

## 💡 Amazon Relational Database Service (Amazon RDS)

Amazon RDS is a managed [#service](#) which we can use to launch and manage relational databases on AWS. It makes easier to set up, [#operate](#), and scale a relational database in the AWS [#cloud](#), also provides cost-efficient, resizable capacity for an industry-standard relational database and manages common [#database](#) administration tasks.

Amazon RDS supports 6 engines, [#PostgreSQL](#), [#MySQL](#), [#mariadb](#), [#oracledatabase](#), [#sqlserver](#) and Amazon Aurora.

### ✖ Major Components

🔥 DB Instances - is the basic building block of RDS. It contains multiple user databases which can be interacted with the same set of [#tools](#) and applications which we use to access a stand-alone [#db](#).

Three types : Standard instances, Memory-optimized instances, Micro Instances.

🔥 Amazon [#rds](#) storage - uses Elastic Block Store, [#ebs](#) volumes for database and log storage. It can dynamically increase the size when needed, but based on the database workloads and price associated with the [#storage](#) types.

Three types: General Purpose (SSD), Provisioned IOPS, Magnetic.

🔥 Regions and Availability Zones - AWS allocated highly available [#data](#) centers across different areas of the world. Each [#aws](#) region includes different locations called Availability Zones or AZs which are engineered if a failure of one [#availability](#) zone does not impact the another one.

🔥 Security Groups - controls the access to DB [#instances](#) by enabling access to the user who needs permission from the security group to access the IP address ranges or [#ec2](#) instances.

Three types: [#vpc](#) Security Group, EC2 [#security](#) Group, DB Security Group.

🔥 DB Parameter Groups - is a collection of [#engine](#) configuration values that can be used as a [#container](#) mapped to one or more instances. If the DB Parameter Groups didn't applied for the instance, a [#default](#) parameter group will be added and which cannot be edited further.

Two types - Static Parameter Groups and Dynamic Parameter Groups.

🔥 DB Option Groups - It can specify [#features](#) (options), those are available for a particular Amazon RDS DB instance. When we map a DB with an [#option](#) group, the DB instance will automatically inherit the features specified.