Q1) 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 andeach game has a unique game_id.
Which choice of keys is recommended for the DynamoDB table?

⚪ Create a composite primary key with user_id as the partition key and game_id as the sort key
⚪ Create a composite primary key with game_id as the partition key and user_id as the sort key
✅ Create a global secondary index with user_id as the partition key
Explanation:-Reference: https://aws.amazon.com/blogs/database/amazon-dynamodb-gaming-use-cases-and-designpatterns/
⚪ Create a global secondary index with game_id as the partition key

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Q2) A Database Specialist migrated an existing production MySQL database from on-premises to an AmazonRDS for MySQL DB instance. However, after the migration, the database needed to be encrypted at restusing AWS KMS. Due to the size of the database, reloading, the data into an encrypted database wouldbe too time-consuming, so it is not an option.
How should the Database Specialist satisfy this new requirement?

⚪ Restore an unencrypted snapshot into a MySQL RDS DB instance that is encrypted.
⚪ Create an encrypted read replica of the RDS DB instance. Promote it the master.
⚪ Modify the RDS DB instance. Enable the AWS KMS encryption option that leverages the AWS CLI.
✅ Create a snapshot of the unencrypted RDS DB instance. Create an encrypted copy of the unencrypted snapshot. Restore the encrypted snapshot copy.

Q3) A Database Specialist is planning to create a read replica of an existing Amazon RDS for MySQL Multi-AZ DB instance. When using the AWS Management Console to conduct this task, the DatabaseSpecialist discovers that the source RDS DB instance does not appear in the read replica sourceselection box, so the read replica cannot be created.
What is the most likely reason for this?

✅ Automated backups are not enabled on the source DB instance.
Explanation:-Reference: https://aws.amazon.com/rds/features/read-replicas/
⚪ The minor MySQL version in the source DB instance does not support read replicas.
⚪ Enhanced Monitoring is not enabled on the source DB instance.
⚪ The source DB instance has to be converted to Single-AZ first to create a read replica from it.

Q4) A Database Specialist has migrated an on-premises Oracle database to Amazon Aurora PostgreSQL.
The schema and the data have been migrated successfully. The on-premises database server was alsobeing used to run database maintenance cron jobs written in Python to perform tasks including datapurging and generating data exports. The logs for these jobs show that, most of the time, the jobscompleted within 5 minutes, but a few jobs took up to 10 minutes to complete. These maintenance jobsneed to be set up for Aurora PostgreSQL.
How can the Database Specialist schedule these jobs so the setup requires minimal maintenance andprovides high availability?

✅ Create the maintenance job using the Amazon CloudWatch job scheduling plugin.
Explanation:-Reference: https://docs.aws.amazon.com/systems-manager/latest/userguide/mw-cli-task-options.html
⚪ Create AWS Lambda functions to run the maintenance jobs and schedule them with AmazonCloudWatch Events.
⚪ Create cron jobs on an Amazon EC2 instance to run the maintenance jobs following the required schedule.
⚪ Connect to the Aurora host and create cron jobs to run the maintenance jobs following the required schedule.

Q5) A company maintains several databases using Amazon RDS for MySQL and PostgreSQL. Each RDSdatabase generates log files with retention periods set to their default values. The company has nowmandated that database logs be maintained for up to 90 days in a centralized repository to facilitate realtimeand after-the-fact analyses.
What should a Database Specialist do to meet these requirements with minimal effort?

⚪ Create an AWS Lambda function to download the logs from the RDS databases and publish the logsto Amazon CloudWatch Logs. Change the log retention policy for the log group to expire the eventsafter 90 days.
⚪ Write a stored procedure in each RDS database to download the logs and consolidate the log files in an Amazon S3 bucket. Set a lifecycle policy to expire the objects after 90 days.
⚪ Modify the RDS databases to publish log to Amazon CloudWatch Logs. Change the log retention policy for each log group to expire the events after 90 days.
✅ Create an AWS Lambda function to pull logs from the RDS databases and consolidate the log files inan Amazon S3 bucket. Set a lifecycle policy to expire the objects after 90 days.

Q6) 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?

⚪ Aurora will promote an arbitrary Aurora Replica
⚪ Aurora will promote the largest-sized Aurora Replica
✅ Aurora will promote an Aurora Replica that is of the same size as the primary instance
Explanation:-Reference: https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/aurora-ug.pdf
⚪ Aurora will not promote an Aurora Replica

Q7) A company is running its line of business application on AWS, which uses Amazon RDS for MySQL at the persistent data store. The company wants to minimize downtime when it migrates the database to Amazon Aurora.
Which migration method should a Database Specialist use?

- ⚪ Create an Aurora Replica from the RDS for MySQL DB instance and promote the Aurora DB cluster.
- ⚪ Make a backup of the RDS for MySQL DB instance using the mysqldump utility, create a new AuroraDB cluster, and restore the backup.
- ✅ Take a snapshot of the RDS for MySQL DB instance and create a new Aurora DB cluster with the option to migrate snapshots.
- ⚪ Create a clone of the RDS for MySQL DB instance and promote the Aurora DB cluster.

Q8) The Security team for a finance company was notified of an internal security breach that happened 3 weeks ago. A Database Specialist must start producing audit logs out of the production Amazon AuroraPostgreSQL cluster for the Security team to use for monitoring and alerting. The Security team is required to perform real-time alerting and monitoring outside the Aurora DB cluster and wants to have the cluster push encrypted files to the chosen solution.
Which approach will meet these requirements?

- ⚪ Turn on verbose logging and set up a schedule for the logs to be dumped out for the Security team.
- ⚪ Set up database activity streams and connect the data stream from Amazon Kinesis to consumerapplications.
- ✅ Use AWS CloudTrail to audit the DB cluster and the Security team will get data from Amazon S3.
- **Explanation:-**Reference: https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/aurora-ug.pdf (525)
- ⚪ Use pg_audit to generate audit logs and send the logs to the Security team.

Q9) A company is using Amazon RDS for MySQL to redesign its business application. A Database Specialist has noticed that the Development team is restoring their MySQL database multiple times a day when Developers make mistakes in their schema updates. The Developers sometimes need to wait hours to the restores to complete.
Multiple team members are working on the project, making it difficult to find the correct restore point for each mistake.
Which approach should the Database Specialist take to reduce downtime?

- ⚪ Migrate to Amazon Aurora MySQL and enable the Aurora Backtrack feature
- ⚪ Migrate to Amazon RDS for SQL Server, take a snapshot, and restore from the snapshot
- ✅ Deploy multiple read replicas and have the team members make changes to separate replicainstances
- ⚪ Enable the Amazon RDS for MySQL Backtrack feature

Q10) 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.)

- ✅ Disable the publicly accessible setting.
- ✅ Enable VPC peering between the application host running on the corporate network and the VPCassociated with the DB instance.
- ⚪ Move the DB instance to a private subnet using AWS DMS.
- ⚪ Modify the associated security group. Add the required corporate network IPs and remove the unwanted IPs.
- ⚪ Modify the pg_hba.conf file. Add the required corporate network IPs and remove the unwanted IPs.
- ✅ Connect to the DB instance using private IPs and a VPN.

Q11) A gaming company has recently acquired a successful iOS game, which is particularly popular during the holiday season. The company has decided to add a leaderboard to the game that uses Amazon DynamoDB. The application load is expected to ramp up over the holiday season.
Which solution will meet these requirements at the lowest cost?

- ⚪ DynamoDB with DynamoDB Accelerator
- ✅ DynamoDB with on-demand capacity mode
- **Explanation:-**Reference: https://aws.amazon.com/blogs/database/running-spiky-workloads-and-optimizing-costs-bymore-than-90-using-amazon-dynamodb-on-demand-capacity-mode/?nc1=b_rp
- ⚪ DynamoDB Streams
- ⚪ DynamoDB with provisioned capacity mode with Auto Scaling

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Q12)

A company's Security department established new requirements that state internal users must connect to an existing Amazon RDS for SQL Server DB instance using their corporate Active Directory (AD)credentials.

A Database Specialist must make the modifications needed to fulfill this requirement.

Which combination of actions should the Database Specialist take? (Choose three.)

- ⚪ Use the AWS Management Console to create an AD Connector. Create a trust relationship with thecorporate AD.
- ✅ Stop the RDS SQL Server DB instance, modify it to use the directory for Windows authentication, andstart it again. Create appropriate new logins.
- ✅ Use the AWS Management Console to create an AWS Managed Microsoft AD. Create a trustrelationship with the corporate AD.
- ⚪ Modify the RDS SQL Server DB instance to use the directory for Windows authentication. Createappropriate new logins.
- ⚪ Disable Transparent Data Encryption (TDE) on the RDS SQL Server DB instance.
- ✅ Configure the AWS Managed Microsoft AD domain controller Security Group.

Q13) A Database Specialist is performing a proof of concept with Amazon Aurora using a small instance to confirm a simple database behavior. When loading a large dataset and creating the index, the Database Specialist encounters the following error message from Aurora:
ERROR: cloud not write block 7507718 of temporary file: No space left on device

What is the cause of this error and what should the Database Specialist do to resolve this issue?

○ The local storage used to store temporary tables is full. The Database Specialist needs to enable localstorage scaling.

✅ The local storage used to store temporary tables is full. The Database Specialist needs to scale up theinstance.

○ The scaling of Aurora storage cannot catch up with the data loading. The Database Specialist needsto enable Aurora storage scaling.

○ The scaling of Aurora storage cannot catch up with the data loading. The Database Specialist needsto modify the workload to load the data slowly.

Q14) A financial company wants to store sensitive user data in an Amazon Aurora PostgreSQL DB cluster. Thedatabase will be accessed by multiple applications across the company. The company has mandated thatall 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?

✅ Set the rds.force_ssl=1 parameter in DB parameter groups. Download and use the Amazon RDScertificate bundle and configure the PostgreSQL connection string with sslmode=verify-full.

○ Set the rds.force_ssl=0 parameter in DB parameter groups. Download and use the Amazon RDScertificate bundle and configure the PostgreSQL connection string with sslmode=verify-ca.

○ Set the rds.force_ssl=1 parameter in DB parameter groups. Download and use the Amazon RDScertificate bundle and configure the PostgreSQL connection string with sslmode=disable.

○ Set the rds.force_ssl=0 parameter in DB parameter groups. Download and use the Amazon RDScertificate bundle and configure the PostgreSQL connection string with sslmode=allow.

Q15) A company is using 5 TB Amazon RDS DB instances and needs to maintain 5 years of monthly databasebackups for compliance purposes. A Database Administrator must provide Auditors with data within 24hours.
Which solution will meet these requirements and is the MOST operationally efficient?

○ Create an RDS snapshot schedule from the AWS Management Console to take a snapshot every 30days.

○ Create an AWS Lambda function to run on the first day of every month to create an automated RDSsnapshot.

✅ Create an AWS Lambda function to run on the first day of every month to take a manual RDSsnapshot.

○ Create an AWS Lambda function to run on the first day of every month to take a manual RDSsnapshot. Move the snapshot to the company's Amazon S3 bucket.

Q16) A company wants to automate the creation of secure test databases with random credentials to be storedsafely for later use. The credentials should have sufficient information about each test database to initiate a connection and perform automated credential rotations. The credentials should not be logged or stored anywhere in an unencrypted form.
Which steps should a Database Specialist take to meet these requirements using an AWSCloudFormation template?

○ Create the secret with a chosen user name and a randomly generated password set by theGenerateSecretString property. Add an SecretTargetAttachment resource with the SecretId propertyset to the Amazon Resource Name (ARN) of the secret and the TargetId property set to a parametervalue matching the desired database ARN. Then, create a database with the MasterUserName andMasterUserPassword properties set to the previously created values in the secret.

○ Add a Mapping property from the database Amazon Resource Name (ARN) to the secret ARN. Then,create the secret with a chosen user name and a randomly generated password set by theGenerateSecretString property. Add the database with the MasterUserName andMasterUserPassword properties set to the user name of the secret.

✅ Add a resource of type AWS::SecretsManager::Secret and specify the GenerateSecretStringproperty. Then, define the database user name in the SecureStringTemplate template. Create aresource for the database and reference the secret string for the MasterUserName andMasterUserPassword properties. Then, add a resource of typeAWS::SecretsManagerSecretTargetAttachment with the SecretId and TargetId properties set to theAmazon Resource Names (ARNs) of the secret and the database.
Explanation:-Reference: https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resourcesecretsmanager-secrettargetattachment.html

○ Create the database with the MasterUserName and MasterUserPassword properties set to the defaultvalues. Then, create the secret with the user name and password set to the same default values. Adda Secret Target Attachment resource with the SecretId and TargetId properties set to the AmazonResource Names (ARNs) of the secret and the database. Finally, update the secret's password valuewith a randomly generated string set by the GenerateSecretString property.

Q17)

A company is going to use an Amazon Aurora PostgreSQL DB cluster for an application backend. TheDB cluster contains some tables with sensitive data.

A Database Specialist needs to control the accessprivileges at the table level.

How can the Database Specialist meet these requirements?

○ Define access privileges to the tables containing sensitive data in the pg_hba.conf file.

○ Configure the rules in a NACL to restrict outbound traffic from the Aurora DB cluster.

✅ Execute GRANT and REVOKE commands that restrict access to the tables containing sensitive data.
Explanation:-Reference: https://aws.amazon.com/blogs/database/managing-postgresql-users-and-roles/

○ Use AWS IAM database authentication and restrict access to the tables using an IAM policy.

Q18) A Database Specialist is working with a company to launch a new website built on Amazon Aurora withseveral Aurora Replicas. This new website will replace an on-premises website connected to a legacyrelational database. Due to stability issues in the legacy database, the company would like to test theresiliency of Aurora.
Which action can the Database Specialist take to test the resiliency of the Aurora DB cluster?

○ Remove the DB cluster endpoint to simulate a master DB instance failure

✅ Use Aurora fault injection to crash the master DB instance
Explanation:-Reference: https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraMySQL.Managing.FaultInjectionQueries.html

- Stop the DB cluster and analyze how the website responds
- Use Aurora Backtrack to crash the DB cluster

Q19) A company just migrated to Amazon Aurora PostgreSQL from an on-premises Oracle database. After themigration, the company discovered there is a period of time every day around 3:00 PM where theresponse time of the application is noticeably slower. The company has narrowed down the cause of thisissue to the database and not the application.
Which set of steps should the Database Specialist take to most efficiently find the problematicPostgreSQL query?

- ✅ Enable Amazon RDS Performance Insights on the PostgreSQL database. Use the metrics to identifyany queries that are related to spikes in the graph during the next slow period.
- ⚪ Modify the logging database parameter to log all the queries related to locking in the database andthen check the logs after the next slow period for this information.
- ⚪ Launch an Amazon EC2 instance, and install and configure an open-source PostgreSQL monitoringtool that will run reports based on the output error logs.
- ⚪ Create an Amazon CloudWatch dashboard to show the number of connections, CPU usage, and diskspace consumption. Watch these dashboards during the next slow period.

Q20) A company has a web-based survey application that uses Amazon DynamoDB. During peak usage, whensurvey responses are being collected, a Database Specialist sees theProvisionedThroughputExceededException error.
What can the Database Specialist do to resolve this error? (Choose two.)

- ✅ Change the table type to throughput optimized
Explanation:-Reference: https://forums.aws.amazon.com/thread.jspa?threadID=174315
- ⚪ Change the table capacity mode to on-demand
- ✅ Increase the write capacity units for the specific table
Explanation:-Reference: https://forums.aws.amazon.com/thread.jspa?threadID=174315
- ⚪ Change the table to use Amazon DynamoDB Streams
- ⚪ Purchase DynamoDB reserved capacity in the affected Region

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Q21) A company is running a two-tier ecommerce application in one AWS account. The web server isdeployed using an Amazon RDS for MySQL Multi-AZ DB instance. A Developer mistakenly deleted thedatabase in the production environment. The database has been restored, but this resulted in hours ofdowntime and lost revenue.
Which combination of changes in existing IAM policies should a Database Specialist make to prevent anerror like this from happening in the future? (Choose three.)

- ✅ Use policy conditions to restrict access to selective IP addresses
- ⚪ Use AccessList Controls policy type to restrict users for database instance deletion
- ✅ Enable multi-factor authentication for sensitive operations to access sensitive resources and APIoperations
- ⚪ Allow all users to restore a database from a backup that will reduce the overall downtime to restorethe database
- ✅ Grant least privilege to groups, users, and roles
- ⚪ Enable AWS CloudTrail logging and Enhanced Monitoring

Q22) A company is building a new web platform where user requests trigger an AWS Lambda function thatperforms an insert into an Amazon Aurora MySQL DB cluster. Initial tests with less than 10 users on thenew platform yielded successful execution and fast response times. However, upon more extensive testswith the actual target of 3,000 concurrent users, Lambda functions are unable to connect to the DBcluster and receive too many connections errors.
Which of the following will resolve this issue?

- ⚪ Change the DB cluster to Multi-AZ
- ✅ Increase the instance size of the DB cluster
- ⚪ Edit the my.cnf file for the DB cluster to increase max_connections
- ⚪ Increase the number of Aurora Replicas

Q23) A company is developing a multi-tier web application hosted on AWS using Amazon Aurora as thedatabase. The application needs to be deployed to production and other non-production environments. ADatabase Specialist needs to specify different MasterUsername and MasterUserPassword properties inthe AWS CloudFormation templates used for automated deployment. The CloudFormation templates areversion controlled in the company's code repository. The company also needs to meet compliancerequirement by routinely rotating its database master password for production.
What is most secure solution to store the master password?

- ⚪ Use the ssm dynamic reference to retrieve the master password stored in the AWS Systems ManagerParameter Store and enable automatic rotation.
- ✅ Use the secretsmanager dynamic reference to retrieve the master password stored in AWS SecretsManager and enable automatic rotation.
- ⚪ Encrypt the master password using an AWS KMS key. Store the encrypted master password in theCloudFormation template.
- ⚪ Store the master password in a parameter file in each environment. Reference the environmentspecificparameter file in the CloudFormation template.

Q24) A company is writing a new survey application to be used with a weekly televised game show. Theapplication will be available for 2 hours each week. The company expects to receive over 500,000 entriesevery week, with each survey asking 2-3 multiple choice questions of each user. A Database Specialistneeds to select a platform that is highly scalable for a large number of concurrent writes to handle theanticipated volume.
Which AWS services should the Database Specialist consider? (Choose two.)

- ⚪ Amazon Elasticsearch Service
- ⚪ Amazon Neptune
- ⚪ Amazon Redshift
- ✅ Amazon DynamoDB
- ✅ Amazon ElastiCache

Q25) A company has migrated a single MySQL database to Amazon Aurora. The production data is hosted in aDB cluster in VPC_PROD, and 12 testing environments are hosted in VPC_TEST using the same AWSaccount. Testing results in minimal changes to the test data. The Development team wants eachenvironment refreshed nightly so each test database contains fresh production data every day.
Which migration approach will be the fastest and most cost-effective to implement?

○ Run the master in Amazon Aurora MySQL using Aurora Serverless. Create 12 clones in VPC_TEST,and script the clones to be deleted and re-created nightly.

○ Run the master in Amazon Aurora MySQL. Create 12 Aurora Replicas in VPC_TEST, and script thereplicas to be deleted and re-created nightly.

○ Run the master in Amazon Aurora MySQL. Take a nightly snapshot, and restore it into 12 databasesin VPC_TEST using Aurora Serverless.

✅ Run the master in Amazon Aurora MySQL. Create 12 clones in VPC_TEST, and script the clones tobe deleted and re-created nightly.