

## **RDS (Relational Database Service)**

- Relational databases are what most of us are all used to.
- A database structured to recognize relations between stored items of information.  
eg: Excel sheet

## **Relational Database Types**

- SQL Server
- Oracle
- MySQL Server
- PostgreSQL
- Aurora
- MariaDB

## **RDS Back-ups**

Two types of Backups

- Automated Backups
- DB Snapshots

### **Automated Backups:**

- Automated backups allow you to recover your database to any point in time within a "retention period". The retention period can be between one and 35 days.

- Automated Backups will take a full daily snapshot and will also store transaction logs throughout the day. When you do a recovery, AWS will first choose the most recent daily back up, and then apply transaction logs relevant to that day.
- Automated Backups are enabled by default.

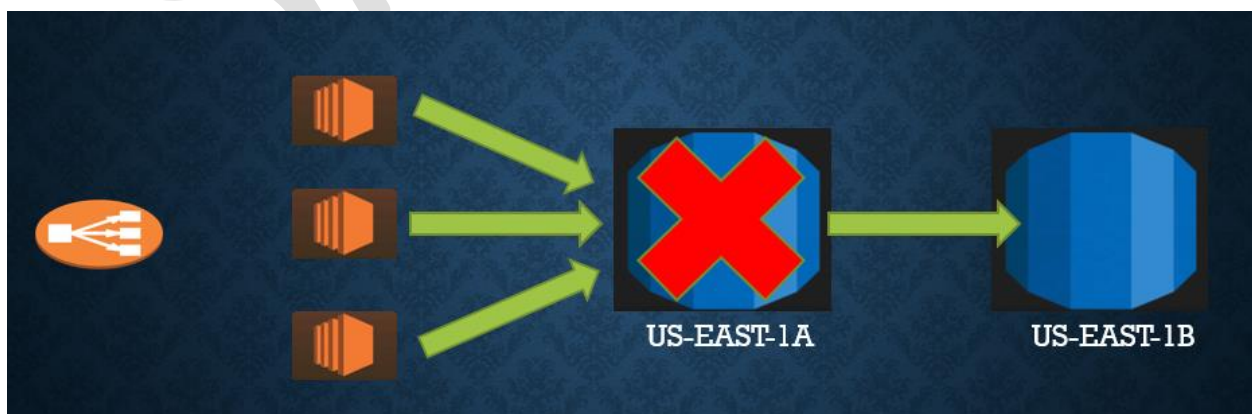
### Snapshots:

- DB Snapshots are done manually (ie they are user initiated). They are stored even after you delete the original RDS instance, unlike automated backups.

### Restoring Backups

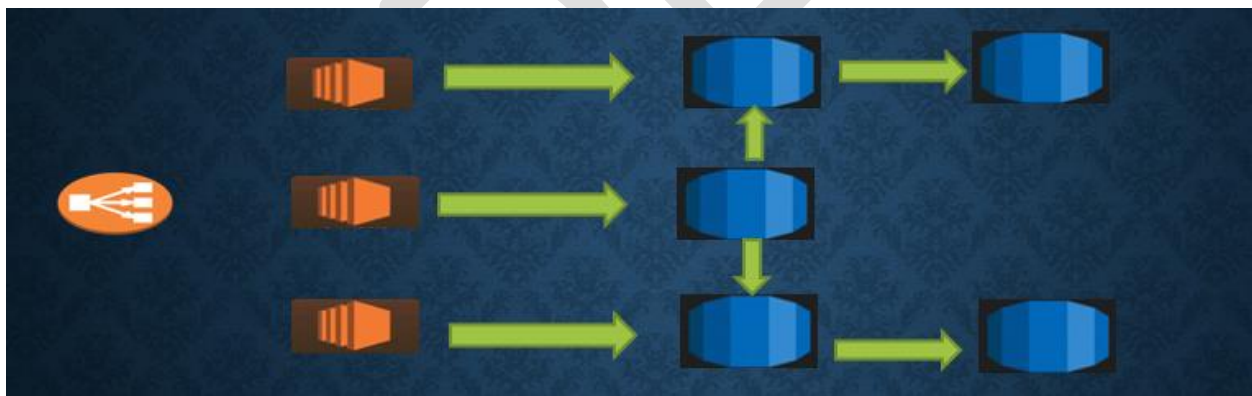
- Whenever you restore either an Automatic Backup or a manual Snapshot, the restored version of the database will be a new RDS instance with a new DNS endpoint.

### Multi-AZ



- Multi-AZ allows you to have an exact copy of your production database in another AZ. AWS handles the replication for you, so when your production database is written to, this write will automatically be synchronized to the stand by database.
- In the event of planned database maintenance, DB Instance failure, or an AZ failure, Amazon RDS will automatically failover to the standby so that database operations can resume quickly without administrative intervention.
- Both DB servers have same DNS endpoints.

### Read Replica



- Read replicas allow you to have a read-only copy of your production database. This is achieved by using Asynchronous replication from the primary RDS instance to the read replica.
- You use read replicas primarily for very read-heavy database workloads

- Use for scaling. Not for DR.
- You can have up to 5 RR copies of any database
- You can have read replicas of read replicas (But latency will be there)
- Each RR will have its own DNS end point