

Amazon

Exam Questions AWS-Certified-Developer-Associate

Amazon AWS Certified Developer - Associate



NEW QUESTION 1

An Amazon Simple Queue Service (Amazon SQS) queue serves as an event source for an AWS Lambda function. In the SQS queue, each item corresponds to a video file that the Lambda function must convert to a smaller resolution. The Lambda function is timing out on longer video files, but the Lambda function's timeout is already configured to its maximum value.

What should a developer do to avoid the timeouts without additional code changes?

- A. Increase the memory configuration of the Lambda function.
- B. Increase the visibility timeout on the SQS queue.
- C. Increase the instance size of the host that runs the Lambda function.
- D. Use multi-threading for the conversion.

Answer: A

Explanation:

Increasing the memory configuration of the Lambda function will also increase the CPU and network throughput available to the function. This can improve the performance of the video conversion process and reduce the execution time of the function. This solution does not require any code changes or additional resources. It is also recommended to follow the best practices for preventing Lambda function timeouts.

1. References

? Troubleshoot Lambda function invocation timeout errors | AWS re:Post

NEW QUESTION 2

An online food company provides an Amazon API Gateway HTTP API to receive orders for partners. The API is integrated with an AWS Lambda function. The Lambda function stores the orders in an Amazon DynamoDB table.

The company expects to onboard additional partners. Some partners require additional Lambda function to receive orders. The company has created an Amazon S3 bucket. The company needs to store all orders and updates in the S3 bucket for future analysis.

How can the developer ensure that all orders and updates are stored to Amazon S3 with the LEAST development effort?

- A. Create a new Lambda function and a new API Gateway API endpoint.
- B. Configure the new Lambda function to write to the S3 bucket.
- C. Modify the original Lambda function to post updates to the new API endpoint.
- D. Use Amazon Kinesis Data Streams to create a new data stream.
- E. Modify the Lambda function to publish orders to the data stream. Configure the data stream to write to the S3 bucket.
- F. Enable DynamoDB Streams on the DynamoDB table.
- G. Create a new Lambda function to read from the DynamoDB Streams and write to the S3 bucket.
- H. Associate the stream's Amazon Resource Name (ARN) with the Lambda Function bucket as records appear in the table's stream.
- I. Modify the Lambda function to publish to a new Amazon SNS topic.
- J. Simple Lambda function receives order.
- K. Subscribe a new Lambda function to the topic.
- L. Configure the new Lambda function to write to the S3 bucket as updates come through the topic.

Answer: C

Explanation:

This solution will ensure that all orders and updates are stored to Amazon S3 with the least development effort because it uses DynamoDB Streams to capture changes in the DynamoDB table and trigger a Lambda function to write those changes to the S3 bucket. This way, the original Lambda function and API Gateway API endpoint do not need to be modified, and no additional services are required. Option A is not optimal because it will require more development effort to create a new Lambda function and a new API Gateway API endpoint, and to modify the original Lambda function to post updates to the new API endpoint. Option B is not optimal because it will introduce additional costs and complexity to use Amazon Kinesis Data Streams to create a new data stream, and to modify the Lambda function to publish orders to the data stream. Option D is not optimal because it will require more development effort to modify the Lambda function to publish to a new Amazon SNS topic, and to create and subscribe a new Lambda function to the topic. References: Using DynamoDB Streams, Using AWS Lambda with Amazon S3

NEW QUESTION 3

A developer is troubleshooting an Amazon API Gateway API. Clients are receiving HTTP 400 response errors when the clients try to access an endpoint of the API. How can the developer determine the cause of these errors?

- A. Create an Amazon Kinesis Data Firehose delivery stream to receive API call logs from API Gateway.
- B. Configure Amazon CloudWatch Logs as the delivery stream's destination.
- C. Turn on AWS CloudTrail Insights and create a trail. Specify the Amazon Resource Name (ARN) of the trail for the stage of the API.
- D. Turn on AWS X-Ray for the API stage. Create an Amazon CloudWatch Logs log group. Specify the Amazon Resource Name (ARN) of the log group for the API stage.
- E. Turn on execution logging and access logging in Amazon CloudWatch Logs for the API stage.
- F. Create a CloudWatch Logs log group.
- G. Specify the Amazon Resource Name (ARN) of the log group for the API stage.

Answer: D

Explanation:

This solution will meet the requirements by using Amazon CloudWatch Logs to capture and analyze the logs from API Gateway. Amazon CloudWatch Logs is a service that monitors, stores, and accesses log files from AWS resources. The developer can turn on execution logging and access logging in Amazon CloudWatch Logs for the API stage, which enables logging information about API execution and client access to the API. The developer can create a CloudWatch Logs log group, which is a collection of log streams that share the same retention, monitoring, and access control settings. The developer can specify the Amazon Resource Name (ARN) of the log group for the API stage, which instructs API Gateway to send the logs to the specified log group. The developer can then examine the logs to determine the cause of the HTTP 400 response errors. Option A is not optimal because it will create an Amazon Kinesis Data Firehose delivery stream to receive API call logs from API Gateway, which may introduce additional costs and complexity for delivering and processing streaming data. Option B is not optimal because it will turn on AWS CloudTrail Insights and create a trail, which is a feature that helps identify and troubleshoot unusual API activity or operational issues, not HTTP response errors. Option C is not optimal because it will turn on AWS X-Ray for the API stage, which is a service that helps analyze and debug distributed applications, not HTTP response errors. References: [Setting Up CloudWatch Logging for a REST API], [CloudWatch Logs Concepts]

NEW QUESTION 4

A developer has been asked to create an AWS Lambda function that is invoked any time updates are made to items in an Amazon DynamoDB table. The function has been created and appropriate permissions have been added to the Lambda execution role Amazon DynamoDB streams have been enabled for the table, but the function is still not being invoked.

Which option would enable DynamoDB table updates to invoke the Lambda function?

- A. Change the StreamViewType parameter value to NEW_AND_OLD_IMAGES for the DynamoDB table.
- B. Configure event source mapping for the Lambda function.
- C. Map an Amazon Simple Notification Service (Amazon SNS) topic to the DynamoDB streams.
- D. Increase the maximum runtime (timeout) setting of the Lambda function.

Answer: B

Explanation:

This solution allows the Lambda function to be invoked by the DynamoDB stream whenever updates are made to items in the DynamoDB table. Event source mapping is a feature of Lambda that enables a function to be triggered by an event source, such as a DynamoDB stream, an Amazon Kinesis stream, or an Amazon Simple Queue Service (SQS) queue. The developer can configure event source mapping for the Lambda function using the AWS Management Console, the AWS CLI, or the AWS SDKs. Changing the StreamViewType parameter value to NEW_AND_OLD_IMAGES for the DynamoDB table will not affect the invocation of the Lambda function, but only change the information that is written to the stream record. Mapping an Amazon Simple Notification Service (Amazon SNS) topic to the DynamoDB stream will not invoke the Lambda function directly, but require an additional subscription from the Lambda function to the SNS topic. Increasing the maximum runtime (timeout) setting of the Lambda function will not affect the invocation of the Lambda function, but only change how long the function can run before it is terminated.

Reference: [Using AWS Lambda with Amazon DynamoDB], [Using AWS Lambda with Amazon SNS]

NEW QUESTION 5

A developer is configuring an applications deployment environment in AWS CodePipeline. The application code is stored in a GitHub repository. The developer wants to ensure that the repository package's unit tests run in the new deployment environment. The deployment has already set the pipeline's source provider to GitHub and has specified the repository and branch to use in the deployment.

When combination of steps should the developer take next to meet these requirements with the least the LEAST overhead' (Select TWO).

- A. Create an AWS CodeCommit project
- B. Add the repository package's build and test commands to the project's buildspec
- C. Create an AWS CodeBuild project
- D. Add the repository package's build and test commands to the project's buildspec
- E. Create an AWS CodeDeploy provider
- F. Add the repository package's build and test commands to the project's buildspec
- G. Add an action to the source stage
- H. Specify the newly created project as the action provider
- I. Specify the build artifact as the action's input artifact.
- J. Add a new stage to the pipeline after the source stage
- K. Add an action to the new stage
- L. Specify the newly created project as the action provider
- M. Specify the source artifact as the action's input artifact.

Answer: BE

Explanation:

This solution will ensure that the repository package's unit tests run in the new deployment environment with the least overhead because it uses AWS CodeBuild to build and test the code in a fully managed service, and AWS CodePipeline to orchestrate the deployment stages and actions. Option A is not optimal because it will use AWS CodeCommit instead of AWS CodeBuild, which is a source control service, not a build and test service. Option C is not optimal because it will use AWS CodeDeploy instead of AWS CodeBuild, which is a deployment service, not a build and test service. Option D is not optimal because it will add an action to the source stage instead of creating a new stage, which will not follow the best practice of separating different deployment phases. References: AWS CodeBuild, AWS CodePipeline

NEW QUESTION 6

A company has an application that is hosted on Amazon EC2 instances. The application stores objects in an Amazon S3 bucket and allows users to download objects from the S3 bucket. A developer turns on S3 Block Public Access for the S3 bucket. After this change, users report errors when they attempt to download objects. The developer needs to implement a solution so that only users who are signed in to the application can access objects in the S3 bucket.

Which combination of steps will meet these requirements in the MOST secure way? (Select TWO.)

Which combination of steps will meet these requirements in the MOST secure way? (Select TWO.)

- A. Create an EC2 instance profile and role with an appropriate policy. Associate the role with the EC2 instances.
- B. Create an IAM user with an appropriate policy.
- C. Store the access key ID and secret access key on the EC2 instances.
- D. Modify the application to use the S3 GeneratePresignedUrl API call.
- E. Modify the application to use the S3 GetObject API call and to return the object handle to the user.
- F. Modify the application to delegate requests to the S3 bucket.

Answer: AC

Explanation:

The most secure way to allow the EC2 instances to access the S3 bucket is to use an EC2 instance profile and role with an appropriate policy that grants the necessary permissions. This way, the EC2 instances can use temporary security credentials that are automatically rotated and do not need to store any access keys on the instances. To allow the users who are signed in to the application to download objects from the S3 bucket, the application can use the S3 GeneratePresignedUrl API call to create a pre-signed URL that grants temporary access to a specific object. The pre-signed URL can be returned to the user, who can then use it to download the object within a specified time period. References

? Use Amazon S3 with Amazon EC2

? How to Access AWS S3 Bucket from EC2 Instance In a Secured Way

? Sharing an Object with Others

NEW QUESTION 7

A company uses Amazon API Gateway to expose a set of APIs to customers. The APIs have caching enabled in API Gateway. Customers need a way to invalidate the cache for each API when they test the API.

What should a developer do to give customers the ability to invalidate the API cache?

- A. Ask the customers to use AWS credentials to call the InvalidateCache API operation.
- B. Attach an InvalidateCache policy to the IAM execution role that the customers use to invoke the AP
- C. Ask the customers to send a request that contains the HTTP header when they make an API call.
- D. Ask the customers to use the AWS SDK API Gateway class to invoke the InvalidateCache API operation.
- E. Attach an InvalidateCache policy to the IAM execution role that the customers use to invoke the AP
- F. Ask the customers to add the INVALIDATE_CACHE query string parameter when they make an API call.

Answer: D

NEW QUESTION 8

A company has a web application that is hosted on Amazon EC2 instances. The EC2 instances are configured to stream logs to Amazon CloudWatch Logs. The company needs to receive an Amazon Simple Notification Service (Amazon SNS) notification when the number of application error messages exceeds a defined threshold within a 5-minute period.

Which solution will meet these requirements?

- A. Rewrite the application code to stream application logs to Amazon SNS. Configure an SNS topic to send a notification when the number of errors exceeds the defined threshold within a 5-minute period.
- B. Configure a subscription filter on the CloudWatch Logs log group.
- C. Configure the filter to send an SNS notification when the number of errors exceeds the defined threshold within a 5-minute period.
- D. Install and configure the Amazon Inspector agent on the EC2 instances to monitor for errors. Configure Amazon Inspector to send an SNS notification when the number of errors exceeds the defined threshold within a 5-minute period.
- E. Create a CloudWatch metric filter to match the application error pattern in the log data. Set up a CloudWatch alarm based on the new custom metric.
- F. Configure the alarm to send an SNS notification when the number of errors exceeds the defined threshold within a 5-minute period.

Answer: D

Explanation:

The best solution is to create a CloudWatch metric filter to match the application error pattern in the log data. This will allow you to create a custom metric that tracks the number of errors in your application. You can then set up a CloudWatch alarm based on this metric and configure it to send an SNS notification when the number of errors exceeds a defined threshold within a 5-minute period. This solution does not require any changes to your application code or installing any additional agents on your EC2 instances. It also leverages the existing integration between CloudWatch and SNS for sending notifications. References

- ? Create Metric Filters - Amazon CloudWatch Logs
- ? Creating Amazon CloudWatch Alarms - Amazon CloudWatch
- ? How to send alert based on log message on CloudWatch - Stack Overflow

NEW QUESTION 9

An application that is hosted on an Amazon EC2 instance needs access to files that are stored in an Amazon S3 bucket. The application lists the objects that are stored in the S3 bucket and displays a table to the user. During testing, a developer discovers that the application does not show any objects in the list.

What is the MOST secure way to resolve this issue?

- A. Update the IAM instance profile that is attached to the EC2 instance to include the S3:* permission for the S3 bucket.
- B. Update the IAM instance profile that is attached to the EC2 instance to include the S3:ListBucket permission for the S3 bucket.
- C. Update the developer's user permissions to include the S3:ListBucket permission for the S3 bucket.
- D. Update the S3 bucket policy by including the S3:ListBucket permission and by setting the Principal element to specify the account number of the EC2 instance.

Answer: B

Explanation:

IAM instance profiles are containers for IAM roles that can be associated with EC2 instances. An IAM role is a set of permissions that grant access to AWS resources. An IAM role can be used to allow an EC2 instance to access an S3 bucket by including the appropriate permissions in the role's policy. The S3:ListBucket permission allows listing the objects in an S3 bucket. By updating the IAM instance profile with this permission, the application on the EC2 instance can retrieve the objects from the S3 bucket and display them to the user. Reference: Using an IAM role to grant permissions to applications running on Amazon EC2 instances

NEW QUESTION 10

An online sales company is developing a serverless application that runs on AWS. The application uses an AWS Lambda function that calculates order success rates and stores the data in an Amazon DynamoDB table. A developer wants an efficient way to invoke the Lambda function every 15 minutes.

Which solution will meet this requirement with the LEAST development effort?

- A. Create an Amazon EventBridge rule that has a rate expression that will run the rule every 15 minutes.
- B. Add the Lambda function as the target of the EventBridge rule.
- C. Create an AWS Systems Manager document that has a script that will invoke the Lambda function on Amazon EC2. Use a Systems Manager Run Command task to run the shell script every 15 minutes.
- D. Create an AWS Step Functions state machine.
- E. Configure the state machine to invoke the Lambda function execution role at a specified interval by using a Wait state.
- F. Set the interval to 15 minutes.
- G. Provision a small Amazon EC2 instance.
- H. Set up a cron job that invokes the Lambda function every 15 minutes.

Answer: A

Explanation:

The best solution for this requirement is option A. Creating an Amazon EventBridge rule that has a rate expression that will run the rule every 15 minutes and

adding the Lambda function as the target of the EventBridge rule is the most efficient way to invoke the Lambda function periodically. This solution does not require any additional resources or development effort, and it leverages the built-in scheduling capabilities of EventBridge1.

NEW QUESTION 10

A developer wants to expand an application to run in multiple AWS Regions. The developer wants to copy Amazon Machine Images (AMIs) with the latest changes and create a new application stack in the destination Region. According to company requirements, all AMIs must be encrypted in all Regions. However, not all the AMIs that the company uses are encrypted.

How can the developer expand the application to run in the destination Region while meeting the encryption requirement?

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Amazon Machine Images (AMIs) are encrypted snapshots of EC2 instances that can be used to launch new instances. The developer can create new AMIs from the existing instances and specify encryption parameters. The developer can copy the encrypted AMIs to the destination Region and use them to create a new application stack. The developer can delete the unencrypted AMIs after the encryption process is complete. This solution will meet the encryption requirement and allow the developer to expand the application to run in the destination Region.

References:

- ? [Amazon Machine Images (AMI) - Amazon Elastic Compute Cloud]
- ? [Encrypting an Amazon EBS Snapshot - Amazon Elastic Compute Cloud]
- ? [Copying an AMI - Amazon Elastic Compute Cloud]

NEW QUESTION 14

A developer is creating a new REST API by using Amazon API Gateway and AWS Lambda. The development team tests the API and validates responses for the known use cases before deploying the API to the production environment.

The developer wants to make the REST API available for testing by using API Gateway locally.
Which AWS Serverless Application Model Command Line Interface (AWS SAM CLI) subcommand will meet these requirements?

- A. Sam local invoke
- B. Sam local generate-event
- C. Sam local start-lambda
- D. Sam local start-api

Answer: D

Explanation:

? The sam local start-api subcommand allows you to run your serverless application locally for quick development and testing1. It creates a local HTTP server that acts as a proxy for API Gateway and invokes your Lambda functions based on the AWS SAM template1. You can use the sam local start-api subcommand to test your REST API locally by sending HTTP requests to the local endpoint1.

NEW QUESTION 15

A company needs to harden its container images before the images are in a running state. The company's application uses Amazon Elastic Container Registry (Amazon ECR) as an image registry. Amazon Elastic Kubernetes Service (Amazon EKS) for compute, and an AWS CodePipeline pipeline that orchestrates a continuous integration and continuous delivery (CI/CD) workflow.

Dynamic application security testing occurs in the final stage of the pipeline after a new image is deployed to a development namespace in the EKS cluster. A developer needs to

place an analysis stage before this deployment to analyze the container image earlier in the CI/CD pipeline.

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

- A. Build the container image and run the docker scan command locally
- B. Mitigate any findings before pushing changes to the source code repository
- C. Write a pre-commit hook that enforces the use of this workflow before commit.
- D. Create a new CodePipeline stage that occurs after the container image is built
- E. Configure ECR basic image scanning to scan on image push
- F. Use an AWS Lambda function as the action provider
- G. Configure the Lambda function to check the scan results and to fail the pipeline if there are findings.
- H. Create a new CodePipeline stage that occurs after source code has been retrieved from its repository
- I. Run a security scanner on the latest revision of the source code
- J. Fail the pipeline if there are findings.
- K. Add an action to the deployment stage of the pipeline so that the action occurs before the deployment to the EKS cluster
- L. Configure ECR basic image scanning to scan on image push
- M. Use an AWS Lambda function as the action provider
- N. Configure the Lambda function to check the scan results and to fail the pipeline if there are findings.

Answer: B

Explanation:

The solution that will meet the requirements with the most operational efficiency is to create a new CodePipeline stage that occurs after the container image is built. Configure ECR basic image scanning to scan on image push. Use an AWS Lambda function as the action provider. Configure the Lambda function to check the scan results and to fail the pipeline if there are findings. This way, the container image is analyzed earlier in the CI/CD pipeline and any vulnerabilities are detected and reported before deploying to the EKS cluster. The other options either delay the analysis until after deployment, which increases the risk of exposing insecure images, or perform analysis on the source code instead of the container image, which may not capture all the dependencies and configurations that affect the security posture of the image.

Reference: Amazon ECR image scanning

NEW QUESTION 19

A company is using an AWS Lambda function to process records from an Amazon Kinesis data stream. The company recently observed slow processing of the

records. A developer notices that the iterator age metric for the function is increasing and that the Lambda run duration is constantly above normal. Which actions should the developer take to increase the processing speed? (Choose two.)

- ☐ A. Increase the number of shards of the Kinesis data stream.
- ☐ B. Decrease the timeout of the Lambda function.
- ☐ C. Increase the memory that is allocated to the Lambda function.
- ☐ D. Decrease the number of shards of the Kinesis data stream.
- ☐ E. Increase the timeout of the Lambda function.

Answer: AC

Explanation:

Increasing the number of shards of the Kinesis data stream will increase the throughput and parallelism of the data processing. Increasing the memory that is allocated to the Lambda function will also increase the CPU and network performance of the function, which will reduce the run duration and improve the processing speed. Option B is not correct because decreasing the timeout of the Lambda function will not affect the processing speed, but may cause some records to fail if they exceed the timeout limit. Option D is not correct because decreasing the number of shards of the Kinesis data stream will decrease the throughput and parallelism of the data processing, which will slow down the processing speed. Option E is not correct because increasing the timeout of the Lambda function will not affect the processing speed, but may increase the cost of running the function.

References: [Amazon Kinesis Data Streams Scaling], [AWS Lambda Performance Tuning]

NEW QUESTION 22

A developer has an application that makes batch requests directly to Amazon DynamoDB by using the BatchGetItem low-level API operation. The responses frequently return values in the UnprocessedKeys element.

Which actions should the developer take to increase the resiliency of the application when the batch response includes values in UnprocessedKeys? (Choose two.)

- ☐ A. Retry the batch operation immediately.
- ☐ B. Retry the batch operation with exponential backoff and randomized delay.
- ☐ C. Update the application to use an AWS software development kit (AWS SDK) to make the requests.
- ☐ D. Increase the provisioned read capacity of the DynamoDB tables that the operation accesses.
- ☐ E. Increase the provisioned write capacity of the DynamoDB tables that the operation accesses.

Answer: BC

Explanation:

The UnprocessedKeys element indicates that the BatchGetItem operation did not process all of the requested items in the current response. This can happen if the

response size limit is exceeded or if the table's provisioned throughput is exceeded. To handle this situation, the developer should retry the batch operation with exponential backoff and randomized delay to avoid throttling errors and reduce the load on the table. The developer should also use an AWS SDK to make the requests, as the SDKs automatically retry requests that return UnprocessedKeys.

References:

? [BatchGetItem - Amazon DynamoDB]

? [Working with Queries and Scans - Amazon DynamoDB]

? [Best Practices for Handling DynamoDB Throttling Errors]

NEW QUESTION 24

A company uses a custom root certificate authority certificate chain (Root CA Cert) that is 10 KB in size generate SSL certificates for its on-premises HTTPS endpoints. One of the company's cloud based applications has hundreds of AWS Lambda functions that pull data from these endpoints. A developer updated the trust store of the Lambda execution environment to use the Root CA Cert when the Lambda execution environment is initialized. The developer bundled the Root CA Cert as a text file in the Lambdas deployment bundle.

After 3 months of development the root CA Cert is no longer valid and must be updated. The developer needs a more efficient solution to update the Root CA Cert for all deployed Lambda functions. The solution must not include rebuilding or updating all Lambda functions that use the Root CA Cert. The solution must also work for all development, testing and production environment. Each environment is managed in a separate AWS account.

When combination of steps Would the developer take to meet these environments MOST cost-effectively? (Select TWO)

- ☐ A. Mastered
- ☐ B. Not Mastered

Answer: A

Explanation:

This solution will meet the requirements by storing the Root CA Cert as a Secure String parameter in AWS Systems Manager Parameter Store, which is a secure and scalable service for storing and managing configuration data and secrets. The resource-based policy will allow IAM users in different AWS accounts and environments to access the parameter without requiring cross-account roles or permissions. The Lambda code will be refactored to load the Root CA Cert from the parameter store and modify the runtime trust store outside the Lambda function handler, which will improve performance and reduce latency by avoiding repeated calls to Parameter Store and trust store modifications for each invocation of the Lambda function. Option A is not optimal because it will use AWS Secrets Manager instead of AWS Systems Manager Parameter Store, which will incur additional costs and complexity for storing and managing a non-secret configuration data such as Root CA Cert. Option C is not optimal because it will deactivate the application secrets and monitor the application error logs temporarily, which will cause application downtime and potential data loss. Option D is not optimal because it will modify the runtime trust store inside the Lambda function handler, which will degrade performance and increase latency by repeating unnecessary operations for each invocation of the Lambda function.

References: AWS Systems Manager Parameter Store, [Using SSL/TLS to Encrypt a Connection to a DB Instance]

NEW QUESTION 28

A developer has written the following IAM policy to provide access to an Amazon S3 bucket:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "s3:GetObject",
        "s3:PutObject"
      ],
      "Resource": "arn:aws:s3:::DOC-EXAMPLE-BUCKET/*"
    },
    {
      "Effect": "Deny",
      "Action": "s3:*",
      "Resource": "arn:aws:s3:::DOC-EXAMPLE-BUCKET/secrets*"
    }
  ]
}
```

Which access does the policy allow regarding the s3:GetObject and s3:PutObject actions?

- A. Access on all buckets except the "DOC-EXAMPLE-BUCKET" bucket
- B. Access on all buckets that start with "DOC-EXAMPLE-BUCKET" except the "DOC-EXAMPLE-BUCKET/secrets" bucket
- C. Access on all objects in the "DOC-EXAMPLE-BUCKET" bucket along with access to all S3 actions for objects in the "DOC-EXAMPLE-BUCKET" bucket that start with "secrets"
- D. Access on all objects in the "DOC-EXAMPLE-BUCKET" bucket except on objects that start with "secrets"

Answer: D

Explanation:

The IAM policy shown in the image is a resource-based policy that grants or denies access to an S3 bucket based on certain conditions. The first statement allows access to any S3 action on any object in the "DOC-EXAMPLE-BUCKET" bucket when the request is made over HTTPS (the value of aws:SecureTransport is true). The second statement denies access to the s3:GetObject and s3:PutObject actions on any object in the "DOC-EXAMPLE-BUCKET/secrets" prefix when the request is made over HTTP (the value of aws:SecureTransport is false). Therefore, the policy allows access on all objects in the "DOC-EXAMPLE-BUCKET" bucket except on objects that start with "secrets".

Reference: Using IAM policies for Amazon S3

NEW QUESTION 29

A company has an application that runs as a series of AWS Lambda functions. Each Lambda function receives data from an Amazon Simple Notification Service (Amazon SNS) topic and writes the data to an Amazon Aurora DB instance.

To comply with an information security policy, the company must ensure that the Lambda functions all use a single securely encrypted database connection string to access Aurora.

Which solution will meet these requirements'?

- A. Use IAM database authentication for Aurora to enable secure database connections for all the Lambda functions.
- B. Store the credentials and read the credentials from an encrypted Amazon RDS DB instance.
- C. Store the credentials in AWS Systems Manager Parameter Store as a secure string parameter.
- D. Use Lambda environment variables with a shared AWS Key Management Service (AWS KMS) key for encryption.

Answer: A

Explanation:

This solution will meet the requirements by using IAM database authentication for Aurora, which enables using IAM roles or users to authenticate with Aurora databases instead of using passwords or other secrets. The developer can use IAM database authentication for Aurora to enable secure database connections for all the Lambda functions that access Aurora DB instance. The developer can create an IAM role with permission to connect to Aurora DB instance and attach it to each Lambda function. The developer can also configure Aurora DB instance to use IAM database authentication and enable encryption in transit using SSL certificates. This way, the Lambda functions can use a single securely encrypted database connection string to access Aurora without needing any secrets or passwords. Option B is not optimal because it will store the credentials and read them from an encrypted Amazon RDS DB instance, which may introduce additional costs and complexity for managing and accessing another RDS DB instance. Option C is not optimal because it will store the credentials in AWS Systems Manager Parameter Store as a secure string parameter, which may require additional steps or permissions to retrieve and decrypt the credentials from Parameter Store. Option D is not optimal because it will use Lambda environment variables with a shared AWS Key Management Service (AWS KMS) key for encryption, which may not be secure or scalable as environment variables are stored as plain text unless encrypted with AWS KMS. References: [IAM Database Authentication for MySQL and PostgreSQL], [Using SSL/TLS to Encrypt a Connection to a DB Instance]

NEW QUESTION 32

A company has an existing application that has hardcoded database credentials A developer needs to modify the existing application The application is deployed in two AWS Regions with an active-passive failover configuration to meet company's disaster recovery strategy

The developer needs a solution to store the credentials outside the code. The solution must comply With the company's disaster recovery strategy

Which solution Will meet these requirements in the MOST secure way?

- A. Store the credentials in AWS Secrets Manager in the primary Regio
- B. Enable secret replication to the secondary Region Update the application to use the Amazon Resource Name (ARN) based on the Region.
- C. Store credentials in AWS Systems Manager Parameter Store in the primary Regio
- D. Enable parameter replication to the secondary Region
- E. Update the application to use the Amazon Resource Name (ARN) based on the Region.

- F. Store credentials in a config file
- G. Upload the config file to an S3 bucket in the primary Region
- H. Enable Cross-Region Replication (CRR) to an S3 bucket in the secondary region
- I. Update the application to access the config file from the S3 bucket based on the Region.
 - Store credentials in a config file
- K. Upload the config file to an Amazon Elastic File System (Amazon EFS) file system
- L. Update the application to use the Amazon EFS file system Regional endpoints to access the config file in the primary and secondary Regions.

Answer: A

Explanation:

AWS Secrets Manager is a service that allows you to store and manage secrets, such as database credentials, API keys, and passwords, in a secure and centralized way. It also provides features such as automatic secret rotation, auditing, and monitoring¹. By using AWS Secrets Manager, you can avoid hardcoding credentials in your code, which is a bad security practice and makes it difficult to update them. You can also replicate your secrets to another Region, which is useful for disaster recovery purposes². To access your secrets from your application, you can use the ARN of the secret, which is a unique identifier that includes the Region name. This way, your application can use the appropriate secret based on the Region where it is deployed³.

References:

- ? AWS Secrets Manager
- ? Replicating and sharing secrets
- ? Using your own encryption keys

NEW QUESTION 35

A developer is working on an ecommerce platform that communicates with several third-party payment processing APIs. The third-party payment services do not provide a test environment.

The developer needs to validate the ecommerce platform's integration with the third-party payment processing APIs. The developer must test the API integration code without invoking the third-party payment processing APIs.

Which solution will meet these requirements?

- A. Set up an Amazon API Gateway REST API with a gateway response configured for status code 200. Add response templates that contain sample responses captured from the real third-party API.
- B. Set up an AWS AppSync GraphQL API with a data source configured for each third-party API. Specify an integration type of Mock. Configure integration responses by using sample responses captured from the real third-party API.
- C. Create an AWS Lambda function for each third-party API.
- D. Embed responses captured from the real third-party API.
- E. Configure Amazon Route 53 Resolver with an inbound endpoint for each Lambda function's Amazon Resource Name (ARN).
- F. Set up an Amazon API Gateway REST API for each third-party API. Specify an integration request type of Mock. Configure integration responses by using sample responses captured from the real third-party API.

Answer: D

Explanation:

Amazon API Gateway can mock responses for testing purposes without requiring any integration backend. This allows the developer to test the API integration code without invoking the third-party payment processing APIs. The developer can configure integration responses by using sample responses captured from the real third-party API. References:

- ? Mocking Integration Responses in API Gateway
- ? Set up Mock Integrations for an API in API Gateway

NEW QUESTION 39

A company is building a web application on AWS. When a customer sends a request, the application will generate reports and then make the reports available to the customer within one hour. Reports should be accessible to the customer for 8 hours. Some reports are larger than 1 MB. Each report is unique to the customer. The application should delete all reports that are older than 2 days.

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

- A. Generate the reports and then store the reports as Amazon DynamoDB items that have a specified TTL.
- B. Generate a URL that retrieves the reports from DynamoDB.
- C. Provide the URL to customers through the web application.
- D. Generate the reports and then store the reports in an Amazon S3 bucket that uses server-side encryption.
- E. Attach the reports to an Amazon Simple Notification Service (Amazon SNS) message.
- F. Subscribe the customer to email notifications from Amazon SNS.
- G. Generate the reports and then store the reports in an Amazon S3 bucket that uses server-side encryption.
- H. Generate a presigned URL that contains an expiration date. Provide the URL to customers through the web application.
- I. Add S3 Lifecycle configuration rules to the S3 bucket to delete old reports.
- J. Generate the reports and then store the reports in an Amazon RDS database with a date stamp.
- K. Generate a URL that retrieves the reports from the RDS database.
- L. Provide the URL to customers through the web application.
- M. Schedule an hourly AWS Lambda function to delete database records that have expired date stamps.

Answer: C

Explanation:

This solution will meet the requirements with the least operational overhead because it uses Amazon S3 as a scalable, secure, and durable storage service for the reports. The presigned URL will allow customers to access their reports for a limited time (8 hours) without requiring additional authentication. The S3 Lifecycle configuration rules will automatically delete the reports that are older than 2 days, reducing storage costs and complying with the data retention policy. Option A is not optimal because it will incur additional costs and complexity to store the reports as DynamoDB items, which have a size limit of 400 KB. Option B is not optimal because it will not provide customers with access to their reports within one hour, as Amazon SNS email delivery is not guaranteed. Option D is not optimal because it will require more operational overhead to manage an RDS database and a Lambda function for storing and deleting the reports.

References: Amazon S3 Presigned URLs, Amazon S3 Lifecycle

NEW QUESTION 40

A financial company must store original customer records for 10 years for legal reasons. A complete record contains personally identifiable information (PII). According to local regulations, PII is available to only certain people in the company and must not be shared with third parties. The company needs to make the records available to third-party organizations for statistical analysis without sharing the PII.

A developer wants to store the original immutable record in Amazon S3. Depending on who accesses the S3 document, the document should be returned as is or with all the PII removed. The developer has written an AWS Lambda function to remove the PII from the document. The function is named `removePii`. What should the developer do so that the company can meet the PII requirements while maintaining only one copy of the document?

- A. Set up an S3 event notification that invokes the `removePii` function when an S3 GET request is made
- B. Call Amazon S3 by using a GET request to access the object without PII.
- C. Set up an S3 event notification that invokes the `removePii` function when an S3 PUT request is made
- D. Call Amazon S3 by using a PUT request to access the object without PII.
- E. Create an S3 Object Lambda access point from the S3 console
- F. Select the `removePii` function
- G. Use S3 Access Points to access the object without PII.
- H. Create an S3 access point from the S3 console
- I. Use the access point name to call the `GetObjectLegalHold` S3 API function
- J. Pass in the `removePii` function name to access the object without PII.

Answer: C

Explanation:

S3 Object Lambda allows you to add your own code to process data retrieved from S3 before returning it to an application. You can use an AWS Lambda function to modify the data, such as removing PII, redacting confidential information, or resizing images. You can create an S3 Object Lambda access point and associate it with your Lambda function. Then, you can use the access point to request objects from S3 and get the modified data back. This way, you can maintain only one copy of the original

document in S3 and apply different transformations depending on who accesses it. Reference: Using AWS Lambda with Amazon S3

NEW QUESTION 42

A developer has created an AWS Lambda function that is written in Python. The Lambda function reads data from objects in Amazon S3 and writes data to an Amazon DynamoDB table. The function is successfully invoked from an S3 event notification when an object is created. However, the function fails when it attempts to write to the DynamoDB table.

What is the MOST likely cause of this issue?

- A. The Lambda function's concurrency limit has been exceeded.
- B. DynamoDB table requires a global secondary index (GSI) to support writes.
- C. The Lambda function does not have IAM permissions to write to DynamoDB.
- D. The DynamoDB table is not running in the same Availability Zone as the Lambda function.

Answer: C

Explanation:

https://docs.aws.amazon.com/IAM/latest/UserGuide/reference_policies_examples_lambda-access-dynamodb.html

NEW QUESTION 45

A developer has observed an increase in bugs in the AWS Lambda functions that a development team has deployed in its Node.js application. To minimize these bugs, the developer wants to implement automated testing of Lambda functions in an environment that closely simulates the Lambda environment.

The developer needs to give other developers the ability to run the tests locally. The developer also needs to integrate the tests into the team's continuous integration and continuous delivery (CI/CD) pipeline before the AWS Cloud Development Kit (AWS CDK) deployment.

Which solution will meet these requirements?

- A. Create sample events based on the Lambda documentation
- B. Create automated test scripts that use the `cdk local invoke` command to invoke the Lambda function
- C. Check the responses
- D. Document the test scripts for the other developers on the team
- E. Update the CI/CD pipeline to run the test scripts.
- F. Install a unit testing framework that reproduces the Lambda execution environment.
- G. Invoke the handler function by using a unit testing framework
- H. Check the responses
- I. Document how to run the unit testing framework for the other developers on the team
- J. Update the CI/CD pipeline to run the unit testing framework.
- K. Install the AWS Serverless Application Model (AWS SAM) CLI tool
- L. Use the `sam local generate-event` command to generate sample events for the automated test
- M. Create automated test scripts that use the `sam local invoke` command to invoke the Lambda function
- N. Check the responses
- O. Document the test scripts for the other developers on the team
- P. Update the CI/CD pipeline to run the test scripts.
- Q. Create sample events based on the Lambda documentation
- R. Create a Docker container from the Node.js base image to invoke the Lambda function
- S. Check the responses
- T. Document how to run the Docker container for the other developers on the team
- . Update the CI/CD pipeline to run the Docker container.

Create sample events based on the Lambda

Answer: C

Explanation:

The AWS Serverless Application Model Command Line Interface (AWS SAM CLI) is a command-line tool for local development and testing of Serverless

applications³. The `aws-sam local generate-event` command of AWS SAM CLI generates sample events for automated tests³. The `aws-sam local invoke` command is used to invoke Lambda functions³. Therefore, option C is correct.

NEW QUESTION 49

A developer is creating a new REST API by using Amazon API Gateway and AWS Lambda. The development team tests the API and validates responses for the known use cases before deploying the API to the production environment.

The developer wants to make the REST API available for testing by using API Gateway locally.

Which AWS Serverless Application Model Command Line Interface (AWS SAM CLI) subcommand will meet these requirements?

- A. `aws-sam local invoke`
- B. `aws-sam local generate-event`
- C. `aws-sam local start-lambda`
- D. `aws-sam local start-api`

Answer: D

Explanation:

The AWS Serverless Application Model Command Line Interface (AWS SAM CLI) is a command-line tool for local development and testing of Serverless applications². The `aws-sam local start-api` subcommand of AWS SAM CLI is used to simulate a REST API by starting a new local endpoint³. Therefore, option D is correct.

NEW QUESTION 51

A developer is building a serverless application by using AWS Serverless Application Model (AWS SAM) on multiple AWS Lambda functions. When the application is deployed, the developer wants to shift 10% of the traffic to the new deployment of the application for the first 10 minutes after deployment. If there are no issues, all traffic must switch over to the new version.

Which change to the AWS SAM template will meet these requirements?

- A. Set the `DeploymentPreferenceType` to `Canary` and `Percent10Minutes`
- B. Set the `AutoPublishAlias` property to the Lambda alias.
- C. Set the `DeploymentPreferenceType` to `Linear` and `PercentEvery10Minutes`
- D. Set `AutoPublishAlias` property to the Lambda alias.
- E. Set the `DeploymentPreferenceType` to `Canary` and `Percent10Minutes`
- F. Set the `PreTraffic` and `PostTraffic` properties to the Lambda alias.
- G. Set the `DeploymentPreferenceType` to `Linear` and `PercentEvery10Minutes`
- H. Set `PreTraffic` and `PostTraffic` properties to the Lambda alias.

Answer: A

Explanation:

? The `DeploymentPreferenceType` property specifies how traffic should be shifted between versions of a Lambda function¹. The `Canary10Percent10Minutes` option means that 10% of the traffic is immediately shifted to the new version, and after 10 minutes, the remaining 90% of the traffic is shifted¹. This matches the requirement of shifting 10% of the traffic for the first 10 minutes, and then switching all traffic to the new version.

? The `AutoPublishAlias` property enables AWS SAM to automatically create and update a Lambda alias that points to the latest version of the function¹. This is required to use the `DeploymentPreferenceType` property¹. The alias name can be specified by the developer, and it can be used to invoke the function with the latest code.

NEW QUESTION 54

A developer at a company needs to create a small application that makes the same API call once each day at a designated time. The company does not have infrastructure in the AWS Cloud yet, but the company wants to implement this functionality on AWS.

Which solution meets these requirements in the MOST operationally efficient manner?

- A. Use a Kubernetes cron job that runs on Amazon Elastic Kubernetes Service (Amazon EKS).
- B. Use an Amazon Linux crontab scheduled job that runs on Amazon EC2.
- C. Use an AWS Lambda function that is invoked by an Amazon EventBridge scheduled event.
- D. Use an AWS Batch job that is submitted to an AWS Batch job queue.

Answer: C

Explanation:

The correct answer is C. Use an AWS Lambda function that is invoked by an Amazon EventBridge scheduled event.

* C. Use an AWS Lambda function that is invoked by an Amazon EventBridge scheduled event. This is correct. AWS Lambda is a serverless compute service that lets you run code without provisioning or managing servers. Lambda runs your code on a high-availability compute infrastructure and performs all of the administration of the compute resources, including server and operating system maintenance, capacity provisioning and automatic scaling, and logging¹. Amazon EventBridge is a serverless event bus service that enables you to connect your applications with data from a variety of sources². EventBridge can create rules that run on a schedule, either at regular intervals or at specific times and dates, and invoke targets such as Lambda functions³. This solution meets the requirements of creating a small application that makes the same API call once each day at a designated time, without requiring any infrastructure in the AWS Cloud or any operational overhead.

* A. Use a Kubernetes cron job that runs on Amazon Elastic Kubernetes Service (Amazon EKS). This is incorrect. Amazon EKS is a fully managed Kubernetes service that allows you to run containerized applications on AWS⁴. Kubernetes cron jobs are tasks that run periodically on a given schedule⁵. This solution could meet the functional requirements of creating a small application that makes the same API call once each day at a designated time, but it would not be the most operationally efficient manner. The company would need to provision and manage an EKS cluster, which would incur additional costs and complexity.

* B. Use an Amazon Linux crontab scheduled job that runs on Amazon EC2. This is incorrect. Amazon EC2 is a web service that provides secure, resizable compute capacity in the cloud⁶. Crontab is a Linux utility that allows you to schedule commands or scripts to run automatically at a specified time or date⁷. This solution could meet the functional requirements of creating a small application that makes the same API call once each day at a designated time, but it would not be the most operationally efficient manner. The company would need to provision and manage an EC2 instance, which would incur additional costs and complexity.

* D. Use an AWS Batch job that is submitted to an AWS Batch job queue. This is incorrect. AWS Batch enables you to run batch computing workloads on the AWS Cloud⁸. Batch jobs are units of work that can be submitted to job queues, where they are executed in parallel or sequentially on

compute environments9. This solution could meet the functional requirements of creating a small application that makes the same API call once each day at a designated time, but it would not be the most operationally efficient manner. The company would need to configure and manage an AWS Batch environment, which would incur additional costs and complexity.

References:

- ? 1: What is AWS Lambda? - AWS Lambda
- ? 2: What is Amazon EventBridge? - Amazon EventBridge
- ? 3: Creating an Amazon EventBridge rule that runs on a schedule - Amazon EventBridge
- ? 4: What is Amazon EKS? - Amazon EKS
- ? 5: CronJob - Kubernetes
- ? 6: What is Amazon EC2? - Amazon EC2
- ? 7: Crontab in Linux with 20 Useful Examples to Schedule Jobs - Tecmint
- ? 8: What is AWS Batch? - AWS Batch
- ? 9: Jobs - AWS Batch

NEW QUESTION 55

A company needs to distribute firmware updates to its customers around the world.

Which service will allow easy and secure control of the access to the downloads at the lowest cost?

- A. Use Amazon CloudFront with signed URLs for Amazon S3.
- B. Create a dedicated Amazon CloudFront Distribution for each customer.
- C. Use Amazon CloudFront with AWS Lambda@Edge.
- D. Use Amazon API Gateway and AWS Lambda to control access to an S3 bucket.

Answer: A

Explanation:

This solution allows easy and secure control of access to the downloads at the lowest cost because it uses a content delivery network (CDN) that can cache and distribute firmware updates to customers around the world, and uses a mechanism that can restrict access to specific files or versions. Amazon CloudFront is a CDN that can improve performance, availability, and security of web applications by delivering content from edge locations closer to customers. Amazon S3 is a storage service that can store firmware updates in buckets and objects. Signed URLs are URLs that include additional information, such as an expiration date and time, that give users temporary access to specific objects in S3 buckets. The developer can use CloudFront to serve firmware updates from S3 buckets and use signed URLs to control who can download them and for how long. Creating a dedicated CloudFront distribution for each customer will incur unnecessary costs and complexity. Using Amazon CloudFront with AWS Lambda@Edge will require additional programming overhead to implement custom logic at the edge locations. Using Amazon API Gateway and AWS Lambda to control access to an S3 bucket will also require additional programming overhead and may not provide optimal performance or availability.

Reference: [Serving Private Content through CloudFront], [Using CloudFront with Amazon S3]

NEW QUESTION 59

A company wants to automate part of its deployment process. A developer needs to automate the process of checking for and deleting unused resources that supported previously deployed stacks but that are no longer used.

The company has a central application that uses the AWS Cloud Development Kit (AWS CDK) to manage all deployment stacks. The stacks are spread out across multiple accounts. The developer's solution must integrate as seamlessly as possible within the current deployment process.

Which solution will meet these requirements with the LEAST amount of configuration?

In the central AWS CDK application, write a handler function in the code that uses AWS SDK calls to check for and delete unused

resource

- B. Create an AWS CloudFormation template from a JSON file
- C. Use the template to attach the function code to an AWS Lambda function and to invoke the Lambda function when the deployment stack runs.
- D. In the central AWS CDK application
- E. write a handler function in the code that uses AWS SDK calls to check for and delete unused resource
- F. Create an AWS CDK custom resource Use the custom resource to attach the function code to an AWS Lambda function and to invoke the Lambda function when the deployment stack runs.
- G. In the central AWS CDK, write a handler function in the code that uses AWS SDK calls to check for and delete unused resource
- H. Create an API in AWS Amplify Use the API to attach the function code to an AWS Lambda function and to invoke the Lambda function when the deployment stack runs.
- I. In the AWS Lambda console write a handler function in the code that uses AWS SDK calls to check for and delete unused resource
- J. Create an AWS CDK custom resource
- K. Use the custom resource to import the Lambda function into the stack and to invoke the Lambda function when the deployment stack runs.

Answer: B

Explanation:

This solution meets the requirements with the least amount of configuration because it uses a feature of AWS CDK that allows custom logic to be executed during stack deployment or deletion. The AWS Cloud Development Kit (AWS CDK) is a software development framework that allows you to define cloud infrastructure as code and provision it through CloudFormation. An AWS CDK custom resource is a construct that enables you to create resources that are not natively supported by CloudFormation or perform tasks that are not supported by CloudFormation during stack deployment or deletion. The developer can write a handler function in the code that uses AWS SDK calls to check for and delete unused resources, and create an AWS CDK custom resource that attaches the function code to a Lambda function and invokes it when the deployment stack runs. This way, the developer can automate the cleanup process without requiring additional configuration or integration. Creating a CloudFormation template from a JSON file will require additional configuration and integration with the central AWS CDK application. Creating an API in AWS Amplify will require additional configuration and integration with the central AWS CDK application and may not provide optimal performance or availability. Writing a handler function in the AWS Lambda console will require additional configuration and integration with the central AWS CDK application.

Reference: [AWS Cloud Development Kit (CDK)], [Custom Resources]

NEW QUESTION 64

A developer is migrating some features from a legacy monolithic application to use AWS Lambda functions instead. The application currently stores data in an Amazon Aurora DB cluster that runs in private subnets in a VPC. The AWS account has one VPC deployed. The Lambda functions and the DB cluster are deployed in the same AWS Region in the same AWS account.

The developer needs to ensure that the Lambda functions can securely access the DB cluster without crossing the public internet.

Which solution will meet these requirements?

- A. Configure the DB cluster's public access setting to Yes.
- B. Configure an Amazon RDS database proxy for the Lambda functions.
- C. Configure a NAT gateway and a security group for the Lambda functions.
- D. Configure the VPC, subnets, and a security group for the Lambda functions.

Answer: D

Explanation:

This solution will meet the requirements by allowing the Lambda functions to access the DB cluster securely within the same VPC without crossing the public internet. The developer can configure a VPC endpoint for RDS in a private subnet and assign it to the Lambda functions. The developer can also configure a security group for the Lambda functions that allows inbound traffic from the DB cluster on port 3306 (MySQL). Option A is not optimal because it will expose the DB cluster to public access, which may compromise its security and data integrity. Option B is not optimal because it will introduce additional latency and complexity to use an RDS database proxy for accessing the DB cluster from Lambda functions within the same VPC. Option C is not optimal because it will require additional costs and configuration to use a NAT gateway for accessing resources in private subnets from Lambda functions.

References: [Configuring a Lambda Function to Access Resources in a VPC]

NEW QUESTION 69

A developer is building a new application on AWS. The application uses an AWS Lambda function that retrieves information from an Amazon DynamoDB table. The developer hard coded the DynamoDB table name into the Lambda function code. The table name might change over time. The developer does not want to modify the Lambda code if the table name changes.

Which solution will meet these requirements MOST efficiently?

- A. Create a Lambda environment variable to store the table name
- B. Use the standard method for the programming language to retrieve the variable.
- C. Store the table name in a file
- D. Store the file in the /tmp folder
- E. Use the SDK for the programming language to retrieve the table name.
- F. Create a file to store the table name
- G. Zip the file and upload the file to the Lambda layer
- H. Use the SDK for the programming language to retrieve the table name.
Create a global variable that is outside the handler in the Lambda function to store the table name.
- I.

Answer: A

Explanation:

The solution that will meet the requirements most efficiently is to create a Lambda environment variable to store the table name. Use the standard method for the programming language to retrieve the variable. This way, the developer can avoid hard-coding the table name in the Lambda function code and easily change the table name by updating the environment variable. The other options either involve storing the table name in a file, which is less efficient and secure than using an environment variable, or creating a global variable, which is not recommended as it can cause concurrency issues.

Reference: Using AWS Lambda environment variables

NEW QUESTION 72

A developer at a company needs to create a small application that makes the same API call once each day at a designated time. The company does not have infrastructure in the AWS Cloud yet, but the company wants to implement this functionality on AWS.

Which solution meets these requirements in the MOST operationally efficient manner?

- A. Use a Kubernetes cron job that runs on Amazon Elastic Kubernetes Service (Amazon EKS)
- B. Use an Amazon Linux crontab scheduled job that runs on Amazon EC2
- C. Use an AWS Lambda function that is invoked by an Amazon EventBridge scheduled event.
- D. Use an AWS Batch job that is submitted to an AWS Batch job queue.

Answer: C

Explanation:

This solution meets the requirements in the most operationally efficient manner because it does not require any infrastructure provisioning or management. The developer can create a Lambda function that makes the API call and configure an EventBridge rule that triggers the function once a day at a designated time. This is a serverless solution that scales automatically and only charges for the execution time of the function.

Reference: [Using AWS Lambda with Amazon EventBridge], [Schedule Expressions for Rules]

NEW QUESTION 77

A company is planning to securely manage one-time fixed license keys in AWS. The company's development team needs to access the license keys in automation scripts that run in Amazon EC2 instances and in AWS CloudFormation stacks.

Which solution will meet these requirements MOST cost-effectively?

- A. Amazon S3 with encrypted files prefixed with "config"
- B. AWS Secrets Manager secrets with a tag that is named SecretString
- C. AWS Systems Manager Parameter Store SecureString parameters
- D. CloudFormation NoEcho parameters

Answer: C

Explanation:

AWS Systems Manager Parameter Store is a service that provides secure, hierarchical storage for configuration data and secrets. Parameter Store supports SecureString parameters, which are encrypted using AWS Key Management Service (AWS KMS) keys. SecureString parameters can be used to store license keys in AWS and retrieve them securely from automation scripts that run in EC2 instances or CloudFormation stacks. Parameter Store is a cost-effective solution

because it does not charge for storing parameters or API calls. Reference: Working with Systems Manager parameters

NEW QUESTION 80

An application runs on multiple EC2 instances behind an ELB.

Where is the session data best written so that it can be served reliably across multiple requests?

- A. Write data to Amazon ElastiCache
- B. Write data to Amazon Elastic Block Store
- C. Write data to Amazon EC2 instance Store
- D. Write data to the root filesystem

Answer: A

Explanation:

The solution that will meet the requirements is to write data to Amazon ElastiCache. This way, the application can write session data to a fast, scalable, and reliable in-memory data store that can be served reliably across multiple requests. The other options either involve writing data to persistent storage, which is slower and more expensive than in-memory storage, or writing data to the root filesystem, which is not shared among multiple EC2 instances.

Reference: Using ElastiCache for session management

NEW QUESTION 85

A company is migrating its PostgreSQL database into the AWS Cloud. The company wants to use a database that will secure and regularly rotate database credentials. The company wants a solution that does not require additional programming overhead.

Which solution will meet these requirements?

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

This solution meets the requirements because it uses a PostgreSQL-compatible database that can secure and regularly rotate database credentials without requiring additional programming overhead. Amazon Aurora PostgreSQL is a relational database service that is compatible with PostgreSQL and offers high performance, availability, and scalability. AWS Secrets Manager is a service that helps you protect secrets needed to access your applications, services, and IT resources. You can store database credentials in AWS Secrets Manager and use them to access your Aurora PostgreSQL database. You can also enable automatic rotation of your secrets according to a schedule or an event. AWS Secrets Manager handles the complexity of rotating secrets for you, such as generating new passwords and updating your database with the new credentials. Using Amazon DynamoDB for the database will not meet the requirements because it is a NoSQL database that is not compatible with PostgreSQL. Using AWS Systems Manager Parameter Store for storing and rotating database credentials will require additional programming overhead to integrate with your database.

Reference: [What Is Amazon Aurora?], [What Is AWS Secrets Manager?]

NEW QUESTION 89

A company is implementing an application on Amazon EC2 instances. The application needs to process incoming transactions. When the application detects a transaction that is not valid, the application must send a chat message to the company's support team. To send the message, the application needs to retrieve the access token to authenticate by using the chat API.

A developer needs to implement a solution to store the access token. The access token must be encrypted at rest and in transit. The access token must also be accessible from other AWS accounts.

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

- A. Use an AWS Systems Manager Parameter Store SecureString parameter that uses an AWS Key Management Service (AWS KMS) AWS managed key to store the access token
- B. Add a resource-based policy to the parameter to allow access from other account
- C. Update the IAM role of the EC2 instances with permissions to access Parameter Store
- D. Retrieve the token from Parameter Store with the decrypt flag enable
- E. Use the decrypted access token to send the message to the chat.
- F. Encrypt the access token by using an AWS Key Management Service (AWS KMS) customer managed key
- G. Store the access token in an Amazon DynamoDB table
- H. Update the IAM role of the EC2 instances with permissions to access DynamoDB and AWS KMS
- I. Retrieve the token from DynamoDB
- J. Decrypt the token by using AWS KMS on the EC2 instance
- K. Use the decrypted access token to send the message to the chat.
- L. Use AWS Secrets Manager with an AWS Key Management Service (AWS KMS) customer managed key to store the access token
- M. Add a resource-based policy to the secret to allow access from other account
- N. Update the IAM role of the EC2 instances with permissions to access Secrets Manager
- O. Retrieve the token from Secrets Manager
- P. Use the decrypted access token to send the message to the chat.
- Q. Encrypt the access token by using an AWS Key Management Service (AWS KMS) AWS managed key
- R. Store the access token in an Amazon S3 bucket
- S. Add a bucket policy to the S3 bucket to allow access from other account
- T. Update the IAM role of the EC2 instances with permissions to access Amazon S3 and AWS KMS
- U. Retrieve the token from the S3 bucket
- V. Decrypt the token by using AWS KMS on the EC2 instance
- W. Use the decrypted access token to send the message to the chat.

Answer: C

Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/secrets-manager-share-between-accounts/>
https://docs.aws.amazon.com/secretsmanager/latest/userguide/auth-and-access_examples_cross.html

NEW QUESTION 93

A developer is writing an AWS Lambda function. The developer wants to log key events that occur while the Lambda function runs. The developer wants to include a unique identifier to associate the events with a specific function invocation. The developer adds the following code to the Lambda function:

```
function handler(event, context) {  
  
}
```

Which solution will meet this requirement?

- A. Obtain the request identifier from the AWS request ID field in the context object
- B. Configure the application to write logs to standard output.
- C. Obtain the request identifier from the AWS request ID field in the event object
- D. Configure the application to write logs to a file.
- E. Obtain the request identifier from the AWS request ID field in the event object
- F. Configure the application to write logs to standard output.
- G. Obtain the request identifier from the AWS request ID field in the context object
- H. Configure the application to write logs to a file.

Answer: A

Explanation:

<https://docs.aws.amazon.com/lambda/latest/dg/nodejs-context.html> <https://docs.aws.amazon.com/lambda/latest/dg/nodejs-logging.html>

There is no explicit information for the runtime, the code is written in Node.js.

AWS Lambda is a service that lets developers run code without provisioning or managing servers. The developer can use the AWS request ID field in the context object to obtain a unique identifier for each function invocation. The developer can configure the application to write logs to standard output, which will be captured by Amazon CloudWatch Logs. This solution will meet the requirement of logging key events with a unique identifier.

References:

? [What Is AWS Lambda? - AWS Lambda]

? [AWS Lambda Function Handler in Node.js - AWS Lambda]

? [Using Amazon CloudWatch - AWS Lambda]

NEW QUESTION 95

A company has installed smart meters in all its customer locations. The smart meter's measure power usage at 1-minute intervals and send the usage readings to a remote endpoint for collection. The company needs to create an endpoint that will receive the smart meter readings and store the readings in a database. The company wants to store the location ID and timestamp information.

The company wants to give its customers low-latency access to their current usage and historical usage on demand. The company expects demand to increase significantly. The solution must not impact performance or include downtime write scaling.

When solution will meet these requirements MOST cost-effectively?

- A. Store the smart meter readings in an Amazon RDS database
- B. Create an index on the location ID and timestamp columns. Use the columns to filter on the customers' data.
- C. Store the smart meter readings in an Amazon DynamoDB table. Create a composite key by using the location ID and timestamp column.
- D. Use the columns to filter on the customers' data.
- E. Store the smart meter readings in Amazon ElastiCache for Redis. Create a Sorted Set key by using the location ID and timestamp column.
- F. Use the columns to filter on the customers' data.
- G. Store the smart meter readings in Amazon S3. Partition the data by using the location ID and timestamp column.
- H. Use Amazon Athena to filter on the customers' data.

Answer: B

Explanation:

The solution that will meet the requirements most cost-effectively is to store the smart meter readings in an Amazon DynamoDB table. Create a composite key by using the location ID and timestamp columns. Use the columns to filter on the customers' data. This way, the company can leverage the scalability, performance, and low latency of DynamoDB to store and retrieve the smart meter readings. The company can also use the composite key to query the data by location ID and timestamp efficiently. The other options either involve more expensive or less scalable services, or do not provide low-latency access to the current usage.

Reference: Working with Queries in DynamoDB

NEW QUESTION 100

A developer needs to store configuration variables for an application. The developer needs to set an expiration date and time for the configuration. The developer wants to receive notifications. Before the configuration expires. Which solution will meet these requirements with the LEAST operational overhead?

- A. Create a standard parameter in AWS Systems Manager Parameter Store. Set Expiration and Expiration Notification policy types.
- B. Create a standard parameter in AWS Systems Manager Parameter Store. Create an AWS Lambda function to expire the configuration and to send Amazon Simple Notification Service (Amazon SNS) notifications.
- C. Create an advanced parameter in AWS Systems Manager Parameter Store. Set Expiration and Expiration Notification policy types.
- D. Create an advanced parameter in AWS Systems Manager Parameter Store. Create an Amazon EC2 instance with a cron job to expire the configuration and to send notifications.

Answer: C

Explanation:

This solution will meet the requirements by creating an advanced parameter in AWS Systems Manager Parameter Store, which is a secure and scalable service for storing and managing configuration data and secrets. The advanced parameter allows setting expiration and expiration notification policy types, which enable specifying an expiration date and time for the configuration and receiving notifications before the configuration expires. The Lambda code will be refactored to load the Root CA Cert from the parameter store and modify the runtime trust store outside the Lambda function handler, which will improve performance and reduce

latency by avoiding repeated calls to Parameter Store and trust store modifications for each invocation of the Lambda function. Option A is not optimal because it will create a standard parameter in AWS Systems Manager Parameter Store, which does not support expiration and expiration notification policy types. Option B is not optimal because it will create a secret access key and access key ID with permission to access the S3 bucket, which will introduce additional security risks and complexity for storing and managing credentials. Option D is not optimal because it will create a Docker container from Node.js base image to invoke Lambda functions, which will incur additional costs and overhead for creating and running Docker containers. References: AWS Systems Manager Parameter Store, [Using SSL/TLS to Encrypt a Connection to a DB Instance]

NEW QUESTION 105

A developer wants to deploy a new version of an AWS Elastic Beanstalk application. During deployment the application must maintain full capacity and avoid service interruption. Additionally, the developer must minimize the cost of additional resources that support the deployment. Which deployment method should the developer use to meet these requirements?

- A. All at once
- B. Rolling with additional batch
- C. Bluegreen
- D. Immutable

Answer: B

Explanation:

This solution will meet the requirements by using a rolling with additional batch deployment method, which deploys the new version of the application to a separate group of instances and then shifts traffic to those instances in batches. This way, the application maintains full capacity and avoids service interruption during deployment, as well as minimizes the cost of additional resources that support the deployment. Option A is not optimal because it will use an all at once deployment method, which deploys the new version of the application to all instances simultaneously, which may cause service interruption or downtime during deployment. Option C is not optimal because it will use a blue/green deployment method, which deploys the new version of the application to a separate environment and then swaps URLs with the original environment, which may incur more costs for additional resources that support the deployment. Option D is not optimal because it will use an immutable deployment method, which deploys the new version of the application to a fresh group of instances and then redirects traffic to those instances, which may also incur more costs for additional resources that support the deployment.

References: AWS Elastic Beanstalk Deployment Policies

NEW QUESTION 108

A developer has code that is stored in an Amazon S3 bucket. The code must be deployed as an AWS Lambda function across multiple accounts in the same AWS Region as the S3 bucket an AWS CloudFormation template that runs for each account will deploy the Lambda function. What is the MOST secure way to allow CloudFormation to access the Lambda Code in the S3 bucket?

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

This solution allows the CloudFormation service role to access the S3 bucket from any account, as long as it has the S3 GetObject permission. The bucket policy grants access to any principal with the GetObject permission, which is the least privilege needed to deploy the Lambda code. This is more secure than granting ListBucket permission, which is not required for deploying Lambda code, or using a service-based link, which is not supported for Lambda functions.

Reference: AWS CloudFormation Service Role, Using AWS Lambda with Amazon S3

NEW QUESTION 112

A company is building a micro services application that consists of many AWS Lambda functions. The development team wants to use AWS Serverless Application Model (AWS SAM) templates to automatically test the Lambda functions. The development team plans to test a small percentage of traffic that is directed to new updates before the team commits to a full deployment of the application.

Which combination of steps will meet these requirements in the MOST operationally efficient way? (Select TWO.)

- A. Use AWS SAM CLI commands in AWS CodeDeploy to invoke the Lambda functions to test the deployment
- B. Declare the EventInvokeConfig on the Lambda functions in the AWS SAM templates with OnSuccess and OnFailure configurations.
Enable gradual deployments through AWS SAM templates.
- ☒ C. Set the deployment preference type to Canary10Percent130Minutes Use hooks to test the deployment.
- E. Set the deployment preference type to Linear10PercentEvery10Minutes Use hooks to test the deployment.

Answer: CD

Explanation:

This solution will meet the requirements by using AWS Serverless Application Model (AWS SAM) templates and gradual deployments to automatically test the Lambda functions. AWS SAM templates are configuration files that define serverless applications and resources such as Lambda functions. Gradual deployments are a feature of AWS SAM that enable deploying new versions of Lambda functions incrementally, shifting traffic gradually, and performing validation tests during deployment. The developer can enable gradual deployments through AWS SAM templates by adding a DeploymentPreference property to each Lambda function resource in the template. The developer can set the deployment preference type to Canary10Percent30Minutes, which means that 10 percent of traffic will be shifted to the new version of the Lambda function for 30 minutes before shifting 100 percent of traffic. The developer can also use hooks to test the deployment, which are custom Lambda functions that run before or after traffic shifting and perform validation tests or rollback actions.

References: [AWS Serverless Application Model (AWS SAM)], [Gradual Code Deployment]

NEW QUESTION 114

A developer is preparing to begin development of a new version of an application. The previous version of the application is deployed in a production environment. The developer needs to deploy fixes and updates to the current version during the development of the new version of the application. The code for the new version of the application is stored in AWS CodeCommit.

Which solution will meet these requirements?

- A. From the main branch, create a feature branch for production bug fix

- B. Create a second feature branch from the main branch for development of the new version.
- C. Create a Git tag of the code that is currently deployed in production.
- D. Create a Git tag for the development of the new version.
- E. Push the two tags to the CodeCommit repository.
- F. From the main branch, create a branch of the code that is currently deployed in production.
- G. Apply an IAM policy that ensures no other users can push or merge to the branch.
- H. Create a new CodeCommit repository for development of the new version of the application.
- I. Create a Git tag for the development of the new version.

Answer: A

Explanation:

? A feature branch is a branch that is created from the main branch to work on a specific feature or task. Feature branches allow developers to isolate their work from the main branch and avoid conflicts with other changes. Feature branches can be merged back to the main branch when the feature or task is completed and tested.

? In this scenario, the developer needs to maintain two parallel streams of work: one for fixing and updating the current version of the application that is deployed in production, and another for developing the new version of the application. The developer can use feature branches to achieve this goal.

? The developer can create a feature branch from the main branch for production bug fixes. This branch will contain the code that is currently deployed in production, and any fixes or updates that need to be applied to it. The developer can push this branch to the CodeCommit repository and use it to deploy changes to the production environment.

? The developer can also create a second feature branch from the main branch for development of the new version of the application. This branch will contain the code that is under development for the new version, and any changes or enhancements that are part of it. The developer can push this branch to the CodeCommit repository and use it to test and deploy the new version of the application in a separate environment.

? By using feature branches, the developer can keep the main branch stable and clean, and avoid mixing code from different versions of the application. The developer can also easily switch between branches and merge them when needed.

NEW QUESTION 118

A development team maintains a web application by using a single AWS CloudFormation template. The template defines web servers and an Amazon RDS database. The team uses the CloudFormation template to deploy the CloudFormation stack to different environments. During a recent application deployment, a developer caused the primary development database to be dropped and recreated. The result of this incident was a loss of data. The team needs to avoid accidental database deletion in the future. Which solutions will meet these requirements? (Choose two.)

- A. Add a CloudFormation DeletionPolicy attribute with the Retain value to the database resource.
- B. Update the CloudFormation stack policy to prevent updates to the database.
 Modify the database to use a Multi-AZ deployment.
- ☒ C. Create a CloudFormation stack set for the web application and database deployments.
- E. Add a CloudFormation DeletionPolicy attribute with the Retain value to the stack.

Answer: AB

Explanation:

AWS CloudFormation is a service that enables developers to model and provision AWS resources using templates. The developer can add a CloudFormation DeletionPolicy attribute with the Retain value to the database resource. This will prevent the database from being deleted when the stack is deleted or updated. The developer can also update the CloudFormation stack policy to prevent updates to the database. This will prevent accidental changes to the database configuration or properties.

References:

- ? [What Is AWS CloudFormation? - AWS CloudFormation]
- ? [DeletionPolicy Attribute - AWS CloudFormation]
- ? [Protecting Resources During Stack Updates - AWS CloudFormation]

NEW QUESTION 121

A developer has an application that stores data in an Amazon S3 bucket. The application uses an HTTP API to store and retrieve objects. When the PutObject API operation adds objects to the S3 bucket the developer must encrypt these objects at rest by using server-side encryption with Amazon S3 managed keys (SSE-S3). Which solution will meet this requirement?

- A. Create an AWS Key Management Service (AWS KMS) key.
- B. Assign the KMS key to the S3 bucket.
- C. Set the x-amz-server-side-encryption header when invoking the PutObject API operation.
- D. Provide the encryption key in the HTTP header of every request.
- E. Apply TLS to encrypt the traffic to the S3 bucket.

Answer: B

Explanation:

Amazon S3 supports server-side encryption, which encrypts data at rest on the server that stores the data. One of the encryption options is SSE-S3, which uses keys managed by S3. To use SSE-S3, the x-amz-server-side-encryption header must be set to AES256 when invoking the PutObject API operation. This instructs S3 to encrypt the object data with SSE-S3 before saving it on disks in its data centers and decrypt it when it is downloaded. Reference: Protecting data using server-side encryption with Amazon S3-managed encryption keys (SSE-S3)

NEW QUESTION 122

A developer is trying to get data from an Amazon DynamoDB table called demoman-table. The developer configured the AWS CLI to use a specific IAM user's credentials and ran the following command.

```
aws dynamodb get-item --table-name demoman-table --key '{"id": {"N": "1993"}}'
```

The command returned errors and no rows were returned. What is the MOST likely cause of these issues?

- A. The command is incorrect; it should be rewritten to use put-item with a string argument

- B. The developer needs to log a ticket with AWS Support to enable access to the demoman-table
- C. Amazon DynamoDB cannot be accessed from the AWS CLI and needs to be called via the REST API
- D. The IAM user needs an associated policy with read access to demoman-table

Answer: D

Explanation:

This solution will most likely solve the issues because it will grant the IAM user the necessary permission to access the DynamoDB table using the AWS CLI command. The error message indicates that the IAM user does not have sufficient access rights to perform the scan operation on the table. Option A is not optimal because it will change the command to use put-item instead of scan, which will not achieve the desired result of getting data from the table. Option B is not optimal because it will involve contacting AWS Support, which may not be necessary or efficient for this issue. Option C is not optimal because it will state that DynamoDB cannot be accessed from the AWS CLI, which is incorrect as DynamoDB supports AWS CLI commands.

References: AWS CLI for DynamoDB, [IAM Policies for DynamoDB]

NEW QUESTION 126

A developer is writing an application that will retrieve sensitive data from a third-party system. The application will format the data into a PDF file. The PDF file could be more than 1 MB. The application will encrypt the data to disk by using AWS Key Management Service (AWS KMS). The application will decrypt the file when a user requests to download it. The retrieval and formatting portions of the application are complete.

The developer needs to use the GenerateDataKey API to encrypt the PDF file so that the PDF file can be decrypted later. The developer needs to use an AWS KMS symmetric customer managed key for encryption.

Which solutions will meet these requirements?

- A. Write the encrypted key from the GenerateDataKey API to disk for later use
- B. Use the plaintext key from the GenerateDataKey API and a symmetric encryption algorithm to encrypt the file.
- C. Write the plain text key from the GenerateDataKey API to disk for later use
- D. Use the encrypted key from the GenerateDataKey API and a symmetric encryption algorithm to encrypt the file.
- E. Write the encrypted key from the GenerateDataKey API to disk for later use
- F. Use the plaintext key from the GenerateDataKey API to encrypt the file by using the KMS Encrypt API
- G. Write the plain text key from the GenerateDataKey API to disk for later use
- H. Use the encrypted key from the GenerateDataKey API to encrypt the file by using the KMS Encrypt API

Answer: A

Explanation:

? The GenerateDataKey API returns a data key that is encrypted under a symmetric encryption KMS key that you specify, and a plaintext copy of the same data key. The data key is a random byte string that can be used with any standard encryption algorithm, such as AES or SM42. The plaintext data key can be used to encrypt or decrypt data outside of AWS KMS, while the encrypted data key can be stored with the encrypted data and later decrypted by AWS KMS.

? In this scenario, the developer needs to use the GenerateDataKey API to encrypt

the PDF file so that it can be decrypted later. The developer also needs to use an AWS KMS symmetric customer managed key for encryption. To achieve this, the developer can follow these steps:

NEW QUESTION 127

A developer is deploying an AWS Lambda function. The developer wants the ability to return to older versions of the function quickly and seamlessly.

How can the developer achieve this goal with the LEAST operational overhead?

- A. Use AWS OpsWorks to perform blue/green deployments.
- B. Use a function alias with different versions.
- C. Maintain deployment packages for older versions in Amazon S3.
- D. Use AWS CodePipeline for deployments and rollbacks.

Answer: B

Explanation:

A function alias is a pointer to a specific Lambda function version. You can use aliases to create different environments for your function, such as development, testing, and production. You can also use aliases to perform blue/green deployments by shifting traffic between two versions of your function gradually. This way, you can easily roll back to a previous version if something goes wrong, without having to redeploy your code or change your configuration. Reference: AWS Lambda function aliases

NEW QUESTION 129

A developer has created an AWS Lambda function that makes queries to an Amazon Aurora MySQL DB instance. When the developer performs a test the DB instance shows an error for too many connections.

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

- A. Create a read replica for the DB instance. Query the replica DB instance instead of the primary DB instance.
- B. Migrate the data to an Amazon DynamoDB database.
- C. Configure the Amazon Aurora MySQL DB instance for Multi-AZ deployment.
- D. Create a proxy in Amazon RDS Proxy. Query the proxy instead of the DB instance.

Answer: D

Explanation:

This solution will meet the requirements by using Amazon RDS Proxy, which is a fully managed, highly available database proxy for Amazon RDS that makes applications more scalable, more resilient to database failures, and more secure. The developer can create a proxy in Amazon RDS Proxy, which sits between the application

and the DB instance and handles connection management, pooling, and routing. The developer can query the proxy instead of the DB instance, which reduces the number of open connections to the DB instance and avoids errors for too many connections. Option A is not optimal because it will create a read replica for the DB instance, which may not solve the problem of too many connections as read replicas also have connection limits and may incur additional costs. Option B is not optimal because it will migrate the data to an Amazon DynamoDB database, which may introduce additional complexity and

overhead for migrating and accessing data from a different database service. Option C is not optimal because it will configure the Amazon Aurora MySQL DB instance for Multi-AZ deployment, which may improve availability and durability of the DB instance but not reduce the number of connections.
References: [Amazon RDS Proxy], [Working with Amazon RDS Proxy]

NEW QUESTION 131

A company has an analytics application that uses an AWS Lambda function to process transaction data asynchronously. A developer notices that asynchronous invocations of the Lambda function sometimes fail. When failed Lambda function invocations occur, the developer wants to invoke a second Lambda function to handle errors and log details.
Which solution will meet these requirements?

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Configuring a Lambda function destination with a failure condition is the best solution for invoking a second Lambda function to handle errors and log details. A Lambda function destination is a resource that Lambda sends events to after a function is invoked. The developer can specify the destination type as Lambda function and the ARN of the error-handling Lambda function as the resource. The developer can also specify the failure condition, which means that the destination is invoked only when the initial Lambda function fails. The destination event will include the response from the initial function, the request ID, and the timestamp. The other solutions are either not feasible or not efficient. Enabling AWS X-Ray active tracing on the initial Lambda function will help to monitor and troubleshoot the function performance, but it will not automatically invoke the error-handling Lambda function. Configuring a Lambda function trigger with a failure condition is not a valid option, as triggers are used to invoke Lambda functions, not to send events from Lambda functions. Creating a status check alarm on the initial Lambda function will incur additional costs and complexity, and it will not capture the details of the failed invocations. References

- ? Using AWS Lambda destinations
- ? Asynchronous invocation - AWS Lambda
- ? AWS Lambda Destinations: What They Are and Why to Use Them
- ? AWS Lambda Destinations: A Complete Guide | Dashbird

NEW QUESTION 135

A developer has an application that is composed of many different AWS Lambda functions. The Lambda functions all use some of the same dependencies. To avoid security issues, the developer is constantly updating the dependencies of all of the Lambda functions. The result is duplicated effort to reach function.
How can the developer keep the dependencies of the Lambda functions up to date with the LEAST additional complexity?

- A. Define a maintenance window for the Lambda functions to ensure that the functions get updated copies of the dependencies.
- B. Upgrade the Lambda functions to the most recent runtime version.
- C. Define a Lambda layer that contains all of the shared dependencies.
- D. Use an AWS CodeCommit repository to host the dependencies in a centralized location.

Answer: C

Explanation:

This solution allows the developer to keep the dependencies of the Lambda functions up to date with the least additional complexity because it eliminates the need to update each function individually. A Lambda layer is a ZIP archive that contains libraries, custom runtimes, or other dependencies. The developer can create a layer that contains all of the shared dependencies and attach it to multiple Lambda functions. When the developer updates the layer, all of the functions that use the layer will have access to the latest version of the dependencies.
Reference: [AWS Lambda layers]

NEW QUESTION 137

A company's developer has deployed an application in AWS by using AWS CloudFormation. The CloudFormation stack includes parameters in AWS Systems Manager Parameter Store that the application uses as configuration settings. The application can modify the parameter values. When the developer updated the stack to create additional resources with tags, the developer noted that the parameter values were reset and that the values ignored the latest changes made by the application. The developer needs to change the way the company deploys the CloudFormation stack. The developer also needs to avoid resetting the parameter values outside the stack.
Which solution will meet these requirements with the LEAST development effort?

- A. Modify the CloudFormation stack to set the deletion policy to Retain for the Parameter Store parameters.
- B. Create an Amazon DynamoDB table as a resource in the CloudFormation stack to hold configuration data for the application. Migrate the parameters that the application is modifying from Parameter Store to the DynamoDB table.
- C. Create an Amazon RDS DB instance as a resource in the CloudFormation stack.
- D. Create a table in the database for parameter configuration.
- E. Migrate the parameters that the application is modifying from Parameter Store to the configuration table.
- F. Modify the CloudFormation stack policy to deny updates on Parameter Store parameters.

Answer: D

Explanation:

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/protect-stack-resources.html#stack-policy-samples>

NEW QUESTION 142

A developer is using AWS Amplify Hosting to build and deploy an application. The developer is receiving an increased number of bug reports from users. The developer wants to add end-to-end testing to the application to eliminate as many bugs as possible before the bugs reach production.
Which solution should the developer implement to meet these requirements?

- A. Run the `amplify add test` command in the Amplify CLI.
- B. Create unit tests in the application.

- C. Deploy the unit tests by using the amplify push command in the Amplify CLI.
- D. Add a test phase to the amplify.yml build settings for the application.
- E. Add a test phase to the aws-exports.js file for the application.

Answer: C

Explanation:

The solution that will meet the requirements is to add a test phase to the amplify.yml build settings for the application. This way, the developer can run end-to-end tests on every code commit and catch any bugs before deploying to production. The other options either do not support end-to-end testing, or do not run tests automatically.

Reference: End-to-end testing

NEW QUESTION 145

A developer is working on a web application that uses Amazon DynamoDB as its data store. The application has two DynamoDB tables: one table that is named `artists` and one table that is named `songs`. The `artists` table has `artistName` as the partition key. The `songs` table has `songName` as the partition key and `artistName` as the sort key.

The table usage patterns include the retrieval of multiple songs and artists in a single database operation from the webpage. The developer needs a way to retrieve this information with minimal network traffic and optimal application performance.

Which solution will meet these requirements?

- A. Perform a `BatchGetItem` operation that returns items from the two tables.
- B. Use the list of `songName` `artistName` keys for the `songs` table and the list of `artistName` key for the `artists` table.
- C. Create a local secondary index (LSI) on the `songs` table that uses `artistName` as the partition key. Perform a query operation for each `artistName` on the `songs` table that filters by the list of `songName`. Perform a query operation for each `artistName` on the `artists` table.
- D. Perform a `BatchGetItem` operation on the `songs` table that uses the `songName/artistName` key.
- E. Perform a `BatchGetItem` operation on the `artists` table that uses `artistName` as the key.
- F. Perform a `Scan` operation on each table that filters by the list of `songName/artistName` for the `songs` table and the list of `artistName` in the `artists` table.

Answer: A

Explanation:

`BatchGetItem` can return one or multiple items from one or more tables. For reference, check the link below.

https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_BatchGetItem.html

NEW QUESTION 146

A developer uses AWS CloudFormation to deploy an Amazon API Gateway API and an AWS Step Functions state machine. The state machine must reference the API Gateway API after the CloudFormation template is deployed. The developer needs a solution that uses the state machine to reference the API Gateway endpoint.

Which solution will meet these requirements MOST cost-effectively?

- A. Configure the CloudFormation template to reference the API endpoint in the `DefinitionSubstitutions` property for the `AWS::StepFunctions::StateMachine` resource.
- B. Configure the CloudFormation template to store the API endpoint in an environment variable for the `AWS::StepFunctions::StateMachine` resource. Configure the state machine to reference the environment variable.
- C. Configure the CloudFormation template to store the API endpoint in a standard AWS: `SecretsManager::Secret` resource. Configure the state machine to reference the resource.
- D. Configure the CloudFormation template to store the API endpoint in a standard AWS: `AppConfig::ConfigurationProfile` resource. Configure the state machine to reference the resource.

Answer: A

Explanation:

The most cost-effective solution is to use the `DefinitionSubstitutions` property of the `AWS::StepFunctions::StateMachine` resource to inject the API endpoint as a variable in the state machine definition. This way, the developer can use the intrinsic function

`Fn::GetAtt` to get the API endpoint from the `AWS::ApiGateway::RestApi` resource, and pass it to the state machine without creating any additional resources or environment variables. The other solutions involve creating and managing extra resources, such as `Secrets Manager` secrets or `AppConfig` configuration profiles, which incur additional costs and complexity. References:

? `AWS::StepFunctions::StateMachine` - AWS CloudFormation

? Call API Gateway with Step Functions - AWS Step Functions

? `amazon-web-services aws-api-gateway terraform aws-step-functions`

NEW QUESTION 148

A company has deployed infrastructure on AWS. A development team wants to create an AWS Lambda function that will retrieve data from an Amazon Aurora database. The Amazon Aurora database is in a private subnet in the company's VPC. The VPC is named `VPC1`. The data is relational in nature. The Lambda function needs to access the data

securely.

Which solution will meet these requirements?

- A. Create the Lambda function.
- B. Configure `VPC1` access for the function.
- C. Attach a security group named `SG1` to both the Lambda function and the database.
- D. Configure the security group inbound and outbound rules to allow TCP traffic on Port 3306.
- E. Create and launch a Lambda function in a new public subnet that is in a new VPC named `VPC2`. Create a peering connection between `VPC1` and `VPC2`.
- F. Create the Lambda function.
- G. Configure `VPC1` access for the function.
- H. Assign a security group named `SG1` to the Lambda function.
- I. Assign a second security group named `SG2` to the database.
- J. Add an inbound rule to `SG1` to allow TCP traffic from Port 3306.

K. Export the data from the Aurora database to Amazon S3. Create and launch a Lambda function in VPC1. Configure the Lambda function query the data from Amazon S3.

Answer: A

Explanation:

AWS Lambda is a service that lets you run code without provisioning or managing servers. Lambda functions can be configured to access resources in a VPC, such as an Aurora database, by specifying one or more subnets and security groups in the VPC settings of the function. A security group acts as a virtual firewall that controls inbound and outbound traffic for the resources in a VPC. To allow a Lambda function to communicate with an Aurora database, both resources need to be associated with the same security group, and the security group rules need to allow TCP traffic on Port 3306, which is the default port for MySQL databases. Reference: [Configuring a Lambda function to access resources in a VPC]

NEW QUESTION 152

A company is running a custom application on a set of on-premises Linux servers that are accessed using Amazon API Gateway. AWS X-Ray tracing has been enabled on the API test stage.

How can a developer enable X-Ray tracing on the on-premises servers with the LEAST amount of configuration?

- A. Install and run the X-Ray SDK on the on-premises servers to capture and relay the data to the X-Ray service.
- B. Install and run the X-Ray daemon on the on-premises servers to capture and relay the data to the X-Ray service.
- C. Capture incoming requests on-premises and configure an AWS Lambda function to pull, process, and relay relevant data to X-Ray using the PutTraceSegments API call.
- D. Capture incoming requests on-premises and configure an AWS Lambda function to pull, process, and relay relevant data to X-Ray using the PutTelemetryRecords API call.

Answer: B

Explanation:

The X-Ray daemon is a software that collects trace data from the X-Ray SDK and relays it to the X-Ray service. The X-Ray daemon can run on any platform that supports Go, including Linux, Windows, and macOS. The developer can install and run the X-Ray daemon on the on-premises servers to capture and relay the data to the X-Ray service with minimal configuration. The X-Ray SDK is used to instrument the application code, not to capture and relay data. The Lambda function solutions are more complex and require additional configuration.

References:

? [AWS X-Ray concepts - AWS X-Ray]

? [Setting up AWS X-Ray - AWS X-Ray]

NEW QUESTION 157

A team of developed is using an AWS CodePipeline pipeline as a continuous integration and continuous delivery (CI/CD) mechanism for a web application. A developer has written unit tests to programmatically test the functionality of the application code. The unit tests produce a test report that shows the results of each individual check. The developer now

wants to run these tests automatically during the CI/CD process.

- A. Write a Git pre-commit hook that runs the test before every commi
- B. Ensure that each developer who is working on the project has the pre-commit hook instated locall
- C. Review the test report and resolve any issues before pushing changes to AWS CodeCommit.
- D. Add a new stage to the pipelin
- E. Use AWS CodeBuild as the provide
- F. Add the new stage after the stage that deploys code revisions to the test environmen
- G. Write a buildspec that fails the CodeBuild stage if any test does not pas
- H. Use the test reports feature of Codebuild to integrate the report with the CodoBuild consol
- I. View the test results in CodeBuild Resolve any issues.
- J. Add a new stage to the pipelin
- K. Use AWS CodeBuild at the provide
- L. Add the new stage before the stage that deploys code revisions to the test environmen
- M. Write a buildspec that fails the CodeBuild stage it any test does not pas
- N. Use the test reports feature of CodeBuild to integrate the report with the CodeBuild consol
- O. View the test results in codeBuild Resolve any issues.
- P. Add a new stage to the pipelin
- Q. Use Jenkins as the provide
- R. Configure CodePipeline to use Jenkins to run the unit test
- S. Write a Jenkinsfile that fails the stage if any test does not pas
- T. Use the test report plugin for Jenkins to integrate the repot with the Jenkins dashboar
- . View the test results in Jenkin
- . Resolve any issues.

Answer: C

Explanation:

The solution that will meet the requirements is to add a new stage to the pipeline. Use AWS CodeBuild as the provider. Add the new stage before the stage that deploys code revisions to the test environment. Write a buildspec that fails the CodeBuild stage if any test does not pass. Use the test reports feature of CodeBuild to integrate the report with the CodeBuild console. View the test results in CodeBuild. Resolve any issues. This way, the developer can run the unit tests automatically during the CI/CD process and catch any bugs before deploying to the test environment. The developer can also use the test reports feature of CodeBuild to view and analyze the test results in a graphical interface. The other options either involve running the tests manually, running them after deployment, or using a different provider that requires additional configuration and integration.

Reference: Test reports for CodeBuild

NEW QUESTION 162

A company runs a batch processing application by using AWS Lambda functions and Amazon API Gateway APIs with deployment stages for development, user acceptance testing and production A development team needs to configure the APIs in the deployment stages to connect to third-party service endpoints.

Which solution will meet this requirement?

- A. Store the third-party service endpoints in Lambda layers that correspond to the stage
- B. Store the third-party service endpoints in API Gateway stage variables that correspond to the stage
- C. Encode the third-party service endpoints as query parameters in the API Gateway request URL.
- D. Store the third-party service endpoint for each environment in AWS AppConfig

Answer: B

Explanation:

API Gateway stage variables are name-value pairs that can be defined as configuration attributes associated with a deployment stage of a REST API. They act like environment variables and can be used in the API setup and mapping templates. For example, the development team can define a stage variable named endpoint and assign it different values for each stage, such as dev.example.com for development, uat.example.com for user acceptance testing, and prod.example.com for production. Then, the team can use the stage variable value in the integration request URL, such as http://\$ { stageVariables.endpoint}/api. This way, the team can use the same API setup with different endpoints at each stage by resetting the stage variable value. The other solutions are either not feasible or not cost-effective. Lambda layers are used to package and load dependencies for Lambda functions, not for storing endpoints. Encoding the endpoints as query parameters would expose them to the public and make the request URL unnecessarily long. Storing the endpoints in AWS AppConfig would incur additional costs and complexity, and would require additional logic to retrieve the values from the configuration store. References

- ? Using Amazon API Gateway stage variables
- ? Setting up stage variables for a REST API deployment
- ? Setting stage variables using the Amazon API Gateway console

NEW QUESTION 165

A developer wants to add request validation to a production environment Amazon API Gateway API. The developer needs to test the changes before the API is deployed to the production environment. For the least the developer will send test requests to the API through a testing tool. Which solution will meet these requirements with the LEAST operational overhead?

- A. Export the existing API to an OpenAPI file
 - B. Create a new API Import the OpenAPI file Modify the new API to add request validation
 - C. Perform the tests Modify the existing API to add request validation
 - D. Deploy the existing API to production.
 - E. Modify the existing API to add request validation
 - F. Deploy the updated API to a new API Gateway stage Perform the tests Deploy the updated API to the API Gateway production stage.
 - G. Create a new API Add the necessary resources and methods including new request validation
 - H. Perform the tests Modify the existing API to add request validation
 - I. Deploy the existing API to production.
 - J. Clone the existing API Modify the new API to add request validation
 - K. Perform the tests
- Modify the existing API to add request validation Deploy the existing API to production.

Answer: D

Explanation:

This solution allows the developer to test the changes without affecting the production environment. Cloning an API creates a copy of the API definition that can be modified independently. The developer can then add request validation to the new API and test it using a testing tool. After verifying that the changes work as expected, the developer can apply the same changes to the existing API and deploy it to production.

Reference: Clone an API, [Enable Request Validation for an API in API Gateway]

NEW QUESTION 167

A developer migrated a legacy application to an AWS Lambda function. The function uses a third-party service to pull data with a series of API calls at the end of each month. The function then processes the data to generate the monthly reports. The function has been working with no issues so far. The third-party service recently issued a restriction to allow a fixed number of API calls each minute and each day. If the API calls exceed the limit for each minute or each day, then the service will produce errors. The API also provides the minute limit and daily limit in the response header. This restriction might extend the overall process to multiple days because the process is consuming more API calls than the available limit. What is the MOST operationally efficient way to refactor the serverless application to accommodate this change?

- A. Use an AWS Step Functions state machine to monitor API failure
- B. Use the Wait state to delay calling the Lambda function.
- C. Use an Amazon Simple Queue Service (Amazon SQS) queue to hold the API call
- D. Configure the Lambda function to poll the queue within the API threshold limits.
- E. Use an Amazon CloudWatch Logs metric to count the number of API call
- F. Configure an Amazon CloudWatch alarm that stops the currently running instance of the Lambda function when the metric exceeds the API threshold limits.
- G. Use Amazon Kinesis Data Firehose to batch the API calls and deliver them to an Amazon S3 bucket with an event notification to invoke the Lambda function.

Answer: A

Explanation:

The solution that will meet the requirements is to use an AWS Step Functions state machine to monitor API failures. Use the Wait state to delay calling the Lambda function. This way, the developer can refactor the serverless application to accommodate the change in a way that is automated and scalable. The developer can use Step Functions to orchestrate the Lambda function and handle any errors or retries. The developer can also use the Wait state to pause the execution for a specified duration or until a specified timestamp, which can help avoid exceeding the API limits. The other options either involve using additional services that are not necessary or appropriate for this scenario, or do not address the issue of API failures.

Reference: AWS Step Functions Wait state

NEW QUESTION 172

A company has built an AWS Lambda function to convert large image files into output files that can be used in a third-party viewer application. The company recently added a new module to the function to improve the output of the generated files. However, the new module has increased the bundle size and has increased the time that is needed to deploy changes to the function code. How can a developer increase the speed of the Lambda function deployment?

- A. Use AWS CodeDeploy to deploy the function code
- B. Use Lambda layers to package and load dependencies.

- C. Increase the memory size of the function.
- D. Use Amazon S3 to host the function dependencies

Answer: B

Explanation:

Using Lambda layers is a way to reduce the size of the deployment package and speed up the deployment process. Lambda layers are reusable components that can contain libraries, custom runtimes, or other dependencies. By using layers, the developer can separate the core function logic from the dependencies, and avoid uploading them every time the function code changes. Layers can also be shared across multiple functions or accounts, which can improve consistency and maintainability. References

? Working with AWS Lambda layers

? AWS Lambda Layers Best Practices

? Best practices for working with AWS Lambda functions

NEW QUESTION 177

A company is developing an ecommerce application that uses Amazon API Gateway APIs. The application uses AWS Lambda as a backend. The company needs to test the code in a dedicated, monitored test environment before the company releases the code to the production environment.

When solution will meet these requirements?

- A. Use a single stage in API Gateway
- B. Create a Lambda function for each environment
- C. Configure API clients to send a query parameter that indicates the environment and the specific lambda function.
- D. Use multiple stages in API Gateway
- E. Create a single Lambda function for all environment
- F. Add different code blocks for different environments in the Lambda function based on Lambda environment variables.
- G. Use multiple stages in API Gateway
- H. Create a Lambda function for each environment
- I. Configure API Gateway stage variables to route traffic to the Lambda function in different environments.
- J. Use a single stage in API Gateway
- K. Configure a API client to send a query parameter that indicated the environment
- L. Add different code blocks for different environments in the Lambda function to match the value of the query parameter.

Answer: C

Explanation:

The solution that will meet the requirements is to use multiple stages in API Gateway. Create a Lambda function for each environment. Configure API Gateway stage variables to route traffic to the Lambda function in different environments. This way, the company can test the code in a dedicated, monitored test environment before releasing it to the production environment. The company can also use stage variables to specify the Lambda function version or alias for each stage, and avoid hard-coding the Lambda function name in the API Gateway integration. The other options either involve using a single stage in API Gateway, which does not allow testing in different environments, or adding different code blocks for different environments in the Lambda function, which increases complexity and maintenance.

Reference: Set up stage variables for a REST API in API Gateway

NEW QUESTION 182

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