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Sunday, June 14, 2020 10:15 AM

QUESTION 4

A developer has been tasked with writing a new Lambda function that generates statistics from data stored in DynamoDB. The function must be able to be invoked both synchronous and asynchronously. Which of the following AWS services would use synchronous invocations to trigger the Lambda function?

- ✗ S3
- ✗ SNS
- ✓ **API Gateway** SELECTED
- ✓ Application Load Balancer

EXPLANATION:

API Gateway and Application Load Balancers both require Lambda functions to be invoked synchronously, as they require a response from the function before returning their own response to the user. S3 and SNS do not require a response from the Lambda function.

RESOURCES

Different Ways to Invoke Lambda Functions

STATS

- You spent 00:28 on this question

QUESTION 16

A three-tier web application is deployed using CloudFormation template. How can the CloudFormation developer ensure that the database resource is saved for backup purposes upon stack deletion?

- ✗ **Set the DeletionProtection to True in the CloudFormation template.** SELECTED
- ✓ Set the DeletionPolicy to Retain in the CloudFormation template.
- ✗ Set Stack Termination Protection to Enable.
- ✗ Create IAM Policy with Effect of Deny for 'cloudformation:DeleteStack' Action.

EXPLANATION:

The DeletionPolicy attribute can be used to preserve a specific resource when its stack is deleted. The DeletionPolicy Retain option can be used to ensure AWS CloudFormation keeps the resource without deleting the resource. The Stack Termination Protection feature enables protection against accidental deletion of an entire stack, not preservation of a specific resource. Similarly, the 'cloudformation:DeleteStack' Action applies to entire stack(s).

RESOURCES

DeletionPolicy Attribute

STATS

- You spent 01:05 on this question
- You flagged this question

QUESTION 25

A developer is working on a new application which will use DynamoDB. One of the DynamoDB tables that the developer must create requires an index sort key. When creating this DynamoDB table, the developer must select an Attribute Type for the sort key. Which of the following DynamoDB data types can the developer select to use for their index sort key?

- ✗ Map
- ✓ Binary
- ✗ **Boolean** SELECTED
- ✓ **Number** SELECTED
- ✓ **String** SELECTED
- ✗ List

EXPLANATION:

Both partition and sort keys attributes must be defined as type string, number, or binary.

RESOURCES

DynamoDB Data Types

STATS

- You spent 01:04 on this question

QUESTION 46

You are developing a scalable application which will run in Docker on ECS. You would like to be able to run multiple tasks on the same ECS service. How should you approach this?

- ✖ **Virtual Port Mapping** SELECTED
- ✖ Network Load Balancer
- ✖ Dynamic Port Wrapping
- ✔ Dynamic Port Mapping

EXPLANATION:

Port mappings allow containers to access ports on the host container instance to send or receive traffic. Port mappings are specified as part of the container definition. Dynamic port mapping with an Application Load Balancer makes it easier to run multiple tasks on the same Amazon ECS service on an Amazon ECS cluster.

RESOURCES

- Dynamic Port Mapping for Amazon ECS
- Port Mapping for Amazon ECS
- Run Containerized Microservices with Amazon ECS and Application Load Balancer

STATS

- You spent 00:51 on this question

QUESTION 56

GetItem operation is used to read data from a DynamoDB table. What strategy can be used to reduce the size of the read operations and increase read efficiency?

- ✖ **Use Pagination.** SELECTED
- ✔ Use Projection Expression.
- ✖ Use Parallel Scan.
- ✖ Use Filter Expression.

EXPLANATION:

Projection Expressions are a DynamoDB feature used to limit the attributes returned by the GetItem operation. Thus, this can be used to reduce the size of the payload returned by a read operation. Parallel Scans allows multi-threaded applications to perform DynamoDB Scan operations quicker. It cannot be used with GetItem operations to make them more efficient. Pagination allows developer to perform a Scan operation on a table and divide the result set into multiple pages. It cannot be used to make GetItem operations more efficient. Filter expression can be used with Scan operations to filter the results returned by the scan operation. It is not a GetItem operation feature.

RESOURCES

- Projection Expressions

STATS

- You spent 00:37 on this question

QUESTION 58

A business-critical application is deployed using CloudFormation. The team would like to prevent accidental deletion of the stack. How can this be achieved most efficiently?

- ✖ **Set the DeletionProtection to True in the CloudFormation template.** SELECTED
- ✖ Set the DeletionPolicy to Retain in the CloudFormation template.
- ✔ Set Stack Termination Protection to Enable.
- ✖ Create IAM Policy with Effect of Deny for 'cloudformation:DeleteStack' Action.

EXPLANATION:

Termination Protection stack option can be enabled to prevent accidental deletion of an entire CloudFormation stack. It is possible to use IAM policy to prevent deletion of a CloudFormation stack, however, this is not the optimal solution from operations and management perspective. The DeletionPolicy CloudFormation attribute applies to individual resources, not an entire stack. There is no DeletionProtection attribute in CloudFormation.

RESOURCES

- Protecting a Stack From Being Deleted

STATS

- You spent 01:04 on this question

QUESTION 3

Your application is using Kinesis to ingest click-stream data relating to your products from a variety of social media sites. Your company has been trending this quarter because a high profile movie star has recently signed a contract to endorse your products. As a result, the amount of data flowing through Kinesis has increased, causing you to increase the number of shards in your stream from 4 to 6. The application consuming the data runs on a single EC2 instance in us-east-1a with a second instance in us-east-1b which is used as a cold standby in case the primary instance fails. How many consumer instances will you now need in total to cope with the increased number of shards?

- ✖ 6 instances in us-east-1a and 6 instances in us-east-1b
- ✔ **1 instance in us-east-1a and 1 instance in us-east-1b** SELECTED
- ✖ 3 instances in us-east-1a and 3 instances in us-east-1b
- ✖ 6 instances in us-east-1a and 1 instance in us-east-1b

EXPLANATION:

Re-sharding enables you to increase or decrease the number of shards in a stream in order to adapt to changes in the rate of data flowing through the stream. You should ensure that the number of instances does not exceed the number of shards (except for failure standby purposes). Each shard is processed by exactly one KCL worker and has exactly one corresponding record processor, so you never need multiple instances to process one shard. However, one worker can process any number of shards, so it's fine if the number of shards exceeds the number of instances. When re-sharding increases the number of shards in the stream, the corresponding increase in the number of record processors increases the load on the EC2 instances that are hosting them. If the instances are part of an Auto Scaling group, and the load increases sufficiently, the Auto Scaling group adds more instances to handle the increased load.

RESOURCES

- Kinesis Data Streams Terminology
- Resharding, Scaling, and Parallel Processing

STATS

- You spent 02:12 on this question

QUESTION 19

You are trying to diagnose a performance problem with your serverless application, which uses Lambda, API Gateway, S3 and DynamoDB. Your DynamoDB table is performing well and you suspect that your Lambda function is taking too long to execute. Which of the following could you use to investigate the source of the issue?

- ✔ AWS X-Ray SELECTED
- ✖ **API Gateway Latency metric in CloudWatch** SELECTED
- ✖ Lambda Invocations Sum metric in CloudWatch
- ✔ API Gateway Integration Latency metric in CloudWatch

EXPLANATION:

AWS X-Ray can be used to display a histogram showing the latency of your Lambda function. Latency is the amount of time between when a request starts and when it completes. API Gateway Integration Latency in the time between when API Gateway relays a request to the backend and when it receives a response from the backend. API Gateway Latency is the time between when API Gateway receives a request from a client and when it returns a response to the client. The latency includes the integration latency and other API Gateway overhead. Lambda Invocations Sum measures the number of times a function is invoked in response to an event or invocation API call.

RESOURCES

- API Gateway CloudWatch Metrics
- Lambda CloudWatch Metrics
- X-Ray FAQs
- Using Latency Histograms in the AWS X-Ray Console

STATS

- You spent 01:43 on this question

QUESTION 33

A recent increase in the amount of users of an application hosted on an EC2 instance that you manage has caused the instances OS to run out of CPU resources and crash. The crash caused several users' unsaved data to be lost and your supervisor wants to know how this problem can be avoided in the future. Which of the following would you NOT recommend?

- ✔ Take frequent snapshots of the EBS volume during business hours to ensure users' data is backed up.
- ✖ **Create an auto-scaling group to add more servers when demand is high.** SELECTED
- ✖ Rewrite the application so that users' unsaved data is frequently written to disk.
- ✖ Take a snapshot of the EBS volume and re-deploy as a larger instance type.

EXPLANATION:

Frequent snapshots are not recommended, as they can result in performance degradation. Additionally, these snapshots will not capture users' unsaved data that lives in the instance's memory.

RESOURCES

EBS Snapshots

STATS

- You spent 00:57 on this question

QUESTION 2

You have developed a CloudFormation stack in the AWS Management Console. You have a few small number of CloudFormation stacks saved in the Region in which you are operating in. When you launch your stack that contains many EC2 resources, you receive the error Status=start_failed. How would you troubleshoot this issue?

- ✔ **Use the Support Center in the AWS Management Console to request an increase in the number of EC2 instances.** SELECTED
- ✖ Save the template via the AWS CLI.
- ✖ Wait a few minutes before saving the template and retry the process.
- ✖ Use the Support Center in the AWS Management Console to request an increase in the number of CloudFormation stacks.

EXPLANATION:

Verify that you didn't reach a resource limit. For example, the default number Amazon EC2 instances that you can launch is 20. If you try to create more Amazon EC2 instances than your account limit, the instance creation fails and you receive the error Status=start_failed. Also, during an update, if a resource is replaced, AWS CloudFormation creates new resource before it deletes the old one. This replacement might put your account over the resource limit, which would cause your update to fail. You can delete excess resources or request a limit increase. Saving the template in the CLI or waiting a few minutes will have no impact. The default limit for CloudFormation stacks is 200 and the question explicitly states that there are only a very small number of existing stacks.

RESOURCES

Troubleshooting AWS CloudFormation

STATS

- You spent 01:30 on this question
- You flagged this question

QUESTION 39

You are developing a new application using Lambda, API Gateway, S3 and DynamoDB. You would like to record information about incoming and outgoing HTTP requests as well as latency incurred by each component. You have multiple versions of the application to cater for your Development, UAT, Performance Test and Production environments. What is the most efficient way to collect this information and group it according to which environment it relates to?

- ✗ Use CloudFormation to view the information, configure annotations to indicate which environment the traces relate. Group the data according to environment.
- ✗ Use CloudTrail to view the information, configure annotations to indicate which environment the traces relate. Group the data according to environment.
- ✓ **Use X-Ray to view the information, configure annotations to indicate which environment the traces relate. Group the data according to environment.** SELECTED
- ✗ Use CloudWatch to view the information, configure annotations to indicate which environment the traces relate. Group the data according to environment.

EXPLANATION:

AWS X-Ray is a service that collects data about requests that your application serves, and provides tools you can use to view, filter, and gain insights into that data to identify issues and opportunities for optimization. For any traced request to your application, you can see detailed information not only about the request and response, but also about calls that your application makes to downstream AWS resources, micro-services, databases and HTTP web APIs. When you instrument your application, the X-Ray SDK records information about incoming and outgoing requests, the AWS resources used, and the application itself. You can add other information to the segment document as annotations and metadata. Annotations are simple key-value pairs that are indexed for use with filter expressions. Use annotations to record data that you want to use to group traces in the console.

RESOURCES

- X-Ray Annotations and Metadata
- Searching for Traces in the AWS X-Ray Console with Filter Expressions

STATS

- You spent 00:50 on this question

QUESTION 49

You are developing a batch process job on Amazon EMR. The EMR instances need to access data stored in Amazon RDS in order to initialize the batch processing. The application code ran properly during testing but is not able to properly retrieve data from the RDS instance as there appears to be no connectivity. How would you remedy this situation in the most effective manner?

- ✗ **Create a new key pair associated with the EMR instance. The current key pair is invalid.** SELECTED
- ✗ This an AWS issue. AWS manages the underlying RDS and EMR infrastructure; they should be able to communicate with each other. Open a Support Case to resolve the issue.
- ✗ Migrate the application to run on Amazon EC2 instead. Create an auto-scaling group to scale the batch process when it exceeds a CPU threshold.
- ✓ Edit the security group rules associated with the RDS and EMR instances to allow inbound/outbound access.

EXPLANATION:

For AWS Container services, customers are responsible for the data and for firewall rules for access to the container service. For example, Amazon RDS provides RDS security groups, and Amazon EMR allows customers to manage firewall rules through Amazon EC2 security groups for Amazon EMR instances. Editing the security group rules will solve the issue. Although AWS does manage the underlying RDS and EMR infrastructure, customers are responsible for the data and firewall rules for access to container services. Key pairs related to infrastructure services such as EC2 and is not relevant in this case. Migrating to EC2 would work but is unnecessary, more costly and require additional administrative overhead.

RESOURCES

- AWS Security Best Practices

STATS

- You spent 02:09 on this question

QUESTION 59

Your application uses the STS API call AssumeRoleWithWebIdentity to enable access for users who have authenticated using a Web ID provider. Which of the following best describe what is returned by a successful call to AssumeRoleWithWebIdentity?

- ✖ AssumeRoleWithWebIdentity returns an ARN of the IAM user that the user is allowed to assume temporarily
- ✖ AssumeRoleWithWebIdentity returns an assumed role ID which the user is allowed to assume temporarily
- ✔ AssumeRoleWithWebIdentity returns a set of temporary credentials (access key ID, secret access key and security token) which give temporary access to AWS services
- ✖ **AssumeRoleWithWebIdentity returns an ARN of the IAM role that the user is allowed to assume temporarily** SELECTED

EXPLANATION:

AssumeRoleWithWebIdentity returns a set of temporary credentials, giving the user temporary access to AWS. It also returns an Amazon Resource Name (ARN) and the assumed role ID, which are identifiers that you can use to refer to the temporary security credentials.

RESOURCES

STS: AssumeRoleWithWebIdentity

STATS

- You spent **01:47** on this question

QUESTION 20

You are developing an application which will use Cognito to allow authenticated Facebook users to sign-in and use your application. You would like to use Cognito to handle temporary access allowing authenticated users to access product and transaction data that your application stores in S3 and DynamoDB. Which is the best approach?

- ✖ Configure an IAM User Group to provide temporary AWS credentials to your users to allow temporary access to AWS resources
- ✖ Configure a User Pool to provide temporary AWS credentials to your users to allow temporary access to AWS resources
- ✖ Configure a SAML 2 Federation to provide temporary AWS credentials to your users to allow temporary access to AWS resources
- ✔ **Configure an Identity Pool to provide temporary AWS credentials to your users to allow temporary access to AWS resources** SELECTED

EXPLANATION:

Cognito is the recommended approach for user sign-up and sign-in for mobile applications which allow access to users with Facebook, Google or Amazon.com credentials. Identity pools enable you to grant your users temporary access to AWS services. User pools are user directories that provide sign-up and sign-in options for your app users.

RESOURCES

What Is Cognito?

STATS

- You spent **00:56** on this question

QUESTION 61

What is the name of the service that allows users to use their social media account to gain temporary access to the AWS platform?

- ✖ Active Directory Authentication Services
- ✖ Facebook Sign In Service
- ✔ **Web Identity Federation** SELECTED
- ✖ Web Confederation Services

EXPLANATION:

Web Identity Federation is the services which allows users to authenticate with web Identity Providers like Facebook, Google and Amazon receive an authentication token and then exchange that token for temporary security credentials in AWS.

RESOURCES

Web Identity Federation

STATS

- You spent **00:54** on this question