to create a new AMI
- I. Configure CodeDeploy to deploy the newly created AMI.
- J. Create an application in CodeDeploy
- K. Configure an in-place deployment type
- L. Specify the Auto Scaling group as the deployment target
- M. Update the CodePipeline pipeline to use the CodeDeploy action to deploy the application.
- N. Create an application in CodeDeploy
- O. Configure an in-place deployment type
- P. Specify the EC2 instances that are launched from the common AMI as the deployment target
- Q. Update the CodePipeline pipeline to use the CodeDeploy action to deploy the application.

Answer: AD

Explanation:

<https://docs.aws.amazon.com/codedeploy/latest/userguide/integrations-aws-auto-scaling.html>

NEW QUESTION 101

A company has a data ingestion application that runs across multiple AWS accounts. The accounts are in an organization in AWS Organizations. The company needs to monitor the application and consolidate access to the application. Currently the company is running the application on Amazon EC2 instances from several Auto Scaling groups. The EC2 instances have no access to the internet because the data is sensitive. Engineers have deployed the necessary VPC endpoints. The EC2 instances run a custom AMI that is built specifically for the application.

To maintain and troubleshoot the application, system administrators need the ability to log in to the EC2 instances. This access must be automated and controlled centrally. The company's security team must receive a notification whenever the instances are accessed.

Which solution will meet these requirements?

- A. Create an Amazon EventBridge rule to send notifications to the security team whenever a user logs in to an EC2 instance. Use EC2 Instance Connect to log in to the instance.
- B. Deploy Auto Scaling groups by using AWS CloudFormation. Use the cfn-init helper script to deploy appropriate VPC routes for external access. Rebuild the custom AMI so that the custom AMI includes AWS Systems Manager Agent.
- C. Deploy a NAT gateway and a bastion host that has internet access. Create a security group that allows incoming traffic on all the EC2 instances from the bastion host. Install AWS Systems Manager Agent on all the EC2 instances. Use Auto Scaling group lifecycle hooks for monitoring and auditing access. Use Systems Manager Session Manager to log into the instances. Send logs to a log group in Amazon CloudWatch Logs.
- D. Export data to Amazon S3 for auditing. Send notifications to the security team by using S3 event notifications.

E. Use EC2 Image Builder to rebuild the custom AMI Include the most recent version of AWS Systems Manager Agent in the Image Configure the Auto Scaling group to attach the AmazonSSMMManagedInstanceCore role to all the EC2 instances Use Systems Manager Session Manager to log in to the instances Enable logging of session details to Amazon S3 Create an S3 event notification for new file uploads to send a message to the security team through an Amazon Simple Notification Service (Amazon SNS) topic.

F. Use AWS Systems Manager Automation to build Systems Manager Agent into the custom AMI Configure AWS Configure to attach an SCP to the root organization account to allow the EC2 instances to connect to Systems Manager Use Systems Manager Session Manager to log in to the instances Enable logging of session details to Amazon S3 Create an S3 event notification for new file uploads to send a message to the security team through an Amazon Simple Notification Service (Amazon SNS) topic.

Answer: C

Explanation:

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

NEW QUESTION 105

A company is implementing a well-architected design for its globally accessible API stack. The design needs to ensure both high reliability and fast response times for users located in North America and Europe.

The API stack contains the following three tiers: Amazon API Gateway
AWS Lambda Amazon DynamoDB

Which solution will meet the requirements?

- A. Configure Amazon Route 53 to point to API Gateway APIs in North America and Europe using health check
- B. Configure the APIs to forward requests to a Lambda function in that Region
- C. Configure the Lambda functions to retrieve and update the data in a DynamoDB table in the same Region as the Lambda function.
- D. Configure Amazon Route 53 to point to API Gateway APIs in North America and Europe using latency-based routing and health check
- E. Configure the APIs to forward requests to a Lambda function in that Region
- F. Configure the Lambda functions to retrieve and update the data in a DynamoDB global table.
- G. Configure Amazon Route 53 to point to API Gateway in North America, create a disaster recovery API in Europe, and configure both APIs to forward requests to the Lambda functions in that Region
- H. Retrieve the data from a DynamoDB global table
- I. Deploy a Lambda function to check the North America API health every 5 minutes
- J. In the event of a failure, update Route 53 to point to the disaster recovery API.
- K. Configure Amazon Route 53 to point to API Gateway API in North America using latency-based routing
- L. Configure the API to forward requests to the Lambda function in the Region nearest to the user
- M. Configure the Lambda function to retrieve and update the data in a DynamoDB table.

Answer: B

NEW QUESTION 110

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 Regions
- 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 Regions
- 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 Regions¹².

? 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 possible³.

References:

? AWS Documentation on Service Control Policies (SCPs) and how they can be used to manage permissions and restrict access based on Regions¹².

? AWS Documentation on monitoring CloudTrail log files with Amazon CloudWatch Logs to set up alerts for specific activities³.

NEW QUESTION 112

A DevOps engineer manages a company's Amazon Elastic Container Service (Amazon ECS) cluster. The cluster runs on several Amazon EC2 instances that are in an Auto Scaling group. The DevOps

engineer must implement a solution that logs and reviews all stopped tasks for errors. Which solution will meet these requirements?

- A. Create an Amazon EventBridge rule to capture task state change
- B. Send the event to Amazon CloudWatch Log
- C. Use CloudWatch Logs Insights to investigate stopped tasks.
- D. Configure tasks to write log data in the embedded metric format
- E. Store the logs in Amazon CloudWatch Log
- F. Monitor the ContainerInstanceCount metric for changes.

- G. Configure the EC2 instances to store logs in Amazon CloudWatch Log
- H. Create a CloudWatch Contributor Insights rule that uses the EC2 instance log data
- I. Use the Contributor Insights rule to investigate stopped tasks.
- J. Configure an EC2 Auto Scaling lifecycle hook for the EC2_INSTANCE_TERMINATING scale-in event
- K. Write the SystemEventLog file to Amazon S3. Use Amazon Athena to query the log file for errors.

Answer: A

Explanation:

The best solution to log and review all stopped tasks for errors is to use Amazon EventBridge and Amazon CloudWatch Logs. Amazon EventBridge allows the DevOps engineer to create a rule that matches task state change events from Amazon ECS. The rule can then send the event data to Amazon CloudWatch Logs as the target. Amazon CloudWatch Logs can store and monitor the log data, and also provide CloudWatch Logs Insights, a feature that enables the DevOps engineer to interactively search and analyze the log data. Using CloudWatch Logs Insights, the DevOps engineer can filter and aggregate the log data based on various fields, such as cluster, task, container, and reason. This way, the DevOps engineer can easily identify and investigate the stopped tasks and their errors. The other options are not as effective or efficient as the solution in option A. Option B is not suitable because the embedded metric format is designed for custom metrics, not for logging task state changes. Option C is not feasible because the EC2 instances do not store the task state change events in their logs. Option D is not relevant because the EC2_INSTANCE_TERMINATING lifecycle hook is triggered when an EC2 instance is terminated by the Auto Scaling group, not when a task is stopped by Amazon ECS. References:

? : Creating a CloudWatch Events Rule That Triggers on an Event - Amazon Elastic Container Service

? : Sending and Receiving Events Between AWS Accounts - Amazon EventBridge

? : Working with Log Data - Amazon CloudWatch Logs

? : Analyzing Log Data with CloudWatch Logs Insights - Amazon CloudWatch Logs

? : Embedded Metric Format - Amazon CloudWatch

? : Amazon EC2 Auto Scaling Lifecycle Hooks - Amazon EC2 Auto Scaling

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