Exam Session - Knowledge Check: Databases (SAA-C03) 1 of 2

cloudacademy.com/quiz/exam/3792022/results

#1

You are considering increasing the backup retention period for your Amazon RDS snapshots. You are also considering taking more frequent database snapshots. If you decide to implement both of these changes, will it increase your RDS storage costs?

✗
Yes

✗
No

✓
Only if the total GB of RDS database snapshots is higher than the total GBs of active RDS databases combined on the account.

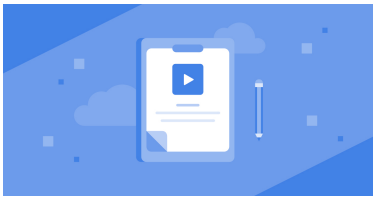
✗
Only if you increase your backup retention period to longer than 90 days.

Explanation

The first point I want to make, and it might surprise you, is that Amazon RDS does not charge any backup storage costs that equates to the total sum of provisioned storage used with your databases within a specific region. So for example, Assume you had a MySQL DB with provisioned storage of 150GiB-Month DB, plus a MariaDB DB with 450GiB in a single region. Amazon RDS would not charge you for any storage utilised up to 600GiB-Month.

https://aws.amazon.com/rds/faqs/

Covered in this lecture
Backup Storage Pricing
Course:Understanding Costs Associated with Amazon RDS



2m

#2

When using Provisioned Capacity mode, how are you charged for Amazon DynamoDB?

✕ by the total amount of throughput that you configure for your tables

✕ by the total amount of storage space used by your data

✕ by the amount of time your database is up and running

✓ by the total amount of throughput that you configure for your tables plus the total amount of storage space used by your data

Explanation

You are charged for the total amount of throughput that you configure for your tables plus the total amount of storage space used by your data.

/course/database-fundamentals-part-one-1064/amazon-dynamodb/
Covered in this lecture
Amazon DynamoDB
Course:Database Fundamentals for AWS - Part 1 of 2

10m

#3

Which of the following is not a typical use case for Neptune graph databases?

✓ online games

✕ social networking

✕ fraud detection

✕

recommendation engines

Explanation

Before I continue, let me run through some of the use cases to help you understand when and where you might use Amazon Neptune as a graph database to solidify the importance of being able to query complex relationships. Graph databases are a powerful asset when used within a social networking environment. Fraud detection: Security should always be a number-one priority in any cloud deployment solution, and using Amazon Neptune can help you from a security standpoint, using its high performance capabilities. Recommendation engines are widely used across many different websites, largely eCommerce sites that recommend products based upon your search and purchase histories.

/course/database-fundamentals-part-one-1064/amazon-neptune/
Covered in this lecture
DEMO: Creating an Amazon Neptune Database
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#4

Which Amazon RDS DB engine uses the BYOL DB instance purchase option?

MySQL

SQL Server

MariaDB

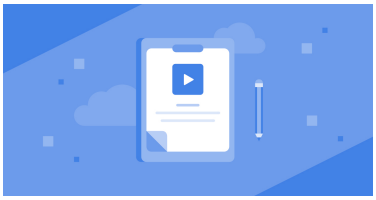
Oracle

Explanation

The different payment options within RDS include on-demand instances, on-demand instances (BYOL), reserved instances, reserved instances (BYOL), and serverless.

Currently, only the Oracle database engine uses the BYOL purchase options, all other DB engines only use on-demand instances and reserved instances, with the added exception of Aurora also using serverless as an additional purchasing option.

/course/understanding-costs-associated-with-amazon-rds-1050/rds-instance-purchasing-options/
Covered in this lecture
RDS Instance Purchasing Options
Course:Understanding Costs Associated with Amazon RDS



10m

#5

An in-memory cache is generally used to improve _____.

write-only performance

read-only performance

both read and write performance

the space efficiency of your database

Explanation

A common scenario is to have a web application that reads and writes data to persistent storage--for example, to a relational database such as RDS or a NoSQL database such as DynamoDB. This is where an in-memory cache is useful. It's generally used to improve read-only performance.

/course/database-fundamentals-part-one-1064/amazon-elasticache/
Covered in this lecture
Amazon ElastiCache
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#6

How does the Amazon RDS multi-AZ model work?

✗ A second, standby database is deployed and maintained in a different availability zone from the master using asynchronous replication.

✓ A second, standby database is deployed and maintained in a different availability zone from the master, using synchronous replication.

✗ A second, standby database is deployed and maintained in a different region from the master using synchronous replication.

✗ A second, standby database is deployed and maintained in a different region from the master using asynchronous replication.

Explanation

> In a Multi-AZ deployment, Amazon RDS automatically provisions and maintains a synchronous standby replica in a different Availability Zone.

http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html

Covered in this lecture
RDS Multi AZ
Course:When to use RDS Multi-AZ & Read Replicas

7m

#7

Which of the following statements about Amazon DynamoDB is incorrect?

✗ Its tables are schemaless.

✗

It is designed to be used for ultra-high performance.

✓

It requires SQL.

✗

It is a key-value store database.

Explanation

Amazon DynamoDB is a fully managed, serverless, key-value NoSQL database designed to run high-performance applications at any scale. Because it is a NoSQL database, it doesn't use the common Structured Query Language, SQL. It falls into a category of databases known as key-value stores.

🔗

https://aws.amazon.com/dynamodb/#:~:text=Amazon%20DynamoDB%20is%20a%20fully,data%20import%20and%20export%20tools.
Covered in this lecture
Amazon DynamoDB
Course:Database Fundamentals for AWS - Part 1 of 2

10m

🔖

#8

What is caching?

✗

a fixed-size chunk of secure, network-attached RAM

✗

ingesting, processing, and analyzing data at scale

✗

reviewing load on your database to determine if scaling is required

✓

storing frequently accessed information in memory

Explanation

Additional memory enables our device to store frequently accessed information in memory instead of having to request the information from the hard drive, which is much slower than RAM. This process is known as caching.

/course/database-fundamentals-part-one-1064/amazon-elasticache/

Covered in this lecture
Amazon ElastiCache
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#9

Which of the following statements about read replicas in Amazon RDS is false?

A read replica allows its users to read and write data.

A read replica is kept in sync with the primary database.

If at any time your primary database goes down, you have the ability to promote a read replica into a new primary database.

Read replicas help to alleviate the bottleneck on your primary database.

Explanation

A read replica is a copy of your database that gives the user another access point to retrieve data from. This helps to alleviate the bottleneck on your primary database. The read replica is kept in sync with the primary database and only allows its users to read data. If at any time your primary database happens to go down or become corrupted in some fashion, you have the ability to promote your read replica into a new primary database. Your traffic can migrate over to this copy using Route 53 failover routing and health checks.

/course/understanding-rds-scaling-elasticity-1081/scaling-with-rds/

Covered in this lecture
Scaling with RDS
Course:Understanding RDS Scaling and Elasticity

5m

#10

Which of the following is not a common use case for ElastiCache?

✕ social networking sites

✕ real-time analytics

✓ customer relationship management systems

✕ online games

Explanation

Before I finish this lecture covering ElastiCache, I want to point out some of the common use cases where you might use Amazon ElastiCache. Due to its incredibly fast performance and scaling abilities, this is commonly used in the online gaming industry, where it's vital that statistical information like a scoreboard is presented as quickly and as consistently as possible to all the players in the game. Another common use is for social networking sites, where they need a way to store temporary session information in session management. Real-time analytics is also a great use for ElastiCache, as it can be used in conjunction with other services such as Amazon Kinesis to ingest, process, and analyze data at scale.

/course/database-fundamentals-part-one-1064/amazon-elasticache/

Covered in this lecture
Amazon ElastiCache
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#11

Which of the following is a type of Amazon Neptune endpoint?

A reader

A cluster

An instance

All of these are Neptune endpoints.

Explanation

There are three different types of Amazon Neptune endpoints: cluster endpoint, reader endpoint, and instance endpoint.

/course/database-fundamentals-part-one-1064/amazon-neptune/

Covered in this lecture
Amazon Neptune
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#12

Each of the following is a use case for Amazon ElastiCache except which choice?

persistent data storage

in-memory data storage

improving read access performance

caches using secure, network-attached RAM

Explanation

ElastiCache should never be used to store your only version of data records, since a cache is designed to be a temporary data store. So when data persistence is necessary, such as when we are working with primary data records, or when we need write performance rather than read performance, a persistent data store should be used instead of an ElastiCache.

/course/database-fundamentals-part-one-1064/amazon-elasticache/
Covered in this lecture
Amazon ElastiCache
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#13

Which Amazon RDS Database Engine supports the serverless purchasing option?

✓ Amazon Aurora

✗ PostgreSQL

✗ MariaDB

✗ SQL Server

Explanation

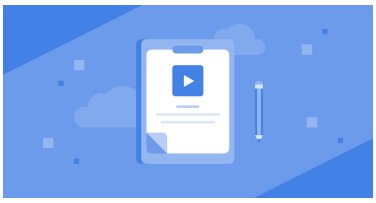
The different payment options within RDS include on-demand instances, on-demand instances (BYOL), reserved instances, reserved instances (BYOL), and serverless.

Currently, only the Oracle database engine uses the BYOL purchase options, all other DB engines only use on-demand instances and reserved instances, with the added exception of Aurora also using serverless as an additional purchasing option.

/course/understanding-costs-associated-with-amazon-rds-1050/rds-instance-purchasing-options/
Covered in this lecture
Course Introduction
Course:Understanding Costs Associated with Amazon RDS

3m

#14



Which of the following statements about Amazon DynamoDB on-demand backups is false?

✓

The backup process for very large databases tends to be very slow.

✗

Every time an on-demand backup is taken, a full backup of the entire table is included.

✗

You can use AWS backup to schedule on-demand backups on a regular and recurring basis.

✗

On-demand backups are not limited by the 35-day retention period.

Explanation

One of the main benefits that on-demand backups have over automatic backups is that they are not limited by the 35-day retention period and exist until you manually delete them. When performing your on-demand backups, you should rest in the comfort that it does not pose any kind of performance throughput impact against your table, thanks to a unique distributed technology that DynamoDB is built upon. This also enables your backup process to scale, which means that your backups can be created in seconds despite how big your database might be in size. Now, this has the benefit of requiring you not to specify backup windows or schedules. Every time an on-demand backup is taken, a full backup of the entire table is included. Also, much like in RDS, you can also use AWS backup to schedule on-demand backups on a regular and recurring basis.

/course/backup-and-restore-capabilities-amazon-rds-amazon-dynamodb-1111/amazon-dynamodb-backup-capabilities/
Covered in this lecture
Restoring an Amazon DynamoDB Database
Course:Backup and Restore Capabilities of Amazon RDS & Amazon DynamoDB

4m

#15

How does in-memory caching provided by ElastiCache improve the performance of applications?

✓

It improves application performance by storing frequently-accessed data in memory for low-latency access.

✗

It improves application performance by using a part of instance RAM for caching important data.

✗

It improves application performance by deleting the requests that do not contain frequently accessed data.

✗

It improves application performance by implementing good database indexing strategies.

Explanation

In Amazon ElastiCache, in-memory caching improves application performance by storing critical pieces of data in memory for low-latency access. Cached information may include the results of I/O-intensive database queries or the results of computationally intensive calculations.

http://aws.amazon.com/elasticache/faqs/#g4

Covered in this lecture
Summary
Course:Introduction to the Amazon ElastiCache Service

1m

#16

Which Amazon RDS storage option does AWS provide only to support backward compatibility?

✗

General Purpose SSD

✓
Magnetic

✗
Provisioned IOPS (SSD)

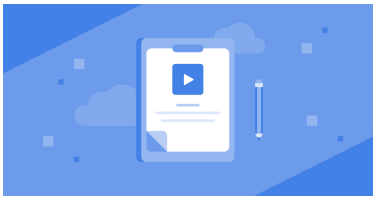
✗
Shared Cluster

Explanation

Shared Cluster storage is available only for Amazon Aurora. General Purpose SSD is a good option for a wide range of use cases. Provisioned IOPS is ideal for workloads that require a high I/O. Magnetic storage is only recommended to support backward compatibility.

/course/understanding-costs-associated-with-amazon-rds-1050/database-storage-and-i-o-pricing/
Covered in this lecture
Course Introduction
Course:Understanding Costs Associated with Amazon RDS

3m



#17

Which of the following statements regarding Amazon RDS instance pricing is incorrect?

✗
On-Demand instances cost more per hour than Reserved instances

✗
Single-AZ configurations costs less than Multi-AZ configurations

✗
Large instances cost more than small instances

✓
Each Oracle BYOL license discount applies to all Oracle DB instance types and sizes

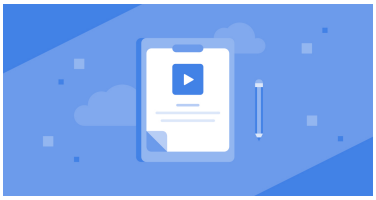
Explanation

Before you decide to use a BYOL license instance you need to ensure that your current license includes software update license and support for the particular instance that you are looking to create.

Also with BYOL for Oracle you have additional editions for deployment. This means that BYOL supports the following Oracle Editions:

Standard Edition
Standard Edition One (SE1)
Standard Edition Two (SE2)
Enterprise Edition
As you are only paying for the compute instances when using BYOL, there is no variation in prices between the different editions of Oracle being used.

/course/understanding-costs-associated-with-amazon-rds-1050/rds-instance-purchasing-options/
Covered in this lecture
Course Summary
Course:Understanding Costs Associated with Amazon RDS



7m

#18

When managing your RDS DB instances, what are two important aspects of database engine upgrades you should always keep in mind? (Choose 2 answers)

✓ backward compatibility

✓ whether the upgrade is major or minor

✗ Instance licensing requirements

✗ Storage capacity

Explanation

The first thing to consider is whether a DB engine upgrade is a major or minor update. This will indicate the extent of changes to the database. One way to determine this is to review the DB engine version numbers. For example, for a MySQL DB instance in Amazon RDS, version numbers like X.Y.Z are organized as follows:

MySQL version = X.Y.Z

X = Major version

Y = Release level

Z = Version number within release series.

If a release is minor, it is more likely your application need little to no testing before being released an updated instance. If a release is major, AWS recommends testing your application on the new DB engine version before deploying it in a production environment or updating any existing DB instances to the version. This is especially important because while minor updates are usually backward compatible, major updates often include changes that are not.

http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER_UpgradeDBInstance.Upgrading.html
#19

What is an endpoint on Amazon Neptune?

A fixed-sized chunk of secure, network-attached RAM

A virtual database cluster volume that contains the data across all instances within the cluster

A URL address and a port that points to your components

A replica instance that scales read-only operations

Explanation

An endpoint is simply a URL address and a port that points to your components.

/course/database-fundamentals-part-one-1064/amazon-neptune/

Covered in this lecture
Amazon Neptune
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#20

You have deployed a single RDS instance, but need to provide more CPU/Memory in your database tier to handle your application's workload, and are considering your scaling options. Which type of scaling would deploy identical copies of your Amazon RDS instance rather than increasing the size of the existing RDS instance?

✓ horizontal

✗ vertical

✗ diagonal

✗ inverse

Explanation

Vertical scaling will enhance the performance of your database instance. An example is scaling up from an m4.large to an m4.2xlarge. Horizontal scaling will deploy additional copies of your current instance.

/course/database-fundamentals-part-one-1064/amazon-relational-database-service/

Covered in this lecture
Amazon Relational Database Service
Course:Database Fundamentals for AWS - Part 1 of 2

11m

#21

Amazon ElastiCache allows you to retrieve information from _____.

✕
different web servers in the cloud

✕
NoSQL databases

✕
relational databases

✓
in-memory data stores

Explanation

Amazon ElastiCache is a service that makes it easy to deploy, operate, and scale open-source, in-memory data stores in the cloud. This service improves performance through caching, where web applications allow you to retrieve information from fast, managed, in-memory data stores instead of relying entirely on slower disk-based solutions.

/course/database-fundamentals-part-one-1064/amazon-elasticache/
Covered in this lecture
Amazon ElastiCache
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#22

Graph databases, like those provided by Amazon Neptune, are ideal for which use case?

✕
Data that is stored in tables and columns

✓
Identifying relationships among interconnected data, rather than the actual data itself

✕
A high volume of concurrent SQL queries

Improving read access performance of large volumes of data

Explanation

Graph databases are ideal if their focus is on being able to identify the relationships among interconnected data, rather than the actual data itself.

/course/database-fundamentals-part-one-1064/amazon-neptune/

Covered in this lecture
Amazon Neptune
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#23

What is an Elasticache cache node?

a group of at least 90 Redis shards

a fixed-sized chunk of secure, network-attached RAM

a parameter group that contains configurational settings about your engine

a group of at least 60 Memcached shards

Explanation

A cache node is a fixed-sized chunk of secure, network-attached RAM, essentially the building block of the ElastiCache service, and supports a clustered configuration.

/course/database-fundamentals-part-one-1064/amazon-elasticache/

Covered in this lecture
Amazon ElastiCache
Course:Database Fundamentals for AWS - Part 1 of 2

8m

#24

Which AWS service is a fully managed, serverless, NoSQL database that has been built to run high-performance applications at any scale?

✗ Amazon S3

✗ Amazon RDS Proxy

✗ Amazon Aurora

✓ Amazon DynamoDB

Explanation

DynamoDB is a fully managed, serverless, NoSQL database that has been built to run high-performance applications at any scale.

/course/survey-serverless-2399/a-survey-of-serverless/

#25

Which of the following statements about backups in Amazon RDS is true?

✗ Only manual backups are supported.

✗ Only automated backups are supported.

✓ Both manual and automated backups are supported.

✗ Neither manual nor automated backups are supported.

Explanation

From a backup perspective, by default, Amazon RDS provides an automatic feature. You can also perform manual backups, which are known as snapshots, any time you need to.

/course/database-fundamentals-part-one-1064/amazon-relational-database-service/

Covered in this lecture

DEMO: Creating an ElastiCache Cluster

Course:Database Fundamentals for AWS - Part 1 of 2

6m