

Exam Questions DVA-C02

DVA-C02

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NEW QUESTION 1

A developer is creating a mobile app that calls a backend service by using an Amazon API Gateway REST API. For integration testing during the development phase, the developer wants to simulate different backend responses without invoking the backend service. Which solution will meet these requirements with the LEAST operational overhead?

- A. Create an AWS Lambda function
- B. Use API Gateway proxy integration to return constant HTTP responses.
- C. Create an Amazon EC2 instance that serves the backend REST API by using an AWS CloudFormation template.
- D. Customize the API Gateway stage to select a response type based on the request.
- E. Use a request mapping template to select the mock integration response.

Answer: D

Explanation:

Amazon API Gateway supports mock integration responses, which are predefined responses that can be returned without sending requests to a backend service. Mock integration responses can be used for testing or prototyping purposes, or for simulating different backend responses based on certain conditions. A request mapping template can be used to select a mock integration response based on an expression that evaluates some aspects of the request, such as headers, query strings, or body content. This solution does not require any additional resources or code changes and has the least operational overhead. Reference: Set up mock integrations for an API Gateway REST API

<https://docs.aws.amazon.com/apigateway/latest/developerguide/how-to-mock-integration.html>

NEW QUESTION 2

A developer is deploying a company's application to Amazon EC2 instances. The application generates gigabytes of data files each day. The files are rarely accessed but the files must be available to the application's users within minutes of a request during the first year of storage. The company must retain the files for 7 years.

How can the developer implement the application to meet these requirements MOST cost-effectively?

- A. Store the files in an Amazon S3 bucket. Use the S3 Glacier Instant Retrieval storage class. Create an S3 Lifecycle policy to transition the files to the S3 Glacier Deep Archive storage class after 1 year.
- B. Store the files in an Amazon S3 bucket.
- C. Use the S3 Standard storage class.
- D. Create an S3 Lifecycle policy to transition the files to the S3 Glacier Flexible Retrieval storage class after 1 year.
- E. Store the files on an Amazon Elastic Block Store (Amazon EBS) volume. Use Amazon Data Lifecycle Manager (Amazon DLM) to create snapshots of the EBS volumes and to store those snapshots in Amazon S3.
- F. Store the files on an Amazon Elastic File System (Amazon EFS) mount.
- G. Configure EFS lifecycle management to transition the files to the EFS Standard-Infrequent Access (Standard-IA) storage class after 1 year.

Answer: A

Explanation:

Amazon S3 Glacier Instant Retrieval is an archive storage class that delivers the lowest-cost storage for long-lived data that is rarely accessed and requires retrieval in

milliseconds. With S3 Glacier Instant Retrieval, you can save up to 68% on storage costs compared to using the S3 Standard-Infrequent Access (S3 Standard-IA) storage class, when your data is accessed once per quarter. <https://aws.amazon.com/s3/storage-classes/glacier/instant-retrieval/>

NEW QUESTION 3

A developer needs to perform geographic load testing of an API. The developer must deploy resources to multiple AWS Regions to support the load testing of the API.

How can the developer meet these requirements without additional application code?

- A. Create and deploy an AWS Lambda function in each desired Region.
- B. Configure the Lambda function to create a stack from an AWS CloudFormation template in that Region when the function is invoked.
Create an AWS CloudFormation template that defines the load test resource.
- B:** Use the AWS CLI create-stack-set command to create a stack set in the desired Regions.
- E. Create an AWS Systems Manager document that defines the resource.
- F. Use the document to create the resources in the desired Regions.
- G. Create an AWS CloudFormation template that defines the load test resource.
- H. Use the AWS CLI deploy command to create a stack from the template in each Region.

Answer: B

Explanation:

AWS CloudFormation is a service that allows developers to model and provision AWS resources using templates. A CloudFormation template can define the load test resources, such as EC2 instances, load balancers, and Auto Scaling groups. A CloudFormation stack set is a collection of stacks that can be created and managed from a single template in multiple Regions and accounts. The AWS CLI create-stack-set command can be used to create a stack set from a template and specify the Regions where the stacks should be created. Reference: Working with AWS CloudFormation stack sets

NEW QUESTION 4

A company has an application that uses Amazon Cognito user pools as an identity provider. The company must secure access to user records. The company has set up multi-factor authentication (MFA). The company also wants to send a login activity notification by email every time a user logs in.

What is the MOST operationally efficient solution that meets this requirement?

- A. Create an AWS Lambda function that uses Amazon Simple Email Service (Amazon SES) to send the email notification.
- B. Add an Amazon API Gateway API to invoke the function.
- C. Call the API from the client side when login confirmation is received.
- D. Create an AWS Lambda function that uses Amazon Simple Email Service (Amazon SES) to send the email notification.
- E. Add an Amazon Cognito post authentication Lambda trigger for the function.

- F. Create an AWS Lambda function that uses Amazon Simple Email Service (Amazon SES) to send the email notification
- G. Create an Amazon CloudWatch Logs log subscription filter to invoke the function based on the login status.
- H. Configure Amazon Cognito to stream all logs to Amazon Kinesis Data Firehose
- I. Create an AWS Lambda function to process the streamed logs and to send the email notification based on the login status of each user.

Answer: B

Explanation:

Amazon Cognito user pools support Lambda triggers, which are custom functions that can be executed at various stages of the user pool workflow. A post authentication Lambda trigger can be used to perform custom actions after a user is authenticated, such as sending an email notification. Amazon SES is a cloud-based email sending service that can be used to send transactional or marketing emails. A Lambda function can use the Amazon SES API to send an email to the user's email address after the user logs in successfully. Reference: Post authentication Lambda trigger

NEW QUESTION 5

A developer is building an application that uses AWS API Gateway APIs, AWS Lambda function, and AWS DynamoDB tables. The developer uses the AWS Serverless Application Model (AWS SAM) to build and run serverless applications on AWS. Each time the developer pushes 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 6

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 API
- 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 API
- 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 7

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 OpenSearch Service internal master user credentials.

What is the MOST secure way to pass these credentials to the Lambda 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 variable
- B. Set the NoEcho 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 parameter
- D. In AWS Systems Manager Parameter Store
- E. Set the NoEcho attribute to true
- F. Create an IAM role that has the `ssm:GetParameter` permission
- G. Assign the role to the Lambda function
- H. Store the parameter name as the Lambda function's environment variable
- I. Resolve the parameter's value at runtime.

- J. 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 variable. We encrypt the parameters value by using the AWS Key Management Service (AWS KMS) encrypt command.
- K. Use CloudFormation to create an AWS Secrets Manager secret.
- L. Use a CloudFormation dynamic reference to retrieve the secret's value for the OpenSearch Service domain's MasterUserOptions.
- M. Create an IAM role that has the secretsmanager:GetSecretValue permission.
- N. Assign the role to the Lambda function. Store the secret's name as the Lambda function's environment variable.
- O. Resolve 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 8

A developer is deploying a new application to Amazon Elastic Container Service (Amazon ECS). The developer needs to securely store and retrieve different types of variables. These variables include authentication information for a remote API, the URL for the API, and credentials. The authentication information and API URL must be available to all current and future deployed versions of the application across development, testing, and production environments. How should the developer retrieve the variables with the FEWEST application changes?

- A. Update the application to retrieve the variables from AWS Systems Manager Parameter Store.
- B. Use unique paths in Parameter Store for each variable in each environment.
- C. Store the credentials in AWS Secrets Manager in each environment.
- D. Update the application to retrieve the variables from AWS Key Management Service (AWS KMS). Store the API URL and credentials as unique keys for each environment.
- E. Update the application to retrieve the variables from an encrypted file that is stored with the application.
- F. Store the API URL and credentials in unique files for each environment.
- G. Update the application to retrieve the variables from each of the deployed environments.
- H. Define the authentication information and API URL in the ECS task definition as unique names during the deployment process.

Answer: A

Explanation:

AWS Systems Manager Parameter Store is a service that provides secure, hierarchical storage for configuration data management and secrets management. The developer can update the application to retrieve the variables from Parameter Store by using the AWS SDK or the AWS CLI. The developer can use unique paths in Parameter Store for each variable in each environment, such as /dev/api-url, /test/api-url, and /prod/api-url. The developer can also store the credentials in AWS Secrets Manager, which is integrated with Parameter Store and provides additional features such as automatic rotation and encryption.

References:

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

? [Parameter Store - AWS Systems Manager]

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

NEW QUESTION 9

A developer needs to deploy an application running on AWS Fargate using Amazon ECS. The application has environment variables that must be passed to a container for the application to initialize.

How should the environment variables be passed to the container?

- A. Define an array that includes the environment variables under the environment parameter within the service definition.
- B. Define an array that includes the environment variables under the environment parameter within the task definition.
- C. Define an array that includes the environment variables under the entryPoint parameter within the task definition.
- D. Define an array that includes the environment variables under the entryPoint parameter within the service definition.

Answer: B

Explanation:

This solution allows the environment variables to be passed to the container when it is launched by AWS Fargate using Amazon ECS. The task definition is a text file that describes one or more containers that form an application. It contains various parameters for configuring the containers, such as CPU and memory requirements, network mode, and environment variables. The environment parameter is an array of key-value pairs that specify environment variables to pass to a container. Defining an array that includes the environment variables under the entryPoint parameter within the task definition

will not pass them to the container, but use them as command-line arguments for overriding the default entry point of a container.

Defining an array that includes the environment variables under the environment or entryPoint parameter within the service definition will not pass them to the container, but cause an error because these parameters are not valid for a service definition.

Reference: [Task Definition Parameters], [Environment Variables]

NEW QUESTION 10

A mobile app stores blog posts in an Amazon DynamoDB table. Millions of posts are added every day and each post represents a single item in the table. The mobile app requires only recent posts. Any post that is older than 48 hours can be removed.

What is the MOST cost-effective way to delete posts that are older than 48 hours?

- A. For each item add a new attribute of type String that has a timestamp that is set to the blog post creation time.
- B. Create a script to find old posts with a table scan and remove posts that are older than 48 hours by using the Batch Write Item API operation.
- C. Schedule a cron job on an Amazon EC2 instance once an hour to start the script.
- D. For each item add a new attribute of type

- E. String that has a timestamp that its set to the blog post creation tim
- F. Create a script to find old posts with a table scan and remove posts that are Oder than 48 hours by using the Batch Write item API operatin
- G. Place the script in a container imag
- H. Schedule an Amazon Elastic Container Service (Amazon ECS) task on AWS Far gate that invokes the container every 5 minutes.
- I. For each item, add a new attribute of type Date that has a timestamp that is set to 48 hours after the blog post creation tim
- J. Create a global secondary index (GSI) that uses the new attribute as a sort ke
- K. Create an AWS Lambda function that references the GSI and removes expired items by using the Batch Write item API operation Schedule me function with an Amazon CloudWatch event every minute.
- L. For each item add a new attribute of typ
- M. Number that has timestamp that is set to 48 hours after the blog pos
- N. creation time Configure the DynamoDB table with a TTL that references the new attribute.

Answer: D

Explanation:

This solution will meet the requirements by using the Time to Live (TTL) feature of DynamoDB, which enables automatically deleting items from a table after a certain time period. The developer can add a new attribute of type Number that has a timestamp that is set to 48 hours after the blog post creation time, which represents the expiration time of the item. The developer can configure the DynamoDB table with a TTL that references the new attribute, which instructs DynamoDB to delete the item when the current time is greater than or equal to the expiration time. This solution is also cost- effective as it does not incur any additional charges for deleting expired items. Option A is not optimal because it will create a script to find and remove old posts with a table scan and a batch write item API operation, which may consume more read and write capacity units and incur more costs. Option B is not optimal because it will use Amazon Elastic Container Service (Amazon ECS) and AWS Fargate to run the script, which may introduce additional costs and complexity for managing and scaling containers. Option C is not optimal because it will create a global secondary index (GSI) that uses the expiration time as a sort key, which may consume more storage space and incur more costs.

References: Time To Live, Managing DynamoDB Time To Live (TTL)

NEW QUESTION 10

A company has an application that runs across multiple AWS Regions. The application is experiencing performance issues at irregular intervals. A developer must use AWS X-Ray to implement distributed tracing for the application to troubleshoot the root cause of the performance issues. What should the developer do to meet this requirement?

- A. Use the X-Ray console to add annotations for AWS services and user-defined services
- B. Use Region annotation that X-Ray adds automatically for AWS services Add Region annotation for user-defined services
- C. Use the X-Ray daemon to add annotations for AWS services and user-defined services
- D. Use Region annotation that X-Ray adds automatically for user-defined services Configure X-Ray to add Region annotation for AWS services

Answer: B

Explanation:

AWS X-Ray automatically adds Region annotation for AWS services that are integrated with X-Ray. This annotation indicates the AWS Region where the service is running. The developer can use this annotation to filter and group traces by Region and identify any performance issues related to cross-Region calls. The developer can also add Region annotation for user-defined services by using the X-Ray SDK. This option enables the developer to implement distributed tracing for the application that runs across multiple AWS Regions. References

? AWS X-Ray Annotations

? AWS X-Ray Concepts

NEW QUESTION 11

A developer is optimizing an AWS Lambda function and wants to test the changes in production on a small percentage of all traffic. The Lambda function serves requests to a REST API in Amazon API Gateway. The developer needs to deploy their changes and perform a test in production without changing the API Gateway URL. Which solution will meet these requirements?

- A. Define a function version for the currently deployed production Lambda functio
- B. Update the API Gateway endpoint to reference the new Lambda function versio
- C. Upload and publish the optimized Lambda function cod
- D. On the production API Gateway stage, define a canary release and set the percentage of traffic to direct to the canary releas
- E. Update the API Gateway endpoint to use the \$LATEST version of the Lambda functio
- F. Publish the API to the canary stage.
- G. Define a function version for the currently deployed production Lambda functio
- H. Update the API Gateway endpoint to reference the new Lambda function versio
- I. Upload and publish the optimized Lambda function cod
- J. Update the API Gateway endpoint to use the \$LATEST version of the Lambda functio
- K. Deploy a new API Gateway stage.
- L. Define an alias on the \$LATEST version of the Lambda functio
- M. Update the API Gateway endpoint to reference the new Lambda function alia
- N. Upload and publish the optimized Lambda function cod
- O. On the production API Gateway stage, define a canary release and set the percentage of traffic to direct to the canary releas
- P. Update the API Gateway endpoint to use the SLAT EST version of the Lambda functio
- Q. Publish to the canary stage.
- R. Define a function version for the currently deployed production Lambda functio
- S. Update the API Gateway endpoint to reference the new Lambda function versio
- T. Upload and publish the optimized Lambda function cod
- . Update the API Gateway endpoint to use the\$LATEST version of the Lambda functio
- . Deploy the API to the production API Gateway stage.

Answer: C

Explanation:

? A Lambda alias is a pointer to a specific Lambda function version or another alias1. A Lambda alias allows you to invoke different versions of a function using the same name1. You can also split traffic between two aliases by assigning weights to them1.

? In this scenario, the developer needs to test their changes in production on a small percentage of all traffic without changing the API Gateway URL. To achieve

this, the developer can follow these steps:

? By using this solution, the developer can test their changes in production on a small percentage of all traffic without changing the API Gateway URL. The developer can also monitor and compare metrics between the canary and production releases, and promote or disable the canary as needed2.

NEW QUESTION 15

A company is building a serverless application on AWS. The application uses an AWS Lambda function to process customer orders 24 hours a day, 7 days a week. The Lambda function calls an external vendor's HTTP API to process payments.

During load tests, a developer discovers that the external vendor payment processing API occasionally times out and returns errors. The company expects that some payment processing API calls will return errors.

The company wants the support team to receive notifications in near real time only when

the payment processing external API error rate exceed 5% of the total number of transactions in an hour. Developers need to use an existing Amazon Simple Notification Service (Amazon SNS) topic that is configured to notify the support team.

Which solution will meet these requirements?

- A. Write the results of payment processing API calls to Amazon CloudWatc
- B. Use Amazon CloudWatch Logs Insights to query the CloudWatch log
- C. Schedule the Lambda function to check the CloudWatch logs and notify the existing SNS topic.
- D. Publish custom metrics to CloudWatch that record the failures of the external payment processing API call
- E. Configure a CloudWatch alarm to notify the existing SNS topic when error rate exceeds the specified rate.
- F. Publish the results of the external payment processing API calls to a new Amazon SNS topi
- G. Subscribe the support team members to the new SNS topic.
- H. Write the results of the external payment processing API calls to Amazon S3. Schedule an Amazon Athena query to run at regular interval
- I. Configure Athena to send notifications to the existing SNS topic when the error rate exceeds the specified rate.

Answer: B

Explanation:

Amazon CloudWatch is a service that monitors AWS resources and applications. The developer can publish custom metrics to CloudWatch that record the failures of the external payment processing API calls. The developer can configure a CloudWatch alarm to notify the existing SNS topic when the error rate exceeds 5% of the total number of transactions in an hour. This solution will meet the requirements in a near real-time and scalable way.

References:

? [What Is Amazon CloudWatch? - Amazon CloudWatch]

? [Publishing Custom Metrics - Amazon CloudWatch]

? [Creating Amazon CloudWatch Alarms - Amazon CloudWatch]

NEW QUESTION 16

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 m 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 18

A developer needs to migrate an online retail application to AWS to handle an anticipated increase in traffic. The application currently runs on two servers: one server for the web application and another server for the database. The web server renders webpages and manages session state in memory. The database server hosts a MySQL database that contains order details. When traffic to the application is heavy, the memory usage for the web server approaches 100% and the application slows down considerably.

The developer has found that most of the memory increase and performance decrease is related to the load of managing additional user sessions. For the web server migration, the developer will use Amazon EC2 instances with an Auto Scaling group behind an Application Load Balancer.

Which additional set of changes should the developer make to the application to improve the application's performance?

- A. Use an EC2 instance to host the MySQL databas
- B. Store the session data and the application data in the MySQL database.
- C. Use Amazon ElastiCache for Memcached to store and manage the session dat
- D. Use an Amazon RDS for MySQL DB instance to store the application data.
- E. Use Amazon ElastiCache for Memcached to store and manage the session data and the application data.
- F. Use the EC2 instance store to manage the session dat
- G. Use an Amazon RDS for MySQL DB instance to store the application data.

Answer: B

Explanation:

Using Amazon ElastiCache for Memcached to store and manage the session data will reduce the memory load and improve the performance of the web server. Using Amazon RDS for MySQL DB instance to store the application data will provide a scalable, reliable, and managed database service. Option A is not optimal because it does not address the memory issue of the web server. Option C is not optimal because it does not provide a persistent storage for the application data. Option D is not optimal because it does not provide a high availability and durability for the session data.

References: Amazon ElastiCache, Amazon RDS

NEW QUESTION 22

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 26

A company has a multi-node Windows legacy application that runs on premises. The application uses a network shared folder as a centralized configuration repository to store configuration files in .xml format. The company is migrating the application to Amazon EC2 instances. As part of the migration to AWS, a developer must identify a solution that provides high availability for the repository.

Which solution will meet this requirement MOST cost-effectively?

- A. Mount an Amazon Elastic Block Store (Amazon EBS) volume onto one of the EC2 instances
- B. Deploy a file system on the EBS volume
- C. Use the host operating system to share a folder
- D. Update the application code to read and write configuration files from the shared folder.
- E. Deploy a micro EC2 instance with an instance store volume
- F. Use the host operating system to share a folder
- G. Update the application code to read and write configuration files from the shared folder.
- H. Create an Amazon S3 bucket to host the repository
- I. Migrate the existing .xml files to the S3 bucket
- J. Update the application code to use the AWS SDK to read and write configuration files from Amazon S3.
- K. Create an Amazon S3 bucket to host the repository
- L. Migrate the existing .xml files to the S3 bucket
- M. Mount the S3 bucket to the EC2 instances as a local volume
- N. Update the application code to read and write configuration files from the disk.

Answer: C

Explanation:

Amazon S3 is a service that provides highly scalable, durable, and secure object storage. The developer can create an S3 bucket to host the repository and migrate the existing .xml files to the S3 bucket. The developer can update the application code to use the AWS SDK to read and write configuration files from S3. This solution will meet the requirement of high availability for the repository in a cost-effective way.

References:

? [Amazon Simple Storage Service (S3)]

? [Using AWS SDKs with Amazon S3]

NEW QUESTION 30

A company needs to deploy all its cloud resources by using AWS CloudFormation templates. A developer must create an Amazon Simple Notification Service (Amazon SNS) automatic notification to help enforce this rule. The developer creates an SNS topic and subscribes the email address of the company's security team to the SNS topic.

The security team must receive a notification immediately if an IAM role is created without the use of CloudFormation.

Which solution will meet this requirement?

- A. Create an AWS Lambda function to filter events from CloudTrail if a role was created without CloudFormation. Configure the Lambda function to send a message to the SNS topic.

function to publish to the SNS topic

B. Create an Amazon EventBridge schedule to invoke the Lambda function every 15 minutes

C. Create an AWS Fargate task in Amazon Elastic Container Service (Amazon ECS) to filter events from CloudTrail if a role was created without CloudFormation
 Configure the Fargate task to publish to the SNS topic Create an Amazon EventBridge schedule to run the Fargate task every 15 minutes

D. Launch an Amazon EC2 instance that includes a script to filter events from CloudTrail if a role was created without CloudFormation

E. Configure the script to publish to the SNS topic

F. Create a cron job to run the script on the EC2 instance every 15 minutes.

G. Create an Amazon EventBridge rule to filter events from CloudTrail if a role was created without CloudFormation Specify the SNS topic as the target of the EventBridge rule.

Answer: D

Explanation:

Creating an Amazon EventBridge rule is the most efficient and scalable way to monitor and react to events from CloudTrail, such as the creation of an IAM role without CloudFormation. EventBridge allows you to specify a filter pattern to match the events you are interested in, and then specify an SNS topic as the target to send notifications. This solution does not require any additional resources or code, and it can trigger notifications in near real-time. The other solutions involve creating and managing additional resources, such as Lambda functions, Fargate tasks, or EC2 instances, and they rely on polling CloudTrail events every 15 minutes, which can introduce delays and increase costs. References

? Using Amazon EventBridge rules to process AWS CloudTrail events

? Using AWS CloudFormation to create and manage AWS Batch resources

? How to use AWS CloudFormation to configure auto scaling for Amazon Cognito and AWS AppSync

? Using AWS CloudFormation to automate the creation of AWS WAF web ACLs, rules, and conditions

NEW QUESTION 35

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

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

Which solution will meet these requirements?

A. Create sample events based on the Lambda documentation

B. Create automated test scripts that use the `cdk local invoke` command to invoke the Lambda function

C. Check the 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 environment

E. Create sample events based on the Lambda Documentation Invoke the handler function by using a unit testing framework

framework for the other developers on the team

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 SAM) CLI tool Use the `Sam local generate-event` command to generate sample events for the 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 documentation

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 other 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 38

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

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

A. Create an EC2 instance profile and role with an appropriate policy Associate the role with the EC2 instances

B. Create an IAM user with an appropriate policy

C. Store the access key ID and secret access key on the EC2 instances

D. Modify the application to use the S3 `GeneratePresignedUrl` API call

E. Modify the application to use the S3 `GetObject` API call and to return the object handle to the user

F. Modify the application to delegate requests to the S3 bucket.

Answer: AC

Explanation:

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

can then use it to download the object within a specified time period. References

? Use Amazon S3 with Amazon EC2

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

? Sharing an Object with Others

NEW QUESTION 43

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

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

A. Save the secrets in a text file and store the text file in Amazon S3. Provision a customer managed key. Use the key for secret encryption in Amazon S3. Read the contents of the text file and read the export as environment variables. Configure S3 Object Lambda to rotate the text file every month.

B. Save the secrets as strings in AWS Systems Manager Parameter Store and use the default AWS Key Management Service (AWS KMS) key. Configure an Amazon EC2 user data script to retrieve the secrets during the startup and export as environment variables. Configure an AWS Lambda function to rotate the secrets in Parameter Store every month.

C. Save the secrets as base64 encoded environment variables in the application properties.

D. Retrieve the secrets during the application startup.

E. Reference the secrets in the application code.

F. Write a script to rotate the secrets saved as environment variables.

G. Store the secrets in AWS Secrets Manager. Provision a new customer master key. Use the key to encrypt the secrets. Enable automatic rotation. Configure an Amazon EC2 user data script to programmatically retrieve the secrets during the startup and export as environment variables.

Answer: D

Explanation:

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

? What Is AWS Secrets Manager? - AWS Secrets Manager

? Rotating Your AWS Secrets Manager Secrets - AWS Secrets Manager

? Retrieving a Secret - AWS Secrets Manager

NEW QUESTION 48

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 API.

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 API.

F. Ask the customers to add the INVALIDATE_CACHE query string parameter when they make an API call.

Answer: D

NEW QUESTION 49

A developer is creating a simple proof-of-concept demo by using AWS CloudFormation and AWS Lambda functions. The demo will use a CloudFormation template to deploy an existing Lambda function. The Lambda function uses deployment packages and dependencies stored in Amazon S3. The developer defined an AWS Lambda Function resource in a CloudFormation template. The developer needs to add the S3 bucket to the CloudFormation template.

What should the developer do to meet these requirements with the LEAST development effort?

A. Add the function code in the CloudFormation template inline as the code property.

B. Add the function code in the CloudFormation template as the ZipFile property.

C. Find the S3 key for the Lambda function. Add the S3 key as the ZipFile property in the CloudFormation template.

D. Add the relevant key and bucket to the S3Bucket and S3Key properties in the CloudFormation template.

Answer: D

Explanation:

The easiest way to add the S3 bucket to the CloudFormation template is to use the S3Bucket and S3Key properties of the AWS::Lambda::Function resource. These properties specify the name of the S3 bucket and the location of the .zip file that contains the function code and dependencies. This way, the developer does not need to modify the function code or upload it to a different location. The other options are either not feasible or not efficient.

The code property can only be used for inline code, not for code stored in S3. The ZipFile property can only be used for code that is less than 4096 bytes, not for code that has dependencies. Finding the S3 key for the Lambda function and adding it as the ZipFile property would not work, as the ZipFile property expects a base64-encoded .zip file, not an S3 location. References:

? AWS::Lambda::Function - AWS CloudFormation

? Deploying Lambda functions as .zip file archives

? AWS Lambda Function Code - AWS CloudFormation

NEW QUESTION 51

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

What is the MOST secure way to resolve this issue?

A. Update the IAM instance profile that is attached to the EC2 instance to include the S3:* permission for the S3 bucket.

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

Answer: B

Explanation:

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

NEW QUESTION 55

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 56

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 57

A company is building a compute-intensive application that will run on a fleet of Amazon EC2 instances. The application uses attached Amazon Elastic Block Store (Amazon EBS) volumes for storing data. The Amazon EBS volumes will be created at time of initial deployment. The application will process sensitive information. All of the data must be encrypted. The solution should not impact the application's performance. Which solution will meet these requirements?

- A. Configure the fleet of EC2 instances to use encrypted EBS volumes to store data.
- B. Configure the application to write all data to an encrypted Amazon S3 bucket.
- C. Configure a custom encryption algorithm for the application that will encrypt and decrypt all data.
- D. Configure an Amazon Machine Image (AMI) that has an encrypted root volume and store the data to ephemeral disks.

Answer: A

Explanation:

Amazon Elastic Block Store (Amazon EBS) provides block level storage volumes for use with Amazon EC2 instances. Amazon EBS encryption offers a straightforward encryption solution for your EBS resources associated with your EC2 instances. When you create an encrypted EBS volume and attach it to a supported

instance type, the following types of data are encrypted: Data at rest inside the volume, all data moving between the volume and the instance, all snapshots created from the volume, and all volumes created from those snapshots¹. Therefore, option A is correct.

NEW QUESTION 61

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 62

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

How should developer resolve this issue MOST cost-effectively?

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

Answer: A

Explanation:

Amazon Simple Queue Service (Amazon SQS) is a fully managed queue service that allows you to de-couple and scale for applications¹. Amazon SQS offers two types of queues: Standard and FIFO (First In First Out) queues¹. The FIFO queue uses

the messageDeduplicationId property to treat messages with the same value as duplicate².

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

NEW QUESTION 66

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

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

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

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

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

NEW QUESTION 71

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 an 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 tas
- B. Add a catcher to the GetResource tas
- C. Configure the catcher with an error type of TooManyRequestsExceptio
- 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 TooManyRequestsExceptio
- 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 76

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 77

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.
 Create one Amazon Simple Notification Service (Amazon SNS) topic
- I.

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 82

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

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

Which solution will meet these requirements?

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

Answer: B

Explanation:

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

NEW QUESTION 84

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 89

A financial company must store original customer records for 10 years for legal reasons. A complete record contains personally identifiable information (PII).

According to local regulations, PII is available to only certain people in the company and must not be shared with third parties. The company needs to make the records available to third-party organizations for statistical analysis without sharing the PII.

A developer wants to store the original immutable record in Amazon S3. Depending on who accesses the S3 document, the document should be returned as is or with all the PII removed. The developer has written an AWS Lambda function to remove the PII from the document. The function is named removePii.

What should the developer do so that the company can meet the PII requirements while maintaining only one copy of the document?

- A. Set up an S3 event notification that invokes the removePii function when an S3 GET request is made
- B. Call Amazon S3 by using a GET request to access the object without PII.

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

Answer: C

Explanation:

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

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

NEW QUESTION 94

For a deployment using AWS Code Deploy, 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 97

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 98

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 102

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

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

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

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

Answer: D

Explanation:

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

NEW QUESTION 107

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 Canaryl OPercent10Minute
- B. Set the AutoPublishAlias property to the Lambda alias.
- C. Set the Deployment Preference Type to Linearl OPercentEverylOMinute
- D. Set AutoPublishAlias property to the Lambda alias.
- E. Set the Deployment Preference Type to Canaryl OPercentlOMinute
- F. Set the PreTraffic and PostTraffic properties to the Lambda alias.
- G. Set the Deployment Preference Type to Linearl OPercentEvery10Minute
- H. Set PreTraffic and PostTraffic properties to the Lambda alias.

Answer: A

Explanation:

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

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

NEW QUESTION 109

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 110

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

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

Which solutions will meet these requirements?

- A. Write the encrypted key from the GenerateDataKey API to disk for later us
- B. Use the plaintext key from the GenerateDataKey API and a symmetric encryption algorithm to encrypt the file.
- C. Write the plain text key from the GenerateDataKey API to disk for later us

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

Answer: A

Explanation:

? The GenerateDataKey API returns a data key that is encrypted under a symmetric encryption KMS key that you specify, and a plaintext copy of the same data key1. The data key is a random byte string that can be used with any standard encryption algorithm, such as AES or SM42. The plaintext data key can be used to encrypt or decrypt data outside of AWS KMS, while the encrypted data key can be stored with the encrypted data and later decrypted by AWS KMS1.
? In this scenario, the developer needs to use the GenerateDataKey API to encrypt the PDF file so that it can be decrypted later. The developer also needs to use an AWS KMS symmetric customer managed key for encryption. To achieve this, the developer can follow these steps:

NEW QUESTION 113

An organization is using Amazon CloudFront to ensure that its users experience low- latency access to its web application. The organization has identified a need to encrypt all traffic between users and CloudFront, and all traffic between CloudFront and the web application. How can these requirements be met? (Select TWO)

- A. Use AWS KMS to encrypt traffic between CloudFront and the web application.
- B. Set the Origin Protocol Policy to "HTTPS Only".
- C. Set the Origin's HTTP Port to 443.
- D. Set the Viewer Protocol Policy to "HTTPS Only" or Redirect HTTP to HTTPS"
- E. Enable the CloudFront option Restrict Viewer Access.

Answer: BD

Explanation:

This solution will meet the requirements by ensuring that all traffic between users and CloudFront, and all traffic between CloudFront and the web application, are encrypted using HTTPS protocol. The Origin Protocol Policy determines how CloudFront communicates with the origin server (the web application), and setting it to "HTTPS Only" will force CloudFront to use HTTPS for every request to the origin server. The Viewer Protocol Policy determines how CloudFront responds to HTTP or HTTPS requests from users, and setting it to "HTTPS Only" or "Redirect HTTP to HTTPS" will force CloudFront to use HTTPS for every response to users. Option A is not optimal because it will use AWS KMS to encrypt traffic between CloudFront and the web application, which is not necessary or supported by CloudFront. Option C is not optimal because it will set the origin's HTTP port to 443, which is incorrect as port 443 is used for HTTPS protocol, not HTTP protocol. Option E is not optimal because it will enable the CloudFront option Restrict Viewer Access, which is used for controlling access to private content using signed URLs or signed cookies, not for encrypting traffic.
References: [Using HTTPS with CloudFront], [Restricting Access to Amazon S3 Content by Using an Origin Access Identity]

NEW QUESTION 114

A developer is deploying an AWS Lambda function. The developer wants the ability to return to older versions of the function quickly and seamlessly. How can the developer achieve this goal with the LEAST operational overhead?

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

Answer: B

Explanation:

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

NEW QUESTION 115

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

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

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

NEW QUESTION 117

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

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

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

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

Answer: A

Explanation:

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

Reference: [Global Secondary Indexes], [Querying]

NEW QUESTION 122

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

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

Which solution will meet these requirements'?

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

Answer: A

Explanation:

BatchGetItem can return one or multiple items from one or more tables. For reference check the link below
[https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_BatchGetItem.h tml](https://docs.aws.amazon.com/amazondynamodb/latest/APIReference/API_BatchGetItem.html)

NEW QUESTION 123

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

Which solution will meet these requirements MOST cost-effectively?

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

Answer: A

Explanation:

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

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

configuration profiles, which incur additional costs and complexity. References

? AWS::StepFunctions::StateMachine - AWS CloudFormation

? Call API Gateway with Step Functions - AWS Step Functions

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

NEW QUESTION 127

A company is migrating legacy internal applications to AWS. Leadership wants to rewrite the internal employee directory to use native AWS services. A developer needs to create a solution for storing employee contact details and high-resolution photos for use with the new application.

Which solution will enable the search and retrieval of each employee's individual details and high-resolution photos using AWS APIs?

A. Encode each employee's contact information and photos using Base64. Store the information in an Amazon DynamoDB table using a sort key.

B. Store each employee's contact information in an Amazon DynamoDB table along with the object keys for the photos stored in Amazon S3.

C. Use Amazon Cognito user pools to implement the employee directory in a fully managed software-as-a-service (SaaS) method.

D. Store employee contact information in an Amazon RDS DB instance with the photos stored in Amazon Elastic File System (Amazon EFS).

Answer: B

Explanation:

Amazon DynamoDB is a fully managed NoSQL database service that provides fast and consistent performance with seamless scalability. The developer can store each employee's contact information in a DynamoDB table along with the object keys for the photos stored in Amazon S3. Amazon S3 is an object storage service that offers industry-leading scalability, data availability, security, and performance. The developer can use AWS APIs to search and retrieve the employee details and photos from DynamoDB and S3.

References:

? [Amazon DynamoDB]

? [Amazon Simple Storage Service (S3)]

NEW QUESTION 129

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

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

A. Install and run the X-Ray SDK on the on-premises servers to capture and relay the data to the X-Ray service.

B. Install and run the X-Ray daemon on the on-premises servers to capture and relay the data to the X-Ray service.

C. Capture incoming requests on-premises and configure an AWS Lambda function to pull, process, and relay relevant data to X-Ray using the PutTraceSegments API call.

D. Capture incoming requests on-premises and configure an AWS Lambda function to pull, process, and relay relevant data to X-Ray using the PutTelemetryRecords API call.

Answer: B

Explanation:

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

References:

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

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

NEW QUESTION 134

A developer has a legacy application that is hosted on-premises. Other applications hosted on AWS depend on the on-premises application for proper functioning. In case of any application errors, the developer wants to be able to use Amazon CloudWatch to monitor and troubleshoot all applications from one place.

How can the developer accomplish this?

A. Install an AWS SDK on the on-premises server to automatically send logs to CloudWatch.

B. Download the CloudWatch agent to the on-premises server

C. Configure the agent to use IAM user credentials with permissions for CloudWatch.

D. Upload log files from the on-premises server to Amazon S3 and have CloudWatch read the files.

E. Upload log files from the on-premises server to an Amazon EC2 instance and have the instance forward the logs to CloudWatch.

Answer: B

Explanation:

Amazon CloudWatch is a service that monitors AWS resources and applications. The developer can use CloudWatch to monitor and troubleshoot all applications from one place. To do so, the developer needs to download the CloudWatch agent to the on-premises server and configure the agent to use IAM user credentials with permissions for CloudWatch. The agent will collect logs and metrics from the on-premises server and send them to CloudWatch.

References:

? [What Is Amazon CloudWatch? - Amazon CloudWatch]

? [Installing and Configuring the CloudWatch Agent - Amazon CloudWatch]

NEW QUESTION 137

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. latestmeta-data/](http://169.254.169.254/latest/meta-data/).

B. Query the instance user data from [http://169.254.169.254. latest/user-data/](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 142

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

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

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

Answer: C

Explanation:

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

Reference: Test reports for CodeBuild

NEW QUESTION 143

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 ate experiencing high latency flue lo sialic content on theEC2 instance. even during non-peak hours.

When companion of steps mill resolves 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 sialic 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 147

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 148

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

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

Answer: D

Explanation:

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

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

NEW QUESTION 153

A company is expanding the compatibility of its photo-sharing mobile app to hundreds of additional devices with unique screen dimensions and resolutions. Photos are stored in Amazon S3 in their original format and resolution. The company uses an Amazon CloudFront distribution to serve the photos. The app includes the dimension and resolution of the display as GET parameters with every request.

A developer needs to implement a solution that optimizes the photos that are served to each device to reduce load time and increase photo quality.

Which solution will meet these requirements MOST cost-effectively?

- A. Use S3 Batch Operations to invoke an AWS Lambda function to create new variants of the photos with the required dimensions and resolution
- B. Create a dynamic CloudFront origin that automatically maps the request of each device to the corresponding photo variant.
- C. Use S3 Batch Operations to invoke an AWS Lambda function to create new variants of the photos with the required dimensions and resolution
- D. Create a Lambda@Edge function to route requests to the corresponding photo variant by using request headers.
- E. Create a Lambda@Edge function that optimizes the photos upon request and returns the photos as a response
- F. Change the CloudFront TTL cache policy to the maximum value possible.
- G. Create a Lambda@Edge function that optimizes the photos upon request and returns the photos as a response
- H. In the same function store a copy of the processed photos on Amazon S3 for subsequent requests.

Answer: D

Explanation:

This solution meets the requirements most cost-effectively because it optimizes the photos on demand and caches them for future requests. Lambda@Edge allows the developer to run Lambda functions at AWS locations closer to viewers, which can reduce latency and improve photo quality. The developer can create a Lambda@Edge function that uses the GET parameters from each request to optimize the photos with the required dimensions and resolutions and returns them as a response. The function can also store a copy of the processed photos on Amazon S3 for subsequent requests, which can reduce processing time and costs. Using S3 Batch Operations to create new variants of the photos will incur additional storage costs and may not cover all possible dimensions and resolutions. Creating a dynamic CloudFront origin or a Lambda@Edge function to route requests to corresponding photo variants will require maintaining a mapping of device types and photo variants, which can be complex and error-prone.

Reference: [Lambda@Edge Overview], [Resizing Images with Amazon CloudFront & Lambda@Edge]

NEW QUESTION 157

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.
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 161

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 164

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 165

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

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

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

Answer: D

Explanation:

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

NEW QUESTION 170

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 175

A company developed an API application on AWS by using Amazon CloudFront, Amazon API Gateway, and AWS Lambda. The API has a minimum of four requests every second. A developer notices that many API users run the same query by using the POST method. The developer wants to cache the POST request to optimize the API resources. Which solution will meet these requirements?

A.

- Configure the CloudFront cach
- B. Update the application to return cached content based upon the default request headers.
- C. Override the cache method in the selected stage of API Gatewa
- D. Select the POST method.
- E. Save the latest request response in Lambda /tmp director
- F. Update the Lambda function to check the /tmp directory.
- G. Save the latest request in AWS Systems Manager Parameter Stor

H. Modify the Lambda function to take the latest request response from Parameter Store.

Answer: B

Explanation:

Amazon API Gateway provides tools for creating and documenting web APIs that route HTTP requests to Lambda functions². You can secure access to your API with authentication and authorization controls. Your APIs can serve traffic over the internet or can be accessible only within your VPC². You can override the cache method in the selected stage of API Gateway². Therefore, option B is correct.

NEW QUESTION 177

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

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

How can the developer resolve this issue?

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

Answer: D

Explanation:

? Maximum concurrency for SQS as an event source allows customers to control the maximum concurrent invokes by the SQS event source¹. When multiple SQS event sources are configured to a function, customers can control the maximum concurrent invokes of individual SQS event source¹.

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

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

NEW QUESTION 178

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