

# Exam Questions AWS-Certified-Database-Specialty

AWS Certified Database - Specialty

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#### NEW QUESTION 1

A company migrated one of its business-critical database workloads to an Amazon Aurora Multi-AZ DB cluster. The company requires a very low RTO and needs to improve the application recovery time after database failovers.

Which approach meets these requirements?

- A. Set the max\_connections parameter to 16,000 in the instance-level parameter group.
- B. Modify the client connection timeout to 300 seconds.
- C. Create an Amazon RDS Proxy database proxy and update client connections to point to the proxy endpoint.
- D. Enable the query cache at the instance level.

**Answer: C**

#### Explanation:

Amazon RDS Proxy allows applications to pool and share connections established with the database, improving database efficiency and application scalability. With RDS Proxy, failover times for Aurora and RDS databases are reduced by up to 66% and database credentials, authentication, and access can be managed through integration with AWS Secrets Manager and AWS Identity and Access Management (IAM).  
<https://aws.amazon.com/rds/proxy/>

#### NEW QUESTION 2

A company is closing one of its remote data centers. This site runs a 100 TB on-premises data warehouse solution. The company plans to use the AWS Schema Conversion Tool (AWS SCT) and AWS DMS for the migration to AWS. The site network bandwidth is 500 Mbps. A Database Specialist wants to migrate the on-premises data using Amazon S3 as the data lake and Amazon Redshift as the data warehouse. This move must take place during a 2-week period when source systems are shut down for maintenance. The data should stay encrypted at rest and in transit.

Which approach has the least risk and the highest likelihood of a successful data transfer?

- A. Set up a VPN tunnel for encrypting data over the network from the data center to AW
- B. Leverage AWS SCT and apply the converted schema to Amazon Redshif
- C. Once complete, start an AWS DMS task to move the data from the source to Amazon S3. Use AWS Glue to load the data from Amazon S3 to Amazon Redshift.
- D. Leverage AWS SCT and apply the converted schema to Amazon Redshif
- E. Start an AWS DMS task with two AWS Snowball Edge devices to copy data from on-premises to Amazon S3 with AWS KMS encryptio
- F. Use AWS DMS to finish copying data to Amazon Redshift.
- G. Leverage AWS SCT and apply the converted schema to Amazon Redshif
- H. Once complete, use a fleet of 10 TB dedicated encrypted drives using the AWS Import/Export feature to copy data from on-premises to Amazon S3 with AWS KMS encryptio
- I. Use AWS Glue to load the data to Amazon redshift.
- J. Set up a VPN tunnel for encrypting data over the network from the data center to AW
- K. Leverage a native database export feature to export the data and compress the file
- L. Use the aws S3 cp multi-port upload command to upload these files to Amazon S3 with AWS KMS encryptio
- M. Once complete, load the data to Amazon Redshift using AWS Glue.

**Answer: B**

#### Explanation:

<https://aws.amazon.com/blogs/database/new-aws-dms-and-aws-snowball-integration-enables-mass-database-mi>

#### NEW QUESTION 3

A Database Specialist is setting up a new Amazon Aurora DB cluster with one primary instance and three Aurora Replicas for a highly intensive, business-critical application. The Aurora DB cluster has one medium-sized primary instance, one large-sized replica, and two medium-sized replicas. The Database Specialist did not assign a promotion tier to the replicas.

In the event of a primary failure, what will occur?

- A. Aurora will promote an Aurora Replica that is of the same size as the primary instance
- B. Aurora will promote an arbitrary Aurora Replica
- C. Aurora will promote the largest-sized Aurora Replica
- D. Aurora will not promote an Aurora Replica

**Answer: C**

#### Explanation:

Priority: If you don't select a value, the default is tier-1. This priority determines the order in which Aurora

[https://docs.amazonaws.cn/en\\_us/AmazonRDS/latest/AuroraUserGuide/aurora-replicas-adding.html](https://docs.amazonaws.cn/en_us/AmazonRDS/latest/AuroraUserGuide/aurora-replicas-adding.html)

More than one Aurora Replica can share the same priority, resulting in promotion tiers. If two or more Aurora Replicas share the same priority, then Amazon RDS promotes the replica that is largest in size. If two or more Aurora Replicas share the same priority and size, then Amazon RDS promotes an arbitrary replica in the same promotion tier.

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Aurora.Managing.Backups.html#Aurora.M> If two or more Aurora Replicas share the same priority, then Amazon RDS promotes the replica that is largest in size. If two or more Aurora Replicas share the same priority and size, then Amazon RDS promotes an arbitrary replica in the same promotion tier. <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Concepts.AuroraHighAvailability.html>

#### NEW QUESTION 4

A ride-hailing application uses an Amazon RDS for MySQL DB instance as persistent storage for bookings. This application is very popular and the company expects a tenfold increase in the user base in next few months. The application experiences more traffic during the morning and evening hours.

This application has two parts:

An in-house booking component that accepts online bookings that directly correspond to simultaneous requests from users.

A third-party customer relationship management (CRM) component used by customer care representatives. The CRM uses queries to access booking data.

A database specialist needs to design a cost-effective database solution to handle this workload. Which solution meets these requirements?

- A. Use Amazon ElastiCache for Redis to accept the booking
- B. Associate an AWS Lambda function to capture changes and push the booking data to the RDS for MySQL DB instance used by the CRM.

- C. Use Amazon DynamoDB to accept the booking
- D. Enable DynamoDB Streams and associate an AWS Lambda function to capture changes and push the booking data to an Amazon SQS queue
- E. This triggers another Lambda function that pulls data from Amazon SQS and writes it to the RDS for MySQL DB instance used by the CRM.
- F. Use Amazon ElastiCache for Redis to accept the booking
- G. Associate an AWS Lambda function to capture changes and push the booking data to an Amazon Redshift database used by the CRM.
- H. Use Amazon DynamoDB to accept the booking
- I. Enable DynamoDB Streams and associate an AWS Lambda function to capture changes and push the booking data to Amazon Athena, which is used by the CRM.

**Answer:** D

#### NEW QUESTION 5

A company has an ecommerce web application with an Amazon RDS for MySQL DB instance. The marketing team has noticed some unexpected updates to the product and pricing information on the website, which is impacting sales targets. The marketing team wants a database specialist to audit future database activity to help identify how and when the changes are being made.

What should the database specialist do to meet these requirements? (Choose two.)

- A. Create an RDS event subscription to the audit event type.
- B. Enable auditing of CONNECT and QUERY\_DML events.
- C. SSH to the DB instance and review the database logs.
- D. Publish the database logs to Amazon CloudWatch Logs.
- E. Enable Enhanced Monitoring on the DB instance.

**Answer:** BD

#### Explanation:

<https://aws.amazon.com/blogs/database/configuring-an-audit-log-to-capture-database-activities-for-amazon-rds>

#### NEW QUESTION 6

A company has a 20 TB production Amazon Aurora DB cluster. The company runs a large batch job overnight to load data into the Aurora DB cluster. To ensure the company's development team has the most up-to-date data for testing, a copy of the DB cluster must be available in the shortest possible time after the batch job completes.

How should this be accomplished?

- A. Use the AWS CLI to schedule a manual snapshot of the DB cluster
- B. Restore the snapshot to a new DB cluster using the AWS CLI.
- C. Create a dump file from the DB cluster
- D. Load the dump file into a new DB cluster.
- E. Schedule a job to create a clone of the DB cluster at the end of the overnight batch process.
- F. Set up a new daily AWS DMS task that will use cloning and change data capture (CDC) on the DB cluster to copy the data to a new DB cluster
- G. Set up a time for the AWS DMS stream to stop when the new cluster is current.

**Answer:** C

#### NEW QUESTION 7

A gaming company has implemented a leaderboard in AWS using a Sorted Set data structure within Amazon ElastiCache for Redis. The ElastiCache cluster has been deployed with cluster mode disabled and has a replication group deployed with two additional replicas. The company is planning for a worldwide gaming event and is anticipating a higher write load than what the current cluster can handle.

Which method should a Database Specialist use to scale the ElastiCache cluster ahead of the upcoming event?

- A. Enable cluster mode on the existing ElastiCache cluster and configure separate shards for the Sorted Set across all nodes in the cluster.
- B. Increase the size of the ElastiCache cluster nodes to a larger instance size.
- C. Create an additional ElastiCache cluster and load-balance traffic between the two clusters.
- D. Use the EXPIRE command and set a higher time to live (TTL) after each call to increment a given key.

**Answer:** B

#### NEW QUESTION 8

A financial company wants to store sensitive user data in an Amazon Aurora PostgreSQL DB cluster. The database will be accessed by multiple applications across the company. The company has mandated that all communications to the database be encrypted and the server identity must be validated. Any non-SSL-based connections should be disallowed access to the database.

Which solution addresses these requirements?

- A. Set the `rds.force_ssl=0` parameter in DB parameter group
- B. Download and use the Amazon RDS certificate bundle and configure the PostgreSQL connection string with `sslmode=allow`.
- C. Set the `rds.force_ssl=1` parameter in DB parameter group
- D. Download and use the Amazon RDS certificate bundle and configure the PostgreSQL connection string with `sslmode=disable`.
- E. Set the `rds.force_ssl=0` parameter in DB parameter group
- F. Download and use the Amazon RDS certificate bundle and configure the PostgreSQL connection string with `sslmode=verify-ca`.
- G. Set the `rds.force_ssl=1` parameter in DB parameter group
- H. Download and use the Amazon RDS certificate bundle and configure the PostgreSQL connection string with `sslmode=verify-full`.

**Answer:** D

#### Explanation:

PostgreSQL: `sslrootcert=rds-cert.pem sslmode=[verify-ca | verify-full]`

#### NEW QUESTION 9

A company has a production environment running on Amazon RDS for SQL Server with an in-house web application as the front end. During the last application maintenance window, new functionality was added to the web application to enhance the reporting capabilities for management. Since the update, the application is slow to respond to some reporting queries.

How should the company identify the source of the problem?

- A. Install and configure Amazon CloudWatch Application Insights for Microsoft .NET and Microsoft SQL Serve
- B. Use a CloudWatch dashboard to identify the root cause.
- C. Enable RDS Performance Insights and determine which query is creating the proble
- D. Request changes to the query to address the problem.
- E. Use AWS X-Ray deployed with Amazon RDS to track query system traces.
- F. Create a support request and work with AWS Support to identify the source of the issue.

**Answer: B**

**Explanation:**

Amazon RDS Performance Insights is a database performance tuning and monitoring feature that helps you quickly assess the load on your database, and determine when and where to take action. Performance Insights allows non-experts to detect performance problems with an easy-to-understand dashboard that visualizes database load. <https://aws.amazon.com/rds/performance-insights/>

**NEW QUESTION 10**

A gaming company is developing a new mobile game and decides to store the data for each user in Amazon DynamoDB. To make the registration process as easy as possible, users can log in with their existing Facebook or Amazon accounts. The company expects more than 10,000 users.

How should a database specialist implement access control with the LEAST operational effort?

- A. Use web identity federation on the mobile app and AWS STS with an attached IAM role to get temporary credentials to access DynamoDB.
- B. Use web identity federation on the mobile app and create individual IAM users with credentials to access DynamoDB.
- C. Use a self-developed user management system on the mobile app that lets users access the data from DynamoDB through an API.
- D. Use a single IAM user on the mobile app to access DynamoDB.

**Answer: A**

**NEW QUESTION 10**

A media company is using Amazon RDS for PostgreSQL to store user data. The RDS DB instance currently has a publicly accessible setting enabled and is hosted in a public subnet. Following a recent AWS Well- Architected Framework review, a Database Specialist was given new security requirements. Only certain on-premises corporate network IPs should connect to the DB instance. Connectivity is allowed from the corporate network only.

Which combination of steps does the Database Specialist need to take to meet these new requirements? (Choose three.)

- A. Modify the pg\_hba.conf fil
- B. Add the required corporate network IPs and remove the unwanted IPs.
- C. Modify the associated security grou
- D. Add the required corporate network IPs and remove the unwanted IPs.
- E. Move the DB instance to a private subnet using AWS DMS.
- F. Enable VPC peering between the application host running on the corporate network and the VPC associated with the DB instance.
- G. Disable the publicly accessible setting.
- H. Connect to the DB instance using private IPs and a VPN.

**Answer: BEF**

**Explanation:**

[https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER\\_VPC.WorkingWithRDSInstanceinaVPC.ht](https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER_VPC.WorkingWithRDSInstanceinaVPC.ht)

**NEW QUESTION 14**

An online gaming company is planning to launch a new game with Amazon DynamoDB as its data store. The database should be designated to support the following use cases:

Update scores in real time whenever a player is playing the game. Retrieve a player's score details for a specific game session.

A Database Specialist decides to implement a DynamoDB table. Each player has a unique user\_id and each game has a unique game\_id.

Which choice of keys is recommended for the DynamoDB table?

- A. Create a global secondary index with game\_id as the partition key
- B. Create a global secondary index with user\_id as the partition key
- C. Create a composite primary key with game\_id as the partition key and user\_id as the sort key
- D. Create a composite primary key with user\_id as the partition key and game\_id as the sort key

**Answer: D**

**Explanation:**

<https://aws.amazon.com/blogs/database/amazon-dynamodb-gaming-use-cases-and-design-patterns/> "EA uses the user ID as the partition key and primary key (a 1:1 modeling pattern)."

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

"Partition key and sort key: Referred to as a composite primary key, this type of key is composed of two attributes. The first attribute is the partition key, and the second attribute is the sort key."

**NEW QUESTION 17**

A database expert is responsible for building a highly available online transaction processing (OLTP) solution that makes use of Amazon RDS for MySQL production databases. Disaster recovery criteria include a cross-regional deployment and an RPO and RTO of 5 and 30 minutes, respectively.

What should the database professional do to ensure that the database meets the criteria for high availability and disaster recovery?

- A. Use a Multi-AZ deployment in each Region.
- B. Use read replica deployments in all Availability Zones of the secondary Region.



- C. Use Multi-AZ and read replica deployments within a Region.
- D. Use Multi-AZ and deploy a read replica in a secondary Region.

**Answer:** D

#### NEW QUESTION 18

A financial institution uses AWS to host its online application. Amazon RDS for MySQL is used to host the application's database, which includes automatic backups.

The program has corrupted the database logically, resulting in the application being unresponsive. The exact moment the corruption occurred has been determined, and it occurred within the backup retention period.

How should a database professional restore a database to its previous state prior to corruption?

- A. Use the point-in-time restore capability to restore the DB instance to the specified time
- B. No changes to the application connection string are required.
- C. Use the point-in-time restore capability to restore the DB instance to the specified time
- D. Change the application connection string to the new, restored DB instance.
- E. Restore using the latest automated backup
- F. Change the application connection string to the new, restored DB instance.
- G. Restore using the appropriate automated backup
- H. No changes to the application connection string are required.

**Answer:** B

#### Explanation:

When you perform a restore operation to a point in time or from a DB Snapshot, a new DB Instance is created with a new endpoint (the old DB Instance can be deleted if so desired). This is done to enable you to create multiple DB Instances from a specific DB Snapshot or point in time."

#### NEW QUESTION 21

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 22

A financial company has allocated an Amazon RDS MariaDB DB instance with large storage capacity to accommodate migration efforts. Post-migration, the company purged unwanted data from the instance. The company now wants to downsize storage to save money. The solution must have the least impact on production and near-zero downtime.

Which solution would meet these requirements?

- A. Create a snapshot of the old databases and restore the snapshot with the required storage
- B. Create a new RDS DB instance with the required storage and move the databases from the old instances to the new instance using AWS DMS
- C. Create a new database using native backup and restore
- D. Create a new read replica and make it the primary by terminating the existing primary

**Answer:** B

#### Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/rds-db-storage-size/> Use AWS Database Migration Service (AWS DMS) for minimal downtime.

#### NEW QUESTION 27

A company is running its customer feedback application on Amazon Aurora MySQL. The company runs a report every day to extract customer feedback, and a team reads the feedback to determine if the customer comments are positive or negative. It sometimes takes days before the company can contact unhappy customers and take corrective measures. The company wants to use machine learning to automate this workflow. Which solution meets this requirement with the LEAST amount of effort?

- A. Export the Aurora MySQL database to Amazon S3 by using AWS Database Migration Service (AWS DMS). Use Amazon Comprehend to run sentiment analysis on the exported files.
- B. Export the Aurora MySQL database to Amazon S3 by using AWS Database Migration Service (AWS DMS). Use Amazon SageMaker to run sentiment analysis on the exported files.
- C. Set up Aurora native integration with Amazon Comprehend.
- D. Use SQL functions to extract sentiment analysis.
- E. Set up Aurora native integration with Amazon SageMaker.
- F. Use SQL functions to extract sentiment analysis.

**Answer:** C

**Explanation:**

For details about using Aurora and Amazon Comprehend together, see Using Amazon Comprehend for sentiment detection. Aurora machine learning uses a highly optimized integration between the Aurora database and the AWS machine learning (ML) services SageMaker and Amazon Comprehend.

<https://www.stackovercloud.com/2019/11/27/new-for-amazon-aurora-use-machine-learning-directly-from-your>

**NEW QUESTION 30**

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

**NEW QUESTION 34**

A Database Specialist is creating Amazon DynamoDB tables, Amazon CloudWatch alarms, and associated infrastructure for an Application team using a development AWS account. The team wants a deployment method that will standardize the core solution components while managing environment-specific settings separately, and wants to minimize rework due to configuration errors.

Which process should the Database Specialist recommend to meet these requirements?

- A. Organize common and environmental-specific parameters hierarchically in the AWS Systems Manager Parameter Store, then reference the parameters dynamically from an AWS CloudFormation template
- B. Deploy the CloudFormation stack using the environment name as a parameter.
- C. Create a parameterized AWS CloudFormation template that builds the required object
- D. Keep separate environment parameter files in separate Amazon S3 bucket
- E. Provide an AWS CLI command that deploys the CloudFormation stack directly referencing the appropriate parameter bucket.
- F. Create a parameterized AWS CloudFormation template that builds the required object
- G. Import the template into the CloudFormation interface in the AWS Management Console
- H. Make the required changes to the parameters and deploy the CloudFormation stack.
- I. Create an AWS Lambda function that builds the required objects using an AWS SD
- J. Set the required parameter values in a test event in the Lambda console for each environment that the Application team can modify, as needed
- K. Deploy the infrastructure by triggering the test event in the console.

**Answer:** A

**Explanation:**

<https://aws.amazon.com/blogs/mt/integrating-aws-cloudformation-with-aws-systems-manager-parameter-store/>

**NEW QUESTION 39**

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 42**

A company is deploying a solution in Amazon Aurora by migrating from an on-premises system. The IT department has established an AWS Direct Connect link from the company's data center. The company's Database Specialist has selected the option to require SSL/TLS for connectivity to prevent plaintext data from being sent over the network. The migration appears to be working successfully, and the data can be queried from a desktop machine.

Two Data Analysts have been asked to query and validate the data in the new Aurora DB cluster. Both Analysts are unable to connect to Aurora. Their user names and passwords have been verified as valid and the Database Specialist can connect to the DB cluster using their accounts. The Database Specialist also verified that the security group configuration allows network from all corporate IP addresses.

What should the Database Specialist do to correct the Data Analysts' inability to connect?

- A. Restart the DB cluster to apply the SSL change.
- B. Instruct the Data Analysts to download the root certificate and use the SSL certificate on the connection string to connect.
- C. Add explicit mappings between the Data Analysts' IP addresses and the instance in the security group assigned to the DB cluster.
- D. Modify the Data Analysts' local client firewall to allow network traffic to AWS.

**Answer:** B

**Explanation:**

- To connect using SSL:
- Provide the SSLTrust certificate (can be downloaded from AWS)
- Provide SSL options when connecting to database
- Not using SSL on a DB that enforces SSL would result in error <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/ssl-certificate-rotation-aurora-postgresql.html>

**NEW QUESTION 46**

A company is about to launch a new product, and test databases must be re-created from production data. The company runs its production databases on an Amazon Aurora MySQL DB cluster. A Database Specialist needs to deploy a solution to create these test databases as quickly as possible with the least amount of administrative effort.

What should the Database Specialist do to meet these requirements?

- A. Restore a snapshot from the production cluster into test clusters
- B. Create logical dumps of the production cluster and restore them into new test clusters
- C. Use database cloning to create clones of the production cluster
- D. Add an additional read replica to the production cluster and use that node for testing

**Answer:** C

**Explanation:**

<https://aws.amazon.com/getting-started/hands-on/aurora-cloning-backtracking/>

"Cloning an Aurora cluster is extremely useful if you want to assess the impact of changes to your database, or if you need to perform workload-intensive operations—such as exporting data or running analytical queries, or simply if you want to use a copy of your production database in a development or testing environment. You can make multiple clones of your Aurora DB cluster. You can even create additional clones from other clones, with the constraint that the clone databases must be created in the same region as the source databases.

**NEW QUESTION 48**

A company is using Amazon Aurora PostgreSQL for the backend of its application. The system users are complaining that the responses are slow. A database specialist has determined that the queries to Aurora take longer during peak times. With the Amazon RDS Performance Insights dashboard, the load in the chart for average active sessions is often above the line that denotes maximum CPU usage and the wait state shows that most wait events are IO:XactSync.

What should the company do to resolve these performance issues?

- A. Add an Aurora Replica to scale the read traffic.
- B. Scale up the DB instance class.
- C. Modify applications to commit transactions in batches.
- D. Modify applications to avoid conflicts by taking locks.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraPostgreSQL.Reference.html> <https://blog.dbi-services.com/aws-aurora-xactsync-batch-commit/>

**NEW QUESTION 51**

An electric utility company wants to store power plant sensor data in an Amazon DynamoDB table. The utility company has over 100 power plants and each power plant has over 200 sensors that send data every 2 seconds. The sensor data includes time with milliseconds precision, a value, and a fault attribute if the sensor is malfunctioning. Power plants are identified by a globally unique identifier. Sensors are identified by a unique identifier within each power plant. A database specialist needs to design the table to support an efficient method of finding all faulty sensors within a given power plant.

Which schema should the database specialist use when creating the DynamoDB table to achieve the fastest query time when looking for faulty sensors?



- A. Use the plant identifier as the partition key and the measurement time as the sort key
- B. Create a global secondary index (GSI) with the plant identifier as the partition key and the fault attribute as the sort key.
- C. Create a composite of the plant identifier and sensor identifier as the partition key
- D. Use the measurement time as the sort key
- E. Create a local secondary index (LSI) on the fault attribute.
- F. Create a composite of the plant identifier and sensor identifier as the partition key
- G. Use the measurement time as the sort key
- H. Create a global secondary index (GSI) with the plant identifier as the partition key and the fault attribute as the sort key.
- I. Use the plant identifier as the partition key and the sensor identifier as the sort key
- J. Create a local secondary index (LSI) on the fault attribute.

**Answer:** D

**Explanation:**

Plant id as partition key and Sensor id as a sort key. Fault can be identified quickly using the local secondary index and associated plant and sensor can be identified easily.

**NEW QUESTION 53**

A Database Specialist is migrating an on-premises Microsoft SQL Server application database to Amazon RDS for PostgreSQL using AWS DMS. The application requires minimal downtime when the RDS DB instance goes live.

What change should the Database Specialist make to enable the migration?

- A. Configure the on-premises application database to act as a source for an AWS DMS full load with ongoing change data capture (CDC)
- B. Configure the AWS DMS replication instance to allow both full load and ongoing change data capture (CDC)
- C. Configure the AWS DMS task to generate full logs to allow for ongoing change data capture (CDC)
- D. Configure the AWS DMS connections to allow two-way communication to allow for ongoing change data capture (CDC)

**Answer:** A

**Explanation:**

"requires minimal downtime when the RDS DB instance goes live" in order to do CDC: "you must first ensure that ARCHIVELOG MODE is on to provide information to LogMiner. AWS DMS uses LogMiner to read information from the archive logs so that AWS DMS can capture changes"

<https://docs.aws.amazon.com/dms/latest/sbs/chap-oracle2postgresql.steps.configureoracle.html> "If you want to capture and apply changes (CDC), then you also need the following privileges."

**NEW QUESTION 56**

A ride-hailing application stores bookings in a persistent Amazon RDS for MySQL DB instance. This program is very popular, and the corporation anticipates a tenfold rise in the application's user base over the next several months. The application receives a higher volume of traffic in the morning and evening.

This application is divided into two sections:

An internal booking component that takes online reservations in response to concurrent user queries. A component of a third-party customer relationship management (CRM) system that customer service professionals utilize. Booking data is accessed using queries in the CRM.

To manage this workload effectively, a database professional must create a cost-effective database system. Which solution satisfies these criteria?

- A. Use Amazon ElastiCache for Redis to accept the booking
- B. Associate an AWS Lambda function to capture changes and push the booking data to the RDS for MySQL DB instance used by the CRM.
- C. Use Amazon DynamoDB to accept the booking
- D. Enable DynamoDB Streams and associate an AWS Lambda function to capture changes and push the booking data to an Amazon SQS queue
- E. This triggers another Lambda function that pulls data from Amazon SQS and writes it to the RDS for MySQL DB instance used by the CRM.
- F. Use Amazon ElastiCache for Redis to accept the booking
- G. Associate an AWS Lambda function to capture changes and push the booking data to an Amazon Redshift database used by the CRM.
- H. Use Amazon DynamoDB to accept the booking
- I. Enable DynamoDB Streams and associate an AWS Lambda function to capture changes and push the booking data to Amazon Athena, which is used by the CRM.

**Answer:** B

**Explanation:**

"AWS Lambda function to capture changes" capture changes to what? ElastiCache? The main use of ElastiCache is to cache frequently read data. Also "the company expects a tenfold increase in the user base" and "correspond to simultaneous requests from users"

**NEW QUESTION 61**

A small startup company is looking to migrate a 4 TB on-premises MySQL database to AWS using an Amazon RDS for MySQL DB instance.

Which strategy would allow for a successful migration with 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:** B

#### NEW QUESTION 62

A company is running a finance application on an Amazon RDS for MySQL DB instance. The application is governed by multiple financial regulatory agencies. The RDS DB instance is set up with security groups to allow access to certain Amazon EC2 servers only. AWS KMS is used for encryption at rest. Which step will provide additional security?

- A. Set up NACLs that allow the entire EC2 subnet to access the DB instance
- B. Disable the master user account
- C. Set up a security group that blocks SSH to the DB instance
- D. Set up RDS to use SSL for data in transit

**Answer:** D

#### NEW QUESTION 65

Developers have requested a new Amazon Redshift cluster so they can load new third-party marketing data. The new cluster is ready and the user credentials are given to the developers. The developers indicate that their copy jobs fail with the following error message:

“Amazon Invalid operation: S3ServiceException:Access Denied,Status 403,Error AccessDenied.”

The developers need to load this data soon, so a database specialist must act quickly to solve this issue. What is the MOST secure solution?

- A. Create a new IAM role with the same user name as the Amazon Redshift developer user
- B. Provide the IAM role with read-only access to Amazon S3 with the assume role action.
- C. Create a new IAM role with read-only access to the Amazon S3 bucket and include the assume role action
- D. Modify the Amazon Redshift cluster to add the IAM role.
- E. Create a new IAM role with read-only access to the Amazon S3 bucket with the assume role action
- F. Add this role to the developer IAM user ID used for the copy job that ended with an error message.
- G. Create a new IAM user with access keys and a new role with read-only access to the Amazon S3 bucket. Add this role to the Amazon Redshift cluster
- H. Change the copy job to use the access keys created.

**Answer:** B

#### Explanation:

<https://docs.aws.amazon.com/redshift/latest/gsg/rs-gsg-create-an-iam-role.html>

"Now that you have created the new role, your next step is to attach it to your cluster. You can attach the role when you launch a new cluster or you can attach it to an existing cluster. In the next step, you attach the role to a new cluster."

[https://docs.aws.amazon.com/redshift/latest/dg/copy-usage\\_notes-access-permissions.html](https://docs.aws.amazon.com/redshift/latest/dg/copy-usage_notes-access-permissions.html)

#### NEW QUESTION 68

A Database Specialist needs to define a database migration strategy to migrate an on-premises Oracle database to an Amazon Aurora MySQL DB cluster. The company requires near-zero downtime for the data migration. The solution must also be cost-effective.

Which approach should the Database Specialist take?

- A. Dump all the tables from the Oracle database into an Amazon S3 bucket using datapump (expdp). Run data transformations in AWS Glue
- B. Load the data from the S3 bucket to the Aurora DB cluster.
- C. Order an AWS Snowball appliance and copy the Oracle backup to the Snowball appliance
- D. Once the Snowball data is delivered to Amazon S3, create a new Aurora DB cluster
- E. Enable the S3 integration to migrate the data directly from Amazon S3 to Amazon RDS.
- F. Use the AWS Schema Conversion Tool (AWS SCT) to help rewrite database objects to MySQL during the schema migration
- G. Use AWS DMS to perform the full load and change data capture (CDC) tasks.
- H. Use AWS Server Migration Service (AWS SMS) to import the Oracle virtual machine image as an Amazon EC2 instance
- I. Use the Oracle Logical Dump utility to migrate the Oracle data from Amazon EC2 to an Aurora DB cluster.

**Answer:** C

#### Explanation:

<https://aws.amazon.com/blogs/database/migrating-oracle-databases-with-near-zero-downtime-using-aws-dms/>

#### NEW QUESTION 71

An online shopping company has a large inflow of shopping requests daily. As a result, there is a consistent load on the company's Amazon RDS database. A database specialist needs to ensure the database is up and running at all times. The database specialist wants an automatic notification system for issues that may cause database downtime or for configuration changes made to the database.

What should the database specialist do to achieve this? (Choose two.)

- A. Create an Amazon CloudWatch Events event to send a notification using Amazon SNS on every API call logged in AWS CloudTrail.
- B. Subscribe to an RDS event subscription and configure it to use an Amazon SNS topic to send notifications.
- C. Use Amazon SES to send notifications based on configured Amazon CloudWatch Events events.
- D. Configure Amazon CloudWatch alarms on various metrics, such as FreeStorageSpace for the RDS instance.
- E. Enable email notifications for AWS Trusted Advisor.

**Answer:** BD

#### NEW QUESTION 75

A stock market analysis firm maintains two locations: one in the us-east-1 Region and another in the eu-west-2 Region. The business want to build an AWS database solution capable of providing rapid and accurate updates. Dashboards with advanced analytical queries are used to present data in the eu-west-2 office. Because the corporation will use these dashboards to make purchasing choices, they must have less than a second to obtain application data. Which solution satisfies these criteria and gives the MOST CURRENT dashboard?

- A. Deploy an Amazon RDS DB instance in us-east-1 with a read replica instance in eu-west-2. Create an Amazon ElastiCache cluster in eu-west-2 to cache data from the read replica to generate the dashboards.
- B. Use an Amazon DynamoDB global table in us-east-1 with replication into eu-west-2. Use multi-active replication to ensure that updates are quickly propagated to eu-west-2.
- C. Use an Amazon Aurora global databas
- D. Deploy the primary DB cluster in us-east-1. Deploy the secondary DB cluster in eu-west-2. Configure the dashboard application to read from the secondary cluster.
- E. Deploy an Amazon RDS for MySQL DB instance in us-east-1 with a read replica instance in eu-west-2. Configure the dashboard application to read from the read replica.

**Answer: C**

**Explanation:**

Amazon Aurora global databases span multiple AWS Regions, enabling low latency global reads and providing fast recovery from the rare outage that might affect an entire AWS Region. An Aurora global database has a primary DB cluster in one Region, and up to five secondary DB clusters in different Regions.  
<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/aurora-global-database.html>

**NEW QUESTION 79**

A Database Specialist needs to speed up any failover that might occur on an Amazon Aurora PostgreSQL DB cluster. The Aurora DB cluster currently includes the primary instance and three Aurora Replicas. How can the Database Specialist ensure that failovers occur with the least amount of downtime for the application?

- A. Set the TCP keepalive parameters low
- B. Call the AWS CLI failover-db-cluster command
- C. Enable Enhanced Monitoring on the DB cluster
- D. Start a database activity stream on the DB cluster

**Answer: A**

**Explanation:**

<https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraPostgreSQL.BestPractices.html#Aur>

**NEW QUESTION 84**

A company is migrating a mission-critical 2-TB Oracle database from on premises to Amazon Aurora. The cost for the database migration must be kept to a minimum, and both the on-premises Oracle database and the Aurora DB cluster must remain open for write traffic until the company is ready to completely cut over to Aurora.

Which combination of actions should a database specialist take to accomplish this migration as quickly as possible? (Choose two.)

- A. Use the AWS Schema Conversion Tool (AWS SCT) to convert the source database schem
- B. Then restore the converted schema to the target Aurora DB cluster.
- C. Use Oracle's Data Pump tool to export a copy of the source database schema and manually edit the schema in a text editor to make it compatible with Aurora.
- D. Create an AWS DMS task to migrate data from the Oracle database to the Aurora DB cluste
- E. Select the migration type to replicate ongoing changes to keep the source and target databases in sync until the company is ready to move all user traffic to the Aurora DB cluster.
- F. Create an AWS DMS task to migrate data from the Oracle database to the Aurora DB cluste
- G. Once the initial load is complete, create an AWS Kinesis Data Firehose stream to perform change data capture (CDC) until the company is ready to move all user traffic to the Aurora DB cluster.
- H. Create an AWS Glue job and related resources to migrate data from the Oracle database to the Aurora DB cluste
- I. Once the initial load is complete, create an AWS DMS task to perform change data capture (CDC) until the company is ready to move all user traffic to the Aurora DB cluster.

**Answer: AC**

**NEW QUESTION 86**

A bank intends to utilize Amazon RDS to host a MySQL database instance. The database should be able to handle high-volume read requests with extremely few repeated queries.

Which solution satisfies these criteria?

- A. Create an Amazon ElastiCache cluste
- B. Use a write-through strategy to populate the cache.
- C. Create an Amazon ElastiCache cluste
- D. Use a lazy loading strategy to populate the cache.
- E. Change the DB instance to Multi-AZ with a standby instance in another AWS Region.
- F. Create a read replica of the DB instanc
- G. Use the read replica to distribute the read traffic.

**Answer: D**

**NEW QUESTION 91**

A business just transitioned from an on-premises Oracle database to Amazon Aurora PostgreSQL. Following the move, the organization observed that every day around 3:00 PM, the application's response time is substantially slower. The firm has determined that the problem is with the database, not the application.

Which set of procedures should the Database Specialist do to locate the erroneous PostgreSQL query most efficiently?

- A. Create an Amazon CloudWatch dashboard to show the number of connections, CPU usage, and disk space consumption.
- B. Watch these dashboards during the next slow period.
- C. Launch an Amazon EC2 instance, and install and configure an open-source PostgreSQL monitoring tool that will run reports based on the output error logs.
- D. Modify the logging database parameter to log all the queries related to locking in the database and then check the logs after the next slow period for this information.
- E. Enable Amazon RDS Performance Insights on the PostgreSQL databases.
- F. Use the metrics to identify any queries that are related to spikes in the graph during the next slow period.

**Answer:** D

**Explanation:**

<https://aws.amazon.com/blogs/database/optimizing-and-tuning-queries-in-amazon-rds-postgresql-based-on-native> "AWS recently released a feature called Amazon RDS Performance Insights, which provides an easy-to-understand dashboard for detecting performance problems in terms of load." "AWS recently released a feature called Amazon RDS Performance Insights, which provides an easy-to-understand dashboard for detecting performance problems in terms of load."

**NEW QUESTION 94**

A company wants to migrate its Microsoft SQL Server Enterprise Edition database instance from on-premises to AWS. A deep review is performed and the AWS Schema Conversion Tool (AWS SCT) provides options for running this workload on Amazon RDS for SQL Server Enterprise Edition, Amazon RDS for SQL Server Standard Edition, Amazon Aurora MySQL, and Amazon Aurora PostgreSQL. The company does not want to use its own SQL server license and does not want to change from Microsoft SQL Server.

What is the MOST cost-effective and operationally efficient solution?

- A. Run SQL Server Enterprise Edition on Amazon EC2.
- B. Run SQL Server Standard Edition on Amazon RDS.
- C. Run SQL Server Enterprise Edition on Amazon RDS.
- D. Run Amazon Aurora MySQL leveraging SQL Server on Linux compatibility libraries.

**Answer:** B

**Explanation:**

This link seems to indicate that more information is required to determine if the Enterprise instance is a candidate for downgrading to Standard.

<https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/determine-whether-your-microsoft-sql-server>

<https://calculator.aws/#/createCalculator/RDSSQLServer>

**NEW QUESTION 99**

A large gaming company is creating a centralized solution to store player session state for multiple online games. The workload required key-value storage with low latency and will be an equal mix of reads and writes. Data should be written into the AWS Region closest to the user across the games' geographically distributed user base. The architecture should minimize the amount of overhead required to manage the replication of data between Regions.

Which solution meets these requirements?

- A. Amazon RDS for MySQL with multi-Region read replicas
- B. Amazon Aurora global database
- C. Amazon RDS for Oracle with GoldenGate
- D. Amazon DynamoDB global tables

**Answer:** A

**NEW QUESTION 100**

A clothing company uses a custom ecommerce application and a PostgreSQL database to sell clothes to thousands of users from multiple countries. The company is migrating its application and database from its on-premises data center to the AWS Cloud. The company has selected Amazon EC2 for the application and Amazon RDS for PostgreSQL for the database. The company requires database passwords to be changed every 60 days. A Database Specialist needs to ensure that the credentials used by the web application to connect to the database are managed securely.

Which approach should the Database Specialist take to securely manage the database credentials?

- A. Store the credentials in a text file in an Amazon S3 bucket
- B. Restrict permissions on the bucket to the IAM role associated with the instance profile only
- C. Modify the application to download the text file and retrieve the credentials on start up
- D. Update the text file every 60 days.
- E. Configure IAM database authentication for the application to connect to the databases
- F. Create an IAM user and map it to a separate database user for each ecommerce user
- G. Require users to update their passwords every 60 days.
- H. Store the credentials in AWS Secrets Manager
- I. Restrict permissions on the secret to only the IAM role associated with the instance profile
- J. Modify the application to retrieve the credentials from Secrets Manager on start up
- K. Configure the rotation interval to 60 days.
- L. Store the credentials in an encrypted text file in the application Amazon Machine Image (AMI)
- M. Use AWS KMS to store the key for decrypting the text file
- N. Modify the application to decrypt the text file and retrieve the credentials on start up
- O. Update the text file and publish a new AMI every 60 days.

**Answer:** C

**NEW QUESTION 103**

An online retail company is planning a multi-day flash sale that must support processing of up to 5,000 orders per second. The number of orders and exact schedule for the sale will vary each day. During the sale, approximately 10,000 concurrent users will look at the deals before buying items. Outside of the sale, the traffic volume is very low. The acceptable performance for read/write queries should be under 25 ms. Order items are about 2 KB in size and have a unique identifier. The company requires the most cost-effective solution that will automatically scale and is highly available.

Which solution meets these requirements?

- A. Amazon DynamoDB with on-demand capacity mode
- B. Amazon Aurora with one writer node and an Aurora Replica with the parallel query feature enabled
- C. Amazon DynamoDB with provisioned capacity mode with 5,000 write capacity units (WCUs) and 10,000 read capacity units (RCUs)
- D. Amazon Aurora with one writer node and two cross-Region Aurora Replicas

**Answer:** A

**Explanation:**

The number of orders and exact schedule for the sale will vary each day. During the sale, approximately 10,000 concurrent users will look at the deals before buying items. Outside of the sale, the traffic volume is very low ==> Setting provisioning DynamoDB fix read 5000/write 10000 with will waste the resource when the traffic is low. It is not cost-effective.

**NEW QUESTION 105**

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