

Amazon

Exam Questions DVA-C02

DVA-C02



NEW QUESTION 1

A developer is incorporating AWS X-Ray into an application that handles personal identifiable information (PII). The application is hosted on Amazon EC2 instances. The application trace messages include encrypted PII and go to Amazon CloudWatch. The developer needs to ensure that no PII goes outside of the EC2 instances. Which solution will meet these requirements?

- A. Manually instrument the X-Ray SDK in the application code.
- B. Use the X-Ray auto-instrumentation agent.
- C. Use Amazon Macie to detect and hide PII
- D. Call the X-Ray API from AWS Lambda.
- E. Use AWS Distro for Open Telemetry.

Answer: A

Explanation:

This solution will meet the requirements by allowing the developer to control what data is sent to X-Ray and CloudWatch from the application code. The developer can filter out any PII from the trace messages before sending them to X-Ray and CloudWatch, ensuring that no PII goes outside of the EC2 instances. Option B is not optimal because it will automatically instrument all incoming and outgoing requests from the application, which may include PII in the trace messages. Option C is not optimal because it will require additional services and costs to use Amazon Macie and AWS Lambda, which may not be able to detect and hide all PII from the trace messages. Option D is not optimal because it will use Open Telemetry instead of X-Ray, which may not be compatible with CloudWatch and other AWS services.

References: [AWS X-Ray SDKs]

NEW QUESTION 2

A developer is building an application that uses AWS API Gateway APIs, AWS Lambda function, and AWS Dynamic DB tables. The developer uses the AWS Serverless Application Model (AWS SAM) to build and run serverless applications on AWS. Each time the developer pushes changes for only to the Lambda functions, all the artifacts in the application are rebuilt.

The developer wants to implement AWS SAM Accelerate by running a command to only redeploy the Lambda functions that have changed.

Which command will meet these requirements?

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

Answer: D

Explanation:

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

Reference: AWS SAM Accelerate

NEW QUESTION 3

A 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 4

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 5

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 function
- B. Update the API Gateway endpoint to reference the new Lambda function version
- C. Upload and publish the optimized Lambda function code
- D. On the production API Gateway stage, define a canary release and set the percentage of traffic to direct to the canary release
- E. Update the API Gateway endpoint to use the \$LATEST version of the Lambda function
- F. Publish the API to the canary stage.
- G. Define a function version for the currently deployed production Lambda function
- H. Update the API Gateway endpoint to reference the new Lambda function version
- I. Upload and publish the optimized Lambda function code
- J. Update the API Gateway endpoint to use the \$LATEST version of the Lambda function
- K. Deploy a new API Gateway stage.
- L. Define an alias on the \$LATEST version of the Lambda function
- M. Update the API Gateway endpoint to reference the new Lambda function alias
- N. Upload and publish the optimized Lambda function code
- O. On the production API Gateway stage, define a canary release and set the percentage of traffic to direct to the canary release
- P. Update the API Gateway endpoint to use the \$LATEST version of the Lambda function
- Q. Publish to the canary stage.
- R. Define a function version for the currently deployed production Lambda function
- S. Update the API Gateway endpoint to reference the new Lambda function version
- T. Upload and publish the optimized Lambda function code
- U. Update the API Gateway endpoint to use the \$LATEST version of the Lambda function
- V. 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 6

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

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

Answer: A

Explanation:

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

NEW QUESTION 7

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 8

An online food company provides an Amazon API Gateway HTTP API to receive orders for partners. The API is integrated with an AWS Lambda function. The Lambda function stores the orders in an Amazon DynamoDB table. The company expects to onboard additional partners. Some partners require additional Lambda function to receive orders. The company has created an Amazon S3 bucket. The company needs to store all orders and updates in the S3 bucket for future analysis. How can the developer ensure that all orders and updates are stored to Amazon S3 with the LEAST development effort?

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

Answer: C

Explanation:

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

NEW QUESTION 9

A company notices that credentials that the company uses to connect to an external software as a service (SaaS) vendor are stored in a configuration file as plaintext. The developer needs to secure the API credentials and enforce automatic credentials rotation on a quarterly basis. Which solution will meet these requirements MOST securely?

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

Answer: C

Explanation:

Store the credentials in AWS Secrets Manager and enable rotation. Configure the API to have Secrets Manager access. This is correct. This solution will meet the requirements most securely, because it uses a service that is designed to store and manage secrets such as API credentials. AWS Secrets Manager helps you

protect access to your applications, services, and IT resources by enabling you to rotate, manage, and retrieve secrets throughout their lifecycle¹. You can store secrets such as passwords, database strings, API keys, and license codes as encrypted values². You can also configure automatic rotation of your secrets on a schedule that you specify³. You can use the AWS SDK or CLI to retrieve secrets from Secrets Manager when you need them⁴. This way, you can avoid storing credentials in plaintext files or hardcoding them in your code.

NEW QUESTION 10

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 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. Configure the script to publish to the SNS topic.
- E. Create a cron job to run the script on the EC2 instance every 15 minutes.
- F. 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 10

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

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

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

Answer: BE

Explanation:

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

NEW QUESTION 15

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

Which solution will meet these requirements?

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

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F. Configure the alarm to send an SNS notification when the number of errors exceeds the defined threshold within a 5- minute period.

Answer: D

Explanation:

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

? Create Metric Filters - Amazon CloudWatch Logs

? Creating Amazon CloudWatch Alarms - Amazon CloudWatch

? How to send alert based on log message on CloudWatch - Stack Overflow

NEW QUESTION 19

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 23

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 instanc

B. Enable encryption of data in transit and at res

C. Store frequently accessed data in the cache.

D. Create an Amazon ElastiCache for Memcached instanc

E. Enable encryption of data in transit and at res

F. Store frequently accessed data in the cache.

G. Create an Amazon RDS for MySQL read replic

H. Connect to the read replica by using SS

I. Configure the read replica to store frequently accessed data.

J. Create an Amazon DynamoDB table and a DynamoDB Accelerator (DAX) cluster for the tabl

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 25

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 instances¹. Amazon EBS encryption offers a straight-forward encryption solution for your EBS resources associated with your EC2 instances¹. 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 30

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

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

Answer: BC

Explanation:

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

way, the EC2 instance has the permissions to read and eventually write the specified S3 bucket

NEW QUESTION 33

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. 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 35

A developer must use multi-factor authentication (MFA) to access data in an Amazon S3

bucket that is in another AWS account. Which AWS Security Token Service (AWS STS) API operation should the developer use with the MFA information to meet this requirement?

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

Answer: D

Explanation:

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

? AssumeRole

? Requesting Temporary Security Credentials

NEW QUESTION 37

A developer is working on an e-commerce 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 e-commerce platform's integration with the third-party payment processing APIs. The developer must test the API integration code without invoking the third-party payment processing APIs.

Which solution will meet these requirements?

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

Answer: D

Explanation:

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

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

NEW QUESTION 42

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 44

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 46

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

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

Use a Kubernetes cron job that runs on Amazon Elastic Kubernetes Service (Amazon EKS).

- ~~A~~: Use an Amazon Linux crontab scheduled job that runs on Amazon EC2.
- C. Use an AWS Lambda function that is invoked by an Amazon EventBridge scheduled event.
- D. Use an AWS Batch job that is submitted to an AWS Batch job queue.

Answer: C

Explanation:

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

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

operational overhead.

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

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

* D. Use an AWS Batch job that is submitted to an AWS Batch job queue. This is incorrect. AWS Batch enables you to run batch computing workloads on the AWS or sequentially on

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

References:

? 1: What is AWS Lambda? - AWS Lambda

? 2: What is Amazon EventBridge? - Amazon EventBridge

? 3: Creating an Amazon EventBridge rule that runs on a schedule - Amazon EventBridge

? 4: What is Amazon EKS? - Amazon EKS

? 5: CronJob - Kubernetes

? 6: What is Amazon EC2? - Amazon EC2

? 7: Crontab in Linux with 20 Useful Examples to Schedule Jobs - Tecmint

? 8: What is AWS Batch? - AWS Batch

? 9: Jobs - AWS Batch

NEW QUESTION 51

A company has an application that stores data in Amazon RDS instances. The application periodically experiences surges of high traffic that cause performance problems.

During periods of peak traffic, a developer notices a reduction in query speed in all database queries.

The team's technical lead determines that a multi-threaded and scalable caching solution should be used to offload the heavy read traffic. The solution needs to improve performance.

Which solution will meet these requirements with the LEAST complexity?

A. Use Amazon ElastiCache for Memcached to offload read requests from the main database.

B. Replicate the data to Amazon DynamoDB

C. Set up a DynamoDB Accelerator (DAX) cluster.

D. Configure the Amazon RDS instances to use Multi-AZ deployment with one standby instance.

E. Offload read requests from the main database to the standby instance.

F. Use Amazon ElastiCache for Redis to offload read requests from the main database.

Answer: A

Explanation:

? Amazon ElastiCache for Memcached is a fully managed, multithreaded, and scalable in-memory key-value store that can be used to cache frequently accessed data and improve application performance. By using Amazon ElastiCache for Memcached, the developer can reduce the load on the main database and handle high traffic surges more efficiently.

? To use Amazon ElastiCache for Memcached, the developer needs to create a cache cluster with one or more nodes, and configure the application to store and retrieve data from the cache cluster. The developer can use any of the supported Memcached clients to interact with the cache cluster. The developer can also use Auto Discovery to dynamically discover and connect to all cache nodes in a cluster.

? Amazon ElastiCache for Memcached is compatible with the Memcached protocol, which means that the developer can use existing tools and libraries that work with

Memcached. Amazon ElastiCache for Memcached also supports data partitioning, which allows the developer to distribute data among multiple nodes and scale out the cache cluster as needed.

? Using Amazon ElastiCache for Memcached is a simple and effective solution that meets the requirements with the least complexity. The developer does not need to change the database schema, migrate data to a different service, or use a different caching model. The developer can leverage the existing Memcached ecosystem and easily integrate it with the application.

NEW QUESTION 53

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

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

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

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

B. The developer needs to log a ticket with AWS Support to enable access to the demoman-table

C. Amazon DynamoDB cannot be accessed from the AWS CLI and needs to be called via the REST API

D. The IAM user needs an associated policy with read access to demoman-table

Answer: D

Explanation:

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

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

NEW QUESTION 57

A developer is writing an application that will retrieve sensitive data from a third-party system. The application will format the data into a PDF file. The PDF file could be more than 1 MB. The application will encrypt the data to disk by using AWS Key Management Service (AWS KMS). The application will decrypt the file when a user requests to download it. The retrieval and formatting portions of the application are complete. The developer needs to use the GenerateDataKey API to encrypt the PDF file so that the PDF file can be decrypted later. The developer needs to use an AWS KMS symmetric customer managed key for encryption. Which solutions will meet these requirements?

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

Answer: A

Explanation:

? The GenerateDataKey API returns a data key that is encrypted under a symmetric encryption KMS key that you specify, and a plaintext copy of the same data key. The data key is a random byte string that can be used with any standard encryption algorithm, such as AES or SM4. The plaintext data key can be used to encrypt or decrypt data outside of AWS KMS, while the encrypted data key can be stored with the encrypted data and later decrypted by AWS KMS.

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

NEW QUESTION 59

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

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

Answer: D

Explanation:

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

NEW QUESTION 63

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

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

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

NEW QUESTION 65

A developer uses AWS CloudFormation to deploy an Amazon API Gateway API and an AWS Step Functions state machine. The state machine must reference the API Gateway API after the CloudFormation template is deployed. The developer needs a solution that uses the state machine to reference the API Gateway endpoint. Which solution will meet these requirements MOST cost-effectively?

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

D. Configure the CloudFormation template to store the API endpoint in a standard AWS::AppConfig::ConfigurationProfile resource Configure the state machine to reference the resource.

Answer: A

Explanation:

The most cost-effective solution is to use the DefinitionSubstitutions property of the AWS::StepFunctions::StateMachine resource to inject the API endpoint as a variable in the state machine definition. This way, the developer can use the intrinsic function Fn::GetAtt to get the API endpoint from the AWS::ApiGateway::RestApi resource, and pass it to the state machine without creating any additional resources or environment variables. The other solutions involve creating and managing extra resources, such as Secrets Manager secrets or AppConfig configuration profiles, which incur additional costs and complexity. References

- ? AWS::StepFunctions::StateMachine - AWS CloudFormation
- ? Call API Gateway with Step Functions - AWS Step Functions
- ? amazon-web-services aws-api-gateway terraform aws-step-functions

NEW QUESTION 68

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 73

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

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

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

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

Answer: A

Explanation:

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

Reference: AWS Step Functions Wait state

NEW QUESTION 78

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

When solution will meet these requirements?

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

L. Add different code blocks for different environments in the Lambda Junction to match the value of the query parameter.

Answer: C

Explanation:

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

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

NEW QUESTION 82

A developer is working on an ecommerce website. The developer wants to review server logs without logging in to each of the application servers individually. The website runs on multiple Amazon EC2 instances, is written in Python, and needs to be highly available. How can the developer update the application to meet these requirements with MINIMUM changes?

- A. Rewrite the application to be cloud native and to run on AWS Lambda, where the logs can be reviewed in Amazon CloudWatch
- B. Set up centralized logging by using Amazon OpenSearch Service, Logstash, and OpenSearch Dashboards
- C. Scale down the application to one larger EC2 instance where only one instance is recording logs
- D. Install the unified Amazon CloudWatch agent on the EC2 instances. Configure the agent to push the application logs to CloudWatch

Answer: D

Explanation:

The unified Amazon CloudWatch agent can collect both system metrics and log files from Amazon EC2 instances and on-premises servers. By installing and configuring the agent on the EC2 instances, the developer can easily access and analyze the application logs in CloudWatch without logging in to each server individually. This option requires minimum changes to the existing application and does not affect its availability or scalability. References

? Using the CloudWatch Agent

? Collecting Metrics and Logs from Amazon EC2 Instances and On-Premises Servers with the CloudWatch Agent

NEW QUESTION 85

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 prefix 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 86

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

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

- A. Package each Python library in its own .zip file archive.
- B. Deploy each Lambda function with its own copy of the library.
- C. Create a Lambda layer with the required Python library.
- D. Use the Lambda layer in both Lambda functions.
- E. Combine the two Lambda functions into one Lambda function.
- F. Deploy the Lambda function as a single .zip file archive.
- G. Download the Python library to an S3 bucket.
- H. Program the Lambda functions to reference the object URLs.

Answer: B

Explanation:

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

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

References:

? [What Is AWS Lambda? - AWS Lambda]

? [AWS Lambda Layers - AWS Lambda]

NEW QUESTION 90

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

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

Answer: D

Explanation:

FunctionName: MyLambdaFunction Code:

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

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

Variables:

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

NEW QUESTION 92

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 93

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

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

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

Answer: C

Explanation:

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

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

References:

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

NEW QUESTION 97

An application uses an Amazon EC2 Auto Scaling group. A developer notices that EC2 instances are taking a long time to become available during scale-out events. The UserData script is taking a long time to run.

The developer must implement a solution to decrease the time that elapses before an EC2 instance becomes available. The solution must make the most recent version of the application available at all times and must apply all available security updates. The solution also must minimize the number of images that are created. The images must be validated.

Which combination of steps should the developer take to meet these requirements? (Choose two.)

- A. Use EC2 Image Builder to create an Amazon Machine Image (AMI). Install all the patches and agents that are needed to manage and run the applicatio
- B. Update the Auto Scaling group launch configuration to use the AMI.
- C. Use EC2 Image Builder to create an Amazon Machine Image (AMI). Install the latest version of the application and all the patches and agents that are needed to manage and run the applicatio
- D. Update the Auto Scaling group launch configuration to use the AMI.
- E. Set up AWS CodeDeploy to deploy the most recent version of the application at runtime.
- F. Set up AWS CodePipeline to deploy the most recent version of the application at runtime.
- G. Remove any commands that perform operating system patching from the UserData script.

Answer: BE

Explanation:

AWS CloudFormation is a service that enables developers to model and provision AWS resources using templates. The developer can use the following steps to avoid accidental database deletion in the future:

- ? Set up AWS CodeDeploy to deploy the most recent version of the application at runtime. This will ensure that the application code is always up to date and does not depend on the AMI.
- ? Remove any commands that perform operating system patching from the UserData script. This will reduce the time that the UserData script takes to run and speed up the instance launch process.

References:

- ? [What Is AWS CloudFormation? - AWS CloudFormation]
- ? [What Is AWS CodeDeploy? - AWS CodeDeploy]
- ? [Running Commands on Your Linux Instance at Launch - Amazon Elastic Compute Cloud]

NEW QUESTION 98

A company has deployed an application on AWS Elastic Beanstalk. The company has configured the Auto Scaling group that is associated with the Elastic Beanstalk environment to have five Amazon EC2 instances. If the capacity is fewer than four EC2 instances during the deployment, application performance degrades. The company is using the all-at-once deployment policy.

What is the MOST cost-effective way to solve the deployment issue?

- A. Change the Auto Scaling group to six desired instances.
- B. Change the deployment policy to traffic splittin
- C. Specify an evaluation time of 1 hour.
- D. Change the deployment policy to rolling with additional batc
- E. Specify a batch size of 1.
- F. Change the deployment policy to rollin
- G. Specify a batch size of 2.

Answer: C

Explanation:

This solution will solve the deployment issue by deploying the new version of the application to one new EC2 instance at a time, while keeping the old version running on

the existing instances. This way, there will always be at least four instances serving traffic during the deployment, and no downtime or performance degradation will occur. Option A is not optimal because it will increase the cost of running the Elastic Beanstalk environment without solving the deployment issue. Option B is not optimal because it will split the traffic between two versions of the application, which may cause inconsistency and confusion for the customers. Option D is not optimal because it will deploy the new version of the application to two existing instances at a time, which may reduce the capacity below four instances during the deployment.

References: AWS Elastic Beanstalk Deployment Policies

NEW QUESTION 100

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

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

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

? How to Deploy Docker Containers | AWS

? Deploy a Web App Using AWS App Runner

? How to Deploy Containerized Apps on AWS Using ECR and Docker

NEW QUESTION 105

An application that is deployed to Amazon EC2 is using Amazon DynamoDB. The application calls the DynamoDB REST API. Periodically the application receives a ProvisionedThroughputExceededException error when the application writes to a DynamoDB table.

Which solutions will mitigate this error MOST cost-effectively? (Select TWO)

- A. Modify the application code to perform exponential back off when the error is received.
- B. Modify the application to use the AWS SDKs for DynamoDB.
- C. Increase the read and write throughput of the DynamoDB table.
- D. Create a DynamoDB Accelerator (DAX) cluster for the DynamoDB table.
- E. Create a second DynamoDB table. Distribute the reads and writes between the two tables.

Answer: AB

Explanation:

These solutions will mitigate the error most cost-effectively because they do not require increasing the provisioned throughput of the DynamoDB table or creating additional resources. Exponential backoff is a retry strategy that increases the waiting time between retries to reduce the number of requests sent to DynamoDB. The AWS SDKs for DynamoDB implement exponential backoff by default and also provide other features such as automatic pagination and encryption. Increasing the read and write throughput of the DynamoDB table, creating a DynamoDB Accelerator (DAX) cluster, or creating a second DynamoDB table will incur additional costs and complexity.

Reference: [Error Retries and Exponential Backoff in AWS], [Using the AWS SDKs with DynamoDB]

NEW QUESTION 108

A developer wants to insert a record into an Amazon DynamoDB table as soon as a new file is added to an Amazon S3 bucket. Which set of steps would be necessary to achieve this?

- A. Create an event with Amazon EventBridge that will monitor the S3 bucket and then insert the records into DynamoDB.
- B. Configure an S3 event to invoke an AWS Lambda function that inserts records into DynamoDB.
- C. Create an AWS Lambda function that will poll the S3 bucket and then insert the records into DynamoDB.
- D. Create a cron job that will run at a scheduled time and insert the records into DynamoDB.

Answer: B

Explanation:

Amazon S3 is a service that provides highly scalable, durable, and secure object storage. Amazon DynamoDB is a fully managed NoSQL database service that

provides fast and consistent performance with seamless scalability. AWS Lambda is a service that lets developers run code without provisioning or managing servers. The developer can configure an S3 event to invoke a Lambda function that inserts records into DynamoDB whenever a new file is added to the S3 bucket. This solution will meet the requirement of inserting a record into DynamoDB as soon as a new file is added to S3. References:

? [Amazon Simple Storage Service (S3)]

? [Amazon DynamoDB]

? [What Is AWS Lambda? - AWS Lambda]

? [Using AWS Lambda with Amazon S3 - AWS Lambda]

NEW QUESTION 113

When using the AWS Encryption SDK how does the developer keep track of the data encryption keys used to encrypt data?

- A. The developer must manually keep track of the data encryption keys used for each data object.
- B. The SDK encrypts the data encryption key and stores it (encrypted) as part of the resumable ciphertext.
- C. The SDK stores the data encryption keys automatically in Amazon S3.
- D. The data encryption key is stored in the user data for the EC2 instance.

Answer: B

Explanation:

This solution will meet the requirements by using AWS Encryption SDK, which is a client-side encryption library that enables developers to encrypt and decrypt data using data encryption keys that are protected by AWS Key Management Service (AWS KMS). The SDK encrypts the data encryption key with a customer master key (CMK) that is managed by AWS KMS, and stores it (encrypted) as part of the returned ciphertext. The developer does not need to keep track of the data encryption keys used to encrypt data, as they are stored with the encrypted data and can be retrieved and decrypted by using AWS KMS when needed. Option A is not optimal because it will require manual tracking of the data encryption keys used for each data object, which is error-prone and inefficient. Option C is not optimal because it will store the data encryption keys automatically in Amazon S3, which is unnecessary and insecure as Amazon S3 is not designed for storing encryption keys. Option D is not optimal because it will store the data encryption key in the user data for the EC2 instance, which is also unnecessary and insecure as user data is not encrypted by default.

References: [AWS Encryption SDK], [AWS Key Management Service]

NEW QUESTION 114

A developer is modifying an existing AWS Lambda function. While checking the code, the developer notices hardcoded parameter values for an Amazon RDS for SQL Server user name, password, database, host, and port. There are also hardcoded parameter values for an Amazon DynamoDB table, an Amazon S3 bucket, and an Amazon Simple Notification Service (Amazon SNS) topic.

The developer wants to securely store the parameter values outside the code in an encrypted format and wants to turn on rotation for the credentials. The developer also wants to be able to reuse the parameter values from other applications and to update the parameter values without modifying code.

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

- A. Create an RDS database secret in AWS Secrets Manager
- B. Set the user name, password, database, host, and port
- C. Turn on secret rotation
- D. Create encrypted Lambda environment variables for the DynamoDB table, S3 bucket, and SNS topic.
- E. Create an RDS database secret in AWS Secrets Manager
- F. Set the user name, password, database, host, and port
- G. Turn on secret rotation
- H. Create Secure String parameters in AWS Systems Manager Parameter Store for the DynamoDB table, S3 bucket, and SNS topic.
- I. Create RDS database parameters in AWS Systems Manager Parameter Store
- J. Store for the user name, password, database, host, and port
- K. Create encrypted Lambda environment variables for the DynamoDB table, S3 bucket, and SNS topic
- L. Create a Lambda function and set the logic for the credentials rotation task. Schedule the credentials rotation task in Amazon EventBridge.
- M. Create RDS database parameters in AWS Systems Manager Parameter Store

- N. Store for the user name password database, host, and port
- O. Store the DynamoDB tabl
- P. S3 bucket, and SNS topic in Amazon S3 Create a Lambda function and set the logic for the credentials rotation Invoke the Lambda function on a schedule.

Answer: B

Explanation:

This solution will meet the requirements by using AWS Secrets Manager and AWS Systems Manager Parameter Store to securely store the parameter values outside the code in an encrypted format. AWS Secrets Manager is a service that helps protect secrets such as database credentials by encrypting them with AWS Key Management Service (AWS KMS) and enabling automatic rotation of secrets. The developer can create an RDS database secret in AWS Secrets Manager and set the user name, password, database, host, and port for accessing the RDS database. The developer can also turn on secret rotation, which will change the database credentials periodically according to a specified schedule or event. AWS Systems Manager Parameter Store is a service that provides secure and scalable storage for configuration data and secrets. The developer can create Secure String parameters in AWS Systems Manager Parameter Store for the DynamoDB table, S3 bucket, and SNS topic, which will encrypt them with AWS KMS. The developer can also reuse the parameter values from other applications and update them without modifying code. Option A is not optimal because it will create encrypted Lambda

environment variables for the DynamoDB table, S3 bucket, and SNS topic, which may not be reusable or updatable without modifying code. Option C is not optimal because it will create RDS database parameters in AWS Systems Manager Parameter Store, which does not support automatic rotation of secrets. Option D is not optimal because it will store the DynamoDB table, S3 bucket, and SNS topic in Amazon S3, which may introduce additional costs and complexity for accessing configuration data. References: AWS Secrets Manager, [AWS Systems Manager Parameter Store]

NEW QUESTION 119

A company has developed a new serverless application using AWS Lambda functions that will be deployed using the AWS Serverless Application Model (AWS SAM) CLI.

Which step should the developer complete prior to deploying the application?

- A. Compress the application to a zip file and upload it into AWS Lambda.
- B. Test the new AWS Lambda function by first tracing it m AWS X-Ray.
- C. Bundle the serverless application using a SAM package.
- D. Create the application environment using the eb create my-env command.

Answer: C

Explanation:

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

NEW QUESTION 120

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

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

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

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

AWS Glue

D. AWS Lambda

Answer: B

Explanation:

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

NEW QUESTION 122

A developer is designing an AWS Lambda function that creates temporary files that are less than 10 MB during invocation. The temporary files will be accessed and modified multiple times during invocation. The developer has no need to save or retrieve these files in the future.

Where should the temporary files be stored?

- A. the /tmp directory
- B. Amazon Elastic File System (Amazon EFS)
- C. Amazon Elastic Block Store (Amazon EBS)
- D. Amazon S3

Answer: A

Explanation:

AWS Lambda is a service that lets developers run code without provisioning or managing servers. Lambda provides a local file system that can be used to store temporary files during invocation. The local file system is mounted under the /tmp directory and has a limit of 512 MB. The temporary files are accessible only by the Lambda function that created them and are deleted after the function execution ends. The developer can store temporary files that are less than 10 MB in the /tmp directory and access and modify them multiple times during invocation.

References:

? [What Is AWS Lambda? - AWS Lambda]

? [AWS Lambda Execution Environment - AWS Lambda]

NEW QUESTION 126

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

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

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

Answer: A

Explanation:

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

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

NEW QUESTION 131

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

the DB cluster are deployed in the same AWS Region in the same AWS account. The developer needs to ensure that the Lambda functions can securely access the DB cluster without crossing the public internet. Which solution will meet these requirements?

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

Answer: D

Explanation:

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

NEW QUESTION 136

An application uses Lambda functions to extract metadata from files uploaded to an S3 bucket; the metadata is stored in Amazon DynamoDB. The application starts behaving unexpectedly, and the developer wants to examine the logs of the Lambda function code for errors. Based on this system configuration, where would the developer find the logs?

- A. Amazon S3
- B. AWS CloudTrail
- C. Amazon CloudWatch
- D. Amazon DynamoDB

Answer: C

Explanation:

Amazon CloudWatch is the service that collects and stores logs from AWS Lambda functions. The developer can use CloudWatch Logs Insights to query and analyze the logs for errors and metrics. Option A is not correct because Amazon S3 is a storage service that does not store Lambda function logs. Option B is not correct because AWS CloudTrail is a service that records API calls and events for AWS services, not Lambda function logs. Option D is not correct because Amazon DynamoDB is a database service that does not store Lambda function logs. References: AWS Lambda Monitoring, [CloudWatch Logs Insights]

NEW QUESTION 140

A company is planning to securely manage one-time fixed license keys in AWS. The company's development team needs to access the license keys in automation scripts that run in Amazon EC2 instances and in AWS CloudFormation stacks. Which solution will meet these requirements MOST cost-effectively?

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

Answer: C

Explanation:

AWS Systems Manager Parameter Store is a service that provides secure, hierarchical storage for configuration data and secrets. Parameter Store supports SecureString parameters, which are encrypted using AWS Key Management Service (AWS KMS) keys. SecureString parameters can be used to store license keys in AWS and retrieve them securely from automation scripts that run in EC2 instances or CloudFormation stacks. Parameter Store is a cost-effective solution because it does not charge for storing parameters or API calls. Reference: Working with Systems Manager parameters

NEW QUESTION 143

A company hosts a client-side web application for one of its subsidiaries on Amazon S3. The web application can be accessed through Amazon CloudFront from <https://www.example.com>. After a successful rollout, the company wants to host three more client-side web applications for its remaining subsidiaries on three separate S3 buckets.

To achieve this goal, a developer moves all the common JavaScript files and web fonts to a central S3 bucket that serves the web applications. However, during testing, the developer notices that the browser blocks the JavaScript files and web fonts.

What should the developer do to prevent the browser from blocking the JavaScript files and web fonts?

- A. Create four access points that allow access to the central S3 bucket
- B. Assign an access point to each web application bucket.
- C. Create a bucket policy that allows access to the central S3 bucket
- D. Attach the bucket policy to the central S3 bucket.
- E. Create a cross-origin resource sharing (CORS) configuration that allows access to the central S3 bucket
- F. Add the CORS configuration to the central S3 bucket.
- G. Create a Content-MD5 header that provides a message integrity check for the central S3 bucket
- H. Insert the Content-MD5 header for each web application request.

Answer: C

Explanation:

This is a frequent trouble. Web applications cannot access the resources in other domains by default, except some exceptions. You must configure CORS on the

resources to be accessed. <https://docs.aws.amazon.com/AmazonS3/latest/userguide/cors.html>

NEW QUESTION 144

An application is processing clickstream data using Amazon Kinesis. The clickstream data feed into Kinesis experiences periodic spikes. The PutRecords API call occasionally fails and the logs show that the failed call returns the response shown below:

```
{
  "FailedRecordCount": 1,
  "Records": [
    {
      "SequenceNumber": "21269319989900637946712965403778482371",
      "ShardId": "shardId-000000000001"
    },
    {
      "ErrorCode": "ProvisionedThroughputExceededException",
      "ErrorMessage": "Rate exceeded for shard shardId-000000000001 in
        stream exampleStreamName under account 123456789."
    },
    {
      "SequenceNumber": "21269319989999637946712965403778482985",
      "ShardId": "shardId-000000000002"
    }
  ]
}
```

Which techniques will help mitigate this exception? (Choose two.)

- A. Implement retries with exponential backoff.
- B. Use a PutRecord API instead of PutRecords.
- C. Reduce the frequency and/or size of the requests.
- D. Use Amazon SNS instead of Kinesis.
- E. Reduce the number of KCL consumers.

Answer: AC

Explanation:

The response from the API call indicates that the ProvisionedThroughputExceededException exception has occurred. This exception means that the rate of incoming requests exceeds the throughput limit for one or more shards in a stream. To mitigate this exception, the developer can use one or more of the following techniques:

- ? Implement retries with exponential backoff. This will introduce randomness in the retry intervals and avoid overwhelming the shards with retries.
- ? Reduce the frequency and/or size of the requests. This will reduce the load on the shards and avoid throttling errors.
- ? Increase the number of shards in the stream. This will increase the throughput capacity of the stream and accommodate higher request rates.
- ? Use a PutRecord API instead of PutRecords. This will reduce the number of records per request and avoid exceeding the payload limit.

References:

- ? [ProvisionedThroughputExceededException - Amazon Kinesis Data Streams Service API Reference]
- ? [Best Practices for Handling Kinesis Data Streams Errors]

NEW QUESTION 149

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

Which solutions will meet these requirements? (Choose two.)

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

Answer: AB

Explanation:

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

References:

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

NEW QUESTION 150

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