



1

Introduction

- 1 Amazon RDS (Relational Database Service) storage refers to the underlying storage system that Amazon RDS uses to store database data
- 2 It is based on Amazon EBS (Elastic Block Store) and provides scalable, durable, and high-performance storage options
- 3 There are different storage options depending on your needs
 - 1 General Purpose SSD
 - 2 Provisioned IOPS SSD
 - 3 Magnetic storage legacy (not recommended)
- 4 The storage options available in Amazon RDS are indeed based on the database engine you select, Different database engines support specific storage types
- 5 You can create Db2, MySQL, MariaDB, Oracle, SQL Server, and PostgreSQL RDS DB instances with up to 64 terabytes (TiB) of storage.

2

Data Striping in Amazon RDS

- 1 RDS data striping is a process where Amazon RDS automatically splits and distributes your database data across multiple EBS volumes.
- 2 This improves performance by increasing the speed of data reads and writes, as multiple volumes work together to handle the data
- 3 You don't need to configure it manually—RDS handles the striping to ensure your database performs efficiently, especially for large or high-traffic databases.

3

Storage Auto Scaling

1

Introduction

- 1 Amazon RDS automatically increases the allocated storage space for your database when it detects that you're running out of space.
- 2 This feature helps ensure that your database continues to run smoothly without requiring manual intervention to increase storage

2

Step-by-Step Example

- 1 Scenario
 - 1 Let's say you have an RDS instance running MySQL, and you initially allocate 100 GB of storage to it
 - 2 You also enable Storage Auto Scaling to ensure the storage automatically grows as needed
 - 3 You set a maximum storage limit of 500 GB.
- 2 Initial Setup
 - 1 You allocate 100 GB of storage to your RDS instance
 - 2 The database starts with 30 GB of data
- 3 Database Growth
 - 1 Over time, the database grows as more data is inserted.
 - 2 After a few months, the database size reaches 90 GB.
 - 3 At this point, you have 10 GB of free space left from the initial 100 GB allocation
- 4 Threshold is Reached When the database usage reaches close to 90% of the allocated storage (e.g., 90 GB out of 100 GB), RDS automatically triggers Storage Auto Scaling because it anticipates that you will soon run out of space.
- 5 Automatic Storage Increase
 - 1 For example RDS increases the storage allocation by 50 GB (based on its scaling policies and requirements).
 - 2 Now, your RDS instance has 150 GB of total storage (initial 100 GB + 50 GB added).
- 6 Continued Growth
 - 1 Your database continues to grow, and it eventually reaches 140 GB of data.
 - 2 Once again, RDS detects that you're nearing the storage limit and adds another 50 GB of storage.
- 7 Maximum Storage Limit You've set a maximum storage limit of 500 GB. RDS will keep increasing storage automatically as your database grows, up to this limit
- 8 Cost Efficiency
 - 1 You only pay for the storage you use, so if your database grows to 150 GB
 - 2 you're charged based on that, rather than for the maximum 500 GB limit you set.

3

Key Limitations of Storage Auto Scaling

- 1 Supported Storage Types
- 2 Not Available for Read Replicas
- 3 Storage auto scaling is not supported by Multi-AZ DB clusters in Amazon RDS