

# Amazon

## Exam Questions AWS-Certified-Developer-Associate

Amazon AWS Certified Developer - Associate



**NEW QUESTION 1**

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.
- H. Associate the stream's Amazon Resource Name (ARN) with the Lambda Function.
- 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 2**

A company notices that credentials that the company uses to connect to an external software as a service (SaaS) vendor are stored in a configuration file as plaintext.

The developer needs to secure the API credentials and enforce automatic credentials rotation on a quarterly basis.

Which solution will meet these requirements MOST securely?

- A. Use AWS Key Management Service (AWS KMS) to encrypt the configuration file.
- B. Decrypt the configuration file when users make API calls to the SaaS vendor.
- C. Enable rotation.
- D. Retrieve temporary credentials from AWS Security Token Service (AWS STS) every 15 minutes.
- E. Use the temporary credentials when users make API calls to the SaaS vendor.
- F. Store the credentials in AWS Secrets Manager and enable rotation.
- G. Configure the API to have Secrets Manager access.
- H. Store the credentials in AWS Systems Manager Parameter Store and enable rotation.
- I. Retrieve the credentials when users make API calls to the SaaS vendor.

**Answer:** C

**Explanation:**

Store the credentials in AWS Secrets Manager and enable rotation. Configure the API to have Secrets Manager access. This is correct. This solution will meet the requirements most securely, because it uses a service that is designed to store and manage secrets such as API credentials. AWS Secrets Manager helps you protect access to your applications, services, and IT resources by enabling you to rotate, manage, and retrieve secrets throughout their lifecycle<sup>1</sup>. You can store secrets such as passwords, database strings, API keys, and license codes as encrypted values<sup>2</sup>. You can also configure automatic rotation of your secrets on a schedule that you specify<sup>3</sup>. You can use the AWS SDK or CLI to retrieve secrets from Secrets Manager when you need them<sup>4</sup>. This way, you can avoid storing credentials in plaintext files or hardcoding them in your code.

**NEW QUESTION 3**

A developer is creating an AWS Lambda function that needs credentials to connect to an Amazon RDS for MySQL database. An Amazon S3 bucket currently stores the credentials. The developer needs to improve the existing solution by implementing credential rotation and secure storage. The developer also needs to provide integration with the Lambda function.

Which solution should the developer use to store and retrieve the credentials with the LEAST management overhead?

- A. Store the credentials in AWS Systems Manager Parameter Store.
- B. Select the database that the parameter will access.
- C. Use the default AWS Key Management Service (AWS KMS) key to encrypt the parameter.
- D. Enable automatic rotation for the parameter.
- E. Use the parameter from Parameter Store on the Lambda function to connect to the database.
- F. Encrypt the credentials with the default AWS Key Management Service (AWS KMS) key.
- G. Store the credentials as environment variables for the Lambda function.
- H. Create a second Lambda function to generate new credentials and to rotate the credentials by updating the environment variables of the first Lambda function.
- I. Invoke the second Lambda function by using an Amazon EventBridge rule that runs on a schedule.
- J. Update the database to use the new credential.
- K. On the first Lambda function, retrieve the credentials from the environment variable.
- L. Decrypt the credentials by using AWS KMS. Connect to the database.
- M. Store the credentials in AWS Secrets Manager.

- N. Set the secret type to Credentials for Amazon RDS databases
- O. Select the database that the secret will access
- P. Use the default AWS Key Management Service (AWS KMS) key to encrypt the secret
- Q. Enable automatic rotation for the secret
- R. Use the secret from Secrets Manager on the Lambda function to connect to the database.
- S. Encrypt the credentials by using AWS Key Management Service (AWS KMS). Store the credentials in an Amazon DynamoDB table
- T. Create a second Lambda function to rotate the credential
- . Invoke the second Lambda function by using an Amazon EventBridge rule that runs on a schedule
- . Update the DynamoDB table
- . Update the database to use the generated credential
- . Retrieve the credentials from DynamoDB with the first Lambda function
- . Connect to the database.

**Answer: C**

**Explanation:**

AWS Secrets Manager is a service that helps you protect secrets needed to access your applications, services, and IT resources. Secrets Manager enables you to store, retrieve, and rotate secrets such as database credentials, API keys, and passwords. Secrets Manager supports a secret type for RDS databases, which allows you to select an existing RDS database instance and generate credentials for it. Secrets Manager encrypts the secret using AWS Key Management Service (AWS KMS) keys and enables automatic rotation of the secret at a specified interval. A Lambda function can use the AWS SDK or CLI to retrieve the secret from Secrets Manager and use it to connect to the database. Reference: Rotating your AWS Secrets Manager secrets

**NEW QUESTION 4**

A company runs a payment application on Amazon EC2 instances behind an Application Load Balance. The EC2 instances run in an Auto Scaling group across multiple Availability Zones. The application needs to retrieve application secrets during the application startup and export the secrets as environment variables. These secrets must be encrypted at rest and need to be rotated every month. Which solution will meet these requirements with the LEAST development effort?

- A. Save the secrets in a text file and store the text file in Amazon S3. Provision a customer managed key. Use the key for secret encryption in Amazon S3. Read the contents of the text file and read the export as environment variables. Configure S3 Object Lambda to rotate the text file every month.
- B. Save the secrets as strings in AWS Systems Manager Parameter Store and use the default AWS Key Management Service (AWS KMS) key. Configure an Amazon EC2 user data script to retrieve the secrets during the startup and export as environment variables. Configure an AWS Lambda function to rotate the secrets in Parameter Store every month.
- C. Save the secrets as base64 encoded environment variables in the application properties.
- D. Retrieve the secrets during the application startup.
- E. Reference the secrets in the application code.
- F. Write a script to rotate the secrets saved as environment variables.
- G. Store the secrets in AWS Secrets Manager. Provision a new customer master key. Use the key to encrypt the secrets. Enable automatic rotation. Configure an Amazon EC2 user data script to programmatically retrieve the secrets during the startup and export as environment variables.

**Answer: D**

**Explanation:**

AWS Secrets Manager is a service that enables the secure management and rotation of secrets, such as database credentials, API keys, or passwords. By using Secrets Manager, the company can avoid hardcoding secrets in the application code or properties files, and instead retrieve them programmatically during the application startup. Secrets Manager also supports automatic rotation of secrets by using AWS Lambda functions or built-in rotation templates. The company can provision a customer master key (CMK) to encrypt the secrets and use the AWS SDK or CLI to export the secrets as environment variables. References:

- ? What Is AWS Secrets Manager? - AWS Secrets Manager
- ? Rotating Your AWS Secrets Manager Secrets - AWS Secrets Manager
- ? Retrieving a Secret - AWS Secrets Manager

**NEW QUESTION 5**

A developer is creating a simple proof-of-concept demo by using AWS CloudFormation and AWS Lambda functions. The demo will use a CloudFormation template to deploy an existing Lambda function. The Lambda function uses deployment packages and dependencies stored in Amazon S3. The developer defined an AWS Lambda Function resource in a CloudFormation template. The developer needs to add the S3 bucket to the CloudFormation template. What should the developer do to meet these requirements with the LEAST development effort?

- A. Add the function code in the CloudFormation template inline as the code property.
- B. Add the function code in the CloudFormation template as the ZipFile property.
- C. Find the S3 key for the Lambda function. Add the S3 key as the ZipFile property in the CloudFormation template.
- D. Add the relevant key and bucket to the S3Bucket and S3Key properties in the CloudFormation template.

**Answer: D**

**Explanation:**

The easiest way to add the S3 bucket to the CloudFormation template is to use the S3Bucket and S3Key properties of the AWS::Lambda::Function resource. These properties specify the name of the S3 bucket and the location of the .zip file that contains the function code and dependencies. This way, the developer does not need to modify the function code or upload it to a different location. The other options are either not feasible or not efficient. The code property can only be used for inline code, not for code stored in S3. The ZipFile property can only be used for code that is less than 4096 bytes, not for code that has dependencies. Finding the S3 key for the Lambda function and adding it as the ZipFile property would not work, as the ZipFile property expects a base64-encoded .zip file, not an S3 location. References:

- ? AWS::Lambda::Function - AWS CloudFormation
- ? Deploying Lambda functions as .zip file archives
- ? AWS Lambda Function Code - AWS CloudFormation

**NEW QUESTION 6**

A developer is creating an AWS Lambda function that searches for items from an Amazon DynamoDB table that contains customer contact information. The DynamoDB table items have the customers as the partition and additional properties such as customer\_type, name, and job\_title. The Lambda function runs whenever a user types a new character into the customer\_type text input. The developer wants to search to return partial matches of all the email\_address property of a particular customer type. The developer does not want to recreate the DynamoDB table.

What should the developer do to meet these requirements?

- A. Add a global secondary index (GSI) to the DynamoDB table with customer-type input, as the partition key and email\_address as the sort key
- B. Perform a query operation on the GSI by using the begins\_with key condition expression with the email\_address property.  
Add a global secondary index (GSI) to the DynamoDB table with email\_address as the partition key and customer\_type as the sort key
- C. Perform a query operation on the GSI by using the begins\_with key condition expression with the email\_address property.
- D. Perform a query operation on the GSI by using the begins\_with key condition expression with the email\_address property.
- E. Address property.
- F. Add a local secondary index (LSI) to the DynamoDB table with customer\_type as the partition key and email\_address as the sort key
- G. Perform a query operation on the LSI by using the begins\_with key condition expression with the email\_address property.
- H. Add a local secondary index (LSI) to the DynamoDB table with job-title as the partition key and email\_address as the sort key
- I. Perform a query operation on the LSI by using the begins\_with key condition expression with the email\_address property.

**Answer:** A

**Explanation:**

The solution that will meet the requirements is to add a global secondary index (GSI) to the DynamoDB table with customer\_type as the partition key and email\_address as the sort key. Perform a query operation on the GSI by using the begins\_with key condition expression with the email\_address property. This way, the developer can search for partial matches of the email\_address property of a particular customer type without recreating the DynamoDB table. The other options either involve using a local secondary index (LSI), which requires recreating the table, or using a different partition key, which does not allow filtering by customer\_type.

Reference: Using Global Secondary Indexes in DynamoDB

**NEW QUESTION 7**

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 8**

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 9**



A developer is creating an AWS CloudFormation template to deploy Amazon EC2 instances across multiple AWS accounts. The developer must choose the EC2 instances from a list of approved instance types.

How can the developer incorporate the list of approved instance types in the CloudFormation template?

- A. Create a separate CloudFormation template for each EC2 instance type in the list.
- B. In the Resources section of the CloudFormation template, create resources for each EC2 instance type in the list.
- C. In the CloudFormation template, create a separate parameter for each EC2 instance type in the list.
- D. In the CloudFormation template, create a parameter with the list of EC2 instance types as AllowedValues.

**Answer: D**

**Explanation:**

In the CloudFormation template, the developer should create a parameter with the list of approved EC2 instance types as AllowedValues. This way, users can select the instance type they want to use when launching the CloudFormation stack, but only from the approved list.

**NEW QUESTION 10**

A developer is creating an AWS Lambda function that consumes messages from an Amazon Simple Queue Service (Amazon SQS) standard queue. The developer notices that the Lambda function processes some messages multiple times.

How should developer resolve this issue MOST cost-effectively?

- A. Change the Amazon SQS standard queue to an Amazon SQS FIFO queue by using the Amazon SQS message deduplication ID.
- B. Set up a dead-letter queue.
- C. Set the maximum concurrency limit of the AWS Lambda function to 1
- D. Change the message processing to use Amazon Kinesis Data Streams instead of Amazon SQS.

**Answer: A**

**Explanation:**

Amazon Simple Queue Service (Amazon SQS) is a fully managed queue service that allows you to de-couple and scale for applications<sup>1</sup>. Amazon SQS offers two types of queues: Standard and FIFO (First In First Out) queues<sup>1</sup>. The FIFO queue uses the messageDeduplicationId property to treat messages with the same value as duplicate<sup>2</sup>.

Therefore, changing the Amazon SQS standard queue to an Amazon SQS FIFO queue using the Amazon SQS message deduplication ID can help resolve the issue of the Lambda function processing some messages multiple times. Therefore, option A is correct.

**NEW QUESTION 10**

A developer is creating an application that will be deployed on IoT devices. The application will send data to a RESTful API that is deployed as an AWS Lambda function. The application will assign each API request a unique identifier. The volume of API requests from the application can randomly increase at any given time of day.

During periods of request throttling, the application might need to retry requests. The API must be able to handle duplicate requests without inconsistencies or data loss.

Which solution will meet these requirements?

- A. Create an Amazon RDS for MySQL DB instance
- B. Store the unique identifier for each request in a database table
- C. Modify the Lambda function to check the table for the identifier before processing the request.
- D. Create an Amazon DynamoDB table
- E. Store the unique identifier for each request in the table
- F. Modify the Lambda function to check the table for the identifier before processing the request.
- G. Create an Amazon DynamoDB table
- H. Store the unique identifier for each request in the table
- I. Modify the Lambda function to return a client error response when the function receives a duplicate request.
- J. Create an Amazon ElastiCache for Memcached instance
- K. Store the unique identifier for each request in the cache
- L. Modify the Lambda function to check the cache for the identifier before processing the request.

**Answer: B**

**Explanation:**

Amazon DynamoDB is a fully managed NoSQL database service that can store and retrieve any amount of data with high availability and performance. DynamoDB can handle concurrent requests from multiple IoT devices without throttling or data loss. To prevent duplicate requests from causing inconsistencies or data loss, the Lambda function can use DynamoDB conditional writes to check if the unique identifier for each request already exists in the table before processing the request. If the identifier exists, the function can skip or abort the request; otherwise, it can process the request and store the identifier in the table. Reference: Using conditional writes

**NEW QUESTION 12**

A developer must use multi-factor authentication (MFA) to access data in an Amazon S3 bucket that is in another AWS account. Which AWS Security Token Service (AWS STS) API operation should the developer use with the MFA information to meet this requirement?

- A. AssumeRoleWithWebIdentity
- B. GetFederationToken
- C. AssumeRoleWithSAML
- D. AssumeRole

**Answer: D**

**Explanation:**

The AssumeRole API operation returns a set of temporary security credentials that can be used to access resources in another AWS account. The developer can specify the MFA device serial number and the MFA token code in the request parameters. This option enables the developer to use MFA to access data in an S3 bucket that is in another AWS account. The other options are not relevant or effective for this scenario. References

? AssumeRole  
? Requesting Temporary Security Credentials

**NEW QUESTION 17**

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 AP
- D. Embed responses captured from the real third-party AP
- 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 20**

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 mad
- 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 mad
- 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 consol
- F. Select the removePii functio
- G. Use S3 Access Points to access the object without PII.
- H. Create an S3 access point from the S3 consol
- I. Use the access point name to call the GetObjectLegalHold S3 API functio
- 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 23**

A company runs an application on AWS The application stores data in an Amazon DynamoDB table Some queries are taking a long time to run These slow queries involve an attribute that is not the table's partition key or sort key

The amount of data that the application stores in the DynamoDB table is expected to increase significantly. A developer must increase the performance of the queries.

Which solution will meet these requirements'?

- A. Increase the page size for each request by setting the Limit parameter to be higher than the default value Configure the application to retry any request that exceeds the provisioned throughput.
- B. Create a global secondary index (GSI). Set query attribute to be the partition key of the index
- C. Perform a parallel scan operation by issuing individual scan requests in the parameters specify the segment for the scan requests and the total number of segments for the parallel scan.
- D. Turn on read capacity auto scaling for the DynamoDB tabl
- E. Increase the maximum read capacity units (RCUs).

**Answer: B**

**Explanation:**

Creating a global secondary index (GSI) is the best solution to improve the performance of the queries that involve an attribute that is not the table's partition key or sort key. A GSI allows you to define an alternate key for your table and query the data using that key. This way, you can avoid scanning the entire table and reduce the latency and cost of your queries. You should also follow the best practices for designing and using GSIs in DynamoDB<sup>12</sup>. References

- ? Working with Global Secondary Indexes - Amazon DynamoDB

? DynamoDB Performance & Latency - Everything You Need To Know

#### NEW QUESTION 27

An developer is building a serverless application by using the AWS Serverless Application Model (AWS SAM). The developer is currently testing the application in a development environment. When the application is nearly finished, the developer will need to set up additional testing and staging environments for a quality assurance team. The developer wants to use a feature of the AWS SAM to set up deployments to multiple environments. Which solution will meet these requirements with the LEAST development effort?

- A. Add a configuration file in TOML format to group configuration entries to every environment
- B. Add a table for each testing and staging environment
- C. Deploy updates to the environments by using the `sam deploy` command and the `--config-env` flag that corresponds to the each environment.
- D. Create additional AWS SAM templates for each testing and staging environment
- E. Write a custom shell script that uses the `sam deploy` command and the `--template-file` flag to deploy updates to the environments.
- F. Create one AWS SAM configuration file that has default parameter
- G. Perform updates to the testing and staging environments by using the `--parameter-overrides` flag in the AWS SAM CLI and the parameters that the updates will override.
- H. Use the existing AWS SAM template
- I. Add additional parameters to configure specific attributes for the serverless function and database table resources that are in each environment
- J. Deploy updates to the testing and staging environments by using the `sam deploy` command.

**Answer:** A

#### Explanation:

The correct answer is A. Add a configuration file in TOML format to group configuration entries to every environment. Add a table for each testing and staging environment. Deploy updates to the environments by using the `sam deploy` command and the `--config-env` flag that corresponds to the each environment.

\* A. Add a configuration file in TOML format to group configuration entries to every environment. Add a table for each testing and staging environment. Deploy updates to the environments by using the `sam deploy` command and the `--config-env` flag that corresponds to the each environment. This is correct. This solution will meet the requirements with the least development effort, because it uses a feature of the AWS SAM CLI that supports a project-level configuration file that can be used to configure AWS SAM CLI command parameter values<sup>1</sup>. The configuration file can have multiple environments, each with its own set of parameter values, such as stack name, region, capabilities, and more<sup>2</sup>. The developer can use the `--config-env` option to specify which environment to use when deploying the application<sup>3</sup>. This way, the developer can avoid creating multiple templates or scripts, or manually overriding parameters for each environment.

\* B. Create additional AWS SAM templates for each testing and staging environment. Write a custom shell script that uses the `sam deploy` command and the `--template-file` flag to

deploy updates to the environments. This is incorrect. This solution will not meet the requirements with the least development effort, because it requires creating and maintaining multiple templates and scripts for each environment. This can introduce duplication, inconsistency, and complexity in the deployment process.

\* C. Create one AWS SAM configuration file that has default parameters. Perform updates to the testing and staging environments by using the `--parameter-overrides` flag in the AWS SAM CLI and the parameters that the updates will override. This is incorrect. This solution will not meet the requirements with the least development effort, because it requires manually specifying and overriding parameters for each environment every time the developer deploys the application. This can be error-prone, tedious, and inefficient.

\* D. Use the existing AWS SAM template. Add additional parameters to configure specific attributes for the serverless function and database table resources that are in each environment. Deploy updates to the testing and staging environments by using the `sam deploy` command. This is incorrect. This solution will not meet the requirements with the least development effort, because it requires modifying the existing template and adding complexity to the resource definitions for each environment. This can also make it difficult to manage and track changes across different environments.

References:

? 1: AWS SAM CLI configuration file - AWS Serverless Application Model

? 2: Configuration file basics - AWS Serverless Application Model

? 3: Specify a configuration file - AWS Serverless Application Model

#### NEW QUESTION 31

A company wants to share information with a third party. The third party has an HTTP API endpoint that the company can use to share the information. The company has the required API key to access the HTTP API.

The company needs a way to manage the API key by using code. The integration of the API key with the application code cannot affect application performance. Which solution will meet these requirements MOST securely?

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

AWS Secrets Manager is a service that helps securely store, rotate, and manage secrets such as API keys, passwords, and tokens. The developer can store the API credentials in AWS Secrets Manager and retrieve them at runtime by using the AWS SDK. This solution will meet the requirements of security, code management, and performance. Storing the API credentials in a local code variable or an S3 object is not secure, as it exposes the credentials to unauthorized access or leakage. Storing the API credentials in a DynamoDB table is also not secure, as it requires additional encryption and access control measures. Moreover, retrieving the credentials from S3 or DynamoDB may affect application performance due to network latency.

References:

? [What Is AWS Secrets Manager? - AWS Secrets Manager]

? [Retrieving a Secret - AWS Secrets Manager]

#### NEW QUESTION 33

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 `Percent10Minute`
- B. Set the `AutoPublishAlias` property to the Lambda alias.
- C. Set the `DeploymentPreferenceType` to `Linear` and `PercentEvery10Minute`



- D. Set AutoPublishAlias property to the Lambda alias.
- E. Set the Deployment Preference Type to Canaryl OPercentlOMinute
- F. Set the PreTraffic and PostTraffic properties to the Lambda alias.
- G. Set the Deployment Preference Type to Linearl OPercentEvery10Minute
- H. Set PreTraffic and PostTraffic properties to the Lambda alias.

**Answer:** A

**Explanation:**

? The Deployment Preference Type property specifies how traffic should be shifted between versions of a Lambda function<sup>1</sup>. 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 shifted<sup>1</sup>. 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 function<sup>1</sup>. This is required to use the Deployment Preference Type property<sup>1</sup>. The alias name can be specified by the developer, and it can be used to invoke the function with the latest code.

**NEW QUESTION 34**

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 logging<sup>1</sup>. Amazon EventBridge is a serverless event bus service that enables you to connect your applications with data from a variety of sources<sup>2</sup>. 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 functions<sup>3</sup>. 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 AWS<sup>4</sup>. Kubernetes cron jobs are tasks that run periodically on a given schedule<sup>5</sup>. 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 cloud<sup>6</sup>. Crontab is a Linux utility that allows you to schedule commands or scripts to run automatically at a specified time or date<sup>7</sup>. 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 Cloud<sup>8</sup>. Batch jobs are units of work that can be submitted to job queues, where they are executed in parallel or sequentially on compute environments<sup>9</sup>. 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 37**

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 41

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?

- A. 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 44

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 46

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.
- I. Create a global variable that is outside the handler in the Lambda function to store the table name.

**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 50**

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 54**

A developer must analyze performance issues with production-distributed applications written as AWS Lambda functions. These distributed Lambda applications invoke other components that make up the applications. How should the developer identify and troubleshoot the root cause of the performance issues in production?

- A. Add logging statements to the Lambda function
- B. then use Amazon CloudWatch to view the logs.
- C. Use AWS CloudTrail and then examine the logs.
- D. Use AWS X-Ray
- E. then examine the segments and errors.
- F. Run Amazon Inspector agents and then analyze performance.

**Answer:** C

**Explanation:**

This solution will meet the requirements by using AWS X-Ray to analyze and debug the performance issues with the distributed Lambda applications. AWS X-Ray is a service that collects data about requests that the applications serve, and provides tools to view, filter, and gain insights into that data. The developer can use AWS X-Ray to identify the root cause of the performance issues by examining the segments and errors that show the details of each request and the components that make up the applications. Option A is not optimal because it will use logging statements and Amazon CloudWatch, which may not provide enough information or visibility into the distributed applications. Option B is not

optimal because it will use AWS CloudTrail, which is a service that records API calls and events for AWS services, not application performance data. Option D is not optimal because it will use Amazon Inspector, which is a service that helps improve the security and compliance of applications on Amazon EC2 instances, not Lambda functions. References: AWS X-Ray, Using AWS X-Ray with AWS Lambda

**NEW QUESTION 59**

A company built a new application in the AWS Cloud. The company automated the bootstrapping of new resources with an Auto Scaling group by using AWS CloudFormation templates. The bootstrap scripts contain sensitive data.

The company needs a solution that is integrated with CloudFormation to manage the sensitive data in the bootstrap scripts.

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

- A. Put the sensitive data into a CloudFormation parameter
- B. Encrypt the CloudFormation templates by using an AWS Key Management Service (AWS KMS) key.
- C. Put the sensitive data into an Amazon S3 bucket. Update the CloudFormation templates to download the object from Amazon S3 during bootstrap.
- D. Put the sensitive data into AWS Systems Manager Parameter Store as a secure string parameter
- E. Update the CloudFormation templates to use dynamic references to specify template values.
- F. Put the sensitive data into Amazon Elastic File System (Amazon EFS). Enforce EFS encryption after file system creation.
- G. Update the CloudFormation templates to retrieve data from Amazon EFS.

**Answer:** C

**Explanation:**

This solution meets the requirements in the most secure way because it uses a service that is integrated with CloudFormation to manage sensitive data in encrypted form. AWS Systems Manager Parameter Store provides secure, hierarchical storage for configuration data management and secrets management. You can store sensitive data as secure string parameters, which are encrypted using an AWS Key Management Service (AWS KMS) key of your choice. You can also use dynamic references in your CloudFormation templates to specify template values that are stored in Parameter Store or Secrets Manager without having to include them in your templates. Dynamic references are resolved only during stack creation or update operations, which reduces exposure risks for sensitive data. Putting sensitive data into a CloudFormation parameter will not encrypt them or protect them from unauthorized access. Putting sensitive data into an Amazon S3 bucket or Amazon Elastic File System (Amazon EFS) will require additional configuration and integration with CloudFormation and may not provide fine-grained access control or encryption for sensitive data.

Reference: [What Is AWS Systems Manager Parameter Store?], [Using Dynamic References to Specify Template Values]

**NEW QUESTION 64**

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 69**

A company is creating an application that processes csv files from Amazon S3. A developer has created an S3 bucket. The developer has also created an AWS Lambda function to process the csv files from the S3 bucket.

Which combination of steps will invoke the Lambda function when a csv file is uploaded to Amazon S3? (Select TWO.)

- A. Create an Amazon EventBridge rule. Configure the rule with a pattern to match the S3 object created event.
- B. Schedule an Amazon EventBridge rule to run a new Lambda function to scan the S3 bucket.
- C. Add a trigger to the existing Lambda function.
- D. Set the trigger type to EventBridge. Select the Amazon EventBridge rule.
- E. Create a new Lambda function to scan the S3 bucket for recently added S3 objects.
- F. Add S3 Lifecycle rules to invoke the existing Lambda function.

**Answer:** AC

**Explanation:**

To invoke a Lambda function when a csv file is uploaded to Amazon S3, you can use Amazon EventBridge to create a rule that matches the S3 object created event. Then, you can add a trigger to the existing Lambda function and set the trigger type to EventBridge. This way, the Lambda function will be invoked whenever a new csv file is added to the S3 bucket. References:

? Tutorial: Using an Amazon S3 trigger to invoke a Lambda function

? How to trigger my Lambda Function once the file is uploaded to S3 bucket

? Lambda Function to be invoked or triggered by S3(csv file upload ...)

**NEW QUESTION 72**

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 73**

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 Deletion Policy 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.
- B**: Create a CloudFormation stack set for the web application and database deployments.
- E. Add a Cloud Formation 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 Deletion Policy 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 78**

An application that runs on AWS Lambda requires access to specific highly confidential objects in an Amazon S3 bucket. In accordance with the principle of least privilege a company grants access to the S3 bucket by using only temporary credentials.

How can a developer configure access to the S3 bucket in the MOST secure way?

- A. Hardcode the credentials that are required to access the S3 objects in the application cod
- B. Use the credentials to access me required S3 objects.  
    Create a secret access key and access key ID with permission to access the S3 bucke
- B**: Store the key and key ID in AWS Secrets Manage
- E. Configure the application to retrieve the Secrets Manager secret and use the credentials to access me S3 objects.
- F. Create a Lambda function execution role Attach a policy to the rote that grants access to specific objects in the S3 bucket.
- G. Create a secret access key and access key ID with permission to access the S3 bucket Store the key and key ID as environment variables m Lambd
- H. Use the environment variables to access the required S3 objects.

**Answer:** C

**Explanation:**

This solution will meet the requirements by creating a Lambda function execution role, which is an IAM role that grants permissions to a Lambda function to access AWS resources such as Amazon S3 objects. The developer can attach a policy to the role that grants access to specific objects in the S3 bucket that are required by the application, following the principle of least privilege. Option A is not optimal because it will hardcode the credentials that are required to access S3 objects in the application code, which is insecure and difficult to maintain. 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 store the secret access key and access key ID as environment variables in Lambda, which is also insecure and difficult to maintain. References: [AWS Lambda Execution Role], [Using AWS Lambda with Amazon S3]

**NEW QUESTION 80**

A company is running Amazon EC2 instances in multiple AWS accounts. A developer needs to implement an application that collects all the lifecycle events of the EC2 instances. The application needs to store the lifecycle events in a single Amazon Simple Queue Service (Amazon SQS) queue in the company's main AWS account for further processing.

Which solution will meet these requirements?

- A. Configure Amazon EC2 to deliver the EC2 instance lifecycle events from all accounts to the Amazon EventBridge event bus of the main accoun
- B. Add an EventBridge rule to the event bus of the main account that matches all EC2 instance lifecycle event
- C. Add the SQS queue as a target of the rule.
- D. Use the resource policies of the SQS queue in the main account to give each account permissions to write to that SQS queu
- E. Add to the Amazon EventBridge event bus of each account an EventBridge rule that matches all EC2 instance lifecycle event
- F. Add the SQS queue in the main account as a target of the rule.
- G. Write an AWS Lambda function that scans through all EC2 instances in the company accounts to detect EC2 instance lifecycle change
- H. Configure the Lambda function to write a notification message to the SQS queue in the main account if the function detects an EC2 instance lifecycle chang
- I. Add an Amazon EventBridge scheduled rule that invokes the Lambda function every minute.
- J. Configure the permissions on the main account event bus to receive events from all account
- K. Create an Amazon EventBridge rule in each account to send all the EC2 instance lifecycle events to the main account event bu
- L. Add an EventBridge rule to the main account event bus that matches all EC2 instance lifecycle event
- M. Set the SQS queue as a target for the rule.

**Answer:** D

**Explanation:**

Amazon EC2 instances can send the state-change notification events to Amazon EventBridge.

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/monitoring-instance-state-changes.html> Amazon EventBridge can send and receive events between event buses in AWS accounts. <https://docs.aws.amazon.com/eventbridge/latest/userguide/eb-cross-account.html>

**NEW QUESTION 85**

A company wants to deploy and maintain static websites on AWS. Each website's source code is hosted in one of several version control systems, including AWS CodeCommit, Bitbucket, and GitHub.

The company wants to implement phased releases by using development, staging, user acceptance testing, and production environments in the AWS Cloud. Deployments to each environment must be started by code merges on the relevant Git branch. The company wants to use HTTPS for all data exchange. The company needs a solution that does not require servers to run continuously.

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

- A. Host each website by using AWS Amplify with a serverless backen
- B. Conned the repository branches that correspond to each of the desired environment

- C. Start deployments by merging code changes to a desired branch.
- D. Host each website in AWS Elastic Beanstalk with multiple environment
- E. Use the EB CLI to link each repository branch
- F. Integrate AWS CodePipeline to automate deployments from version control code merges.
- G. Host each website in different Amazon S3 buckets for each environment
- H. Configure AWS CodePipeline to pull source code from version control
- I. Add an AWS CodeBuild stage to copy source code to Amazon S3.
- J. Host each website on its own Amazon EC2 instance
- K. Write a custom deployment script to bundle each website's static assets
- L. Copy the assets to Amazon EC2. Set up a workflow to run the script when code is merged.

**Answer:** A

**Explanation:**

AWS Amplify is a set of tools and services that enables developers to build and deploy full-stack web and mobile applications that are powered by AWS. AWS Amplify supports hosting static websites on Amazon S3 and Amazon CloudFront, with HTTPS enabled by default. AWS Amplify also integrates with various version control systems, such as AWS CodeCommit, Bitbucket, and GitHub, and allows developers to connect different branches to different environments. AWS Amplify automatically builds and deploys the website whenever code changes are merged to a connected branch, enabling phased releases with minimal operational overhead. Reference: AWS Amplify Console

**NEW QUESTION 90**

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 91**

A developer created an AWS Lambda function that performs a series of operations that involve multiple AWS services. The function's duration time is higher than normal. To determine the cause of the issue, the developer must investigate traffic between the services without changing the function code. Which solution will meet these requirements?

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

AWS X-Ray is a service that helps you analyze and debug your applications. You can use X-Ray to trace requests made to your Lambda function and other AWS services, and identify performance bottlenecks and errors. Enabling active tracing in your Lambda function allows X-Ray to collect data from the function invocation and the downstream services that it calls. You can then review the logs and service maps in X-Ray to diagnose the issue. References

- ? Monitoring and troubleshooting Lambda functions - AWS Lambda
- ? Using AWS Lambda with AWS X-Ray
- ? Troubleshoot Lambda function cold start issues | AWS re:Post

**NEW QUESTION 93**

A company has an ecommerce application. To track product reviews, the company's development team uses an Amazon DynamoDB table. Every record includes the following

- A Review ID, a 16-digit universally unique identifier (UUID)
- A Product ID and User ID, 16-digit UUIDs that reference other tables
- A Product Rating on a scale of 1-5
- An optional comment from the user

The table's partition key is the Review ID. The most performed query against the table is to find the 10 reviews with the highest rating for a given product. Which index will provide the FASTEST response for this query?

- A. A global secondary index (GSI) with Product ID as the partition key and Product Rating as the sort key
- B. A global secondary index (GSI) with Product ID as the partition key and Review ID as the sort key
- C. A local secondary index (LSI) with Product ID as the partition key and Product Rating as the sort key
- D. A local secondary index (LSI) with Review ID as the partition key and Product ID as the sort key

**Answer:** A

**Explanation:**

This solution allows the fastest response for the query because it enables the query to use a single partition key value (the Product ID) and a range of sort keys.

values (the Product Rating) to find the matching items. A global secondary index (GSI) is an index that has a partition key and an optional sort key that are different from those on the base table. A GSI can be created at any time and can be queried or scanned independently of the base table. A local secondary index (LSI) is an index that has the same partition key as the base table, but a different sort key. An LSI can only be created when the base table is created and must be queried together with the base table partition key. Using a GSI with Product ID as the partition key and Review ID as the sort key will not allow the query to use a range of sort key values to find the highest ratings. Using an LSI with Product ID as the partition key and Product Rating as the sort key will not work because Product ID is not the partition key of the base table. Using an LSI with Review ID as the partition key and Product ID as the sort key will not allow the query to use a single partition key value to find the matching items.

Reference: [Global Secondary Indexes], [Querying]

#### NEW QUESTION 98

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 103

A developer deployed an application to an Amazon EC2 instance. The application needs to know the public IPv4 address of the instance.

How can the application find this information?

- A. Query the instance metadata from `http://169.254.169.254/latest/meta-data/`.
- B. Query the instance user data from `http://169.254.169.254/latest/user-data/`.
- C. Query the Amazon Machine Image (AMI) information from `http://169.254.169.254/latest/meta-data/ami/`.
- D. Check the hosts file of the operating system.

**Answer:** A

#### Explanation:

The instance metadata service provides information about the EC2 instance, including the public IPv4 address, which can be obtained by querying the endpoint `http://169.254.169.254/latest/meta-data/public-ipv4`. References

- ? Instance metadata and user data
- ? Get Public IP Address on current EC2 Instance
- ? Get the public ip address of your EC2 instance quickly

#### NEW QUESTION 108

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 110



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 environments
- 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 indicates 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 112**

A developer is creating an Amazon DynamoDB table by using the AWS CLI. The DynamoDB table must use server-side encryption with an AWS owned encryption key.

How should the developer create the DynamoDB table to meet these requirements?

- A. Create an AWS Key Management Service (AWS KMS) customer managed key
- B. Provide the key's Amazon Resource Name (ARN) in the `KMSMasterKeyId` parameter during creation of the DynamoDB table
- C. Create an AWS Key Management Service (AWS KMS) AWS managed key. Provide the key's Amazon Resource Name (ARN) in the `KMSMasterKeyId` parameter during creation of the DynamoDB table.
- D. Create an AWS owned key. Provide the key's Amazon Resource Name (ARN) in the `KMSMasterKeyId` parameter during creation of the DynamoDB table.
- E. Create the DynamoDB table with the default encryption options

**Answer:** D

**Explanation:**

When creating an Amazon DynamoDB table using the AWS CLI, server-side encryption with an AWS owned encryption key is enabled by default. Therefore, the developer does not need to create an AWS KMS key or specify the `KMSMasterKeyId` parameter. Option A and B are incorrect because they suggest creating customer-managed and AWS-managed KMS keys, which are not needed in this scenario. Option C is also incorrect because AWS owned keys are automatically used for server-side encryption by default.

**NEW QUESTION 117**

An application is using Amazon Cognito user pools and identity pools for secure access. A developer wants to integrate the user-specific file upload and download features in the application with Amazon S3. The developer must ensure that the files are saved and retrieved in a secure manner and that users can access only their own files. The file sizes range from 3 KB to 300 MB.

Which option will meet these requirements with the HIGHEST level of security?

- A. Use S3 Event Notifications to validate the file upload and download requests and update the user interface (UI).
- B. Save the details of the uploaded files in a separate Amazon DynamoDB table.
- C. Filter the list of files in the user interface (UI) by comparing the current user ID with the user ID associated with the file in the table.
- D. Use Amazon API Gateway and an AWS Lambda function to upload and download files.
- E. Validate each request in the Lambda function before performing the requested operation.
- F. Use an IAM policy within the Amazon Cognito identity pool to restrict users to use their own folders in Amazon S3.

**Answer:** D

**Explanation:**

<https://docs.aws.amazon.com/cognito/latest/developerguide/amazon-cognito-integrating-user-pools-with-identity-pools.html>

**NEW QUESTION 119**

A developer is designing a serverless application with two AWS Lambda functions to process photos. One Lambda function stores objects in an Amazon S3 bucket and stores the associated metadata in an Amazon DynamoDB table. The other Lambda function fetches the objects from the S3 bucket by using the metadata from the DynamoDB table. Both Lambda functions use the same Python library to perform complex computations and are approaching the quota for the maximum size of zipped deployment packages.

What should the developer do to reduce the size of the Lambda deployment packages with the LEAST operational overhead?

- A. Package each Python library in its own .zip file archive.
- B. Deploy each Lambda function with its own copy of the library.
- C. Create a Lambda layer with the required Python libraries.
- D. Use the Lambda layer in both Lambda functions.
- E. Combine the two Lambda functions into one Lambda function.

- F. Deploy the Lambda function as a single .zip file archive.
- G. Download the Python library to an S3 bucket.
- H. Program the Lambda functions to reference the object URLs.

**Answer: B**

**Explanation:**

AWS Lambda is a service that lets developers run code without provisioning or managing servers. Lambda layers are a distribution mechanism for libraries, custom runtimes, and other dependencies. The developer can create a Lambda layer with the

required Python library and use the layer in both Lambda functions. This will reduce the size of the Lambda deployment packages and avoid reaching the quota for the maximum size of zipped deployment packages. The developer can also benefit from using layers to manage dependencies separately from function code.

References:

- ? [What Is AWS Lambda? - AWS Lambda]
- ? [AWS Lambda Layers - AWS Lambda]

**NEW QUESTION 122**

A developer is building an application that gives users the ability to view bank account from multiple sources in a single dashboard. The developer has automated the process to retrieve API credentials for these sources. The process invokes an AWS Lambda function that is associated with an AWS CloudFormation template resource.

The developer wants a solution that will store the API credentials with minimal operational overhead.

Which solution will meet these requirements?

- A. Add an AWS Secrets Manager GenerateSecretString resource to the CloudFormation template.
- B. Set the value to reference new credentials to the CloudFormation resource.
- C. Use the AWS SDK ssm PutParameter operation in the Lambda function from the existing, custom resource to store the credentials as a parameter.
- D. Set the parameter value to reference the new credential.
- E. Set the parameter type to SecureString.
- F. Add an AWS Systems Manager Parameter Store resource to the CloudFormation template.
- G. Set the CloudFormation resource value to reference the new credentials. Set the resource NoEcho attribute to true.
- H. Use the AWS SDK ssm PutParameter operation in the Lambda function from the existing custom resources to store the credentials as a parameter.
- I. Set the parameter value to reference the new credential.
- J. Set the parameter NoEcho attribute to true.

**Answer: B**

**Explanation:**

The solution that will meet the requirements is to use the AWS SDK ssm PutParameter operation in the Lambda function from the existing custom resource to store the credentials as a parameter. Set the parameter value to reference the new credentials. Set the parameter type to SecureString. This way, the developer can store the API credentials with minimal operational overhead, as AWS Systems Manager Parameter Store provides secure and scalable storage for configuration data. The SecureString parameter type encrypts the parameter value with AWS Key Management Service (AWS KMS). The other options either involve adding additional resources to the CloudFormation template, which increases complexity and cost, or do not encrypt the parameter value, which reduces security.

Reference: Creating Systems Manager parameters

**NEW QUESTION 123**

A developer is troubleshooting an application in an integration environment. In the application, an Amazon Simple Queue Service (Amazon SQS) queue consumes messages and then an AWS Lambda function processes the messages. The Lambda function transforms the messages and makes an API call to a third-party service.

There has been an increase in application usage. The third-party API frequently returns an HTTP 429 Too Many Requests error message. The error message prevents a significant number of messages from being processed successfully.

How can the developer resolve this issue?

- A. Increase the SQS event source's batch size setting.
- B. Configure provisioned concurrency for the Lambda function based on the third-party API's documented rate limits.
- C. Increase the retry attempts and maximum event age in the Lambda function's asynchronous configuration.
- D. Configure maximum concurrency on the SQS event source based on the third-party service's documented rate limits.

**Answer: D**

**Explanation:**

? Maximum concurrency for SQS as an event source allows customers to control the maximum concurrent invokes by the SQS event source<sup>1</sup>. When multiple SQS event sources are configured to a function, customers can control the maximum concurrent invokes of individual SQS event source<sup>1</sup>.

? In this scenario, the developer needs to resolve the issue of the third-party API frequently returning an HTTP 429 Too Many Requests error message, which prevents a significant number of messages from being processed successfully. To achieve this, the developer can follow these steps:

? By using this solution, the developer can reduce the frequency of HTTP 429 errors and improve the message processing success rate. The developer can also avoid throttling or blocking by the third-party API.

**NEW QUESTION 128**

A developer is creating an AWS Lambda function. The Lambda function needs an external library to connect to a third-party solution. The external library is a collection of files with a total size of 100 MB. The developer needs to make the external library available to the Lambda execution environment and reduce the Lambda package space.

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

A.

Create a Lambda layer to store the external library. Configure the Lambda function to use the layer.

- B. Create an Amazon S3 bucket. Upload the external library into the S3 bucket.
- C. Mount the S3 bucket folder in the Lambda function. Import the library by using the proper folder in the mount point.
- D. Load the external library to the Lambda function's /tmp directory during deployment of the Lambda package.
- E. Import the library from the /tmp directory.
- F. Create an Amazon Elastic File System (Amazon EFS) volume.
- G. Upload the external library to the EFS volume. Mount the EFS volume in the Lambda function.
- H. Import the library by using the proper folder in the mount point.

**Answer:** A

**Explanation:**

Create a Lambda layer to store the external library. Configure the Lambda function to use the layer. This will allow the developer to make the external library available to the Lambda execution environment without having to include it in the Lambda package, which will reduce the Lambda package space. Using a Lambda layer is a simple and straightforward solution that requires minimal operational overhead. <https://docs.aws.amazon.com/lambda/latest/dg/configuration-layers.html>



**NEW QUESTION 133**

An ecommerce application is running behind an Application Load Balancer. A developer observes some unexpected load on the application during non-peak hours. The developer wants to analyze patterns for the client IP addresses that use the application. Which HTTP header should the developer use for this analysis?

- A. The X-Forwarded-Proto header
- B. The X-F Forwarded-Host header
- C. The X-Forwarded-For header
- D. The X-Forwarded-Port header

**Answer: C**

**Explanation:**

The HTTP header that the developer should use for this analysis is the X- Forwarded-For header. This header contains the IP address of the client that made the request to the Application Load Balancer. The developer can use this header to analyze patterns for the client IP addresses that use the application. The other headers either contain information about the protocol, host, or port of the request, which are not relevant for the analysis.

Reference: How Application Load Balancer works with your applications

**NEW QUESTION 137**

A company is using Amazon OpenSearch Service to implement an audit monitoring system. A developer needs to create an AWS CloudFormation custom resource that is

associated with an AWS Lambda function to configure the OpenSearch Service domain. The Lambda function must access the OpenSearch Service domain by using Open Search Service internal master user credentials. What is the MOST secure way to pass these credentials to the Lambdas function?

- A. Use a CloudFormation parameter to pass the master user credentials at deployment to the OpenSearch Service domain's MasterUserOptions and the Lambda function's environment variabl
- B. Set the No Echo attenuate to true.
- C. Use a CloudFormation parameter to pass the master user credentials at deployment to the OpenSearch Service domain's MasterUserOptions and to create a paramete
- D. In AWS Systems Manager Parameter Stor
- E. Set the No Echo attribute to tru
- F. Create an IAM role that has the ssm GetParameter permissio
- G. Assign me role to the Lambda functio
- H. Store me parameter name as the Lambda function's environment variabl
- I. Resolve the parameter's value at runtime.
- J. Use a CloudFormation parameter to pass the master uses credentials at deployment to the OpenSearch Service domain's MasterUserOptions and the Lambda function's environment varleWe Encrypt the parameters value by using the AWS Key Management Service (AWS KMS) encrypt command.
- K. Use CloudFoimalion to create an AWS Secrets Manager Secre
- L. Use a CloudFormation dynamic reference to retrieve the secret's value for the OpenSearch Service domain's MasterUserOption
- M. Create an IAM role that has the secrets manage
- N. GetSecretvalue permissio
- O. Assign the role to the Lambda Function Store the secrets name as the Lambda function's environment variabl
- P. Resole the secret's value at runtime.

**Answer: D**

**Explanation:**

The solution that will meet the requirements is to use CloudFormation to create an AWS Secrets Manager secret. Use a CloudFormation dynamic reference to retrieve the secret's value for the OpenSearch Service domain's MasterUserOptions. Create an IAM role that has the secretsmanager:GetSecretValue permission. Assign the role to the Lambda function. Store the secret's name as the Lambda function's environment variable. Resolve the secret's value at runtime. This way, the developer can pass the credentials to the Lambda function in a secure way, as AWS Secrets Manager encrypts and manages the secrets. The developer can also use a dynamic reference to avoid exposing the secret's value in plain text in the CloudFormation template. The other options either involve passing the credentials as plain text parameters, which is not secure, or encrypting them with AWS KMS, which is less convenient than using AWS Secrets Manager.

Reference: Using dynamic references to specify template values

**NEW QUESTION 142**

A company runs an application on AWS The application uses an AWS Lambda function that is configured with an Amazon Simple Queue Service (Amazon SQS) queue called high priority queue as the event source A developer is updating the Lambda function with another SQS queue called low priority queue as the event source The Lambda function must always read up to 10 simultaneous messages from the high priority queue before processing messages from low priority queue. The Lambda function must be limited to 100 simultaneous invocations.

Which solution will meet these requirements'?

- A. Set the event source mapping batch size to 10 for the high priority queue and to 90 for the low priority queue
- B. Set the delivery delay to 0 seconds for the high priority queue and to 10 seconds for the low priority queue
- C. Set the event source mapping maximum concurrency to 10 for the high priority queue and to 90 for the low priority queue
- D. Set the event source mapping batch window to 10 for the high priority queue and to 90 for the low priority queue

**Answer: C**

**Explanation:**

Setting the event source mapping maximum concurrency is the best way to control how many messages from each queue are processed by the Lambda function at a time. The maximum concurrency setting limits the number of batches that can be processed concurrently from the same event source. By setting it to 10 for the high priority queue and to 90 for the low priority queue, the developer can ensure that the Lambda function always reads up to 10 simultaneous messages from the high priority queue before processing messages from the low priority queue, and that the total number of concurrent invocations does not exceed 100. The other solutions are either not effective or not relevant. The batch size setting controls how many messages are sent to the Lambda function in a single invocation, not how many invocations are allowed at a time. The delivery delay setting controls how long a message is invisible in the queue after it is sent, not how often it is processed by the Lambda function. The batch window setting controls how long the event source mapping can buffer messages before sending a batch, not how many batches are processed concurrently. References ? Using AWS Lambda with Amazon SQS

? AWS Lambda Event Source Mapping - Examples and best practices | Shisho Dojo  
? Lambda event source mappings - AWS Lambda  
? aws\_lambda\_event\_source\_mapping - Terraform Registry

#### NEW QUESTION 143

A developer maintains a critical business application that uses Amazon DynamoDB as the primary data store. The DynamoDB table contains millions of documents and receives 30-60 requests each minute. The developer needs to perform processing in near-real time on the documents when they are added or updated in the DynamoDB table.

How can the developer implement this feature with the LEAST amount of change to the existing application code?

- A. Set up a cron job on an Amazon EC2 instance. Run a script every hour to query the table for changes and process the documents.
- B. Enable a DynamoDB stream on the table. Invoke an AWS Lambda function to process the documents.
- C. Update the application to send a PutEvents request to Amazon EventBridge.
- D. Create an EventBridge rule to invoke an AWS Lambda function to process the documents.
- E. Update the application to synchronously process the documents directly after the DynamoDB write.

**Answer:** B

#### Explanation:

<https://aws.amazon.com/blogs/database/dynamodb-streams-use-cases-and-design-patterns/>

#### NEW QUESTION 148

A company is offering APIs as a service over the internet to provide unauthenticated read access to statistical information that is updated daily. The company uses Amazon API Gateway and AWS Lambda to develop the APIs. The service has become popular, and the company wants to enhance the responsiveness of the APIs.

Which action can help the company achieve this goal?

- A. Enable API caching in API Gateway.
- B. Configure API Gateway to use an interface VPC endpoint.
- C. Enable cross-origin resource sharing (CORS) for the APIs.
- D. Configure usage plans and API keys in API Gateway.

**Answer:** A

#### Explanation:

Amazon API Gateway is a service that enables developers to create, publish, maintain, monitor, and secure APIs at any scale. The developer can enable API caching in API Gateway to cache responses from the backend integration point for a specified time-to-live (TTL) period. This can improve the responsiveness of the APIs by reducing the number

of calls made to the backend service. References:

? [What Is Amazon API Gateway? - Amazon API Gateway]

? [Enable API Caching to Enhance Responsiveness - Amazon API Gateway]

#### NEW QUESTION 151

A developer is designing a serverless application for a game in which users register and log in through a web browser. The application makes requests on behalf of users to a set of AWS Lambda functions that run behind an Amazon API Gateway HTTP API.

The developer needs to implement a solution to register and log in users on the application's sign-in page. The solution must minimize operational overhead and must minimize ongoing management of user identities.

Which solution will meet these requirements?

- A. Create Amazon Cognito user pools for external social identity providers. Configure IAM roles for the identity pools.
- B. Program the sign-in page to create users' IAM groups with the IAM roles attached to the groups.
- C. Create an Amazon RDS for SQL Server DB instance to store the users and manage the permissions to the backend resources in AWS.
- D. Configure the sign-in page to register and store the users and their passwords in an Amazon DynamoDB table with an attached IAM policy.

**Answer:** A

#### Explanation:

<https://docs.aws.amazon.com/cognito/latest/developerguide/signing-up-users-in-your-app.html>

#### NEW QUESTION 152

A developer is building a serverless application that is based on AWS Lambda. The developer initializes the AWS software development kit (SDK) outside of the Lambda handler function.

What is the PRIMARY benefit of this action?

- A. Improves legibility and stylistic convention.
- B. Takes advantage of runtime environment reuse.
- C. Provides better error handling.
- D. Creates a new SDK instance for each invocation.

**Answer:** B

#### Explanation:

This benefit occurs when initializing the AWS SDK outside of the Lambda handler function because it allows the SDK instance to be reused across multiple invocations of the same function. This can improve performance and reduce latency by avoiding unnecessary initialization overhead. If the SDK is initialized inside the handler function, it will create a new SDK instance for each invocation, which can increase memory usage and execution time.

Reference: [AWS Lambda execution environment], [Best Practices for Working with AWS Lambda Functions]

**NEW QUESTION 153**

A company has a social media application that receives large amounts of traffic. User posts and interactions are continuously updated in an Amazon RDS database. The data changes frequently, and the data types can be complex. The application must serve read requests with minimal latency. The application's current architecture struggles to deliver these rapid data updates efficiently. The company needs a solution to improve the application's performance. Which solution will meet these requirements'?

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Creating an Amazon ElastiCache for Redis cluster is the best solution for improving the application's performance. Redis is an in-memory data store that can serve read requests with minimal latency and handle complex data types, such as lists, sets, hashes, and streams. By using a write-through caching strategy, the application can ensure that the data in Redis is always consistent with the data in RDS. The application can read the data from Redis instead of RDS, reducing the load on the database and improving the response time. The other solutions are either not feasible or not effective. Amazon DynamoDB Accelerator (DAX) is a caching service that works only with DynamoDB, not RDS. Amazon S3 Transfer Acceleration is a feature that speeds up data transfers between S3 and clients across the internet, not between RDS and the application. Amazon CloudFront is a content delivery network that can cache static content, such as images, videos, or HTML files, but not dynamic content, such as user posts and interactions. References

- ? Amazon ElastiCache for Redis
- ? Caching Strategies and Best Practices - Amazon ElastiCache for Redis
- ? Using Amazon ElastiCache for Redis with Amazon RDS
- ? Amazon DynamoDB Accelerator (DAX)
- ? Amazon S3 Transfer Acceleration
- ? Amazon CloudFront

**NEW QUESTION 158**

When a developer tries to run an AWS Code Build project, it raises an error because the length of all environment variables exceeds the limit for the combined maximum of characters. What is the recommended solution?

- A. Add the export LC\_ALL="en\_US.UTF-8" command to the pre\_build section to ensure POSIX Localization.
- B. Use Amazon Cognito to store key-value pairs for large numbers of environment variables.
- C. Update the settings for the build project to use an Amazon S3 bucket for large numbers of environment variables.
- D. Use AWS Systems Manager Parameter Store to store large numbers of environment variables.

**Answer:** D

**Explanation:**

This solution allows the developer to overcome the limit for the combined maximum of characters for environment variables in AWS CodeBuild. AWS Systems Manager Parameter Store provides secure, hierarchical storage for configuration data management and secrets management. The developer can store large numbers of environment variables as parameters in Parameter Store and reference them in the buildspec file using parameter references. Adding export LC\_ALL="en\_US.UTF-8" command to the pre\_build section will not affect the environment variables limit. Using Amazon Cognito or an Amazon S3 bucket to store key-value pairs for environment variables will require additional configuration and integration. Reference: [Build Specification Reference for AWS CodeBuild], [What Is AWS Systems Manager Parameter Store?]

**NEW QUESTION 160**

A company has developed a new serverless application using AWS Lambda functions that will be deployed using the AWS Serverless Application Model (AWS SAM) CLI. Which step should the developer complete prior to deploying the application?

- A. Compress the application to a zip file and upload it into AWS Lambda.
- B. Test the new AWS Lambda function by first tracing it in AWS X-Ray.



- C. Bundle the serverless application using a SAM package.
- D. Create the application environment using the `eb create my-env` command.

**Answer:** C

**Explanation:**

This step should be completed prior to deploying the application because it prepares the application artifacts for deployment. The AWS Serverless Application Model (AWS SAM) is a framework that simplifies building and deploying serverless applications on AWS. The AWS SAM CLI is a command-line tool that helps you create, test, and deploy serverless applications using AWS SAM templates. The `sam package` command bundles the application artifacts, such as Lambda function code and API definitions, and uploads them to an Amazon S3 bucket. The command also returns a CloudFormation template that is ready to be deployed with the `sam deploy` command. Compressing the application to a zip file and uploading it to AWS Lambda will not work because it does not use AWS SAM templates or CloudFormation. Testing the new Lambda function by first tracing it in AWS X-Ray will not prepare the application for deployment, but only monitor its performance and errors. Creating the application environment using the `eb create my-env` command will not work because it is a command for AWS Elastic Beanstalk, not AWS SAM.

**NEW QUESTION 163**

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