PRACTICE TEST I - 2018 VERSION

Attempt	3	**Completed on**	Thursday , 06 December 2018 , 02:54 PM
Marks Obtained	42 / 65	**Time Taken**	00 H 45 M 05 S
Your score is	64.62%	**Result**	Fail

Domains / Topics wise Quiz Performance Report

S.No.	Topic	Total Questions	Correct	Incorrect	Unattempted
1	Security	12	8	4	0
2	Refactoring	14	9	5	0
3	Monitoring and Troubleshooting	4	3	1	0
4	Development with AWS Services	16	11	5	0
5	Other	7	5	2	0
6	Deployment	12	6	6	0

65 Questions	42 Correct	23 Incorrect	0 Unattempted

Show Answers: All

QUESTION 1 CORRECT SECURITY

A developer is writing an application that will run on –premises, but must access AWS services through an AWS SDK. How can the Developer allow the SDK to access the AWS services?

- A. Create an IAM EC2 role with correct permissions and assign it to the on-premises server.
- B. Create an IAM user with correct permissions, generate an access key and store it in aws credentials ✔
- C. Create an IAM role with correct permissions and request an STS token to assume the role.
- D. Create an IAM user with correct permissions, generate an access key and store it in a Dynamo DB table.

Explanation :

Answer – B
When working on development, you need to use the AWS Access keys to work with the AWS Resources
The AWS Documentation additionally mentions the following
You use different types of security credentials depending on how you interact with AWS. For example, you use a user name and password to sign in to the AWS Management Console. You use access keys to make programmatic calls to AWS API operations.
Option A is incorrect since we need to do this from an on-premise server you cannot use an EC2 role to work with an on-premise server.
Option C is incorrect. If you want to test your application on your local machine, you're going to need to generate temporary security credentials (access key id, secret access key, and session token). You can do this by using the access keys from an IAM user to call assumeRole (http://docs.aws.amazon.com/STS/latest/APIReference/API_AssumeRole.html). The result of that call will include credentials that you can use to set the AWS_ACCESS_KEY_ID, AWS_SECRET_ACCESS_KEY, and AWS_SESSION_TOKEN (note without the token, they keys will be invalid). The SDK/CLI should then use these credentials. This will give your app a similar experience to running in an Amazon EC2 instance that was launched using an IAM role.

https://forums.aws.amazon.com/thread.jspa?messageID=604424 (https://forums.aws.amazon.com/thread.jspa?messageID=604424)
Option D is incorrect since the access keys should be on the local machine
For more information on usage of credentials in AWS , please refer to the below link:

- https://docs.aws.amazon.com/general/latest/gr/aws-sec-cred-types.html (https://docs.aws.amazon.com/general/latest/gr/aws-sec-cred-types.html)

Ask our Experts

QUESTION 2 INCORRECT REFACTORING

A Developer is migrating an on-premises web application to the AWS Cloud. The application currently runs on a 32-processor server and stores session state in memory. On Friday afternoons the server runs at 75% CPU utilization, but only about 5% CPU utilization at other times.

How should the Developer change to code to better take advantage of running in the cloud?

- A. Compress the session state data in memory ✖
- B. Store session state on EC2 instance Store
- C. Encrypt the session state data in memory
- D. Store session state in an ElastiCache cluster. ✔

Explanation :

Answer – D
ElastiCache is the perfect solution for managing session state. This is also given in the AWS Documentation
In order to address scalability and to provide a shared data storage for sessions that can be accessible from any individual web server, you can abstract the HTTP sessions from the web servers themselves. A common solution to for this is to leverage an In-Memory Key/Value store such as Redis and Memcached.
Option A is incorrect since compression is not the ideal solution
Option B is incorrect since EC2 Instance Store is too volatile.
Option C is incorrect since this is ok from a security standpoint but will just make the performance worse for the application
For more information on Session Management , please refer to the below Link:

- https://aws.amazon.com/caching/session-management/ (https://aws.amazon.com/caching/session-management/)

Ask our Experts

QUESTION 3 INCORRECT MONITORING AND TROUBLESHOOTING

An organization's application needs to monitor application specific events with a standard AWS service. The service should capture the number of logged in users and trigger events accordingly. During peak times, monitoring frequency will occur every 10 seconds.

What should be done to meet these requirements?

- A. Create an Amazon SNS notification
- B. Create a standard resolution custom Amazon CloudWatch log

C. Create a high-resolution custom Amazon CloudWatch metric ✔

D. Create a custom Amazon CloudTrail log. ✖

Explanation :

Answer – C
This is clearly mentioned in the AWS Documentation
When creating an alarm, select a period that is greater than or equal to the frequency of the metric to be monitored. For example, basic monitoring for Amazon EC2 provides metrics for your instances every 5 minutes. When setting an alarm on a basic monitoring metric, select a period of at least 300 seconds (5 minutes). Detailed monitoring for Amazon EC2 provides metrics for your instances every 1 minute. When setting an alarm on a detailed monitoring metric, select a period of at least 60 seconds (1 minute).
If you set an alarm on a high-resolution metric, you can specify a high-resolution alarm with a period of 10 seconds or 30 seconds, or you can set a regular alarm with a period of any multiple of 60 seconds
Option A is incorrect since the question does not mention anything on notifications.
Option B is incorrect since the standard resolution counters will not help define triggers within a 10 second interval
Option D is incorrect since Cloudtrail is used for API Activity logging
For more information on Cloudwatch metrics , please refer to the below Link:

- https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/cloudwatch_concepts.html (https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/cloudwatch_concepts.html)

Ask our Experts

QUESTION 4 CORRECT DEVELOPMENT WITH AWS SERVICES

A Developer is writing an application that runs on EC2 instances and stores 2 GB objects in an S3 bucket. The Developer wants to minimize the time required to upload each item. Which API should the Developer use to minimize upload time?

A. MultipartUpload ✔

B. BatchGetItem

C. BatchWriteItem

D. PutItem

Explanation :

Answer – A
The AWS Documentation mentions the following to support this
The Multipart upload API enables you to upload large objects in parts. You can use this API to upload new large objects or make a copy of an existing object (see Operations on Objects).
Multipart uploading is a three-step process: You initiate the upload, you upload the object parts, and after you have uploaded all the parts, you complete the multipart upload. Upon receiving the complete multipart upload request, Amazon S3 constructs the object from the uploaded parts, and you can then access the object just as you would any other object in your bucket.
Option B is incorrect since this is used to get a batch of items
Option C is incorrect since this is used to write a batch of items and would not help to upload a large item
Option D is incorrect since this is used to Put a single item but does not offer performance benefits for uploading large objects.
For more information on Amazon S3 Multipart file upload, please refer to the below Link:

- https://docs.aws.amazon.com/AmazonS3/latest/dev/mpuoverview.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/mpuoverview.html)

Ask our Experts

QUESTION 5 CORRECT SECURITY

A Developer working on an AWS CodeBuild project wants to override a build command as part of a build run to test a change. The developer has access to run the builds but does not have access to edit the CodeBuild project

What process should the Developer use to override the build command?

- A. Update the buildspec.yml configuration file that is part of the source code and run a new build.
- B. Update the command in the Build Commands section during the build run in the AWS console.
- C. Run the start build AWS CLI command with buildspecOverride property set to the new buildspec.yml file. ✔
- D. Update the buildspec property in the StartBuild API to override the build command during build run.

Explanation :

Answer – C
Use the AWS CLI command to specify different parameters that need to be run for the build. Since the developer has access to run the build , he can run the build changing the parameters from the command line. The same is also mentioned in the AWS Documentation

1. Run the `start-build` command in one of the following ways:

```
aws codebuild start-build --project-name project-name
```

Use this if you want to run a build that uses the latest version of the build input artifact and the build project's existing settings.

```
aws codebuild start-build --generate-cli-skeleton
```

Use this if you want to run a build with an earlier version of the build input artifact or if you want to override the settings for the build output artifacts, environment variables, build spec, or default build timeout period.

All other option are incorrect since we need to use the AWS CLI

For more information on running the command via the CLI, please refer to the below Link:

- https://docs.aws.amazon.com/codebuild/latest/userguide/run-build.html#run-build-cli (https://docs.aws.amazon.com/codebuild/latest/userguide/run-build.html#run-build-cli)

Ask our Experts

QUESTION 6 INCORRECT REFACTORING

An organization is using an Amazon ElastiCache cluster in front of their Amazon RDS instance. The organization would like the Developer to implement logic into the code so that the cluster only retrieves data from RDS when there is a cache miss.

What strategy can the Developer implement to achieve this?

- A. Lazy loading ✔

- B. Write-through
- C. Error retries ✖
- D. Exponential backoff

Explanation :

Answer – A
The AWS Documentation mentions the different caching strategies, for the above scenario the best one to choose is Lazy Loading.
Whenever your application requests data, it first makes the request to the ElastiCache cache. If the data exists in the cache and is current, ElastiCache returns the data to your application. If the data does not exist in the cache, or the data in the cache has expired, your application requests the data from your data store which returns the data to your application. Your application then writes the data received from the store to the cache so it can be more quickly retrieved next time it is requested.
All other options are incorrect since there is only one which matches the requirement of the question.
For more information on the strategies for ElastiCache, please refer to the below Link:

- https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/Strategies.html (https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/Strategies.html)

Ask our Experts

QUESTION 7 CORRECT REFACTORING

A Developer is writing an application that will run on EC2 instances and read messages from an SQS queue. The messages will arrive every 15-60 seconds. How should the Developer efficiently query the queue for new messages?

- A. Use long polling ✔
- B. Set a custom visibility timeout
- C. Use short polling
- D. Implement exponential backoff.

Explanation :

Answer – A
Option B is invalid because this is valid only for the processing time for the Messages.
Option C is invalid because this would not be a cost effective option
Option D is invalid because this is not a practice for SQS queues
Long polling will help in ensuring that the applications makes less requests for messages in a shorter period of time. This is more cost effective. Since the messages are only going to be available after 15 seconds and we don't know exactly when they would be available, its better to use Long Polling
For more information on Long polling, please refer to the below Link:

- https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-long-polling.html (https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-long-polling.html)

Ask our Experts

QUESTION 8 INCORRECT DEVELOPMENT WITH AWS SERVICES

A Developer is building an application that needs access to an S3 bucket. An IAM role is created with the required permissions to access the S3 bucket. Which API call should the Developer use in the application so that the code can access to the S3 bucket?

- A. IAM: AccessRole

- B. STS: GetSessionToken
- C. IAM:GetRoleAccess ✖
- D. STS:AssumeRole ✔

Explanation :

Answer – D
This is given in the AWS Documentation
A role specifies a set of permissions that you can use to access AWS resources. In that sense, it is similar to an IAM user. An application assumes a role to receive permissions to carry out required tasks and interact with AWS resources. The role can be in your own account or any other AWS account. For more information about roles, their benefits, and how to create and configure them, see IAM Roles, and Creating IAM Roles. To learn about the different methods that you can use to assume a role, see Using IAM Roles.
Important
The permissions of your IAM user and any roles that you assume are not cumulative. Only one set of permissions is active at a time. When you assume a role, you temporarily give up your previous user or role permissions and work with the permissions that are assigned to the role. When you exit the role, your user permissions are automatically restored.
To assume a role, an application calls the AWS STS AssumeRole API operation and passes the ARN of the role to use. When you call AssumeRole, you can optionally pass a JSON policy. This allows you to restrict permissions for that for the role's temporary credentials. This is useful when you need to give the temporary credentials to someone else. They can use the role's temporary credentials in subsequent AWS API calls to access resources in the account that owns the role. You cannot use the passed policy to grant permissions that are in excess of those allowed by the permissions policy of the role that is being assumed. To learn more about how AWS determines the effective permissions of a role, see Policy Evaluation Logic.
All other options are invalid since the right way for the application to use the Role is to assume the role to get access to the S3 bucket.
For more information on switching roles, please refer to the below Link:

- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_use_switch-role-api.html (https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_use_switch-role-api.html)

Ask our Experts

QUESTION 9 CORRECT

A developer has recently deployed an AWS Lambda function that computes a Fibonacci sequence using recursive Lambda invocations. A pre-defined AWS IAM policy is being used for this function, and only the required dependencies were packaged. A few days after deployment, the Lambda function is being throttled.

What should the Developer have done to prevent this, according to best practices?

- A. Use more restrictive IAM policies
- B. Avoid the use of recursion ✔
- C. Request a concurrency service limit increase
- D. Increase the memory allocation range.

Explanation :

Answer – B
The question's focus is on the best practice methods for Lambda functions. Since the question is asking us to choose the best option that the developer might have done to prevent this throttling issue is that he should have written a code that avoids the recursive call of the function within itself as it is not a recommended as a best practice.

For "Lambda function code" best practice it is recommended that we should avoid recursive code in the Lambda function.

"Avoid using recursive code in your Lambda function, wherein the function automatically calls itself until some arbitrary criteria is met. This could lead to unintended volume of function invocations and escalated costs. If you do accidentally do so, set the function concurrent execution limit to '0' (Zero) immediately to throttle all invocations to the function, while you update the code."

Option A is incorrect since using IAM Policies will not help in resolving the issue
Option C is incorrect since this is about concurrency on the number of AWS Lambda executions.
Option D is incorrect since the issue here is with the number of executions and not on the amount of memory used for the executions
For more information, please refer to the below Link:

- https://docs.aws.amazon.com/lambda/latest/dg/best-practices.html (https://docs.aws.amazon.com/lambda/latest/dg/best-practices.html)

Ask our Experts

QUESTION 10 CORRECT

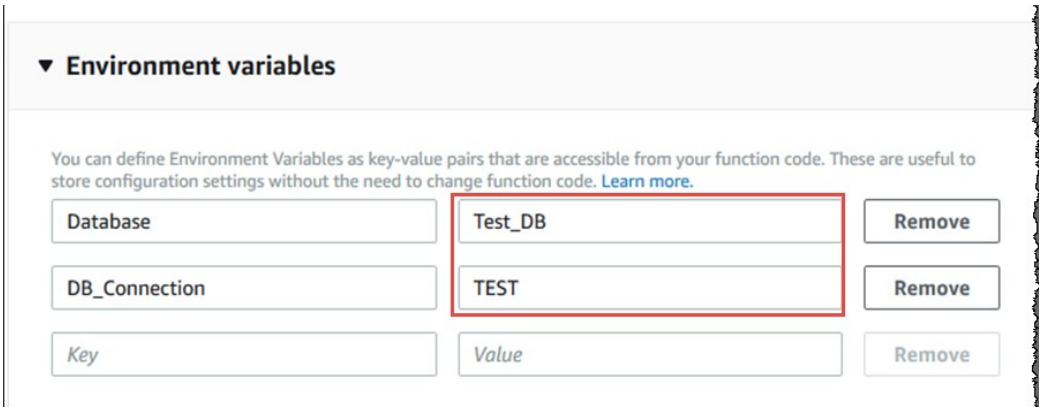
A company is writing a Lambda function that will run in multiple stages, such a dev, test and production. The function is dependent upon several external services, and it must call different endpoints for these services based on function's deployment stage.

What Lambda feature will enable the developer to ensure that the code references the correct endpoints when running in each stage?

- A. Tagging
- B. Concurrency
- C. Aliases
- D. Environment variables ✔

Explanation :

Answer – D
You can create different environment variables in the Lambda function that can be used to point to the different services. The below screenshot from the AWS Documentation shows how this can be done with databases.



Option A is invalid since this can only be used to add metadata for the function
Option B is invalid since this is used for managing the concurrency of execution
Option C is invalid since this is used for managing the different versions of your Lambda function
For more information on AWS Lambda environment variables, please refer to the below Link:

- https://docs.aws.amazon.com/lambda/latest/dg/env_variables.html (https://docs.aws.amazon.com/lambda/latest/dg/env_variables.html)

Ask our Experts

QUESTION 11 CORRECT REFACTORING

An application running on Amazon EC2 must store objects in an S3 bucket.

Which option follows best practices for granting the application access to the S3 bucket?

- A. Use the userdata script to store an access key on the EC2 instance
- B. Use an AWS IAM role with permissions to write to the S3 bucket ✔
- C. Store an access key encrypted with AWS KMS in Amazon S3
- D. Embed an access key in the application code

Explanation :

Answer – B
IAM Roles are the most preferred security standard when it comes to granting access to EC2 Instances to other AWS resources
Options A,C and D are invalid since access keys should not be used when deploying applications on EC2 Instances which need access to other AWS resources
For more information on IAM Roles, please refer to the below Link:

- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html (https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html)

Ask our Experts

QUESTION 12 CORRECT SECURITY

A Developer is migrating an on-premises application to the AWS Cloud. The application currently uses Microsoft SQL, encrypting some of the data using Transparent Data Encryption. Which service should the Developer use to minimize code changes?

- A. Amazon RDS ✔
- B. Amazon Aurora
- C. Amazon Redshift
- D. Amazon DynamoDB

Explanation :

Answer – A
This is also mentioned in the AWS Documentation
Amazon RDS supports using Transparent Data Encryption (TDE) to encrypt stored data on your DB instances running Microsoft SQL Server. TDE automatically encrypts data before it is written to storage, and automatically decrypts data when the data is read from storage.

Amazon RDS supports TDE for the following SQL Server versions and editions:

- SQL Server 2017 Enterprise Edition
- SQL Server 2016 Enterprise Edition
- SQL Server 2014 Enterprise Edition
- SQL Server 2012 Enterprise Edition
- SQL Server 2008 R2 Enterprise Edition

To enable transparent data encryption for a DB instance that is running SQL Server, specify the TDE option in an Amazon RDS option group that is associated with that DB instance.
All other options are incorrect since the developer wants to minimize code changes. So going onto a different database engine is not preferred
For more information on Encryption on Microsoft SQL Server AWS, please refer to the below Link:

- https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Appendix.SQLServer.Options.TDE.html (https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Appendix.SQLServer.Options.TDE.html)

Ask our Experts

QUESTION 13 INCORRECT SECURITY

A Developer is writing several Lambda functions that each access data in a common RDS DB instance. They must share a connection string that contains the database credentials, which are a secret. A company policy requires that all secrets be stored encrypted.

Which solution will minimize the amount of code the Developer must write?

- A. Use common DynamoDB table to store settings ✖
- B. Use AWS Lambda environment variables
- C. Use Systems Manager Parameter Store secure strings ✔
- D. Use a table in a separate RDS database.

Explanation :

Answer – C
The AWS Documentation mentions the following to support this
AWS Systems Manager Parameter Store provides secure, hierarchical storage for configuration data management and secrets management. You can store data such as passwords, database strings, and license codes as parameter values. You can store values as plain text or encrypted data. You can then reference values by using the unique name that you specified when you created the parameter
Options A and D are incorrect and inefficient since you don't need a separate table. Also it does not mention in the answer about encryption of the underlying tables.
Option B is not correct , since you need to share the encrypted connection strings
For more information on Systems Manager Parameter store, please refer to the below Link:

- https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-paramstore.html (https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-paramstore.html)

Ask our Experts

QUESTION 14 CORRECT DEVELOPMENT WITH AWS SERVICES

A developer is using Amazon API Gateway as an HTTP proxy to a backend endpoint. There are three separate environments: Development, Testing, Production and three corresponding stages in the API gateway.

How should traffic be directed to different backend endpoints for each of these stages without creating a separate API for each?

- A. Add a model to the API and add a schema to differentiate different backend endpoints.
- B. Use stage variables and configure the stage variables in the HTTP integration Request of the API ✔
- C. Use API Custom Authorizers to create an authorizer for each of the different stages.
- D. Update the Integration Response of the API to add different backend endpoints.

Explanation :

Answer – B
The AWS Documentation mentions the following to support this
Stage variables are name-value pairs that you can define as configuration attributes associated with a deployment stage of an API. They act like environment variables and can be used in your API setup and mapping templates.
Option A is incorrect since this would only allow for additions of schema's
Option C is incorrect since this is only used for Authorization and would not help to differentiate the environments
Option D is incorrect since this would help in integrating the responses to the API gateway
For more information on Stage variables in the API gateway, please refer to the below Link:

- https://docs.aws.amazon.com/apigateway/latest/developerguide/stage-variables.html (https://docs.aws.amazon.com/apigateway/latest/developerguide/stage-variables.html)

Ask our Experts

QUESTION 15 CORRECT DEPLOYMENT

An organization deployed their static website on Amazon S3. Now, the Developer has a requirement to serve dynamic content using a serverless solution. Which combination of services should be used to implement a serverless application for the dynamic content? Select 2 answers from the options given below

- A. Amazon API Gateway ✔
- B. Amazon EC2
- C. AWS ECS
- D. AWS Lambda ✔
- E. Amazon kinesis

Explanation :

Answer – A and D
Out of the above list, Given the scenerio,API Gateway and AWS Lambda are the best two choices to build this serverless application.
The AWS Documentation mentions the following
AWS Lambda lets you run code without provisioning or managing servers. You pay only for the compute time you consume - there is no charge when your code is not running.
For more information on AWS Lambda, please refer to the below Link:

- https://aws.amazon.com/lambda/ (https://aws.amazon.com/lambda/)

Amazon API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.

- https://aws.amazon.com/api-gateway/ (https://aws.amazon.com/api-gateway/)

For more information on the API gateway please refer to the below Link:
All other services are based on managing infrastructure.

Ask our Experts

QUESTION 16 CORRECT REFACTORING

An application is publishing a custom CloudWatch metric any time an HTTP 504 error appears in the application error logs. These errors are being received intermittently. There is a CloudWatch Alarm for this metric and the Developer would like the alarm to trigger ONLY if it breaches two evaluation periods or more.

What should be done to meet these requirements?

- A. Update the CloudWatch Alarm to send a custom notification depending on results
- B. Publish the value zero whenever there are no "HTTP 504" errors
- C. Use high – resolution metrics to get data pushed to CloudWatch more frequently
- D. The evaluation period and Data Points to Alarm should be set to 2 while creating this alarm ✔

Explanation :

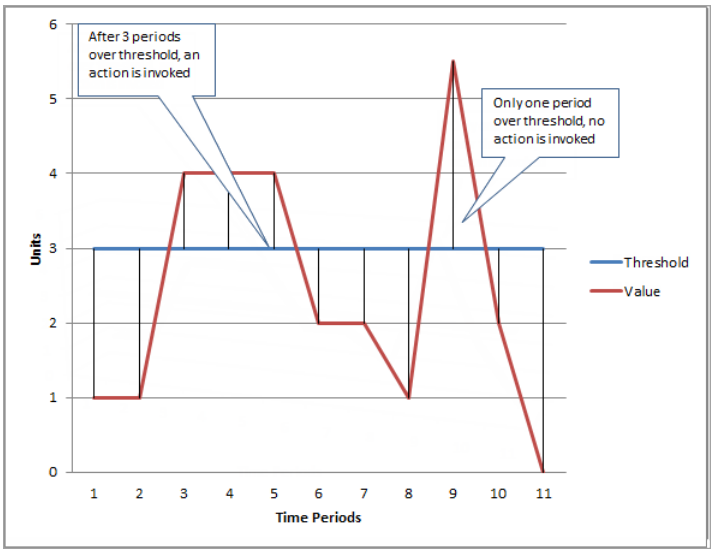
Answer – D
Our scenario states that we are receiving HTTP Error 504 intermittently. The requirement of the scenario is that the ALARM should trigger ONLY of it breaches 2 evaluation periods.

None of the options listed is a good choice.

When you create an alarm, you specify three settings to enable CloudWatch to evaluate when to change the alarm state:

- **Period** is the length of time to evaluate the metric to create each individual data point for a metric. It is expressed in seconds. If you choose one minute as the period, there is one datapoint every minute.
- **Evaluation Period** is the number of the most recent data points to evaluate when determining alarm state.
- **Datapoints to Alarm** is the number of data points within the evaluation period that must be breaching to cause the alarm to go to the ***ALARM*** state. The breaching data points do not have to be consecutive, they just must all be within the last number of data points equal to Evaluation Period.

Let us look at an example.
In the following figure, the alarm threshold is set to three units. The alarm is configured to go to the ***ALARM*** state and both Evaluation Period and Datapoints to Alarm are 3. That is, when all three datapoints in the most recent three consecutive periods are above the threshold, the alarm goes to the ***ALARM*** state. In the figure, this happens in the third through fifth time periods. At period six, the value dips below the threshold, so one of the periods being evaluated is not breaching, and the alarm state changes to ***OK***. During the ninth time period, the threshold is breached again, but for only one period. Consequently, the alarm state remains ***OK***.



Option A is incorrect since here there is no mention of any special kind of notification
Option B is incorrect since you don't need to mention a 0 value , just place a 1 value when the result is received.
Option C is incorrect since there is no mention on the frequency , so we don't know if we need high resolution for metrics
For more information on aggregation of data in Cloudwatch please refer to the below Link:

- https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/CloudWatch-Agent-common-scenarios.html#CloudWatch-Agent-aggregating-metrics (https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/CloudWatch-Agent-common-scenarios.html#CloudWatch-Agent-aggregating-metrics)

Ask our Experts

QUESTION 17 CORRECT DEPLOYMENT

A Developer has been asked to create an AWS Elastic Beanstalk environment for a production web application which needs to handle thousands of requests. Currently the dev environment is running on a t1 micro instance.

How can the Developer change the EC2 instance type to m4.large?

- **A.** Use CloudFormation to migrate the Amazon EC2 instance type of the environment fromt1 micro to m4.large.
- **B.** Create a configuration file in Amazon S3 with the instance type as m4.large and use the same during environment creation. ✔
- **C.** Change the instance type to m4.large in the configuration details page of the Create New Environment page.
- **D.** Change the instance type value for the environment to m4.large by using update autoscaling group CLI command.

Explanation :

Answer – B
The Elastic Beanstalk console and EB CLI set configuration options when you create an environment. You can also set configuration options in saved configurations and configuration files. If the same option is set in multiple locations, the value used is determined by the order of precedence.

Configuration option settings can be composed in text format and saved prior to environment creation, applied during environment creation using any supported client, and added, modified or removed after environment creation.

During environment creation, configuration options are applied from multiple sources with the following precedence, from highest to lowest:

- **Settings applied directly to the environment** – Settings specified during a create environment or update environment operation on the Elastic Beanstalk API by any client, including the AWS Management Console, EB CLI, AWS CLI, and SDKs. The AWS Management Console and EB CLI also apply recommended values (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/command-options.html#configuration-options-recommendedvalues) for some options that apply at this level unless overridden.
- **Saved Configurations** – Settings for any options that are not applied directly to the environment are loaded from a saved configuration, if specified.
- **Configuration Files (.ebextensions)** – Settings for any options that are not applied directly to the environment, and also not specified in a saved configuration, are loaded from configuration files in the ***.ebextensions*** folder at the root of the application source bundle.

Configuration files are executed in alphabetical order. For example, ***.ebextensions/01run.config*** is executed before ***.ebextensions/02do.config***.

- **Default Values** – If a configuration option has a default value, it only applies when the option is not set at any of the above levels.

If the same configuration option is defined in more than one location, the setting with the highest precedence is applied. When a setting is applied from a saved configuration or settings applied directly to the environment, the setting is stored as part of the environment's configuration. These settings can be removed with the AWS CLI or with the EB CLI
.
Settings in configuration files are not applied directly to the environment and cannot be removed without modifying the configuration files and deploying a new application version. If a setting applied with one of the other methods is removed, the same setting will be loaded from configuration files in the source bundle.

Option A is incorrect since the environment is already managed by the Elastic Beanstalk service and we don't need Cloudformation for this.
Option C is incorrect since the changes need to be done for the current configuration.
For more information on making this change, please refer to the below Link:

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.managing.ec2.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.managing.ec2.html)

Ask our Experts

QUESTION 18 CORRECT REFACTORING

An organization has an Amazon Aurora RDS instance that handles all of its AWS-based e-commerce activity. The application accessing the database needs to create large sales reports on an hourly basis, running 15 minutes after the hour. This reporting activity is slowing down the e-commerce application.

Which combination of actions should be taken to reduce the impact on the main e-commerce application? Select 2 answers from the options given below

- [x] **A. Point the reporting application to the read replica** ✔
- [ ] **B. Migrate the data to a set of highly available Amazon EC2 instances**
- [ ] **C. Use SQS Buffering to retrieve data for reports**
- [x] **D. Create a read replica of the database** ✔
- [ ] **E. Create an SQS queue to implement SQS Buffering**

Explanation :

Answer – A and D
The AWS Documentation mentions the following
Amazon RDS Read Replicas provide enhanced performance and durability for database (DB) instances. This feature makes it easy to elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput.
Option B is incorrect, since the AWS RDS service already has features to support the requirement
Options C and E are incorrect since using SQS would be inefficient.
For more information on AWS Read Replica's, please refer to the below Link:

- https://aws.amazon.com/rds/details/read-replicas/ (https://aws.amazon.com/rds/details/read-replicas/)

Ask our Experts

QUESTION 19 INCORRECT DEPLOYMENT

An organization is using AWS Elastic Beanstalk for a web application. The Developer needs to configure the Elastic Beanstalk environment with deployment methods that will create new instances and deploy code to those instances.

Which methods will deploy code ONLY to new instances? Choose 2 answers from the options given below.

- [ ] **A.** All at once deployment
- [ ] **B.** Immutable deployment ✔
- [x] **C.** Rolling deployment ✖
- [x] **D.** Linear deployment ✖
- [ ] **E.** Blue/Green deployment ✔

Explanation :

Answer – B and E
The AWS Documentation mentions the following
Immutable deployments perform an immutable update (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/environmentmgmt-updates-immutable.html) to launch a full set of new instances running the new version of the application in a separate Auto Scaling group, alongside the instances running the old version. Immutable deployments can prevent issues caused by partially completed rolling deployments. If the new instances don't pass health checks, Elastic Beanstalk terminates them, leaving the original instances untouched.
And with Blue Green deployments, you can have a separate deployment environment as well.
All other options are invalid since these would not allow deployment onto separate environments.
For more information on Deployment options, please refer to the below Link:

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.rolling-version-deploy.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.rolling-version-deploy.html)

Ask our Experts

QUESTION 20 CORRECT REFACTORING

A developer is writing an application that will store data in a DynamoDB table. The ratio of reads operations to

write operations will be 1000 to 1, with the same data being accessed frequently.

What should the Developer enable on the DynamoDB table to optimize performance and minimize costs?

- A. Amazon DynamoDB auto scaling
- B. Amazon DynamoDB cross-region replication
- C. Amazon DynamoDB Streams
- D. Amazon DynamoDB Accelerator ✔

Explanation :

Answer – D
The AWS Documentation mentions the following
DAX is a DynamoDB-compatible caching service that enables you to benefit from fast in-memory performance for demanding applications. DAX addresses three core scenarios:
1. As an in-memory cache, DAX reduces the response times of eventually-consistent read workloads by an order of magnitude, from single-digit milliseconds to microseconds.
2. DAX reduces operational and application complexity by providing a managed service that is API-compatible with Amazon DynamoDB, and thus requires only minimal functional changes to use with an existing application.
3. For read-heavy or bursty workloads, DAX provides increased throughput and potential operational cost savings by reducing the need to over-provision read capacity units. This is especially beneficial for applications that require repeated reads for individual keys.

Option A is incorrect since this is good when you have unpredictable workloads
Option B is incorrect since this is good for disaster recovery scenarios
Option C is incorrect since this is good to stream data to other sources
For more information on DynamoDB Accelerator, please refer to the below Link:

- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/DAX.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/DAX.html)

Ask our Experts

QUESTION 21 CORRECT REFACTORING

A developer has written an application that will be deployed by a company. The application is used to read and write objects to an S3 bucket. It is expected that the number of reads could exceed 400 requests per second. What should the developer do to ensure that the requests are handled accordingly.

- A. Enable versioning for the underlying bucket
- B. Ensure that the application uses a hash prefix when writing the data to the bucket ✔
- C. Ensure that the application uses a hash suffix when writing the data to the bucket
- D. Enable Cross region replication for the bucket

Explanation :

Answer – B
This is also mentioned in the AWS Documentation
When your workload is a mix of request types, introduce some randomness to key names by adding a hash string as a prefix to the key name. By introducing randomness to your key names the I/O load will be distributed across multiple index partitions.
Option A is incorrect since this only helps to avoid accidental deletion of objects.
Option C is incorrect since its needs to be a prefix and not a suffix.
Option D is incorrect since this is good for disaster recovery scenarios
For more information on better performance, please refer to the below Link:

- https://aws.amazon.com/premiumsupport/knowledge-center/s3-bucket-performance-improve/ (https://aws.amazon.com/premiumsupport/knowledge-center/s3-bucket-performance-improve/)

Note:
Based on AWS S3 performance announcement, (https://docs.aws.amazon.com/AmazonS3/latest/dev/request-rate-perf-considerations.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/request-rate-perf-considerations.html) - all the old links were expired). As per information, they didn't update the exam answer keys. So we have to choose the previous method to improve the S3 performance based on the AWS exam answer keys. As of now, we don't have AWS links that shows the Old methods to improve the S3 performance. Excuse for the inconvenience.

Ask our Experts

QUESTION 22 INCORRECT DEVELOPMENT WITH AWS SERVICES

You are an API developer that has been hired to work in a company. You have been asked to use the AWS services for development and deployment via the API gateway. You need to control the behavior of the API's frontend interaction. Which of the following could be done to achieve this?

Select 2 options.

- [ ] **A. Modify the configuration of the Method request** ✔
- [x] **B. Modify the configuration of the Integration request** ✖
- [ ] **C. Modify the configuration of the Method response** ✔
- [x] **D. Modify the configuration of the Integration response** ✖

Explanation :

Answer – A and C
This is also mentioned in the AWS Documentation
As an API developer, you control the behaviors of your API's frontend interactions by configuring the method request and a method response. You control the behaviors of your API's backend interactions by setting up the integration request and integration response. These involve data mappings between a method and its corresponding integration
Options B and D are incorrect since these are used control the behaviors of your API's backend interactions
For more information on creating an API via the gateway, please refer to the below Link:

- https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-create-api-from-example-console.html (https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-create-api-from-example-console.html)

Ask our Experts

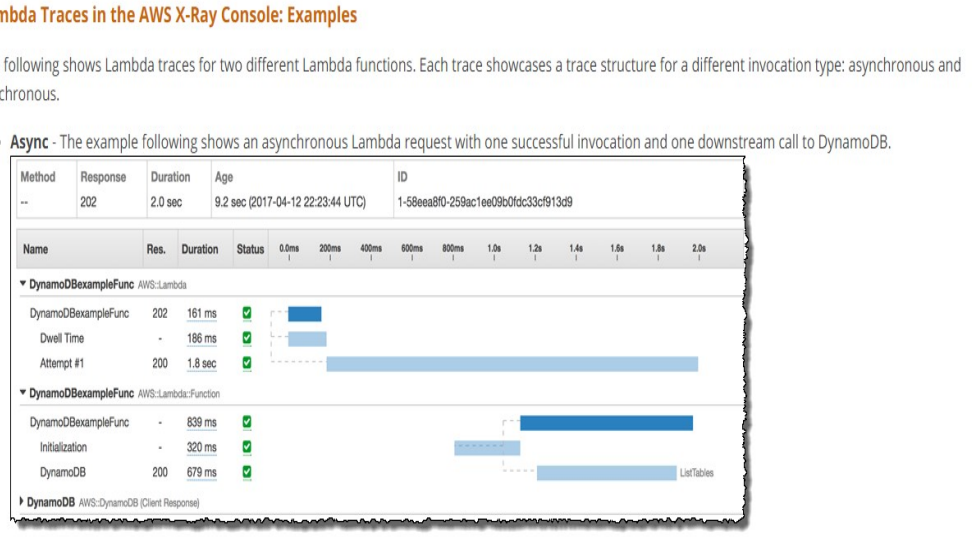
QUESTION 23 INCORRECT DEVELOPMENT WITH AWS SERVICES

You're developing an AWS Lambda function that is interacting with a DynamoDB table. The function was working well, but now is giving the results with a time delay. You need to debug the code to understand where the bottleneck is which is causing the performance issue. Which of the following is the ideal way to debug the code?

- ○ **A. Use Log statements in the code to detect the delay**
- ○ **B. Use Cloudwatch logs to detect where the delay could be** ✖
- ○ **C. Look at the throttling errors in Cloudwatch metrics**
- ○ **D. Use AWS X-Ray to see where the downstream delay could be** ✔

Explanation :

Answer – D
With AWS X-Ray, you can actually see traces in your AWS Lambda function which can allow you to see a detailed level of tracing to your downstream services. The below snapshot from the AWS documentation shows an example of this.



Option A is incorrect since this is not an efficient way to check for the performance errors.

Option B is incorrect since the logs might not be able to give you that level of tracing to detect the error
Option C is incorrect since throttling errors will not give you the cause of the performance issue
For more information on using AWS Lambda with X-Ray, please refer to the below Link:

- https://docs.aws.amazon.com/lambda/latest/dg/lambda-x-ray.html (https://docs.aws.amazon.com/lambda/latest/dg/lambda-x-ray.html)

Ask our Experts

QUESTION 24 INCORRECT DEPLOYMENT

A company is planning on using AWS CodePipeline for their underlying CI/CD process. The code will be picked up from an S3 bucket. The company policy mandates that all data should be encrypted at rest. Which of the following measures would you take to ensure that the CI/CD process conforms to this policy? Choose 2 possible actions from the options given below.

- [x] **A. Ensure that server-side encryption is enabled on the S3 Bucket** ✔
- [x] **B. Ensure that server-side encryption is enabled on the CodePipeline stage** ✖
- [ ] **C. Configure the code pickup stage in CodePipeline to use AWS KMS**
- [ ] **D. Configure AWS KMS with customer managed keys and use it for S3 bucket encryption** ✔

Explanation :

Answer – A and D
This is also mentioned in the AWS Documentation
There are two ways to configure server-side encryption for Amazon S3 artifacts:

- AWS CodePipeline creates an Amazon S3 artifact bucket and default AWS-managed SSE-KMS encryption keys when you create a pipeline using the Create Pipeline wizard. The master key is encrypted along with object data and managed by AWS.
- You can create and manage your own customer-managed SSE-KMS keys.

Options B and C are incorrect since this needs to be configured at the S3 bucket level.
For more information on Encryption in S3 with CodePipeline, please refer to the below Link:

- https://docs.aws.amazon.com/codepipeline/latest/userguide/S3-artifact-encryption.html (https://docs.aws.amazon.com/codepipeline/latest/userguide/S3-artifact-encryption.html)

Ask our Experts

QUESTION 25 CORRECT REFACTORING

An application hosted in AWS has been configured to use a DynamoDB table. A number of items are written to the DynamoDB table. These items are only accessed in a particular time frame, after which they can be deleted. Which of the following is an ideal way to manage the deletion of the stale items?

- A. Perform a scan on the table for the stale items and issue the Delete operation.
- B. Create an additional column to store the date. Perform a query for the stale objectsand the perform the Delete operation.
- C. Enable versioning for the items in DynamoDB and delete the last accessed version.
- D. Enable TTL for the items in DynamoDB ✔

Explanation :

Answer – D
The AWS Documentation mentions the following
Time To Live (TTL) for DynamoDB allows you to define when items in a table expire so that they can be automatically deleted from the database.
TTL is provided at no extra cost as a way to reduce storage usage and reduce the cost of storing irrelevant data without using provisioned throughput. With TTL enabled on a table, you can set a timestamp for deletion on a per-item basis, allowing you to limit storage usage to only those records that are relevant.
Options A and B are incorrect since these would not be cost effective and have a performance issue on the underlying DynamoDB table.
Option C is incorrect since versioning is not possible in DynamoDB.
For more information on Time to Live for items in DynamoDB, please refer to the below Link:

- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/TTL.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/TTL.html)

Ask our Experts

QUESTION 26 CORRECT REFACTORING

You need to migrate an existing on-premise application on AWS. It is a legacy-based application with little development support. Which of the following would be the best way to host this service in AWS?

- A. EC2 Instances with EBS Backed Volumes ✔
- B. EC2 Instances with Instance Store Volumes
- C. AWS Lambda Functions
- D. AWS API gateway with AWS Lambda

Explanation :

Answer - A
Since the application is a legacy-based application with little development support, porting the application onto AWS Lambda would be difficult. Hence Option C and D would be incorrect in this case.
Using EBS Backed Volumes is better for durability, than Instance store in which you could lose the data if the instance is stopped.
For more information on Amazon EC2, please refer to the below Link:

- https://aws.amazon.com/ec2/ (https://aws.amazon.com/ec2/)

Ask our Experts

QUESTION 27 INCORRECT DEPLOYMENT

Your team has been instructed on deploying a Microservices based application onto AWS. There is a requirement to manage the orchestration of application. Which of the following would the ideal way to implement this with the least amount of administrative effort?

- A. Use the Elastic Beanstalk Service
- B. Use the Elastic Container Service ✔
- C. Deploy Kubernetes on EC2 Instances
- D. Use the Opswork service

Explanation :

Answer – B
The Elastic Container service is a fully managed orchestration service available in AWS.
The AWS Documentation mentions the following
Amazon Elastic Container Service (Amazon ECS) is a highly scalable, high-performance container (https://aws.amazon.com/containers/) orchestration service that supports Docker (https://aws.amazon.com/docker/) containers and allows you to easily run and scale containerized applications on AWS. Amazon ECS eliminates the need for you to install and operate your own container orchestration software, manage and scale a cluster of virtual machines, or schedule containers on those virtual machines.
Options A and D are incorrect since they can be used to effectively manage Docker Containers. But for a fully orchestration service, use the Elastic Container Service
Option C is incorrect since even though Kubernetes is a fully managed solution, hosting it on EC2 Instances will incur more administrative headache
For more information on Amazon ECS, please refer to the below Link:

- https://aws.amazon.com/ecs/ (https://aws.amazon.com/ecs/)

Ask our Experts

QUESTION 28 CORRECT DEVELOPMENT WITH AWS SERVICES

You are developing an application that will interact with a DynamoDB table. The table is going to take in a lot of read and write operations. Which of the following would be the ideal partition key for the DynamoDB table to ensure ideal performance?

- A. CustomerID ✔
- B. CustomerName
- C. Location
- D. Age

Explanation :

Answer - A
The AWS Documentation gives the ideal way to construct partition Keys
Recommendations for partition keys
Use high-cardinality attributes. These are attributes that have distinct values for each item, like e-mailid, employee_no, customerid, sessionid, orderid, and so on.
Use composite attributes. Try to combine more than one attribute to form a unique key, if that meets your access pattern. For example, consider an orders table with customerid+productid+countrycode as the partition key and order_date as the sort key.
In such a scenario all other options become invalid since they are not the ideal candidates for partition keys.
For more information on choosing the right partition Key, please refer to the below Link:

- https://aws.amazon.com/blogs/database/choosing-the-right-dynamodb-partition-key/ (https://aws.amazon.com/blogs/database/choosing-the-right-dynamodb-partition-key/)

Ask our Experts

QUESTION 29 CORRECT DEVELOPMENT WITH AWS SERVICES

You are developing an application which will comprise of the following architecture

- A Set of EC2 Instances which will be processing videos
- These will be spun up an Autoscaling Group
- An SQS queue to maintain the processing messages

The application also has 2 pricing tiers. You need to ensure that the premium customers videos are give more preference. How can you achieve this?

- A. Create2 Autoscaling Groups, one for normal and one for premium customers
- B. Create2 sets of EC2 Instances, one for normal and one for premium customers
- C. Create2 SQS queues, one for normal and one for premium customers ✔
- D. Create2 Elastic Load Balancers, one for normal and one for premium customers

Explanation :

Answer – C
The ideal option would be to create 2 SQS queues. Messages can then be processed by the application from the high priority queue first.
The other options are not the ideal options. They would lead to extra cost and also for extra maintenance
For more information on SQS, please refer to the below Link:

- https://aws.amazon.com/sqs/ (https://aws.amazon.com/sqs/)

Ask our Experts

QUESTION 30 CORRECT DEVELOPMENT WITH AWS SERVICES

A developer is making use of AWS services to develop an application. He has been asked to develop the application in a manner to compensate any network delays. Which of the following two mechanisms should he implement in the application?

- A. Multiple SQS queues
- B. Exponential backoff algorithm ✔
- C. Retries in your application code ✔
- D. Consider using the Java SDK

Explanation :

Answer – B and C
Options A and D are incorrect since these practices would not help in the requirement for the application
The AWS Documentation mentions the following
In addition to simple retries, each AWS SDK implements exponential backoff algorithm for better flow control. The idea behind exponential backoff is to use progressively longer waits between retries for consecutive error responses. You should implement a maximum delay interval, as well as a maximum number of retries. The maximum delay interval and maximum number of retries are not necessarily fixed values, and should be set based on the operation being performed, as well as other local factors, such as network latency.

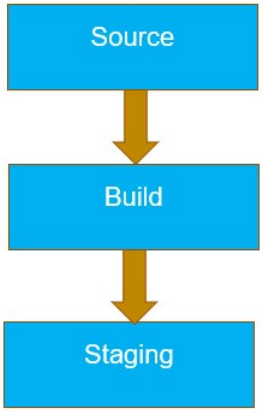
For more information on API retries, please refer to the below Link:

- https://docs.aws.amazon.com/general/latest/gr/api-retries.html (https://docs.aws.amazon.com/general/latest/gr/api-retries.html)

Ask our Experts

QUESTION 31 CORRECT DEPLOYMENT

You have currently defined the following set of stages in CodePipeline?



What happens if there is a failure which is detected at the Build Stage?

- A. A rollback will happen at the Source stage.
- B. The Build will be tried again
- C. The Build step will be skipped, and the Staging stage will be started.
- D. The entire process will stop ✔

Explanation :

Answer – D
The AWS Documentation mentions the following
In AWS CodePipeline, an action is a task performed on an artifact in a stage. If an action or a set of parallel actions is not completed successfully, the pipeline stops running.
Options A,B and C are incorrect since the default action will be that the entire pipeline will be stopped if the build does not succeed.
For more information on Actions retry, please refer to the below Link:

- https://docs.aws.amazon.com/codepipeline/latest/userguide/actions-retry.html (https://docs.aws.amazon.com/codepipeline/latest/userguide/actions-retry.html)

Ask our Experts

QUESTION 32 CORRECT SECURITY

Your architect has drawn out the details for a mobile based application. Below are the key requirements when it

comes to authentication

- Users should have the ability to sign-in using external identities such as Facebook or Google.
- There should be a facility to manage user profiles

Which of the following would you consider as part of the development process for the application?

- A. Consider using IAM Roles which can be mapped to the individual users
- B. Consider using User pools in AWS Cognito ✔
- C. Consider building the logic into the application
- D. Consider using SAML federation identities

Explanation :

Answer – B
The AWS Documentation mentions the following
User pools provide:

- Sign-up and sign-in services.
- A built-in, customizable web UI to sign in users.
- Social sign-in with Facebook, Google, and Login with Amazon, as well as sign-in with SAML identity providers from your user pool.
- User directory management and user profiles.
- Security features such as multi-factor authentication (MFA), checks for compromised credentials, account takeover protection, and phone and email verification.
- Customized workflows and user migration through AWS Lambda triggers.

Options A and C is incorrect since this would require a lot of effort to develop and maintain
Option D is incorrect since this is normally used for external directories such as Active Directory
For more information on user identity pools, please refer to the below Link:

- https://docs.aws.amazon.com/cognito/latest/developerguide/cognito-user-identity-pools.html (https://docs.aws.amazon.com/cognito/latest/developerguide/cognito-user-identity-pools.html)

Ask our Experts

QUESTION 33 CORRECT DEPLOYMENT

You've been asked to migrate a static web site onto AWS. You have been told that the solution should be COST effective. Which of the following solutions would you consider?

- A. Create an EC2 Instance and deploy the web site
- B. Deploy the web site using S3 static web site hosting ✔
- C. Create an Elastic Beanstalk environment and deploy the web site
- D. Create an Opswork stack and deploy the web site

Explanation :

Answer – B
The AWS Documentation mentions the following

You can host a static website on Amazon S3. On a static website, individual web pages include static content and they might also contain client-side scripts. By contrast, a dynamic website relies on server-side processing, including server-side scripts such as PHP, JSP, or ASP.NET. Amazon S3 does not support server-side scripting.
Options A, C and D are incorrect since these would incur more effort and more cost to host the environment
For more information on static web site hosting, please refer to the below Link:

- https://docs.aws.amazon.com/AmazonS3/latest/user-guide/static-website-hosting.html (https://docs.aws.amazon.com/AmazonS3/latest/user-guide/static-website-hosting.html)

Ask our Experts

QUESTION 34 CORRECT SECURITY

Your company is going to develop an application in .Net Core which is going to work with a DynamoDB table. There is a requirement that all data needs to be encrypted at rest. How can you achieve this?

- A. Enable Encryption during the DynamoDB table creation ✔
- B. Enable Encryption on the existing table
- C. You cannot enable encryption at rest , consider using the AWS RDS service instead
- D. You cannot enable encryption at rest , consider using the S3 service instead

Explanation :

Answer – A
Option B is incorrect since Encryption can only be configured during table creation time
Options C and D are incorrect since Encryption is possible in DynamoDB
The AWS Documentation mentions the following
Amazon DynamoDB offers fully managed encryption at rest. DynamoDB encryption at rest provides enhanced security by encrypting your data at rest using an AWS Key Management Service (AWS KMS) managed encryption key for DynamoDB. This functionality eliminates the operational burden and complexity involved in protecting sensitive data.
For more information on DynamoDB Encryption at rest, please refer to the below Link:

- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/EncryptionAtRest.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/EncryptionAtRest.html)

Ask our Experts

QUESTION 35 CORRECT REFACTORING

You have been instructed to manage the deployments of an application onto Elastic Beanstalk. Since this is just a development environment, you have been told to ensure that the least amount of time is taken for each deployment. Which of the following deployment mechanism would you consider based on this requirement.

- A. All at once ✔
- B. Rolling
- C. Immutable
- D. Rolling with additional batch

Explanation :

Answer - A
Below is the screenshot of the deployment options. The 'All at once' is the least deployment option.

Deployment Methods

Method	Impact of Failed Deployment	Deploy Time	Zero Downtime	No DNS Change	Rollback Process	Code Deployed To
All at once	Downtime	◷	X	√	Manual Redeploy	Existing instances
Rolling	Single batch out of service; any successful batches prior to failure running new application version	◷◷†	√	√	Manual Redeploy	Existing instances
Rolling with additional batch	Minimal if first batch fails, otherwise, similar to **Rolling**	◷◷◷†	√	√	Manual Redeploy	New and existing instances
Immutable	Minimal	◷◷◷◷	√	√	Terminate New Instances	New instances
Blue/green	Minimal	◷◷◷◷	√	X	Swap URL	New instances

Based on the above screenshot , all the other options become invalid.

For more information on the deployment options, please refer to the below Link:

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.deploy-existing-version.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.deploy-existing-version.html)

Ask our Experts

QUESTION 36 CORRECT DEVELOPMENT WITH AWS SERVICES

You're developing an application onto AWS which is based on the Microservices. These Microservices will be created based on AWS Lambda functions. Because of the complexity of the flow of these different components, you need some way to manage the workflow of execution of these various Lambda functions. How could you manage this effectively now and for future addition of Lambda functions to the application?

- ○ **A. Consider creating a master Lambda function which would coordinate the execution of the other Lambda functions.**
- ○ **B. Consider creating a separate application hosted on an EC2 Instance which would coordinate the execution of the other Lambda functions**
- ○ **C. Consider using Step Functions to coordinate the execution of the other Lambda functions** ✔
- ○ **D. Consider using SQS queues to coordinate the execution of the other Lambda functions**

Explanation :

Answer – C
The best way to manage this is to use Step Functions. The AWS Documentation mentions the following about Step Functions
AWS Step Functions is a web service that enables you to coordinate the components of distributed applications and microservices using visual workflows. You build applications from individual components that each perform a discrete function, or *task*, allowing you to scale and change applications quickly. Step Functions provides a reliable way to coordinate components and step through the functions of your application.
Options A and B are invalid. Even though feasible, it would just bring too much of effort and maintenance into the entire system
Option D is invalid because this is good in managing the messaging between distributed components of an application.
For more information on Step Functions, please refer to the below Link:

- https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html (https://docs.aws.amazon.com/step-functions/latest/dg/welcome.html)

Ask our Experts

QUESTION 37 INCORRECT DEVELOPMENT WITH AWS SERVICES

Your developing an application that will be used to inject data from multiple devices. You need to ensure that some preprocessing happens on the data before it can be analyzed by your Analytics based tool. Which of the following can be used to carry out this intermediate activity?

- A. Use Step Functions to pre-process the data
- B. Use AWS Lambda functions to pre-process the data ✔
- C. Use the API gateway service to pre-process the data
- D. Use Kinesis Firehose to pre-process the data ✖

Explanation :

Answer – B
The AWS Documentation mentions the following
Many customers use Amazon Kinesis (https://aws.amazon.com/kinesis/) to ingest, analyze, and persist their streaming data. One of the easiest ways to gain real-time insights into your streaming data is to use Kinesis Analytics (https://aws.amazon.com/kinesis/analytics/). It enables you to query the data in your stream or build entire streaming applications using SQL. Customers use Kinesis Analytics for things like filtering, aggregation, and anomaly detection.
Kinesis Analytics now gives you the option to preprocess your data with AWS Lambda (https://aws.amazon.com/lambda). This gives you a great deal of flexibility in defining what data gets analyzed by your Kinesis Analytics application. You can also define how that data is structured before it is queried by your SQL.
Option A is incorrect since this service is used to coordinate different parts of a distributed application
Option C is incorrect since this service is used to give a pathway to your API services
Option D is incorrect since this service is used for streaming data
For more information on preprocessing data in Kinesis, please refer to the below Link:

- https://aws.amazon.com/blogs/big-data/preprocessing-data-in-amazon-kinesis-analytics-with-aws-lambda/ (https://aws.amazon.com/blogs/big-data/preprocessing-data-in-amazon-kinesis-analytics-with-aws-lambda/)

Ask our Experts

QUESTION 38 INCORRECT DEPLOYMENT

Your team has completed the development of an application and now this needs to be deployed to an application on an EC2 Instance. The Application data will be stored on a separate volume which needs to be encrypted at rest. How can you ensure this requirement is met? Choose 2 answers from the options given below

- [x] A. Ensure that Encryption is enabled during volume creation time. ✔
- [ ] B. Ensure to use Throughput Optimized HDD to allow for Encryption
- [ ] C. Create a Customer master key in the KMS service ✔
- [x] D. Create an EBS Encryption Key ✖

Explanation :

Answer – A and C
The AWS Documentation mentions the following
Amazon EBS encryption uses AWS Key Management Service (AWS KMS) customer master keys (CMKs) when creating encrypted volumes and any snapshots created from them. A unique AWS-managed CMK is created for you automatically in each region where you store AWS assets. This key is used for Amazon EBS encryption unless you specify a customer-managed CMK that you created separately using AWS KMS.
Option B is incorrect since Encryption is possible on all EBS volume types
Option D is incorrect since you need to create the Encryption Key in the KMS service
For more information on EBS Encryption, please refer to the below Link:

- https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSEncryption.html (https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSEncryption.html)

Ask our Experts

QUESTION 39 CORRECT

You've been given the requirement to customize the content which is distributed to users via a Cloudfront Distribution. The content origin is an S3 bucket. How could you achieve this?

- A. Add an event to the S3 bucket. Make the event invoke a Lambda function which would customize the content.
- B. Add a Step Function. Add a step with a Lambda function just before the content gets delivered to the users.
- C. Consider using Lambda@Edge ✔
- D. Consider using a separate application on an EC2 Instance for this purpose.

Explanation :

Answer – C
The AWS Documentation mentions the following
Lambda@Edge is an extension of AWS Lambda, a compute service that lets you execute functions that customize the content that CloudFront delivers. You can author functions in one region and execute them in AWS locations globally that are closer to the viewer, without provisioning or managing servers. Lambda@Edge scales automatically, from a few requests per day to thousands per second. Processing requests at AWS locations closer to the viewer instead of on origin servers significantly reduces latency and improves the user experience.
All other options are incorrect since none of these are valid ways to customize content via Cloudfront distributions.
For more information on Lambda@Edge, please refer to the below Link:

- https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/lambda-at-the-edge.html (https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/lambda-at-the-edge.html)

Ask our Experts

QUESTION 40 INCORRECT DEPLOYMENT

Your team has been instructed to develop a completely new solution onto AWS. Currently you have a limitation on the tools available to manage the complete lifecycle of the project. Which of the following service from AWS could help you in this aspect

- A. AWS CodePipeline ✖
- B. AWS CodeBuild
- C. AWS CodeCommit
- D. AWS CodeStar ✔

Explanation :

Answer – D
The AWS Documentation mentions the following
AWS CodeStar is a cloud-based service for creating, managing, and working with software development projects on AWS. You can quickly develop, build, and deploy applications on AWS with an AWS CodeStar project. An AWS CodeStar project creates and integrates AWS services for your project development toolchain. Depending on your choice of AWS CodeStar project template, that toolchain might include source control, build, deployment, virtual servers or serverless resources, and more. AWS CodeStar also manages the permissions required for project users (called team members). By adding users as team members to an AWS CodeStar project, project owners can quickly and simply grant each team member role-appropriate access to a project and its resources.
Option A is incorrect since this service is used for managing CI/CD pipelines
Option B is incorrect since this service is used for managing code builds
Option C is incorrect since this service is used for managing source code versioning repositories

For more information on AWS CodeStar, please refer to the below Link:

- https://docs.aws.amazon.com/codestar/latest/userguide/welcome.html (https://docs.aws.amazon.com/codestar/latest/userguide/welcome.html)

Ask our Experts

QUESTION 41 CORRECT MONITORING AND TROUBLESHOOTING

Your team has just finished developing a new version of an existing application. This is a web-based application hosted on AWS. Currently Route 53 is being used to point the company's DNS name to the web site. Your Management has instructed you to deliver the new application to a portion of the users for testing. How can you achieve this?

- A. Port the application onto Elastic beanstalk and use the Swap URL feature
- B. Use Route 53 weighted Routing policies ✔
- C. Port the application onto Opswork by creating a new stack
- D. Use Route 53 failover Routing policies

Explanation :

Answer – B
The AWS Documentation mentions the following to support this
Weighted Routing
Weighted routing lets you associate multiple resources with a single domain name (example.com) or subdomain name (acme.example.com) and choose how much traffic is routed to each resource. This can be useful for a variety of purposes, including load balancing and testing new versions of software.
To configure weighted routing, you create records that have the same name and type for each of your resources. You assign each record a relative weight that corresponds with how much traffic you want to send to each resource. Amazon Route 53 sends traffic to a resource based on the weight that you assign to the record as a proportion of the total weight for all records in the group:
Formula for how much traffic is routed to a given resource:

weight for a specified record / sum of the weights for all records.

For example, if you want to send a tiny portion of your traffic to one resource and the rest to another resource, you might specify weights of 1 and 255. The resource with a weight of 1 gets 1/256th of the traffic (1/1+255), and the other resource gets 255/256ths (255/1+255). You can gradually change the balance by changing the weights. If you want to stop sending traffic to a resource, you can change the weight for that record to 0.
Options A and C is incorrect since this would cause a full flown deployment of the new app and is just a maintenance overhead to port the application to a new service environment
Option D is incorrect since this should only be used for failover conditions
For more information on the weighted routing policy, please refer to the below Link:

- https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html#routing-policy-weighted (https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html#routing-policy-weighted)

Ask our Experts

QUESTION 42 CORRECT DEPLOYMENT

Your development team has created a set of AWS lambda helper functions that would be deployed in various AWS accounts. You need to automate the deployment of these Lambda functions. Which of the following can be used to automate the deployment?

- A. AWS Opswork
- B. AWS Cloudformation ✔

- C. AWS ElasticBeanstalk
- D. AWS ECS

Explanation :

Answer – B
AWS Cloudformation is a service that can be used to deploy Infrastructure as code. Here you can deploy Lambda functions to various accounts by just building the necessary templates.
The other services cannot be used out of the box as they are to automate the deployment of AWS Lambda functions.
For more information on Cloudformation, please refer to the below Link:

- https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/Welcome.html (https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/Welcome.html)

Ask our Experts

QUESTION 43 INCORRECT DEPLOYMENT

You have a number of Lambda functions that need to be deployed using AWS CodeDeploy. The lambda functions have gone through multiple code revisions and versioning in Lambda is being used to maintain the revisions. Which of the following must be done to ensure that the right version of the function is deployed in AWS CodeDeploy?

- A. Specify the version to be deployed in the AppSpec file. ✔
- B. Specify the version to be deployed in the BuildSpec file ✖
- C. Create a Lambda function environment variable called 'VER' and mention the version that needs to be deployed.
- D. Create an ALIAS for the Lambda function. Mark this as the recent version. Use this ALIAS in CodeDeploy.

Explanation :

Answer - A
The AWS Documentation mentions the following
If your application uses the AWS Lambda compute platform, the AppSpec file can be formatted with either YAML or JSON. It can also be typed directly into an editor in the console. The AppSpec file is used to specify:

- The AWS Lambda function version to deploy.
- The functions to be used as validation tests.

All other options are incorrect since the right approach is to use the AppSpec file.
For more information on the application specification files, please refer to the below Link:

- https://docs.aws.amazon.com/codedeploy/latest/userguide/application-specification-files.html (https://docs.aws.amazon.com/codedeploy/latest/userguide/application-specification-files.html)

Ask our Experts

QUESTION 44 CORRECT DEVELOPMENT WITH AWS SERVICES

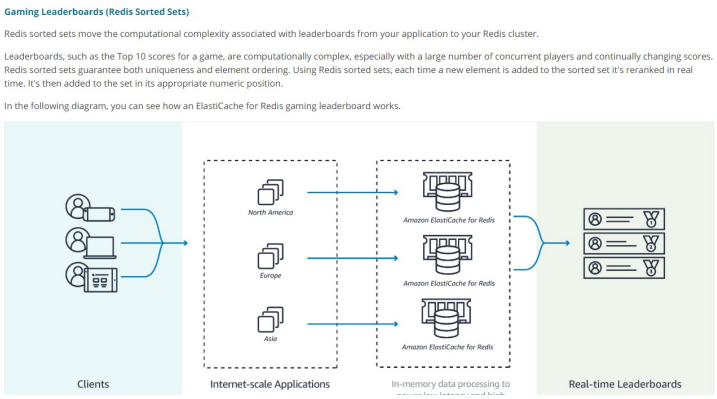
You've been hired to develop a gaming application for a large company. The application will be developed using AWS resources. You need to ensure the right services are used during the development and subsequent deployment of the application. Which of the following would you consider incorporating to ensure leaderboards can be maintained accurately in the application?

- A. AWS ElasticBeanstalk

- B. AWS ElastiCache – Redis ✔
- C. AWS ElastiCache – Memcached
- D. AWS Opswork

Explanation :

Answer - B
The AWS Documentation mentions the following as one of the key advantages of using AWS Redis ElastiCache
Gaming Leaderboards (Redis Sorted Sets)
Redis sorted sets move the computational complexity associated with leaderboards from your application to your Redis cluster. Leaderboards, such as the Top 10 scores for a game, are computationally complex, especially with a large number of concurrent players and continually changing scores. Redis sorted sets guarantee both uniqueness and element ordering. Using Redis sorted sets, each time a new element is added to the sorted set it's reranked in real time. It's then added to the set in its appropriate numeric position.
In the following diagram, you can see how an ElastiCache for Redis gaming leaderboard works.



All other options are invalid since the ideal approach is to use AWS ElastiCache – Redis
For more information on AWS ElastiCache Redis , please refer to the below Link:

- https://docs.aws.amazon.com/AmazonElastiCache/latest/red-ug/elasticache-use-cases.html#elasticache-for-redis-use-cases (https://docs.aws.amazon.com/AmazonElastiCache/latest/red-ug/elasticache-use-cases.html#elasticache-for-redis-use-cases)

Ask our Experts

QUESTION 45 INCORRECT REFACTORING

You're developing an application that will be hosted on an EC2 Instance. This will be part of an Autoscaling Group. The application needs to get the private IP of the instance so that it can send it across to a controller-based application. Which of the following can be done to achieve this?

- A. Query the Instance Meta Data ✔
- B. Query the Instance User Data ✖
- C. Have an Admin get the IP address from the console
- D. Make the application run IFConfig

Explanation :

Answer – A
The application can use the application meta data to get the private IP address. The below snapshot from the AWS Documentation shows the information that you can get from the Instance metadata

This example gets the top-level metadata items. Some items are only available for instances in a VPC. For more information about each of these items, see Instance Metadata Categories.

```
[ec2-user ~]$ curl http://169.254.169.254/latest/meta-data/
ami-id
ami-launch-index
ami-manifest-path
block-device-mapping/
hostname
iam/
instance-action
instance-id
instance-type
local-hostname
local-ipv4
mac
metrics/
network/
placement/
profile
public-hostname
public-ipv4
public-keys/
reservation-id
security-groups
services/
```

Option B is invalid because this cannot be used to get the IP address of the instance
Option C is invalid because this is not an automated approach
Option D is invalid because we don't know the type of instance the application is running on.
For more information on AWS Instance Metadata , please refer to the below link

- https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html (https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html)

Ask our Experts

QUESTION 46 CORRECT DEVELOPMENT WITH AWS SERVICES

You've been asked to develop an application on the AWS Cloud. The application will involve picking up videos from users and placing them in an ideal and durable data store. Which of the following would be an ideal data store, ensuring that components are properly decoupled?

- A. AWS DynamoDB
- B. EBS Volumes
- C. AWS Simple Storage Service ✔
- D. AWS Glacier

Explanation :

Answer – C
AWS Simple Storage Service is the best option for the storage of objects such as videos. The AWS Documentation mentions the following on AWS S3.
Amazon Simple Storage Service is storage for the Internet. It is designed to make web-scale computing easier for developers.
Amazon S3 has a simple web services interface that you can use to store and retrieve any amount of data, at any time, from anywhere on the web. It gives any developer access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of web sites. The service aims to maximize benefits of scale and to pass those benefits on to developers.
Option A is incorrect since DynamoDB is used to store JSON objects and not BLOB type objects.
Option B is incorrect since this would lead to a tightly couple architecture and is not as durable as Amazon S3.
Option D is incorrect since this is used for archive storage
For more information on AWS S3, please refer to the below link

- https://docs.aws.amazon.com/AmazonS3/latest/dev/Welcome.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/Welcome.html)

Ask our Experts

QUESTION 47 CORRECT SECURITY

You've been asked to develop an application on the AWS Cloud. The application will be used to store confidential documents in an S3 bucket. You need to ensure that the bucket is defined in such a way that it does not accept objects that are not encrypted?

- A. Ensure a condition is set in the bucket policy. ✔
- B. Ensure that a condition is set in an IAM policy.
- C. Enable MFA for the underlying bucket
- D. Enable CORS for the underlying bucket

Explanation :

Answer – A
The AWS Documentation gives an example on the same

Amazon S3 supports bucket policies that you can use if you require server-side encryption for all objects that are stored in your bucket. For example, the following bucket policy denies upload object (`s3:PutObject`) permission to everyone if the request does not include the `x-amz-server-side-encryption` header requesting server-side encryption with SSE-KMS.

```
{
   "Version":"2012-10-17",
   "Id":"PutObjPolicy",
   "Statement":[{
        "Sid":"DenyUnEncryptedObjectUploads",
        "Effect":"Deny",
        "Principal":"*",
        "Action":"s3:PutObject",
        "Resource":"arn:aws:s3:::YourBucket/*",
        "Condition":{
           "StringNotEquals":{
              "s3:x-amz-server-side-encryption":"aws:kms"
           }
        }
     }
   ]
}
```

Amazon S3 also supports the `s3:x-amz-server-side-encryption-aws-kms-key-id` condition key, which you can use to require a specific KMS key for object encryption. The KMS key you specify in the policy must use the "`arn:aws:kms:region:acct-id:key/key-id`" format.

Option B is incorrect since the condition needs to be put in the Bucket policy.
Option C is incorrect since this is only used for MFA Delete for accidental deletion of objects.
Option D is incorrect since CORS is only used for cross domain access.
For more information on using KMS Encryption for S3, please refer to the below link

- https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingKMSEncryption.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingKMSEncryption.html)

Ask our Experts

QUESTION 48 INCORRECT SECURITY

Your application has the requirement to store data in a backend data store. Indexing should be possible on the data , but the data does not perform to any schema. Which of the following would be the ideal data store to choose for this application?

- A. AWS RDS
- B. AWS DynamoDB ✔
- C. AWS Redshift ✖
- D. AWS S3

Explanation :

Answer – B
The below AWS Documentation mentions the differences between AWS DynamoDB and other traditional database systems. One of the major differences is the schemaless nature of the database

Characteristic	Relational Database Management System (RDBMS)	Amazon DynamoDB
Optimal Workloads	Ad hoc queries; data warehousing; OLAP (online analytical processing).	Web-scale applications, including social networks, gaming, media sharing, and IoT (Internet of Things).
Data Model	The relational model requires a well-defined schema, where data is normalized into tables, rows and columns. In addition, all of the relationships are defined among tables, columns, indexes, and other database elements.	DynamoDB is schemaless. Every table must have a primary key to uniquely identify each data item, but there are no similar constraints on other non-key attributes. DynamoDB can manage structured or semi-structured data, including JSON documents.
Data Access	SQL (Structured Query Language) is the standard for storing and retrieving data. Relational databases offer a rich set of tools for simplifying the development of database-driven applications, but all of these tools use SQL.	You can use the AWS Management Console or the AWS CLI to work with DynamoDB and perform ad hoc tasks. Applications can leverage the AWS software development kits (SDKs) to work with DynamoDB using object-based, document-centric, or low-level interfaces.
Performance	Relational databases are optimized for storage, so performance generally depends on the disk subsystem. Developers and database administrators must optimize queries, indexes, and table structures in order to achieve peak performance.	DynamoDB is optimized for compute, so performance is mainly a function of the underlying hardware and network latency. As a managed service, DynamoDB insulates you and your applications from these implementation details, so that you can focus on designing and building robust, high-performance applications.
Scaling	It is easiest to scale up with faster hardware. It is also possible for database tables to span across multiple hosts in a distributed system, but this requires additional investment. Relational databases have maximum sizes for the number and size of files, which imposes upper limits on scalability.	DynamoDB is designed to scale out using distributed clusters of hardware. This design allows increased throughput without increased latency. Customers specify their throughput requirements, and DynamoDB allocates sufficient resources to meet those requirements. There are no upper limits on the number of items per table, nor the total size of that table.

Option A is invalid since this is normally used for databases which perform to a particular schema
Option C is invalid since this is normally used for columnar based databases
Option D is invalid since this is normally used for object level storage
For more information on the differences, please refer to the below link

- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/SQLtoNoSQL.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/SQLtoNoSQL.html)

Ask our Experts

QUESTION 49 INCORRECT DEVELOPMENT WITH AWS SERVICES

An application is being developed that is going to write data to a DynamoDB table. You have to setup the read and write throughput for the table. Data is going to be read at the rate of 300 items every 30 seconds. Each item is of size 6KB. The reads can be eventual consistent reads. What should be the read capacity that needs to be set on the table?

- A. 10 ✔
- B. 20
- C. 6
- D. 30 ✖

Explanation :

Answer – A
Since there are 300 items read every 30 seconds , that means there are (300/30) = 10 items read every second.
Since each item is 6KB in size , that means , 2 reads will be required for each item.
So we have total of 2*10 = 20 reads for the number of items per second
Since eventual consistency is required , we can divide the number of reads(20) by 2 , and in the end we get the Read Capacity of 10.
As per the calculation , all other options become invalid
For more information on Read and Write capacity, please refer to the below link

- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ProvisionedThroughput.html
(https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ProvisionedThroughput.html)

Ask our Experts

QUESTION 50 CORRECT MONITORING AND TROUBLESHOOTING

You are in charge of deploying an application that will be hosted on an EC2 Instance and sit behind an Elastic Load balancer. You have been requested to monitor the incoming connections to the Elastic Load Balancer. Which of the below options can suffice this requirement?

- A. Use AWS CloudTrail with your load balancer
- B. Enable access logs on the load balancer ✔
- C. Use a CloudWatch Logs Agent
- D. Create a custom metric CloudWatch filter on your load balancer

Explanation :

Answer – B
The AWS Documentation mentions the following
Elastic Load Balancing provides access logs that capture detailed information about requests sent to your load balancer. Each log contains information such as the time the request was received, the client's IP address, latencies, request paths, and server responses. You can use these access logs to analyze traffic patterns and troubleshoot issues.
Option A is invalid since the Cloudtrail service is used for API activity monitoring
Option C is invalid since the Logs agents are installed on EC2 Instances and not on the ELB
Option D is invalid since the metrics will not provide the detailed information on the incoming connections
For more information on Application Load balancer Logs, please refer to the below link

- https://docs.aws.amazon.com/elasticloadbalancing/latest/application/load-balancer-access-logs.html
(https://docs.aws.amazon.com/elasticloadbalancing/latest/application/load-balancer-access-logs.html)

Ask our Experts

QUESTION 51 CORRECT DEVELOPMENT WITH AWS SERVICES

You are in charge of developing an application that will make use of AWS services. There is a key requirement from an architecture point of view that the entire system is decoupled to ensure less dependency. Which of the following is an ideal service to use to decouple different parts of a system?

- A. AWS CodePipeline
- B. AWS Simple Queue Service ✔
- C. AWS Simple Notification Service
- D. AWS CodeBuild

Explanation :

Answer – B
The AWS Documentation mentions the following
Amazon Simple Queue Service (Amazon SQS) offers a secure, durable, and available hosted queue that lets you integrate and decouple distributed software systems and components. Amazon SQS offers common constructs such as dead-letter queues (https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-dead-letter-queues.html) and cost allocation tags (https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-queue-tags.html). It provides a generic web services API and it can be accessed by any programming language that the AWS SDK supports.
Option A is incorrect since this service is used to build CI/CD pipelines
Option C is incorrect since this service is used to send notifications
Option D is incorrect since this service is used to build applications
For more information on the Simple Queue Service, please refer to the below link

- https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/welcome.html (https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/welcome.html)

Ask our Experts

QUESTION 52 INCORRECT

A static web site has been hosted on a bucket and is now being accessed by users. One of the web pages javascript section has been changed to access data which is hosted in another S3 bucket. Now that same web page is no longer loading in the browser. Which of the following can help alleviate the error?

- A. Enable versioning for the underlying S3 bucket.
- B. Enable Replication so that the objects get replicated to the other bucket
- C. Enable CORS for the bucket ✔
- D. Change the Bucket policy for the bucket to allow access from the other bucket ✖

Explanation :

Answer – C
This is given as use case scenarios in the AWS Documentation
Cross-Origin Resource Sharing: Use-case Scenarios
The following are example scenarios for using CORS:

- Scenario 1: Suppose that you are hosting a website in an Amazon S3 bucket named website as described in Hosting a Static Website on Amazon S3. Your users load the website endpoint http://website.s3-website-us-east-1.amazonaws.com. Now you want to use JavaScript on the webpages that are stored in this bucket to be able to make authenticated GET and PUT requests against the same bucket by using the Amazon S3 API endpoint for the bucket, website.s3.amazonaws.com. A browser would normally block JavaScript from allowing those requests, but with CORS you can configure your bucket to explicitly enable cross-origin requests from website.s3-website-us-east-1.amazonaws.com.
- Scenario 2: Suppose that you want to host a web font from your S3 bucket. Again, browsers require a CORS check (also called a preflight check) for loading web fonts. You would configure the bucket that is hosting the web font to allow any origin to make these requests.

All other options are invalid since none of these options will help rectify the issue
For more information on Cross Origin Resource Sharing, please refer to the below link

- https://docs.aws.amazon.com/AmazonS3/latest/dev/cors.html (https://docs.aws.amazon.com/AmazonS3/latest/dev/cors.html)

Ask our Experts

QUESTION 53 INCORRECT SECURITY

Your mobile application includes a photo-sharing service that is expecting tens of thousands of users at launch. You will leverage Amazon Simple Storage Service (S3) for storage of the user Images, and you must decide how to authenticate and authorize your users for access to these images. You also need to manage the storage of these images. Which two of the following approaches should you use? Choose two answers from the options below

- [ ] **A. Createan Amazon S3 bucket per user, and use your application to generate the S3 URIfor the appropriate content.**
- [x] **B. UseAWS Identity and Access Management (IAM) user accounts as yourapplication-level user database, and offload the burden of authenticationfrom your application code.** ✖
- [x] **C. Authenticateyour users at the application level, and use AWS Security Token Service (STS)to grant token-based authorization to S3 objects.** ✔
- [ ] **D. Authenticateyour users at the application level, and send an SMS token message to theuser. Create an Amazon S3 bucket with the same name as the SMS message token, andmove the user's objects to that bucket.**
- [ ] **E. Usea key-based naming scheme comprised from the user IDs for all user objects in asingle Amazon S3 bucket.** ✔

Explanation :

Answer – C and E
The AWS Security Token Service (STS) is a web service that enables you to request temporary, limited-privilege credentials for AWS Identity and Access Management (IAM) users or for users that you authenticate (federated users).
The token can then be used to grant access to the objects in S3.
You can then provides access to the objects based on the key values generated via the user id.
Option A is possible but then becomes a maintenance overhead because of the number of buckets.
Option B is invalid because IAM users is not a good security practice.
Option D is invalid because SMS tokens are not efficient for this requirement.
For more information on the Security Token Service please refer to the below link

- https://docs.aws.amazon.com/STS/latest/APIReference/Welcome.html (https://docs.aws.amazon.com/STS/latest/APIReference/Welcome.html)

Ask our Experts

QUESTION 54 CORRECT

Your current log analysis application takes more than four hours to generate a report of the top 10 users of your web application. You have been asked to implement a system that can report this information in real time, ensure that the report is always up to date, and handle increases in the number of requests to your web application. Choose the option that is cost-effective and can fulfill the requirements.

- ○ **A. Publish your data to CloudWatch Logs, and configure your application to Autoscale to handle the load on demand.**
- ○ **B. Publish your log data to an Amazon S3 bucket. Use AWS CloudFormation to create an Auto Scaling group to scale your post-processing application which is configured to pull down your log files stored an Amazon S3.**
- ○ **C. Post your log data to an Amazon Kinesis data stream, and subscribe your log-processing application so that is configured to process your logging data.** ✔
- ○ **D. Create a multi-AZ Amazon RDS MySQL cluster, post the logging data to MySQL, and run a map reduce job to retrieve the required information on user counts.**

Explanation :

Answer – C
When you see Amazon Kinesis as an option, this becomes the ideal option to process data in real time.

Amazon Kinesis makes it easy to collect, process, and analyze real-time, streaming data (https://aws.amazon.com/streaming-data/) so you can get timely insights and react quickly to new information. Amazon Kinesis offers key capabilities (https://aws.amazon.com/kinesis/?sc_channel=PS&sc_campaign=acquisition_AE&sc_publisher=google&sc_medium=kinesis_b&sc_content=kinesis_e&sc_detail=amazon%20kinesis&sc_cate
4422!3!161337987523!e!!g!!amazon%20kinesis&ef_id=WMmTnAAAAFikiwx_:20170808180828:s#kinesis-capabilities) to cost effectively process streaming data at any scale, along with the flexibility to choose the tools that best suit the requirements of your application. With Amazon Kinesis, you can ingest real-time data such as application logs, website clickstreams, IoT telemetry data, and more into your databases, data lakes and data warehouses, or build your own real-time applications using this data.
For more information on AWS Kinesis, please refer to the below link

- https://aws.amazon.com/kinesis/ (https://aws.amazon.com/kinesis/)

Ask our Experts

QUESTION 55 CORRECT DEVELOPMENT WITH AWS SERVICES

You've been instructed to develop a mobile application that will make use of AWS services. You need to decide on a data store to store the user sessions. Which of the following would be an ideal data store for session management?

- A. AWS Simple Storage Service
- B. AWS DynamoDB ✔
- C. AWS RDS
- D. AWS Redshift

Explanation :

Answer – B
DynamoDB is a alternative solution which can be used for storage of session management. The latency of access to data is less , hence this can be used as a data store for session management
Option A is incorrect since this service is used for object level storage
Option C is incorrect since this service is used for storing relational data
Option D is incorrect since this service is used as a data warehousing solution.
For more information on an example on this, please refer to the below link

- https://aws.amazon.com/blogs/aws/scalable-session-handling-in-php-using-amazon-dynamodb/ (https://aws.amazon.com/blogs/aws/scalable-session-handling-in-php-using-amazon-dynamodb/)

Ask our Experts

QUESTION 56 CORRECT

Your application currently interacts with a DynamoDB table. Records are inserted into the table via the application. There is now a requirement to ensure that whenever items are updated in the DynamoDB primary table , another record is inserted into a secondary table. Which of the below feature should be used when developing such a solution?

- A. AWS DynamoDB Encryption
- B. AWS DynamoDB Streams ✔
- C. AWS DynamoDB Accelerator
- D. AWSTable Accelerator

Explanation :

Answer – B
This is also mentioned as a use case in the AWS Documentation
DynamoDB Streams Use Cases and Design Patterns
This post describes some common use cases you might encounter, along with their design options and solutions, when migrating data from relational data stores to Amazon DynamoDB.
We will consider how to manage the following scenarios:

- How do you set up a relationship across multiple tables in which, based on the value of an item from one table, you update the item in a second table?
- How do you trigger an event based on a particular transaction?
- How do you audit or archive transactions?
- How do you replicate data across multiple tables (similar to that of materialized views/streams/replication in relational data stores)?

Relational databases provide native support for transactions, triggers, auditing, and replication. Typically, a transaction in a database refers to performing create, read, update, and delete (CRUD) operations against multiple tables in a block. A transaction can have only two states—success or failure. In other words, there is no partial completion.
As a NoSQL database, DynamoDB is not designed to support transactions. Although client-side libraries are available to mimic the transaction capabilities, they are not scalable and cost-effective. For example, the Java Transaction Library for DynamoDB creates 7N+4 additional writes for every write operation. This is partly because the library holds metadata to manage the transactions to ensure that it's consistent and can be rolled back before commit.
You can use DynamoDB Streams to address all these use cases. DynamoDB Streams is a powerful service that you can combine with other AWS services to solve many similar problems. When enabled, DynamoDB Streams captures a time-ordered sequence of item-level modifications in a DynamoDB table and durably stores the information for up to 24 hours. Applications can access a series of stream records, which contain an item change, from a DynamoDB stream in near real time.
AWS maintains separate endpoints for DynamoDB and DynamoDB Streams. To work with database tables and indexes, your application must access a DynamoDB endpoint. To read and process DynamoDB Streams records, your application must access a DynamoDB Streams endpoint in the same Region.
All of the other options are incorrect since none of these would meet the core requirement.
For more information on use cases and design patterns for DynamoDB streams, please refer to the below link

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

Ask our Experts

QUESTION 57 INCORRECT

An application has been making use of AWS DynamoDB for its back-end data store. The size of the table has now grown to 20 GB , and the scans on the table are causing throttling errors. Which of the following should now be implemented to avoid such errors?

- A. Large Page size
- B. Reduced page size ✔
- C. Parallel Scans ✖
- D. Sequential scans

Explanation :

Answer – B

When you scan your table in Amazon DynamoDB, you should follow the DynamoDB best practices for avoiding sudden bursts of read activity.
You can use the following technique to minimize the impact of a scan on a table's provisioned throughput.

Reduce page size
Because a Scan operation reads an entire page (by default, 1 MB), you can reduce the impact of the scan operation by setting a smaller page size. The ***Scan*** operation provides a *Limit* parameter that you can use to set the page size for your request. Each ***Query*** or ***Scan*** request that has a smaller page size uses fewer read operations and creates a "pause" between each request. For example, suppose

that each item is 4 KB and you set the page size to 40 items. A ***Query*** request would then consume only 20 eventually consistent read operations or 40 strongly consistent read operations. A larger number of smaller ***Query*** or ***Scan*** operations would allow your other critical requests to succeed without throttling.
For more information, please check below AWS Docs:

- https://aws.amazon.com/blogs/developer/rate-limited-scans-in-amazon-dynamodb/ (https://aws.amazon.com/blogs/developer/rate-limited-scans-in-amazon-dynamodb/)
- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/bp-query-scan.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/bp-query-scan.html)

Ask our Experts

QUESTION 58 CORRECT DEPLOYMENT

You've developed an application script that needs to be bootstrapped into instances that are launched via an Autoscaling Group. How would you achieve this in the easy way possible?

- A. Place a scheduled task on the instance that starts as soon as the Instance is launched.
- B. Place the script in the metadata for the instance
- C. Place the script in the Userdata for the instance ✔
- D. Create a Lambda function to install the script

Explanation :

Answer – C
The AWS Documentation mentions the following
When you launch an instance in Amazon EC2, you have the option of passing user data to the instance that can be used to perform common automated configuration tasks and even run scripts after the instance starts. You can pass two types of user data to Amazon EC2: shell scripts and cloud-init directives. You can also pass this data into the launch wizard as plain text, as a file (this is useful for launching instances using the command line tools), or as base64-encoded text (for API calls).
Option A is incorrect because even though this is feasible , bootstrapping needs to be done in the User Data section
Option B is incorrect because this needs to be done in the Userdata section
Option D is incorrect since this is not the right approach for bootstraping
For more information on User data, please refer to the below link

- https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/user-data.html (https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/user-data.html)

Ask our Experts

QUESTION 59 CORRECT DEVELOPMENT WITH AWS SERVICES

Your company is planning on creating new development environments in AWS. They want to make use of their existing Chef recipes which they use for their on-premise configuration for servers in AWS. Which of the following service would be ideal to use in this regard?

- A. AWS Elastic Beanstalk
- B. AWS OpsWork ✔
- C. AWS Cloudformation
- D. AWS SQS

Explanation :

Answer – B

The AWS Documentation mentions the following
AWS OpsWorks is a configuration management service that provides managed instances of Chef and Puppet. Chef and Puppet are automation platforms that allow you to use code to automate the configurations of your servers. OpsWorks lets you use Chef and Puppet to automate how servers are configured, deployed, and managed across your Amazon EC2 (https://aws.amazon.com/ec2/) instances or on-premises compute environments
All other options are invalid since they cannot be used to work with Chef recipes for configuration management.
For more information on AWS Opswork, please refer to the below link

- https://aws.amazon.com/opsworks/ (https://aws.amazon.com/opsworks/)

Ask our Experts

QUESTION 60 CORRECT SECURITY

Your company has developed a web application and is hosting it in an Amazon S3 bucket configured for static website hosting. The application is using the AWS SDK for JavaScript in the browser to access data stored in an Amazon DynamoDB table. How can you ensure that API keys for access to your data in DynamoDB are kept secure?

- **A. Create an Amazon S3 role in IAM with access to the specific DynamoDB tables, and assign it to the bucket hosting your website.**
- **B. Configure S3 bucket tags with your AWS access keys for your bucket hosing your website so that the application can query them for access.**
- **C. Configure a web identity federation role within IAM to enable access to the correct DynamoDB resources and retrieve temporary credentials.** ✔
- **D. Store AWS keys in global variables within your application and configure the application to use these credentials when making requests.**

Explanation :

Answer – C
With web identity federation, you don't need to create custom sign-in code or manage your own user identities. Instead, users of your app can sign in using a well-known identity provider (IdP) —such as Login with Amazon, Facebook, Google, or any other OpenID Connect (OIDC) (http://openid.net/connect/)-compatible IdP, receive an authentication token, and then exchange that token for temporary security credentials in AWS that map to an IAM role with permissions to use the resources in your AWS account. Using an IdP helps you keep your AWS account secure, because you don't have to embed and distribute long-term security credentials with your application.
Option A is invalid since Roles cannot be assigned to S3 buckets
Options B and D are invalid since the AWS Access keys should not be used
For more information on Web Identity Federation, please refer to the below link AWS

- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers_oidc.html (https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_providers_oidc.html)

Ask our Experts

QUESTION 61 CORRECT MONITORING AND TROUBLESHOOTING

Your planning on deploying a built application onto an EC2 Instance. There will be a number of tests conducted on this Instance. You want to have the ability to capture the logs from the web server so that it can help diagnose any issues if they occur? How can you achieve this?

- **A. Enable Cloudtrail for the region**
- **B. Install the Cloudwatch agent on the Instance** ✔
- **C. Use the VPC Flow logs to get the logs from the Instance**

○ **D.** Create a dashboard for the key Cloudwatch metrics

Explanation :

Answer – B
You can install the Cloudwatch agent on the machine and then configure it to send the logs for the web server to a central location in Cloudwatch.
Option A is invalid since this is used for API monitoring activity
Option C is invalid since this is used for just getting the network traffic coming to an Instance hosted in a VPC
Option D is invalid since this will not give the detailed level of logs which is required.
For more information on the Cloudwatch agent, please refer to the below link

- https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/Install-CloudWatch-Agent.html (https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/Install-CloudWatch-Agent.html)

Ask our Experts

QUESTION 62 INCORRECT SECURITY

Your application currently makes use of AWS Cognito for managing user identities. You want to analyze the information that is stored in AWS Cognito for your application. Which of the following features of AWS Cognito should you use for this purpose?

○ **A.** Cognito Data
○ **B.** Cognito Events ✖
○ **C.** Cognito Streams ✔
○ **D.** Cognito Callbacks

Explanation :

Answer – C
The AWS Documentation mentions the following
Amazon Cognito Streams gives developers control and insight into their data stored in Amazon Cognito. Developers can now configure a Kinesis stream to receive events as data is updated and synchronized. Amazon Cognito can push each dataset change to a Kinesis stream you own in real time.
All other options are invalid since you should use Cognito Streams
For more information on Cognito Streams, please refer to the below link

- https://docs.aws.amazon.com/cognito/latest/developerguide/cognito-streams.html (https://docs.aws.amazon.com/cognito/latest/developerguide/cognito-streams.html)

Ask our Experts

QUESTION 63 CORRECT SECURITY

You've developed a set of scripts using AWS Lambda. These scripts need to access EC2 Instances in a VPC. Which of the following needs to be done to ensure that the AWS Lambda function can access the resources in the VPC. Choose 2 answers from the options given below

☑ **A.** Ensure that the subnet ID's are mentioned when configuring the Lambda function ✔
☐ **B.** Ensure that the NACL ID's are mentioned when configuring the Lambda function
☑ **C.** Ensure that the Security Group ID's are mentioned when configuring the Lambda function ✔
☐ **D.** Ensure that the VPC Flow Log ID's are mentioned when configuring the Lambda function

Explanation :

Answer – A and C
Options B and D are incorrect since you have to mention the Subnet and Security ID's in order for the Lambda function to access the resources in the VPC.
The AWS Documentation mentions the following
AWS Lambda runs your function code securely within a VPC by default. However, to enable your Lambda function to access resources inside your private VPC, you must provide additional VPC-specific configuration information that includes VPC subnet IDs and security group IDs. AWS Lambda uses this information to set up elastic network interfaces (ENIs) (http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_ElasticNetworkInterfaces.html) that enable your function to connect securely to other resources within your private VPC.
For more information on configuring a lambda function to access resources in a VPC, please refer to the below link

- https://docs.aws.amazon.com/lambda/latest/dg/vpc.html (https://docs.aws.amazon.com/lambda/latest/dg/vpc.html)

Ask our Experts

QUESTION 64 INCORRECT REFACTORING

You've currently been tasked to migrate an existing on-premise environment into Elastic Beanstalk. The application does not make use of Docker containers. You also can't see any relevant environments in the beanstalk service that would be suitable to host your application. What should you consider doing in this case?

- A. Migrate your application to using Docker containers and then migrate the app to the Elastic Beanstalk environment. ✖
- B. Consider using Cloudformation to deploy your environment to Elastic Beanstalk
- C. Consider using Packer to create a custom environment ✔
- D. Consider deploying your application using the Elastic Container Service

Explanation :

Answer – C
The AWS Documentation mentions the following to support this
Custom Platforms
Elastic Beanstalk supports custom platforms. A custom platform is a more advanced customization than a Custom Image in several ways. A custom platform lets you develop an entire new platform from scratch, customizing the operating system, additional software, and scripts that Elastic Beanstalk runs on platform instances. This flexibility allows you to build a platform for an application that uses a language or other infrastructure software, for which Elastic Beanstalk doesn't provide a platform out of the box. Compare that to custom images, where you modify an AMI for use with an existing Elastic Beanstalk platform, and Elastic Beanstalk still provides the platform scripts and controls the platform's software stack. In addition, with custom platforms you use an automated, scripted way to create and maintain your customization, whereas with custom images you make the changes manually over a running instance.
To create a custom platform, you build an Amazon Machine Image (AMI) from one of the supported operating systems—Ubuntu, RHEL, or Amazon Linux (see the flavor entry in Platform.yaml File Format for the exact version numbers)—and add further customizations. You create your own Elastic Beanstalk platform using Packer, which is an open-source tool for creating machine images for many platforms, including AMIs for use with Amazon EC2. An Elastic Beanstalk platform comprises an AMI configured to run a set of software that supports an application, and metadata that can include custom configuration options and default configuration option settings.
Options A and D are invalid because it could require a lot of effort to migrate the application to start using Docker containers
Option B is invalid because using Cloudformation alone cannot be used alone for this requirement
For more information on Custom Platforms, please refer to the below link

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/custom-platforms.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/custom-platforms.html)

Ask our Experts

QUESTION 65 INCORRECT REFACTORING

Company B is writing 10 items to the products table every second. Each item is 15.5Kb in size. What would be the required provisioned write throughput for best performance? Choose the correct answer from the options below.

- A. 10
- B. 160 ✔
- C. 155 ✖
- D. 16

Explanation :

Answer – B

For write capacity, the rule is to divide the item size by 1KB. Hence, we need to divide 15.5 by 1 which gives us 16 to the nearest 1KB. Since we are writing 10 items per second, we need to multiply 10*16 = 160.

For more information on Read and Write capacity, please refer to the below link

- https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ProvisionedThroughput.html (https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ProvisionedThroughput.html)

Ask our Experts

Finish Review (https://www.whizlabs.com/learn/course/aws-cda-practice-tests/quiz/14787)