

Amazon Web Services

Exam Questions DBS-C01

AWS Certified Database - Specialty



NEW QUESTION 1

A company is running an Amazon RDS for MySQL Multi-AZ DB instance for a business-critical workload. RDS encryption for the DB instance is disabled. A recent security audit concluded that all business-critical applications must encrypt data at rest. The company has asked its database specialist to formulate a plan to accomplish this for the DB instance.

Which process should the database specialist recommend?

- A. Create an encrypted snapshot of the unencrypted DB instance
- B. Copy the encrypted snapshot to Amazon S3. Restore the DB instance from the encrypted snapshot using Amazon S3.
- C. Create a new RDS for MySQL DB instance with encryption enabled
- D. Restore the unencrypted snapshot to this DB instance.
- E. Create a snapshot of the unencrypted DB instance
- F. Create an encrypted copy of the snapshot
- G. Restore the DB instance from the encrypted snapshot.
- H. Temporarily shut down the unencrypted DB instance
- I. Enable AWS KMS encryption in the AWS Management Console using an AWS managed CMK
- J. Restart the DB instance in an encrypted state.

Answer: C

Explanation:

<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Overview.Encryption.html#Overview.Encryption>.

NEW QUESTION 2

A Database Specialist is designing a disaster recovery strategy for a production Amazon DynamoDB table. The table uses provisioned read/write capacity mode, global secondary indexes, and time to live (TTL). The Database Specialist has restored the latest backup to a new table.

To prepare the new table with identical settings, which steps should be performed? (Choose two.)

- A. Re-create global secondary indexes in the new table
- B. Define IAM policies for access to the new table
- C. Define the TTL settings
- D. Encrypt the table from the AWS Management Console or use the update-table command
- E. Set the provisioned read and write capacity

Answer: BC

Explanation:

The following items need to be reconfigured after restoring the DynamoDB table.

- AutoScaling policy
- IAM policy
- CloudWatch settings
- Tags
- Stream settings
- TTL

https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/backuprestore_HowItWorks.html

NEW QUESTION 3

An worldwide gaming company's development team is experimenting with using Amazon DynamoDB to store in-game events for three mobile titles. Maximum concurrent users for the most popular game is 500,000, while the least popular game is 10,000. The typical event is 20 KB in size, while the average user session generates one event each second. Each event is assigned a millisecond time stamp and a globally unique identification.

The lead developer generated a single DynamoDB database with the following structure for the events:

- > Partition key: game name
- > Sort key: event identifier
- > Local secondary index: player identifier
- > Event time

In a small-scale development setting, the tests were successful. When the application was deployed to production, however, new events were not being added to the database, and the logs indicated DynamoDB failures with the ItemCollectionSizeLimitExceededException issue code.

Which design modification should a database professional offer to the development team?

- A. Use the player identifier as the partition key
- B. Use the event time as the sort key
- C. Add a global secondary index with the game name as the partition key and the event time as the sort key.
- D. Create two tables
- E. Use the game name as the partition key in both tables
- F. Use the event time as the sort key for the first table
- G. Use the player identifier as the sort key for the second table.
- H. Replace the sort key with a compound value consisting of the player identifier collated with the event time, separated by a dash
- I. Add a local secondary index with the player identifier as the sort key.
- J. Create one table for each game
- K. Use the player identifier as the partition key
- L. Use the event time as the sort key.

Answer: D

NEW QUESTION 4

A small startup firm wishes to move a 4 TB MySQL database from on-premises to AWS through an Amazon RDS for MySQL DB instance.

Which migration approach would result in the LEAST amount of downtime?

- A. Deploy a new RDS for MySQL DB instance and configure it for access from the on-premises data center
- B. Use the mysqldump utility to create an initial snapshot from the on-premises MySQL server, and copy it to an Amazon S3 bucket
- C. Import the snapshot into the DB instance utilizing the MySQL utilities running on an Amazon EC2 instance
- D. Immediately point the application to the DB instance.
- E. Deploy a new Amazon EC2 instance, install the MySQL software on the EC2 instance, and configure networking for access from the on-premises data center
- F. Use the mysqldump utility to create a snapshot of the on-premises MySQL server
- G. Copy the snapshot into the EC2 instance and restore it into the EC2 MySQL instance
- H. Use AWS DMS to migrate data into a new RDS for MySQL DB instance
- I. Point the application to the DB instance.
- J. Deploy a new Amazon EC2 instance, install the MySQL software on the EC2 instance, and configure networking for access from the on-premises data center
- K. Use the mysqldump utility to create a snapshot of the on-premises MySQL server
- L. Copy the snapshot into an Amazon S3 bucket and import the snapshot into a new RDS for MySQL DB instance using the MySQL utilities running on an EC2 instance
- M. Point the application to the DB instance.
- N. Deploy a new RDS for MySQL DB instance and configure it for access from the on-premises data center
- O. Use the mysqldump utility to create an initial snapshot from the on-premises MySQL server, and copy it to an Amazon S3 bucket
- P. Import the snapshot into the DB instance using the MySQL utilities running on an Amazon EC2 instance
- Q. Establish replication into the new DB instance using MySQL replication
- R. Stop application access to the on-premises MySQL server and let the remaining transactions replicate over
- S. Point the application to the DB instance.

Answer: D

Explanation:

<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/MySQL.Procedural.Importing.NonRDSRepl.html>
<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/MySQL.Procedural.Importing.External.Repl.html>

NEW QUESTION 5

A company is looking to move an on-premises IBM Db2 database running AIX on an IBM POWER7 server. Due to escalating support and maintenance costs, the company is exploring the option of moving the workload to an Amazon Aurora PostgreSQL DB cluster.

What is the quickest way for the company to gather data on the migration compatibility?

- A. Perform a logical dump from the Db2 database and restore it to an Aurora DB cluster
- B. Identify the gaps and compatibility of the objects migrated by comparing row counts from source and target tables.
- C. Run AWS DMS from the Db2 database to an Aurora DB cluster
- D. Identify the gaps and compatibility of the objects migrated by comparing the row counts from source and target tables.
- E. Run native PostgreSQL logical replication from the Db2 database to an Aurora DB cluster to evaluate the migration compatibility.
- F. Run the AWS Schema Conversion Tool (AWS SCT) from the Db2 database to an Aurora DB cluster. Create a migration assessment report to evaluate the migration compatibility.

Answer: D

NEW QUESTION 6

A company has an application that uses an Amazon DynamoDB table as its data store. During normal business days, the throughput requirements from the application are uniform and consist of 5 standard write calls per second to the DynamoDB table. Each write call has 2 KB of data. For 1 hour each day, the company runs an additional automated job on the DynamoDB table that makes 20 write requests per second. No other application writes to the DynamoDB table. The DynamoDB table does not have to meet any additional capacity requirements. How should a database specialist configure the DynamoDB table's capacity to meet these requirements MOST cost-effectively?

- A. Use DynamoDB provisioned capacity with 5 WCUs and auto scaling.
- B. Use DynamoDB provisioned capacity with 5 WCUs and a write-through cache that DynamoDB Accelerator (DAX) provides.
- C. Use DynamoDB provisioned capacity with 10 WCUs and auto scaling.
- D. Use DynamoDB provisioned capacity with 10 WCUs and no auto scaling.

Answer: C

Explanation:

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ReadWriteCapacityMode.html>

NEW QUESTION 7

A database professional is developing an application that will respond to single-instance requests. The program will query large amounts of client data and offer end users with results.

These reports may include a variety of fields. The database specialist wants to enable users to query the database using any of the fields offered.

During peak periods, the database's traffic volume will be significant yet changeable. However, the database will see little activity over the rest of the day.

Which approach will be the most cost-effective in meeting these requirements?

- A. Amazon DynamoDB with provisioned capacity mode and auto scaling
- B. Amazon DynamoDB with on-demand capacity mode
- C. Amazon Aurora with auto scaling enabled
- D. Amazon Aurora in a serverless mode

Answer: D

Explanation:

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Limits.html#limits-items>

NEW QUESTION 8

A company uses the Amazon DynamoDB table contractDB in us-east-1 for its contract system with the following schema: orderID (primary key) timestamp (sort key) contract (map) createdBy (string) customerEmail (string)

After a problem in production, the operations team has asked a database specialist to provide an IAM policy to read items from the database to debug the application. In addition, the developer is not allowed to access the value of the customerEmail field to stay compliant. Which IAM policy should the database specialist use to achieve these requirements?

A)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "IAMPolicy",
      "Effect": "Allow",
      "Action": [
        "dynamodb: Query"
      ],
      "Resource": [
        "arn:aws:dynamodb:us-east-1:123456789012:table/contractDB"
      ],
      "Condition": {
        "ForAllValues:StringLike": {
          "dynamodb:Attributes": [
            "orderID",
            "timestamp",
            "contract",
            "createdBy"
          ]
        },
        "StringEquals": {
          "dynamodb:Select": "SPECIFIC_ATTRIBUTES"
        }
      }
    }
  ]
}
```

B)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "IAMPolicy",
      "Effect": "Allow",
      "Action": [
        "dynamodb: Query"
      ],
      "Resource": [
        "arn:aws:dynamodb:us-east-1:123456789012:table/contractDB"
      ],
      "Condition": {
        "ForAllValues:StringLike": {
          "dynamodb:Attributes": [
            "customerEmail"
          ]
        },
        "StringEquals": {
          "dynamodb:Select": "SPECIFIC_ATTRIBUTES"
        }
      }
    }
  ]
}
```

C)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "IAMPolicy",
      "Effect": "Deny",
      "Action": [
        "dynamodb: Query"
      ],
      "Resource": [
        "arn:aws:dynamodb:us-east-1:123456789012:table/contractDB"
      ],
      "Condition": {
        "ForAllValues:StringLike": {
          "dynamodb:Attributes": [
            "customerEmail"
          ]
        },
        "StringEquals": {
          "dynamodb:Select": "SPECIFIC_ATTRIBUTES"
        }
      }
    }
  ]
}
```

D)

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "IAMPolicy",
      "Effect": "Deny",
      "Action": [
        "dynamodb: Query"
      ],
      "Resource": [
        "arn:aws:dynamodb:us-east-1:123456789012:table/contractDB"
      ],
      "Condition": {
        "ForAllValues:StringLike": {
          "dynamodb:Attributes": [
            "orderId",
            "timestamp",
            "contract",
            "createdBy"
          ]
        },
        "StringEquals": {
          "dynamodb:Select": "SPECIFIC_ATTRIBUTES"
        }
      }
    }
  ]
}
```

- A. Option A
- B. Option B
- C. Option C
- D. Option C

Answer: A

NEW QUESTION 9

A financial services company has an application deployed on AWS that uses an Amazon Aurora PostgreSQL DB cluster. A recent audit showed that no log files contained database administrator activity. A database specialist needs to recommend a solution to provide database access and activity logs. The solution should use the least amount of effort and have a minimal impact on performance.

Which solution should the database specialist recommend?

- A. Enable Aurora Database Activity Streams on the database in synchronous mod
- B. Connect the Amazon Kinesis data stream to Kinesis Data Firehos
- C. Set the Kinesis Data Firehose destination to an Amazon S3 bucket.
- D. Create an AWS CloudTrail trail in the Region where the database run
- E. Associate the database activity logs with the trail.
- F. Enable Aurora Database Activity Streams on the database in asynchronous mod
- G. Connect the Amazon Kinesis data stream to Kinesis Data Firehos
- H. Set the Firehose destination to an Amazon S3 bucket.
- I. Allow connections to the DB cluster through a bastion host onl
- J. Restrict database access to the bastion host and application server
- K. Push the bastion host logs to Amazon CloudWatch Logs using the CloudWatch Logs agent.

Answer: C

Explanation:

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/DBActivityStreams.Overview.html>

NEW QUESTION 10

A company is load testing its three-tier production web application deployed with an AWS CloudFormation template on AWS. The Application team is making changes to deploy additional Amazon EC2 and AWS Lambda resources to expand the load testing capacity. A Database Specialist wants to ensure that the changes made by the Application team will not change the Amazon RDS database resources already deployed.

Which combination of steps would allow the Database Specialist to accomplish this? (Choose two.)

- A. Review the stack drift before modifying the template
- B. Create and review a change set before applying it
- C. Export the database resources as stack outputs
- D. Define the database resources in a nested stack
- E. Set a stack policy for the database resources

Answer: BE

Explanation:

https://docs.amazonaws.cn/en_us/AWSCloudFormation/latest/UserGuide/best-practices.html#cfn-best-practices

NEW QUESTION 11

A company is using a Single-AZ Amazon RDS for MySQL DB instance for development. The DB instance is experiencing slow performance when queries are executed. Amazon CloudWatch metrics indicate that the instance requires more I/O capacity.

Which actions can a database specialist perform to resolve this issue? (Choose two.)

- A. Restart the application tool used to execute queries.
- B. Change to a database instance class with higher throughput.
- C. Convert from Single-AZ to Multi-AZ.
- D. Increase the I/O parameter in Amazon RDS Enhanced Monitoring.
- E. Convert from General Purpose to Provisioned IOPS (PIOPS).

Answer: BE

Explanation:

<https://aws.amazon.com/blogs/database/best-storage-practices-for-running-production-workloads-on-hosted-data>

"If you find the pattern of IOPS usage consistently going beyond more than 16,000, you should modify the DB instance and change the storage type from gp2 to io1.

NEW QUESTION 12

A company developed a new application that is deployed on Amazon EC2 instances behind an Application Load Balancer. The EC2 instances use the security group named sg-application-servers. The company needs a database to store the data from the application and decides to use an Amazon RDS for MySQL DB instance. The DB instance is deployed in private DB subnet.

What is the MOST restrictive configuration for the DB instance security group?

- A. Only allow incoming traffic from the sg-application-servers security group on port 3306.
- B. Only allow incoming traffic from the sg-application-servers security group on port 443.
- C. Only allow incoming traffic from the subnet of the application servers on port 3306.
- D. Only allow incoming traffic from the subnet of the application servers on port 443.

Answer: A

Explanation:

most restrictive approach is to allow only incoming connections from SG of EC2 instance on port 3306

NEW QUESTION 13

A company runs a customer relationship management (CRM) system that is hosted on-premises with a MySQL database as the backend. A custom stored procedure is used to send email notifications to another system when data is inserted into a table. The company has noticed that the performance of the CRM system has decreased due to database reporting applications used by various teams. The company requires an AWS solution that would reduce maintenance, improve performance, and accommodate the email notification feature.

Which AWS solution meets these requirements?

- A. Use MySQL running on an Amazon EC2 instance with Auto Scaling to accommodate the reporting application
- B. Configure a stored procedure and an AWS Lambda function that uses Amazon SES to send email notifications to the other system.
- C. Use Amazon Aurora MySQL in a multi-master cluster to accommodate the reporting applications. Configure Amazon RDS event subscriptions to publish a message to an Amazon SNS topic and subscribe the other system's email address to the topic.
- D. Use MySQL running on an Amazon EC2 instance with a read replica to accommodate the reporting application
- E. Configure Amazon SES integration to send email notifications to the other system.
- F. Use Amazon Aurora MySQL with a read replica for the reporting application
- G. Configure a stored procedure and an AWS Lambda function to publish a message to an Amazon SNS topic
- H. Subscribe the other system's email address to the topic.

Answer: D

Explanation:

RDS event subscriptions do not cover "data is inserted into a table" - see

https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/USER_Events.Messages.html We can use stored procedure to invoke Lambda function -

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraMySQL.Integrating.Lambda.html>

NEW QUESTION 14

A retail company uses Amazon Redshift Spectrum to run complex analytical queries on objects that are stored in an Amazon S3 bucket. The objects are joined with multiple dimension tables that are stored in an Amazon Redshift database. The company uses the database to create monthly and quarterly aggregated reports. Users who attempt to run queries are reporting the following error message: error: Spectrum Scan Error: Access throttled

Which solution will resolve this error?

- A. Check file sizes of fact tables in Amazon S3, and look for large file
- B. Break up large files into smaller files of equal size between 100 MB and 1 GB
- C. Reduce the number of queries that users can run in parallel.
- D. Check file sizes of fact tables in Amazon S3, and look for small file
- E. Merge the small files into larger files of at least 64 MB in size.
- F. Review and optimize queries that submit a large aggregation step to Redshift Spectrum.

Answer: C

Explanation:

<https://docs.aws.amazon.com/redshift/latest/dg/c-spectrum-troubleshooting.html#spectrum-troubleshooting-access> <https://docs.aws.amazon.com/redshift/latest/dg/c-spectrum-troubleshooting.html#spectrum-troubleshooting-access>

NEW QUESTION 15

A company has a quarterly customer survey. The survey uses an Amazon EC2 instance that is hosted in a public subnet to host a customer survey website. The company uses an Amazon RDS DB instance that is hosted in a private subnet in the same VPC to store the survey results.

The company takes a snapshot of the DB instance after a survey is complete, deletes the DB instance, and then restores the DB instance from the snapshot when the survey needs to be conducted again. A database specialist discovers that the customer survey website times out when it attempts to establish a connection to the restored DB instance.

What is the root cause of this problem?

- A. The VPC peering connection has not been configured properly for the EC2 instance to communicate with the DB instance.
- B. The route table of the private subnet that hosts the DB instance does not have a NAT gateway configured for communication with the EC2 instance.
- C. The public subnet that hosts the EC2 instance does not have an internet gateway configured for communication with the DB instance.
- D. The wrong security group was associated with the new DB instance when it was restored from the snapshot.

Answer: D

NEW QUESTION 16

A company is running an on-premises application comprised of a web tier, an application tier, and a MySQL database tier. The database is used primarily during business hours with random activity peaks throughout the day. A database specialist needs to improve the availability and reduce the cost of the MySQL database tier as part of the company's migration to AWS.

Which MySQL database option would meet these requirements?

- A. Amazon RDS for MySQL with Multi-AZ
- B. Amazon Aurora Serverless MySQL cluster
- C. Amazon Aurora MySQL cluster
- D. Amazon RDS for MySQL with read replica

Answer: C

NEW QUESTION 17

A software development company is using Amazon Aurora MySQL DB clusters for several use cases, including development and reporting. These use cases place unpredictable and varying demands on the Aurora DB clusters, and can cause momentary spikes in latency. System users run ad-hoc queries sporadically throughout the week. Cost is a primary concern for the company, and a solution that does not require significant rework is needed.

Which solution meets these requirements?

- A. Create new Aurora Serverless DB clusters for development and reporting, then migrate to these new DB clusters.
- B. Upgrade one of the DB clusters to a larger size, and consolidate development and reporting activities on this larger DB cluster.
- C. Use existing DB clusters and stop/start the databases on a routine basis using scheduling tools.

D. Change the DB clusters to the burstable instance family.

Answer: A

Explanation:

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Concepts.DBInstanceClass.html>

NEW QUESTION 18

A gaming company is evaluating Amazon ElastiCache as a solution to manage player leaderboards. Millions of players around the world will complete in annual tournaments. The company wants to implement an architecture that is highly available. The company also wants to ensure that maintenance activities have minimal impact on the availability of the gaming platform.

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

- A. Deploy an ElastiCache for Redis cluster with read replicas and Multi-AZ enabled.
- B. Deploy an ElastiCache for Memcached global datastore.
- C. Deploy a single-node ElastiCache for Redis cluster with automatic backups enable
- D. In the event of a failure, create a new cluster and restore data from the most recent backup.
- E. Use the default maintenance window to apply any required system changes and mandatory updates as soon as they are available.
- F. Choose a preferred maintenance window at the time of lowest usage to apply any required changes and mandatory updates.

Answer: AE

Explanation:

<https://aws.amazon.com/blogs/database/configuring-amazon-elasticache-for-redis-for-higher-availability/>

NEW QUESTION 19

A company uses Amazon Aurora MySQL as the primary database engine for many of its applications. A database specialist must create a dashboard to provide the company with information about user connections to databases. According to compliance requirements, the company must retain all connection logs for at least 7 years.

Which solution will meet these requirements MOST cost-effectively?

- A. Enable advanced auditing on the Aurora cluster to log CONNECT event
- B. Export audit logs from Amazon CloudWatch to Amazon S3 by using an AWS Lambda function that is invoked by an Amazon EventBridge (Amazon CloudWatch Events) scheduled event
- C. Build a dashboard by using Amazon QuickSight.
- D. Capture connection attempts to the Aurora cluster with AWS Cloud Trail by using the DescribeEvents API operatio
- E. Create a CloudTrail trail to export connection logs to Amazon S3. Build a dashboard by using Amazon QuickSight.
- F. Start a database activity stream for the Aurora cluste
- G. Push the activity records to an Amazon Kinesis data strea
- H. Build a dynamic dashboard by using AWS Lambda.
- I. Publish the DatabaseConnections metric for the Aurora DB instances to Amazon CloudWate
- J. Build a dashboard by using CloudWatch dashboards.

Answer: A

Explanation:

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraMySQL.Auditing.html>

NEW QUESTION 20

A Database Specialist modified an existing parameter group currently associated with a production Amazon RDS for SQL Server Multi-AZ DB instance. The change is associated with a static parameter type, which controls the number of user connections allowed on the most critical RDS SQL Server DB instance for the company. This change has been approved for a specific maintenance window to help minimize the impact on users.

How should the Database Specialist apply the parameter group change for the DB instance?

- A. Select the option to apply the change immediately
- B. Allow the preconfigured RDS maintenance window for the given DB instance to control when the change is applied
- C. Apply the change manually by rebooting the DB instance during the approved maintenance window
- D. Reboot the secondary Multi-AZ DB instance

Answer: C

Explanation:

https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER_WorkingWithParamGroups.html#USER_W

NEW QUESTION 21

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