

Amazon

Exam Questions DVA-C02

DVA-C02



NEW QUESTION 1

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

- A. Export the existing API to an OpenAPI file
- B. Create a new AP
- C. Import the OpenAPI file.
- D. Perform the test
- E. Modify the existing API to add request validation
- F. Deploy the existing API to production.
- G. Modify the existing API to add request validation
- H. Deploy the updated API to a new API Gateway stage
- I. Perform the test
- J. Deploy the updated API to the API Gateway production stage.
- K. Create a new AP
- L. Add the necessary resources and methods, including new request validation
- M. Perform the test
- N. Modify the existing API to add request validation
- O. Deploy the existing API to production.
- P. Clone the existing AP
- Q. Modify the new API to add request validation
- R. Perform the test
- S. Modify the existing API to add request validation
- T. Deploy the existing API to production.

Answer: B

Explanation:

Amazon API Gateway allows you to create, deploy, and manage a RESTful API to expose backend HTTP endpoints, AWS Lambda functions, or other AWS services¹. You can use API Gateway to perform basic validation of an API request before proceeding with the integration request¹. When the validation fails, API Gateway immediately fails the request, returns a 400 error response to the caller, and publishes the validation results in CloudWatch Logs¹. To test changes before deploying to a production environment, you can modify the existing API to add request validation and deploy the updated API to a new API Gateway stage¹. This allows you to perform tests without affecting the production environment. Once testing is complete and successful, you can then deploy the updated API to the API Gateway production stage¹. This approach has the least operational overhead as it avoids unnecessary creation of new APIs or exporting and importing of APIs. It leverages the existing infrastructure and only requires changes in the configuration of the existing API¹.

NEW QUESTION 2

A developer is building an application that uses AWS API Gateway APIs, AWS Lambda function, and AWS Dynamic DB tables. The developer uses the AWS Serverless Application Model (AWS SAM) to build and run serverless applications on AWS. Each time the developer pushes of changes for only to the Lambda functions, all the artifacts in the application are rebuilt. The developer wants to implement AWS SAM Accelerate by running a command to only redeploy the Lambda functions that have changed. Which command will meet these requirements?

- A. sam deploy -force-upload
- B. sam deploy -no-execute-changeset
- C. sam package
- D. sam sync -watch

Answer: D

Explanation:

The command that will meet the requirements is sam sync -watch. This command enables AWS SAM Accelerate mode, which allows the developer to only redeploy the Lambda functions that have changed. The -watch flag enables file watching, which automatically detects changes in the source code and triggers a redeployment. The other commands either do not enable AWS SAM Accelerate mode, or do not redeploy the Lambda functions automatically. Reference: AWS SAM Accelerate

NEW QUESTION 3

A development team wants to build a continuous integration/continuous delivery (CI/CD) pipeline. The team is using AWS CodePipeline to automate the code build and deployment. The team wants to store the program code to prepare for the CI/CD pipeline. Which AWS service should the team use to store the program code?

- A. AWS CodeDeploy
- B. AWS CodeArtifact
- C. AWS CodeCommit
- D. Amazon CodeGuru

Answer: C

Explanation:

AWS CodeCommit is a service that provides fully managed source control for hosting secure and scalable private Git repositories. The development team can use CodeCommit to store the program code and prepare for the CI/CD pipeline. CodeCommit integrates with other AWS services such as CodePipeline, CodeBuild, and CodeDeploy to automate the code build and deployment process.

References:

- ? [What Is AWS CodeCommit? - AWS CodeCommit]
- ? [AWS CodePipeline - AWS CodeCommit]

NEW QUESTION 4

A developer is creating an application that includes an Amazon API Gateway REST API in the us-east-2 Region. The developer wants to use Amazon CloudFront and a custom domain name for the API. The developer has acquired an SSL/TLS certificate for the domain from a third-party provider. How should the developer configure the custom domain for the application?

- A. Import the SSL/TLS certificate into AWS Certificate Manager (ACM) in the same Region as the AP
- B. Create a DNS A record for the custom domain.
- C. Import the SSL/TLS certificate into CloudFront
- D. Create a DNS CNAME record for the custom domain.
- E. Import the SSL/TLS certificate into AWS Certificate Manager (ACM) in the same Region as the AP
- F. Create a DNS CNAME record for the custom domain.
- G. Import the SSL/TLS certificate into AWS Certificate Manager (ACM) in the us-east-1 Region
- H. Create a DNS CNAME record for the custom domain.

Answer: D

Explanation:

Amazon API Gateway is a service that enables developers to create, publish, maintain, monitor, and secure APIs at any scale. Amazon CloudFront is a content delivery network (CDN) service that can improve the performance and security of web applications. The developer can use CloudFront and a custom domain name for the API Gateway REST API. To do so, the developer needs to import the SSL/TLS certificate into AWS Certificate Manager (ACM) in the us-east-1 Region. This is because CloudFront requires certificates from ACM to be in this Region. The developer also needs to create a DNS CNAME record for the custom domain that points to the CloudFront distribution.

References:

- ? [What Is Amazon API Gateway? - Amazon API Gateway]
- ? [What Is Amazon CloudFront? - Amazon CloudFront]
- ? [Custom Domain Names for APIs - Amazon API Gateway]

NEW QUESTION 5

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 attribute 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 6

A developer maintains an Amazon API Gateway REST API. Customers use the API through a frontend UI and Amazon Cognito authentication. The developer has a new version of the API that contains new endpoints and backward- incompatible interface changes. The developer needs to provide beta access to other developers on the team without affecting customers. Which solution will meet these requirements with the LEAST operational overhead?

- A. Define a development stage on the API Gateway AP
- B. Instruct the other developers to point the endpoints to the development stage.
- C. Define a new API Gateway API that points to the new API application cod
- D. Instruct the other developers to point the endpoints to the new API.
- E. Implement a query parameter in the API application code that determines which code version to call.
- F. Specify new API Gateway endpoints for the API endpoints that the developer wants to add.

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 define a development stage on the API Gateway API and instruct the other developers to point the endpoints to the development stage. This way, the developer can provide beta access to the new version of the API without affecting customers who use the production stage. This solution will meet the requirements with the least operational overhead.

References:

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

? [Set up a Stage in API Gateway - Amazon API Gateway]

NEW QUESTION 7

A developer is testing a RESTful application that is deployed by using Amazon API Gateway and AWS Lambda. When the developer tests the user login by using credentials that are not valid, the developer receives an HTTP 405 METHOD_NOT_ALLOWED error. The developer has verified that the test is sending the correct request for the resource.

Which HTTP error should the application return in response to the request?

- A. HTTP 401
- B. HTTP 404
- C. HTTP 503
- D. HTTP 505

Answer: A

Explanation:

The HTTP 401 error indicates that the request has not been applied because it lacks valid authentication credentials for the target resource. This is the appropriate error code to return when the user login fails due to invalid credentials. The HTTP 405 error means that the method specified in the request is not allowed for the resource identified by the request URI, which is not the case here. The other error codes are not relevant to the authentication failure scenario.

References:

? HTTP Status Codes

? AWS Lambda Function Errors in API Gateway

NEW QUESTION 8

A company is building a new application that runs on AWS and uses Amazon API Gateway to expose APIs. Teams of developers are working on separate components of the application in parallel. The company wants to publish an API without an integrated backend, so that teams that depend on the application backend can continue the development work before the API backend development is complete.

Which solution will meet these requirements?

- A. Create API Gateway resources and set the integration type value to MOCK. Configure the method integration request and integration response to associate a response with an HTTP status code. Create an API Gateway stage and deploy the API.
- B. Create an AWS Lambda function that returns mocked responses and various HTTP status codes.
- C. Create API Gateway resources and set the integration type value to AWS_PROXY. Deploy the API.
- D. Create an EC2 application that returns mocked HTTP responses. Create API Gateway resources and set the integration type value to AWS. Create an API Gateway stage and deploy the API.
- E. Create API Gateway resources and set the integration type value set to HTTP_PROXY.
- F. Add mapping templates and deploy the API.
- G. Create an AWS Lambda layer that returns various HTTP status codes. Associate the Lambda layer with the API deployment.

Answer: A

Explanation:

The best solution for publishing an API without an integrated backend is to use the MOCK integration type in API Gateway. This allows the developer to return a static response to the client without sending the request to a backend service. The developer can configure the method integration request and integration response to associate a response with an HTTP status code, such as 200 OK or 404 Not Found. The developer can also create an API Gateway stage and deploy the API to make it available to the teams that depend on the application backend. The other solutions are either not feasible or not efficient. Creating an AWS Lambda function, an EC2 application, or an AWS Lambda layer would require additional resources and code to generate the mocked responses and HTTP status codes. These solutions would also incur additional costs and complexity, and would not leverage the built-in functionality of API Gateway. References:

? Set up mock integrations for API Gateway REST APIs

? Mock Integration for API Gateway - AWS CloudFormation

? Mocking API Responses with API Gateway

? How to mock API Gateway responses with AWS SAM

NEW QUESTION 9

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 10

A developer needs to build an AWS CloudFormation template that self-populates the AWS Region variable that deploys the CloudFormation template. What is the MOST operationally efficient way to determine the Region in which the template is being deployed?

- A. Use the AWS::Region pseudo parameter
- B. Require the Region as a CloudFormation parameter
- C. Find the Region from the AWS::StackId pseudo parameter by using the Fn::Split intrinsic function
- D. Dynamically import the Region by referencing the relevant parameter in AWS Systems Manager Parameter Store

Answer: A

Explanation:

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/mappings-section-structure.html>
<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/pseudo-parameter-reference.html>
<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/pseudo-parameter-reference.html>

NEW QUESTION 10

A company is building an application for stock trading. The application needs sub-millisecond latency for processing trade requests. The company uses Amazon DynamoDB to store all the trading data that is used to process each trading request. A development team performs load testing on the application and finds that the data retrieval time is higher

than expected. The development team needs a solution that reduces the data retrieval time with the least possible effort.

Which solution meets these requirements?

- A. Add local secondary indexes (LSIs) for the trading data.
- B. Store the trading data in Amazon S3 and use S3 Transfer Acceleration.
- C. Add retries with exponential back off for DynamoDB queries.
- D. Use DynamoDB Accelerator (DAX) to cache the trading data.

Answer: D

Explanation:

This solution will meet the requirements by using DynamoDB Accelerator (DAX), which is a fully managed, highly available, in-memory cache for DynamoDB that delivers up to a 10 times performance improvement - from milliseconds to microseconds - even at millions of requests per second. The developer can use DAX to cache the trading data that is used to process each trading request, which will reduce the data retrieval time with the least possible effort. Option A is not optimal because it will add local secondary indexes (LSIs) for the trading data, which may not improve the performance or reduce the latency of data retrieval, as LSIs are stored on the same partition as the base table and share the same provisioned throughput. Option B is not optimal because it will store the trading data in Amazon S3 and use S3 Transfer Acceleration, which is a feature that enables fast, easy, and secure transfers of files over long distances between S3 buckets and clients, not between DynamoDB and clients. Option C is not optimal because it will add retries with exponential backoff for DynamoDB queries, which is a strategy to handle transient errors by retrying failed requests with increasing delays, not by reducing data retrieval time.

References: [DynamoDB Accelerator (DAX)], [Local Secondary Indexes]

NEW QUESTION 12

A developer is testing a new file storage application that uses an Amazon CloudFront distribution to serve content from an Amazon S3 bucket. The distribution accesses the S3 bucket by using an origin access identity (OAI). The S3 bucket's permissions explicitly deny access to all other users. The application prompts users to authenticate on a login page and then uses signed cookies to allow users to access their personal storage directories. The developer has configured the distribution to use its default cache behavior with restricted viewer access and has set the origin to point to the S3 bucket. However, when the developer tries to navigate to the login page, the developer receives a 403 Forbidden error.

The developer needs to implement a solution to allow unauthenticated access to the login page. The solution also must keep all private content secure.

Which solution will meet these requirements?

- A. Add a second cache behavior to the distribution with the same origin as the default cache behavior
- B. Set the path pattern for the second cache behavior to the path of the login page, and make viewer access unrestricted
- C. Keep the default cache behavior's settings unchanged.
- D. Add a second cache behavior to the distribution with the same origin as the default cache behavior
- E. Set the path pattern for the second cache behavior to *, and make viewer access restricted
- F. Change the default cache behavior's path pattern to the path of the login page, and make viewer access unrestricted.
- G. Add a second origin as a failover origin to the default cache behavior
- H. Point the failover origin to the S3 bucket
- I. Set the path pattern for the primary origin to *, and make viewer access restricted
- J. Set the path pattern for the failover origin to the path of the login page, and make viewer access unrestricted.
- K. Add a bucket policy to the S3 bucket to allow read access
- L. Set the resource on the policy to the Amazon Resource Name (ARN) of the login page object in the S3 bucket
- M. Add a CloudFront function to the default cache behavior to redirect unauthorized requests to the login page's S3 URL.

Answer: A

Explanation:

The solution that will meet the requirements is to add a second cache behavior to the distribution with the same origin as the default cache behavior. Set the path pattern for the second cache behavior to the path of the login page, and make viewer access unrestricted. Keep the default cache behavior's settings unchanged. This way, the login page can be accessed without authentication, while all other content remains secure and requires signed cookies. The other options either do not allow unauthenticated access to the login page, or expose private content to unauthorized users.

Reference: Restricting Access to Amazon S3 Content by Using an Origin Access Identity

NEW QUESTION 15

An Amazon Kinesis Data Firehose delivery stream is receiving customer data that contains personally identifiable information. A developer needs to remove pattern-based customer identifiers from the data and store the modified data in an Amazon S3 bucket. What should the developer do to meet these requirements?

- A. Implement Kinesis Data Firehose data transformation as an AWS Lambda function
- B. Configure the function to remove the customer identifier
- C. Set an Amazon S3 bucket as the destination of the delivery stream.
- D. Launch an Amazon EC2 instance
- E. Set the EC2 instance as the destination of the delivery stream
- F. Run an application on the EC2 instance to remove the customer identifier
- G. Store the transformed data in an Amazon S3 bucket.
- H. Create an Amazon OpenSearch Service instance
- I. Set the OpenSearch Service instance as the destination of the delivery stream
- J. Use search and replace to remove the customer identifier
- K. Export the data to an Amazon S3 bucket.
- L. Create an AWS Step Functions workflow to remove the customer identifier
- M. As the last step in the workflow, store the transformed data in an Amazon S3 bucket
- N. Set the workflow as the destination of the delivery stream.

Answer: A

Explanation:

Amazon Kinesis Data Firehose is a service that delivers real-time streaming data to destinations such as Amazon S3, Amazon Redshift, Amazon OpenSearch Service, and Amazon Kinesis Data Analytics. The developer can implement Kinesis Data Firehose data transformation as an AWS Lambda function. The function can remove pattern-based customer identifiers from the data and return the modified data to Kinesis Data Firehose. The developer can set an Amazon S3 bucket as the destination of the delivery stream. References:

? [What Is Amazon Kinesis Data Firehose? - Amazon Kinesis Data Firehose]

? [Data Transformation - Amazon Kinesis Data Firehose]

NEW QUESTION 20

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 of the partners require additional Lambda functions 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 bucket as records appear in the table's stream.

I. Modify the Lambda function to publish to a new Amazon

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 24

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

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

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

Answer: B

Explanation:

This solution allows the Lambda function to be invoked by the DynamoDB stream whenever updates are made to items in the DynamoDB table. Event source mapping is a feature of Lambda that enables a function to be triggered by an event source, such as a DynamoDB stream, an Amazon Kinesis stream, or an Amazon Simple Queue Service (SQS) queue. The developer can configure event source mapping for the Lambda function using the AWS Management Console, the AWS CLI, or the AWS SDKs. Changing the StreamViewType parameter value to NEW_AND_OLD_IMAGES for the DynamoDB table will not affect the invocation of the Lambda function, but only change the information that is written to the stream record. Mapping an Amazon Simple Notification Service (Amazon

SNS) topic to the DynamoDB stream will not invoke the Lambda function directly, but require an additional subscription from the Lambda function to the SNS topic. Increasing the maximum runtime (timeout) setting of the Lambda function will not affect the invocation of the Lambda function, but only change how long the function can run before it is terminated.

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

NEW QUESTION 25

An application that runs on AWS receives messages from an Amazon Simple Queue Service (Amazon SQS) queue and processes the messages in batches. The application sends the data to another SQS queue to be consumed by another legacy application. The legacy system can take up to 5 minutes to process some transaction data.

A developer wants to ensure that there are no out-of-order updates in the legacy system. The developer cannot alter the behavior of the legacy system.

Which solution will meet these requirements?

- A. Use an SQS FIFO queue
- B. Configure the visibility timeout value.
- C. Use an SQS standard queue with a SendMessageBatchRequestEntry data type
- D. Configure the DelaySeconds values.
- E. Use an SQS standard queue with a SendMessageBatchRequestEntry data type
- F. Configure the visibility timeout value.
- G. Use an SQS FIFO queue
- H. Configure the DelaySeconds value.

Answer: A

Explanation:

? An SQS FIFO queue is a type of queue that preserves the order of messages and ensures that each message is delivered and processed only once¹. This is suitable for the scenario where the developer wants to ensure that there are no out-of-order updates in the legacy system.

? The visibility timeout value is the amount of time that a message is invisible in the queue after a consumer receives it². This prevents other consumers from processing the same message simultaneously. If the consumer does not delete the message before the visibility timeout expires, the message becomes visible again and another consumer can receive it².

? In this scenario, the developer needs to configure the visibility timeout value to be longer than the maximum processing time of the legacy system, which is 5 minutes. This will ensure that the message remains invisible in the queue until the legacy system finishes processing it and deletes it. This will prevent duplicate or out-of-order processing of messages by the legacy system.

NEW QUESTION 29

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 database
- 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 31

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

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

Which solution will meet these requirements?

- A. Create sample events based on the Lambda documentatio
- B. Create automated test scripts that use the cdk local invoke command to invoke the Lambda function
- C. Check the response Document the test scripts for the other developers on the team Update the CI/CD pipeline to run the test scripts.
- D. Install a unit testing framework that reproduces the Lambda execution environmen
- E. Create sample events based on the Lambda Documentation Invoke the handler function by using a unit testing framewor
framework for the other developers on the tea
- F. Check the response Document how to run the unit testing.
- G. Update the CI/CD pipeline to run the unit testing framework.
- H. Install the AWS Serverless Application Model (AWS SAW) CLI tool Use the Sam local generate-event command to generate sample events for me automated test
- I. Create automated test scripts that use the Sam local invoke command to invoke the Lambda function
- J. Check the response Document the test scripts for the other developers on the team Update the CI/CD pipeline to run the test scripts.
- K. Create sample events based on the Lambda documentatio
- L. Create a Docker container from the Node.js base image to invoke the Lambda function
- M. Check the response Document how to run the Docker container for the more developers on the team update the CI/CD pipeline to run the Docker container.

Answer: C

Explanation:

This solution will meet the requirements by using AWS SAM CLI tool, which is a command line tool that lets developers locally build, test, debug, and deploy serverless applications defined by AWS SAM templates. The developer can use sam local generate-event command to generate sample events for different event sources such as API Gateway or S3. The developer can create automated test scripts that use sam local invoke command to invoke Lambda functions locally in an environment that closely simulates Lambda environment. The developer can check the response from Lambda functions and document how to run the test scripts for other developers on the team. The developer can also update CI/CD pipeline to run these test scripts before deploying with AWS CDK. Option A is not optimal because it will use cdk local invoke command, which does not exist in AWS CDK CLI tool. Option B is not optimal because it will use a unit testing framework that reproduces Lambda execution environment, which may not be accurate or consistent with Lambda environment. Option D is not optimal because it will create a Docker container from Node.js base image to invoke Lambda functions, which may introduce additional overhead and complexity for creating and running Docker containers.

References: [AWS Serverless Application Model (AWS SAM)], [AWS Cloud Development Kit (AWS CDK)]

NEW QUESTION 35

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

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

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

Answer: D

NEW QUESTION 40

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 ke
- 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
- C. Perform a query operation on the GSI by using the begins_with key condition expresses with the email
- D. Perform a query operation on the GSI by using the begins_with key condition expresses with the email
- E. Address property.
- F. Add a local secondary index (LSI) to the DynemoOB table with customer_type as the partition Key and email_address as the sort Ke
- G. Perform a quick 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 ke
- 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 42

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

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

- A. Create an Amazon EventBridge rule that has a rate expression that will run the rule every 15 minute
- B. Add the Lambda function as the target of the EventBridge rule.

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

Answer: A

Explanation:

The best solution for this requirement is option A. Creating an Amazon EventBridge rule that has a rate expression that will run the rule every 15 minutes and adding the Lambda function as the target of the EventBridge rule is the most efficient way to invoke the Lambda function periodically. This solution does not require any additional resources or development effort, and it leverages the built-in scheduling capabilities of EventBridge.

NEW QUESTION 43

A developer is creating an application that will store personal health information (PHI). The PHI needs to be encrypted at all times. An encrypted Amazon RDS for MySQL DB instance is storing the data. The developer wants to increase the performance of the application by caching frequently accessed data while adding the ability to sort or rank the cached datasets.

Which solution will meet these requirements?

- A. Create an Amazon ElastiCache for Redis instance.
- B. Enable encryption of data in transit and at rest.
- C. Store frequently accessed data in the cache.
- D. Create an Amazon ElastiCache for Memcached instance.
- E. Enable encryption of data in transit and at rest.
- F. Store frequently accessed data in the cache.
- G. Create an Amazon RDS for MySQL read replica.
- H. Connect to the read replica by using SSL.
- I. Configure the read replica to store frequently accessed data.
- J. Create an Amazon DynamoDB table and a DynamoDB Accelerator (DAX) cluster for the table.
- K. Store frequently accessed data in the DynamoDB table.

Answer: A

Explanation:

Amazon ElastiCache is a service that offers fully managed in-memory data stores that are compatible with Redis or Memcached. The developer can create an ElastiCache for Redis instance and enable encryption of data in transit and at rest. This will ensure that the PHI is encrypted at all times. The developer can store frequently accessed data in the cache and use Redis features such as sorting and ranking to enhance the performance of the application.

References:

? [What Is Amazon ElastiCache? - Amazon ElastiCache]

? [Encryption in Transit - Amazon ElastiCache for Redis]

? [Encryption at Rest - Amazon ElastiCache for Redis]

NEW QUESTION 47

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 49

A developer designed an application on an Amazon EC2 instance. The application makes API requests to objects in an Amazon S3 bucket. Which combination of steps will ensure that the application makes the API requests in the MOST secure manner? (Select TWO.)

- A. Create an IAM user that has permissions to the S3 bucket
- B. Add the user to an IAM group
- C. Create an IAM role that has permissions to the S3 bucket
- D. Add the IAM role to an instance profile
- E. Attach the instance profile to the EC2 instance.
- F. Create an IAM role that has permissions to the S3 bucket. Assign the role to an IAM group
- G. Store the credentials of the IAM user in the environment variables on the EC2 instance

Answer: BC

Explanation:

- Create an IAM role that has permissions to the S3 bucket. - Add the IAM role to an instance profile. Attach the instance profile to the EC2 instance. We first need to create an IAM Role with permissions to read and eventually write a specific S3 bucket. Then, we need to attach the role to the EC2 instance through an instance profile. In this way, the EC2 instance has the permissions to read and eventually write the specified S3 bucket

NEW QUESTION 52

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 54

A developer is working on a Python application that runs on Amazon EC2 instances. The developer wants to enable tracing of application requests to debug performance issues in the code.

Which combination of actions should the developer take to achieve this goal? (Select TWO)

- A. Install the Amazon CloudWatch agent on the EC2 instances.
- B. Install the AWS X-Ray daemon on the EC2 instances.
- C. Configure the application to write JSON-formatted logs to /var/log/cloudwatch.
- D. Configure the application to write trace data to /var/log/xray.
- E. Install and configure the AWS X-Ray SDK for Python in the application.

Answer: BE

Explanation:

This solution will meet the requirements by using AWS X-Ray to enable tracing of application requests to debug performance issues in the code. 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 install the AWS X-Ray daemon on the EC2 instances, which is a software that listens for traffic on UDP port 2000, gathers raw segment data, and relays it to the X-Ray API. The developer can also install and configure the AWS X-Ray SDK for Python in the application, which is a library that enables instrumenting Python code to generate and send trace data to the X-Ray daemon. Option A is not optimal because it will install the Amazon CloudWatch agent on the EC2 instances, which is a software that collects metrics and logs from EC2 instances and on-premises servers, not application performance data. Option C is not optimal because it will configure the application to write JSON-formatted logs to /var/log/cloudwatch, which is not a valid path or destination for CloudWatch logs. Option D is not optimal because it will configure the application to write trace data to /var/log/xray, which is also not a valid path or destination for X-Ray trace data.

References: [AWS X-Ray], [Running the X-Ray Daemon on Amazon EC2]

NEW QUESTION 56

A developer is using AWS Step Functions to automate a workflow. The workflow defines each step as an AWS Lambda function task. The developer notices that runs of the Step Functions state machine fail in the GetResource task with either an `UlegalArgumentException` error or a `TooManyRequestsException` error. The developer wants the state machine to stop running when the state machine encounters a `UlegalArgumentException` error. The state machine needs to retry the GetResource task one additional time after 10 seconds if the state machine encounters a `TooManyRequestsException` error. If the second attempt fails, the developer wants the state machine to stop running.

How can the developer implement the Lambda retry functionality without adding unnecessary complexity to the state machine?

- A. Add a Delay task after the GetResource task
- B. Add a catcher to the GetResource task
- C. Configure the catcher with an error type of `TooManyRequestsException`
- D. Configure the next step to be the Delay task. Configure the Delay task to wait for an interval of 10 seconds. Configure the next step to be the GetResource task.
- E. Add a catcher to the GetResource task. Configure the catcher with an error type of `TooManyRequestsException`
- F. an interval of 10 seconds, and a maximum attempts value of 1. Configure the next step to be the GetResource task.
- G. Add a retrier to the GetResource task. Configure the retrier with an error type of `TooManyRequestsException`, an interval of 10 seconds, and a maximum attempts value of 1.
- H. Duplicate the GetResource task. Rename the new GetResource task to TryAgain. Add a catcher to the original GetResource task. Configure the catcher with an error type of `TooManyRequestsException`
- I. Configure the next step to be TryAgain.

Answer: C

Explanation:

The best way to implement the Lambda retry functionality is to use the Retry field in the state definition of the GetResource task. The Retry field allows the developer to specify an array of retriers, each with an error type, an interval, and a maximum number of attempts. By setting the error type to TooManyRequestsException, the interval to 10 seconds, and the maximum attempts to 1, the developer can achieve the desired behavior of retrying the GetResource task once after 10 seconds if it encounters a TooManyRequestsException error. If the retry fails, the state machine will stop running. If the GetResource task encounters an UlegalArgumentException error, the state machine will also stop running without retrying, as this error type is not specified in the Retry field. References

- ? Error handling in Step Functions
- ? Handling Errors, Retries, and adding Alerting to Step Function State Machine Executions
- ? The Jitter Strategy for Step Functions Error Retries on the New Workflow Studio

NEW QUESTION 57

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

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

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

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

Answer: D

Explanation:

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

NEW QUESTION 58

A company receives food orders from multiple partners. The company has a microservices application that uses Amazon API Gateway APIs with AWS Lambda integration. Each partner sends orders by calling a customized API that is exposed through API Gateway. The API call invokes a shared Lambda function to process the orders.

Partners need to be notified after the Lambda function processes the orders. Each partner must receive updates for only the partner's own orders. The company wants to add new partners in the future with the fewest code changes possible.

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

- A. Create a different Amazon Simple Notification Service (Amazon SNS) topic for each partner
- B. Configure the Lambda function to publish messages for each partner to the partner's SNS topic.
- C. Create a different Lambda function for each partner
- D. Configure the Lambda function to notify each partner's service endpoint directly.
- E. Create an Amazon Simple Notification Service (Amazon SNS) topic
- F. Configure the Lambda function to publish messages with specific attributes to the SNS topic
- G. Subscribe each partner to the SNS topic
- H. Apply the appropriate filter policy to the topic subscriptions.
- I. Create one Amazon Simple Notification Service (Amazon SNS) topic
- J. Subscribe all partners to the SNS topic.

Answer: C

Explanation:

Amazon Simple Notification Service (Amazon SNS) is a fully managed messaging service that enables pub/sub communication between distributed systems. The

developer can create an SNS topic and configure the Lambda function to publish messages with specific attributes to the topic. The developer can subscribe each partner to the SNS topic and apply the appropriate filter policy to the topic subscriptions. This way, each partner will receive updates for only their own orders based on the message attributes. This solution will meet the requirements in the most scalable way and allow adding new partners in the future with minimal code changes.

References:

? [Amazon Simple Notification Service (SNS)]

? [Filtering Messages with Attributes - Amazon Simple Notification Service]

NEW QUESTION 59

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

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

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

- A. Store the credentials in AWS Secrets Manager in the primary Region.
- B. Enable secret replication to the secondary Region. Update the application to use the Amazon Resource Name (ARN) based on the Region.
- C. Store credentials in AWS Systems Manager Parameter Store in the primary Region.
- D. Enable parameter replication to the secondary Region.
- E. Update the application to use the Amazon Resource Name (ARN) based on the Region.
- F. Store credentials in a config file.
- G. Upload the config file to an S3 bucket in the primary Region.
- H. Enable Cross-Region Replication (CRR) to an S3 bucket in the secondary region.
- I. Update the application to access the config file from the S3 bucket based on the Region.
- J. Store credentials in a config file.
- K. Upload the config file to an Amazon Elastic File System (Amazon EFS) file system.
- L. Update the application to use the Amazon EFS file system Regional endpoints to access the config file in the primary and secondary Regions.

Answer: A

Explanation:

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

References:

? AWS Secrets Manager

? Replicating and sharing secrets

? Using your own encryption keys

NEW QUESTION 62

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

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

Which solution will meet these requirements?

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

Answer: D

Explanation:

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

? Mocking Integration Responses in API Gateway

? Set up Mock Integrations for an API in API Gateway

NEW QUESTION 63

For a deployment using AWS CodeDeploy, what is the run order of the hooks for in-place deployments?

- A. BeforeInstall -> ApplicationStop -> ApplicationStart -> AfterInstall
- B. ApplicationStop -> BeforeInstall -> AfterInstall -> ApplicationStart
- C. BeforeInstall -> ApplicationStop -> ValidateService -> ApplicationStart
- D. ApplicationStop -> BeforeInstall -> ValidateService -> ApplicationStart

Answer: B

Explanation:

For in-place deployments, AWS CodeDeploy uses a set of predefined hooks that run in a specific order during each deployment lifecycle event. The hooks are ApplicationStop, BeforeInstall, AfterInstall, ApplicationStart, and ValidateService. The run order of the hooks for in-place deployments is as follows:

? ApplicationStop: This hook runs first on all instances and stops the current

application that is running on the instances.

? BeforeInstall: This hook runs after ApplicationStop on all instances and performs any tasks required before installing the new application revision.

? AfterInstall: This hook runs after BeforeInstall on all instances and performs any tasks required after installing the new application revision.

? ApplicationStart: This hook runs after AfterInstall on all instances and starts the new application that has been installed on the instances.

? ValidateService: This hook runs last on all instances and verifies that the new application is running properly on the instances.

Reference: [AWS CodeDeploy lifecycle event hooks reference]

NEW QUESTION 68

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 69

A developer is testing an application that invokes an AWS Lambda function asynchronously. During the testing phase the Lambda function fails to process after two retries.

How can the developer troubleshoot the failure?

- A. Configure AWS CloudTrail logging to investigate the invocation failures.
- B. Configure Dead Letter Queues by sending events to Amazon SQS for investigation.
- C. Configure Amazon Simple Workflow Service to process any direct unprocessed events.
- D. Configure AWS Config to process any direct unprocessed events.

Answer: B

Explanation:

This solution allows the developer to troubleshoot the failure by capturing unprocessed events in a queue for further analysis. Dead Letter Queues (DLQs) are queues that store messages that could not be processed by a service, such as Lambda, for various reasons, such as configuration errors, throttling limits, or permissions issues. The developer can configure DLQs for Lambda functions by sending events to either an Amazon Simple Queue Service (SQS) queue or an Amazon Simple Notification Service (SNS) topic. The developer can then inspect the messages in the queue or topic to identify and fix the root cause of the failure. Configuring AWS CloudTrail logging will not capture invocation failures for asynchronous Lambda invocations, but only record API calls made by or on behalf of Lambda. Configuring Amazon Simple Workflow Service (SWF) or AWS Config will not process any direct unprocessed events, but require additional integration and configuration.

Reference: [Using AWS Lambda with DLQs], [Asynchronous invocation]

NEW QUESTION 73

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

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

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

Answer: C

Explanation:

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

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

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

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

complexity.

* D. Use an AWS Batch job that is submitted to an AWS Batch job queue. This is incorrect. AWS Batch enables you to run batch computing workloads on the AWS or sequentially on Cloud8. Batch jobs are units of work that can be submitted to job queues, where they are executed in parallel compute environments. 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 77

A company has a web application that runs on Amazon EC2 instances with a custom Amazon Machine Image (AMI) The company uses AWS CloudFormation to provision the application The application runs in the us-east-1 Region, and the company needs to deploy the application to the us-west-1 Region An attempt to create the AWS CloudFormation stack in us-west-1 fails. An error message states that the AMI ID does not exist. A developer must resolve this error with a solution that uses the least amount of operational overhead Which solution meets these requirements?

- A. Change the AWS CloudFormation templates for us-east-1 and us-west-1 to use an AWS AM
- B. Relaunch the stack for both Regions.
- C. Copy the custom AMI from us-east-1 to us-west-1. Update the AWS CloudFormation template for us-west-1 to refer to AMI ID for the copied AMI Relaunch the stack
- D. Build the custom AMI in us-west-1 Create a new AWS CloudFormation template to launch the stack in us-west-1 with the new AMI ID
- E. Manually deploy the application outside AWS CloudFormation in us-west-1.

Answer: B

Explanation:

<https://aws.amazon.com/blogs/aws/ec2-ami-copy-between-regions/>

NEW QUESTION 80

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

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

Answer: B

Explanation:

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

NEW QUESTION 84

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

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

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

- A. The command is incorrect; it should be rewritten to use put-item with a string argument
- B. The developer needs to log a ticket with AWS Support to enable access to the demoman-table
- C. Amazon DynamoDB cannot be accessed from the AWS CLI and needs to called via the REST API
- D. The IAM user needs an associated policy with read access to demoman-table

Answer: D

Explanation:

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

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

NEW QUESTION 87

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 Deployment Preference Type to Canary10Percent10Minute
AutoPublishAlias property to the Lambda alias.
- B. Set the Deployment Preference Type to Linear10PercentEvery10Minute**
- C. Set the Deployment Preference Type to Canary10Percent10Minute
- D. Set AutoPublishAlias property to the Lambda alias.
- E. Set the Deployment Preference Type to Canary10Percent10Minute
- F. Set the PreTraffic and PostTraffic properties to the Lambda alias.
- G. Set the Deployment Preference Type to Linear10PercentEvery10Minute
- H. Set PreTraffic and Post Traffic properties to the Lambda alias.

Answer: A

Explanation:

The AWS Serverless Application Model (AWS SAM) comes built-in with CodeDeploy to provide gradual AWS Lambda deployments¹. The DeploymentPreference property in AWS SAM allows you to specify the type of deployment that you want. The Canary10Percent10Minutes option means that 10 percent of your customer traffic is immediately shifted to your new version. After 10 minutes, all traffic is shifted to the new version¹. The AutoPublishAlias property in AWS SAM allows AWS SAM to automatically create an alias that points to the updated version of the Lambda function¹. Therefore, option A is correct.

NEW QUESTION 90

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 code
- B. Use the credentials to access the required S3 objects.
Create a secret access key and access key ID with permission to access the S3 bucket
- C. Store the key and key ID in AWS Secrets Manager**
- D. Configure the application to retrieve the Secrets Manager secret and use the credentials to access the S3 objects.
- E. Configure the application to retrieve the Secrets Manager secret and use the credentials to access the S3 objects.
- F. Create a Lambda function execution role. Attach a policy to the role 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 in Lambda
- 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 93

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 account
- 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 queue
- 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 change
- 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 accounts
- K. Create an Amazon EventBridge rule in each account to send all the EC2 instance lifecycle events to the main account event bus
- 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 97

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

Which solution will meet these requirements?

- A. Create the Lambda function
- B. Configure VPC1 access for the function
- C. Attach a security group named SG1 to both the Lambda function and the database
- D. Configure the security group inbound and outbound rules to allow TCP traffic on Port 3306.
- E. Create and launch a Lambda function in a new public subnet that is in a new VPC named VPC2. Create a peering connection between VPC1 and VPC2.
- F. Create the Lambda function
- G. Configure VPC1 access for the function
- H. Assign a security group named SG1 to the Lambda function
- I. Assign a second security group named SG2 to the database
- J. Add an inbound rule to SG1 to allow TCP traffic from Port 3306.
- K. Export the data from the Aurora database to Amazon S3. Create and launch a Lambda function in VPC1. Configure the Lambda function query the data from Amazon S3.

Answer: A

Explanation:

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

NEW QUESTION 100

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 101

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

- A. Write a Git pre-commit hook that runs the test before every commit
- B. Ensure that each developer who is working on the project has the pre-commit hook installed locally
- C. Review the test report and resolve any issues before pushing changes to AWS CodeCommit.
- D. Add a new stage to the pipeline
- E. Use AWS CodeBuild as the provider
- F. Add the new stage after the stage that deploys code revisions to the test environment
- G. Write a buildspec that fails the CodeBuild stage if any test does not pass
- H. Use the test reports feature of CodeBuild to integrate the report with the CodeBuild console
- I. View the test results in CodeBuild. Resolve any issues.
- J. Add a new stage to the pipeline
- K. Use AWS CodeBuild as the provider
- L. Add the new stage before the stage that deploys code revisions to the test environment
- M. Write a buildspec that fails the CodeBuild stage if any test does not pass
- N. Use the test reports feature of CodeBuild to integrate the report with the CodeBuild console
- O. View the test results in CodeBuild. Resolve any issues.
- P. Add a new stage to the pipeline
- Q. Use Jenkins as the provider
- R. Configure CodePipeline to use Jenkins to run the unit test
- S. Write a Jenkinsfile that fails the stage if any test does not pass
- T. Use the test report plugin for Jenkins to integrate the report with the Jenkins dashboard
- U. View the test results in Jenkins
- V. Resolve any issues.

Answer: C

Explanation:

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

Reference: Test reports for CodeBuild

NEW QUESTION 103

A company's website runs on an Amazon EC2 instance and uses Auto Scaling to scale the environment during peak times. Website users across the world are experiencing high latency due to static content on the EC2 instance, even during non-peak hours.

When completion of steps will resolve the latency issue? (Select TWO)

- A. Double the Auto Scaling group's maximum number of servers
- B. Host the application code on AWS Lambda
- C. Scale vertically by resizing the EC2 instances
- D. Create an Amazon CloudFront distribution to cache the static content
- E. Store the application's static content in Amazon S3

Answer: DE

Explanation:

The combination of steps that will resolve the latency issue is to create an Amazon CloudFront distribution to cache the static content and store the application's static content in Amazon S3. This way, the company can use CloudFront to deliver the static content from edge locations that are closer to the website users, reducing latency and improving performance. The company can also use S3 to store the static content reliably and cost-effectively, and integrate it with CloudFront easily. The other options either do not address the latency issue, or are not necessary or feasible for the given scenario.

Reference: Using Amazon S3 Origins and Custom Origins for Web Distributions

NEW QUESTION 104

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

Which solution will meet this requirement?

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

Answer: B

Explanation:

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

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

NEW QUESTION 108

A developer migrated a legacy application to an AWS Lambda function. The function uses a third-party service to pull data with a series of API calls at the end of each month. The function then processes the data to generate the monthly reports. The function has been working with no issues so far.

The third-party service recently issued a restriction to allow a fixed number of API calls each minute and each day. If the API calls exceed the limit for each minute or each day, then the service will produce errors. The API also provides the minute limit and daily limit in the response header. This restriction might extend the overall process to multiple days because the process is consuming more API calls than the available limit.

What is the MOST operationally efficient way to refactor the serverless application to accommodate this change?

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

Answer: A

Explanation:

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

Reference: AWS Step Functions Wait state

NEW QUESTION 113

A company is using Amazon RDS as the Backend database for its application. After a recent marketing campaign, a surge of read requests to the database increased the latency of data retrieval from the database.

The company has decided to implement a caching layer in front of the database. The cached content must be encrypted and must be highly available.

Which solution will meet these requirements?

- A. Amazon Cloudfront
- B. Amazon ElastiCache to Memcached
- C. Amazon ElastiCache for Redis in cluster mode
- D. Amazon DynamoDB Accelerate (DAX)

Answer: C

Explanation:

This solution meets the requirements because it provides a caching layer that can store and retrieve encrypted data from multiple nodes. Amazon ElastiCache for Redis supports encryption at rest and in transit, and can scale horizontally to increase the cache capacity and availability. Amazon ElastiCache for Memcached does not support encryption, Amazon CloudFront is a content delivery network that is not suitable for caching database queries, and Amazon DynamoDB Accelerator (DAX) is a caching service that only works with DynamoDB tables.

Reference: [Amazon ElastiCache for Redis Features], [Choosing a Cluster Engine]

NEW QUESTION 114

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 116

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 119

A developer is building a web application that uses Amazon API Gateway to expose an AWS Lambda function to process requests from clients. During testing, the developer notices that the API Gateway times out even though the Lambda function finishes under the set time limit.

Which of the following API Gateway metrics in Amazon CloudWatch can help the developer troubleshoot the issue? (Choose two.)

- A. `CacheHitCount`
- B. `IntegrationLatency`
- C. `CacheMissCount`
- D. `Latency`
- E. `Count`

Answer: BD

Explanation:

Amazon API Gateway is a service that enables developers to create, publish, maintain, monitor, and secure APIs at any scale. Amazon CloudWatch is a service that monitors AWS resources and applications. API Gateway provides several CloudWatch metrics to help developers troubleshoot issues with their APIs. Two of the metrics that can help the developer troubleshoot the issue of API Gateway timing out are:

? `IntegrationLatency`: This metric measures the time between when API Gateway

relays a request to the backend and when it receives a response from the backend. A high value for this metric indicates that the backend is taking too long to respond and may cause API Gateway to time out.

? `Latency`: This metric measures the time between when API Gateway receives a

request from a client and when it returns a response to the client. A high value for this metric indicates that either the integration latency is high or API Gateway is taking too long to process the request or response.

References:

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

? [Amazon API Gateway Metrics and Dimensions - Amazon CloudWatch]

? [Troubleshooting API Errors - Amazon API Gateway]

NEW QUESTION 124

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 archiv
- B. Deploy each Lambda function with its own copy of the library.
- C. Create a Lambda layer with the required Python librar
- D. Use the Lambda layer in both Lambda functions.
- E. Combine the two Lambda functions into one Lambda functio
- F. Deploy the Lambda function as a single .zip file archive.
- G. Download the Python library to an S3 bucke
- 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 127

A developer is creating a serverless application that uses an AWS Lambda function. The developer will use AWS CloudFormation to deploy the application. The application will write logs to Amazon CloudWatch Logs. The developer has created a log group in a CloudFormation template for the application to use. The developer needs to modify the CloudFormation template to make the name of the log group available to the application at runtime. Which solution will meet this requirement?

- A. Use the AWS::Include transform in CloudFormation to provide the log group's name to the application.
- B. Pass the log group's name to the application in the user data section of the CloudFormation template.
- C. Use the CloudFormation template's Mappings section to specify the log group's name for the application.
- D. Pass the log group's Amazon Resource Name (ARN) as an environment variable to the Lambda function.

Answer: D

Explanation:

FunctionName: MyLambdaFunction Code:

S3Bucket: your-lambda-code-bucket S3Key: lambda-code.zip

Runtime: nodejs14.x # Specify the desired runtime for your Lambda function Environment:

Variables:

LOG_GROUP_NAME: !Ref MyLogGroup <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resource-logs-loggroup.html>

NEW QUESTION 132

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 custom 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 134

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 135

A developer is creating a template that uses AWS CloudFormation to deploy an application. The application is serverless and uses Amazon API Gateway, Amazon DynamoDB, and AWS Lambda.

Which AWS service or tool should the developer use to define serverless resources in YAML?

- A. CloudFormation serverless intrinsic functions
- B. AWS Elastic Beanstalk
- C. AWS Serverless Application Model (AWS SAM)
- D. AWS Cloud Development Kit (AWS CDK)

Answer: C

Explanation:

AWS Serverless Application Model (AWS SAM) is an open-source framework that enables developers to build and deploy serverless applications on AWS. AWS SAM uses a template specification that extends AWS CloudFormation to simplify the

definition of serverless resources such as API Gateway, DynamoDB, and Lambda. The developer can use AWS SAM to define serverless resources in YAML and deploy them using the AWS SAM CLI.

References:

- ? [What Is the AWS Serverless Application Model (AWS SAM)? - AWS Serverless Application Model]
- ? [AWS SAM Template Specification - AWS Serverless Application Model]

NEW QUESTION 139

A developer is building a microservices-based application by using Python on AWS and several AWS services. The developer must use AWS X-Ray. The developer views the service map by using the console to view the service dependencies. During testing, the developer notices that some services are missing from the service map.

What can the developer do to ensure that all services appear in the X-Ray service map?

- A. Modify the X-Ray Python agent configuration in each service to increase the sampling rate.
- B. Instrument the application by using the X-Ray SDK for Python.
- C. Install the X-Ray SDK for all the services that the application uses.
- D. Enable X-Ray data aggregation in Amazon CloudWatch Logs for all the services that the application uses.
- E. Increase the X-Ray service map timeout value in the X-Ray console.

Answer: B

Explanation:

The X-Ray SDK for Python provides libraries and tools for instrumenting Python applications that use AWS services and other AWS X-Ray integrations. By installing the X-Ray SDK for all the services that the application uses, the developer can ensure that all the service dependencies are captured and displayed in the X-Ray service map. The other options are not relevant or effective for this scenario. References

- ? AWS X-Ray SDK for Python
- ? Instrumenting a Python Application

NEW QUESTION 142

A company is preparing to migrate an application to the company's first AWS environment. Before this migration, a developer is creating a proof-of-concept application to validate a model for building and deploying container-based applications on AWS.

Which combination of steps should the developer take to deploy the containerized proof-of-concept application with the LEAST operational effort? (Select TWO.)

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

To deploy a containerized application on AWS with the least operational effort, the developer should package the application into a container image by using the Docker CLI and upload the image to Amazon ECR, which is a fully managed container registry service. Then, the developer should deploy the application to Amazon ECS on AWS Fargate, which is a serverless compute engine for containers that eliminates the need to provision and manage servers or clusters. Amazon ECS will automatically scale, load balance, and monitor the application. References

- ? How to Deploy Docker Containers | AWS
- ? Deploy a Web App Using AWS App Runner
- ? How to Deploy Containerized Apps on AWS Using ECR and Docker

NEW QUESTION 146

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 149

A company has an Amazon S3 bucket containing premier content that it intends to make available to only paid subscribers of its website. The S3 bucket currently has default permissions of all objects being private to prevent inadvertent exposure of the premier content to non-paying website visitors.

How can the company limit the ability to download a premier content file in the S3 Bucket to paid subscribers only?

- A. Apply a bucket policy that allows anonymous users to download the content from the S3 bucket.
- B. Generate a pre-signed object URL for the premier content file when a paid subscriber requests a download.

- C. Add a Docket policy that requires multi-factor authentication for request to access the S3 bucket objects.
- D. Enable server-side encryption on the S3 bucket for data protection against the non- paying website visitors.

Answer: B

Explanation:

This solution will limit the ability to download a premier content file in the S3 bucket to paid subscribers only because it uses a pre-signed object URL that grants temporary access to an S3 object for a specified duration. The pre-signed object URL can be generated by the company's website when a paid subscriber requests a download, and can be verified by Amazon S3 using the signature in the URL. Option A is not optimal because it will allow anyone to download the content from the S3 bucket without verifying their subscription status. Option C is not optimal because it will require additional steps and costs to configure multi-factor authentication for accessing the S3 bucket objects, which may not be feasible or user-friendly for paid subscribers. Option D is not optimal because it will not prevent non-paying website visitors from accessing the S3 bucket objects, but only encrypt them at rest.

References: Share an Object with Others, [Using Amazon S3 Pre-Signed URLs]

NEW QUESTION 153

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 m 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 158

A company is building a scalable data management solution by using AWS services to improve the speed and agility of development. The solution will ingest large volumes of data from various sources and will process this data through multiple business rules and transformations.

The solution requires business rules to run in sequence and to handle reprocessing of data if errors occur when the business rules run. The company needs the solution to be scalable and to require the least possible maintenance.

Which AWS service should the company use to manage and automate the orchestration of the data flows to meet these requirements?

- A. AWS Batch
- B. AWS Step Functions
- C.

AWS Glue

- D. AWS Lambda

Answer: B

Explanation:

<https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html>

NEW QUESTION 159

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 161

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

Which solution will meet these requirements MOST efficiently?

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

Answer: A

Explanation:

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

Reference: Using AWS Lambda environment variables

NEW QUESTION 164

A developer is using an AWS Lambda function to generate avatars for profile pictures that are uploaded to an Amazon S3 bucket. The Lambda function is automatically invoked for profile pictures that are saved under the /original/ S3 prefix. The developer notices that some pictures cause the Lambda function to time out. The developer wants to implement a fallback mechanism by using another Lambda function that resizes the profile picture.

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

- A. Set the image resize Lambda function as a destination of the avatar generator Lambda function for the events that fail processing.
- B. Create an Amazon Simple Queue Service (Amazon SQS) queue
- C. Set the SQS queue as a destination with an on failure condition for the avatar generator Lambda function
- D. Configure the image resize Lambda function to poll from the SQS queue.
- E. Create an AWS Step Functions state machine that invokes the avatar generator Lambda function and uses the image resize Lambda function as a fallback
- F. Create an Amazon EventBridge rule that matches events from the S3 bucket to invoke the state machine.
- G. Create an Amazon Simple Notification Service (Amazon SNS) topic
- H. Set the SNS topic as a destination with an on failure condition for the avatar generator Lambda function
- I. Subscribe the image resize Lambda function to the SNS topic.

Answer: A

Explanation:

The solution that will meet the requirements with the least development effort is to set the image resize Lambda function as a destination of the avatar generator Lambda function for the events that fail processing. This way, the fallback mechanism is automatically triggered by the Lambda service without requiring any additional components or configuration. The other options involve creating and managing additional resources such as queues, topics, state machines, or rules, which would increase the complexity and cost of the solution.

Reference: Using AWS Lambda destinations

NEW QUESTION 169

An AWS Lambda function requires read access to an Amazon S3 bucket and requires read/write access to an Amazon DynamoDB table. The correct IAM policy already exists.

What is the MOST secure way to grant the Lambda function access to the S3 bucket and the DynamoDB table?

- A. Attach the existing IAM policy to the Lambda function.
- B. Create an IAM role for the Lambda function. Attach the existing IAM policy to the role. Attach the role to the Lambda function.
- C. Create an IAM user with programmatic access. Attach the existing IAM policy to the user.

- D. Add the user access key ID and secret access key as environment variables in the Lambda function.
- E. Add the AWS account root user access key ID and secret access key as encrypted environment variables in the Lambda function

Answer: B

Explanation:

The most secure way to grant the Lambda function access to the S3 bucket and the DynamoDB table is to create an IAM role for the Lambda function and attach the existing IAM policy to the role. This way, you can use the principle of least privilege and avoid exposing any credentials in your function code or environment variables. You can also leverage the temporary security credentials that AWS provides to the Lambda function when it assumes the role. This solution follows the best practices for working with AWS Lambda functions¹ and designing and architecting with DynamoDB². References

? Best practices for working with AWS Lambda functions

? Best practices for designing and architecting with DynamoDB

NEW QUESTION 171

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