



- 1 Introduction
 - 1 A read replica is a copy of your main (or primary) database in Amazon RDS.
 - 2 It stays in sync with the primary database, constantly updating itself with any new data.
 - 3 But unlike the primary, a read replica is read-only, meaning it can only handle data reads, not changes like updates or deletions
- 2 Why Use a Read Replica?
 - 1 When your application has many users, the primary database can become slow due to too many requests.
 - 2 To solve this, read replicas are used to reduce the load on the primary database by handling all the "read" requests.
 - 3 This way, the primary database can focus on handling "write" requests (such as adding, deleting, or updating data), making the whole system faster and more efficient.
- 3 How Does It Work?
 - 1 Data Syncing
 - 1 The read replica automatically receives data updates from the primary database. This means any changes made to the primary database are reflected in the read replica
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 - 2 Read Traffic Distribution
 - 1 You can direct read requests from your application to the read replica instead of the primary database.
 - 2 By splitting these tasks, the primary database has less work to do, improving its performance for critical tasks
- 4 Benefits of Using Read Replicas
 - 1 Improved Performance
 - 2 High Scalability
 - 3 Reliability and Backup
 - 4 Special Note
 - 1 Read replicas cannot automatically take over as the primary database if the primary fails.
 - 2 Unlike Multi-AZ setups, which provide automatic failover, a read replica must be manually promoted to become the new primary if needed.
 - 3 This means that read replicas are not a substitute for Multi-AZ configurations when high availability and automatic failover are required
- 5 Same Region Vs Cross-Region Read Replicas
 - 1 Same-Region Read Replicas
 - 1 These replicas are created within the same AWS region as the primary database
 - 2 They're useful for distributing read traffic locally and improving performance for users within the same region
 - 3 While same-region read replicas don't automatically provide high availability (unlike Multi-AZ setups), choosing different AZs for your read replicas can provide better fault tolerance.
 - 2 Cross-Region Read Replicas
 - 1 These replicas are created in a different AWS region from the primary database
 - 2 Cross-region read replicas are ideal for
 - 1 Improving data access speed for global users by reducing latency
 - 2 Disaster recovery by keeping a copy of your database in another region, which can be promoted in case of a regional failure
 - 3 Data migration to another region by promoting the cross-region replica as the new primary