Amazon RDS

Topics to be covered—RDS

1) Paas Introduction
2) Traditional DB and AWS DB
3) RDS Introduction
4) Deploying mysql – accessing through linux and windows
5) Deploying mssql server – accessing through windows
6) Automatic backup
7) Deleting RDS
8) RDS Integration with S3 bucket

What is a Database

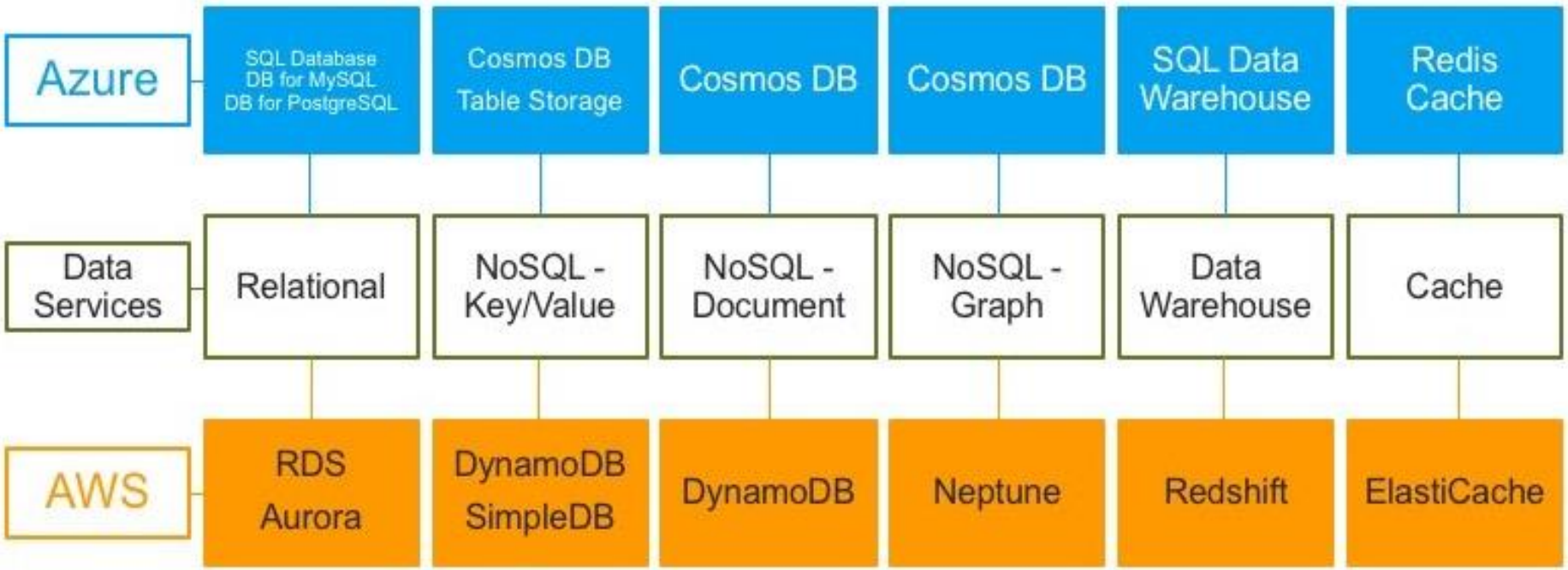
- ✓ A database is a systematic collection of data. They support electronic storage and manipulation of data. Databases make data management easy.
- ✓ Let us discuss a few examples: An online telephone directory uses a database to store data of people, phone numbers, other contact details. Your electricity service provider uses a database to manage billing, client-related issues, handle fault data, etc.
- ✓ Let us also consider Facebook. It needs to store, manipulate, and present data related to members, their friends, member activities, messages, advertisements, and a lot more.

What is SQL

- ✓ **SQL** is the standard language for dealing with Relational Databases. SQL can be used to insert, search, update, and delete database records.
- ✓ SQL can do lots of other operations, including optimizing and maintenance of databases.
- ✓ SQL stands for Structured Query language, pronounced as "S-Q-L" or sometimes as "See-Quel"... Relational databases like MySQL Database, Oracle, MS SQL Server, Sybase, etc. use ANSI SQL.

What is NoSQL

- ✓ **NoSQL** is an upcoming category of Database Management Systems. Its main characteristic is its non-adherence to Relational Database Concepts. NoSQL means "Not only SQL". The concept of NoSQL databases grew with internet giants such as Google, Facebook, Amazon etc. who deal with gigantic volumes of data.
- ✓ NoSQL database is **non-relational databases** that scale-out better than relational databases and are designed with web applications in mind. They do not use SQL to query the data and do not follow strict schemas like relational models. With NoSQL, ACID (Atomicity, Consistency, Isolation, Durability) features are not guaranteed always.


Azure
SQL Database
DB for MySQL
DB for PostgreSQL
Cosmos DB
Table Storage
Cosmos DB
Cosmos DB
SQL Data
Warehouse
Redis
Cache
Data
Services
Relational
NoSQL -
Key/Value
NoSQL -
Document
NoSQL -
Graph
Data
Warehouse
Cache
AWS
RDS
Aurora
DynamoDB
SimpleDB
DynamoDB
Neptune
Redshift
ElastiCache

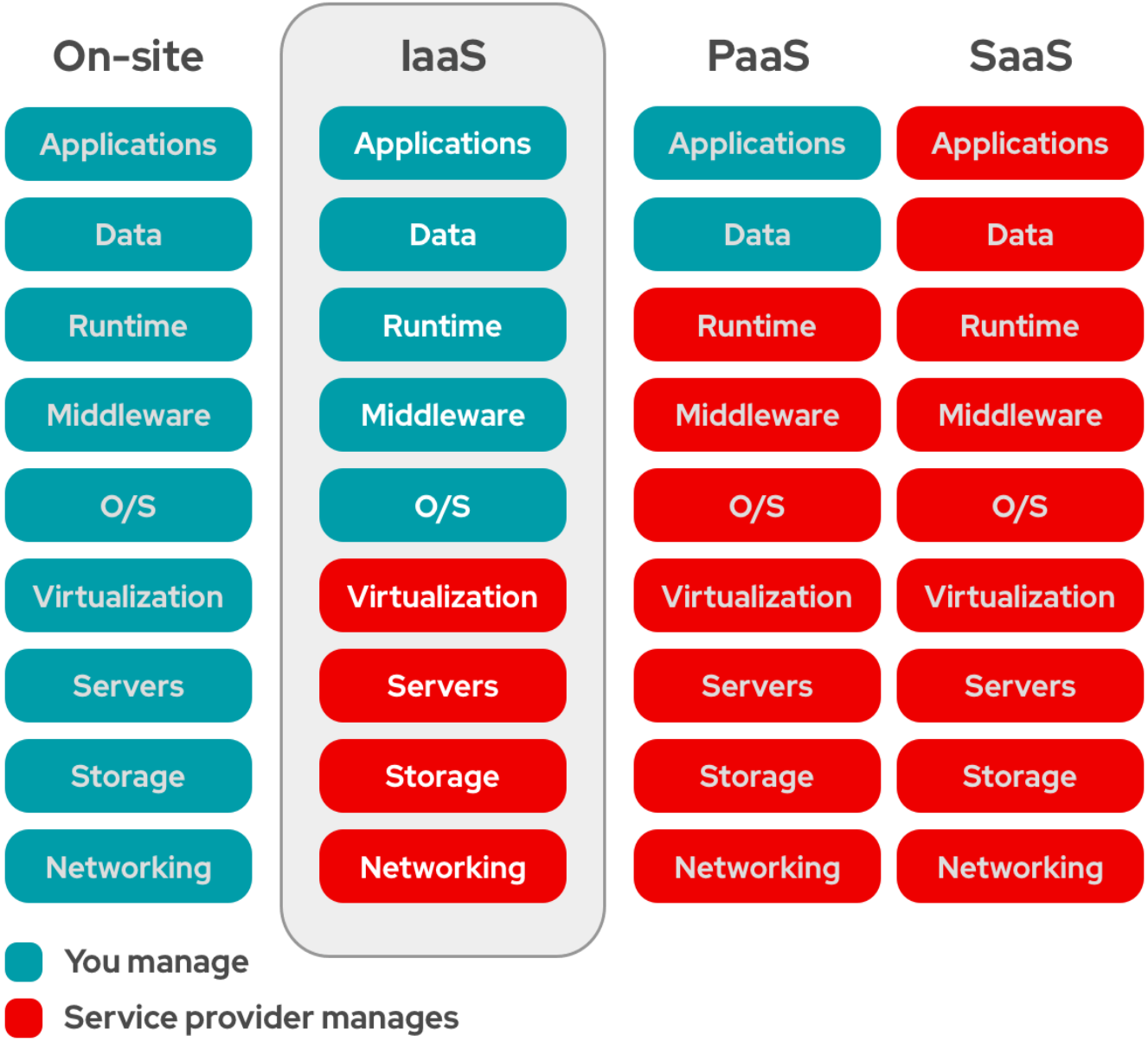
Relational Database Service (RDS)

- ✓ Amazon Relational Database Service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud.
- ✓ It provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching and backups.
- ✓ It frees you to focus on your applications so you can give them the fast performance, high availability, security and compatibility they need.
- ✓ Amazon RDS is available on several database instance types - optimized for memory, performance or I/O - and provides you with six familiar database engines to choose from, including Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle, and Microsoft SQL Server.
- ✓ You can use the AWS Database Migration Service to easily migrate or replicate your existing databases to Amazon RDS.

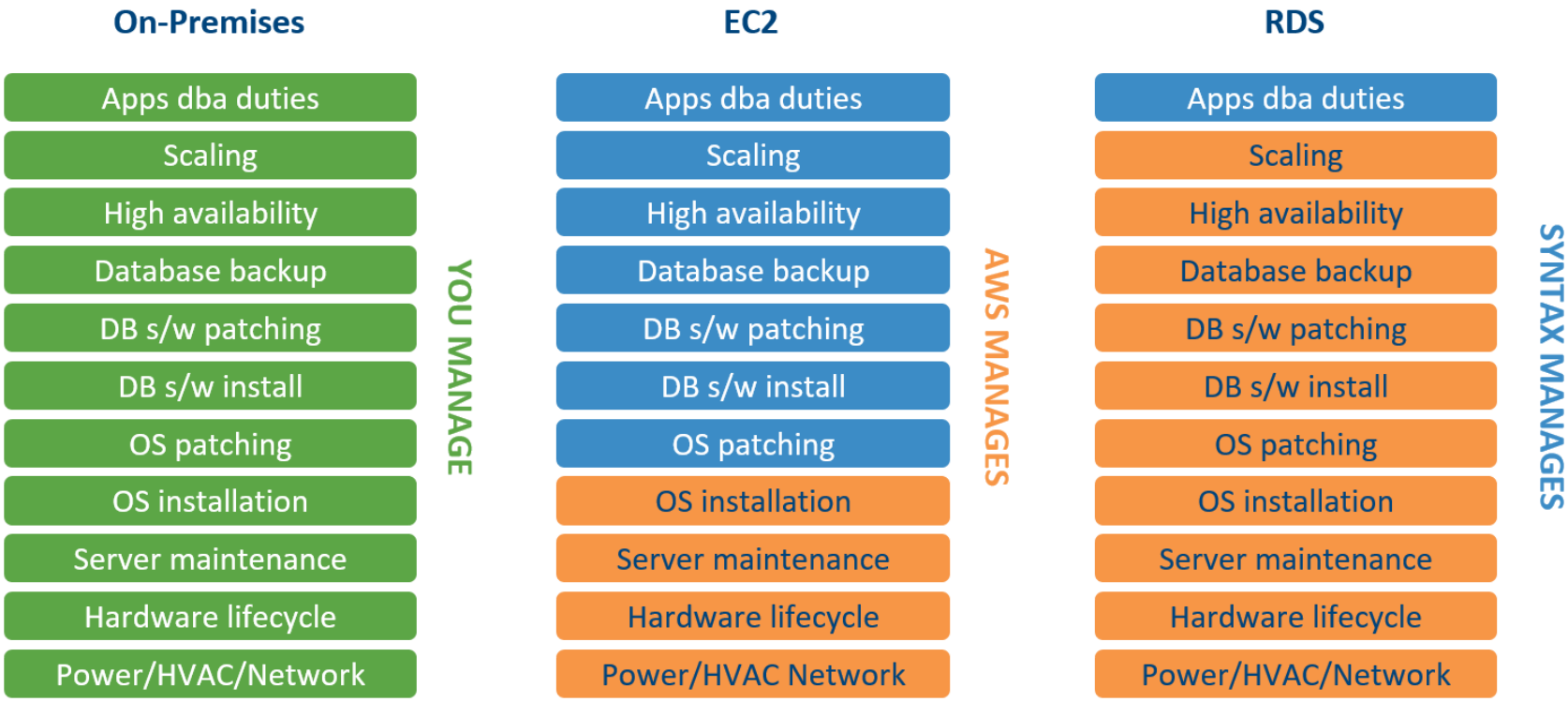

ORACLE
Microsoft
SQL Server
Amazon
Aurora
PostgreSQL
MariaDB
MySQL
amazon
RDS

Features of Amazon RDS

- **Scalable** − Amazon RDS allows to scale the relational database by using AWS Management Console or RDS-specific API. We can increase or decrease your RDS requirements within minutes.
- **Host replacement** − Sometimes these situations occur when the hardware of Amazon RDS fails. There is no need to worry, it will be automatically replaced by Amazon.
- **Inexpensive** − Using Amazon RDS, we pay only for the resources we consume. There is no up-front and long-term commitment.
- **Secure** − Amazon RDS provides complete control over the network to access their database and their associated services.
- **Automatic backups** − Amazon RDS backs up everything in the database including transaction logs up to last five minutes and also manages automatic backup timings.
- **Software patching** − Automatically gets all the latest patches for the database software. We can also specify when the software should be patched using DB Engine Version Management.


On-site
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
IaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
PaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
SaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
You manage
Service provider manages

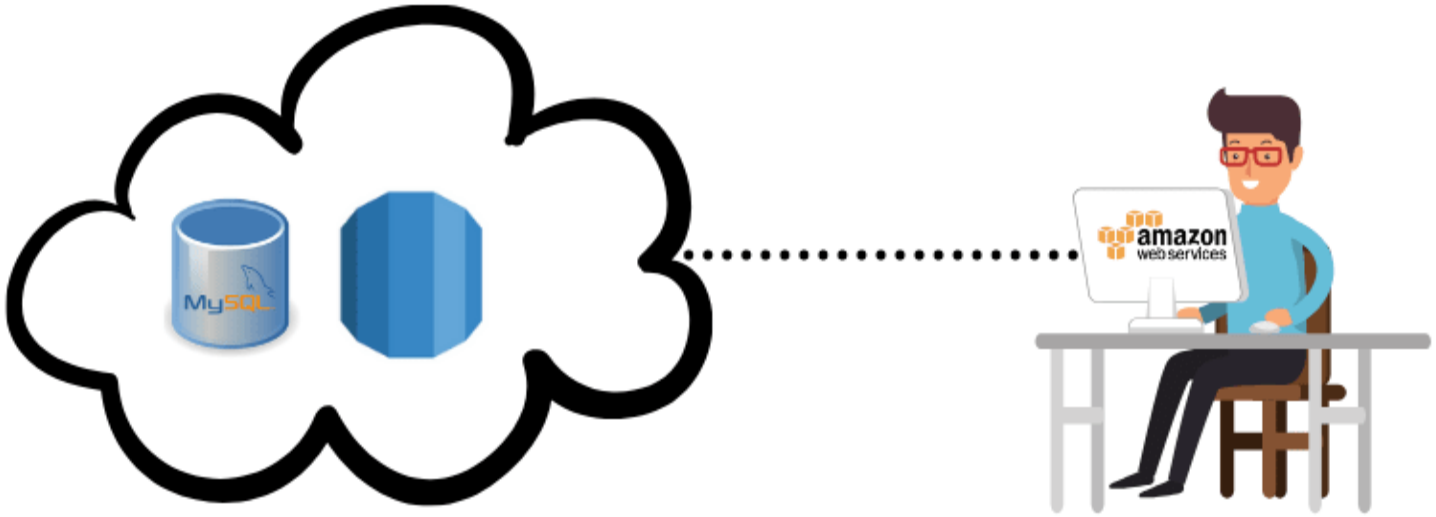
RDS


On-Premises
Apps dba duties
Scaling
High availability
Database backup
DB s/w patching
DB s/w install
OS patching
OS installation
Server maintenance
Hardware lifecycle
Power/HVAC/Network
YOU MANAGE
EC2
Apps dba duties
Scaling
High availability
Database backup
DB s/w patching
DB s/w install
OS patching
OS installation
Server maintenance
Hardware lifecycle
Power/HVAC Network
AWS MANAGES
RDS
Apps dba duties
Scaling
High availability
Database backup
DB s/w patching
DB s/w install
OS patching
OS installation
Server maintenance
Hardware lifecycle
Power/HVAC/Network
SYNTAX MANAGES

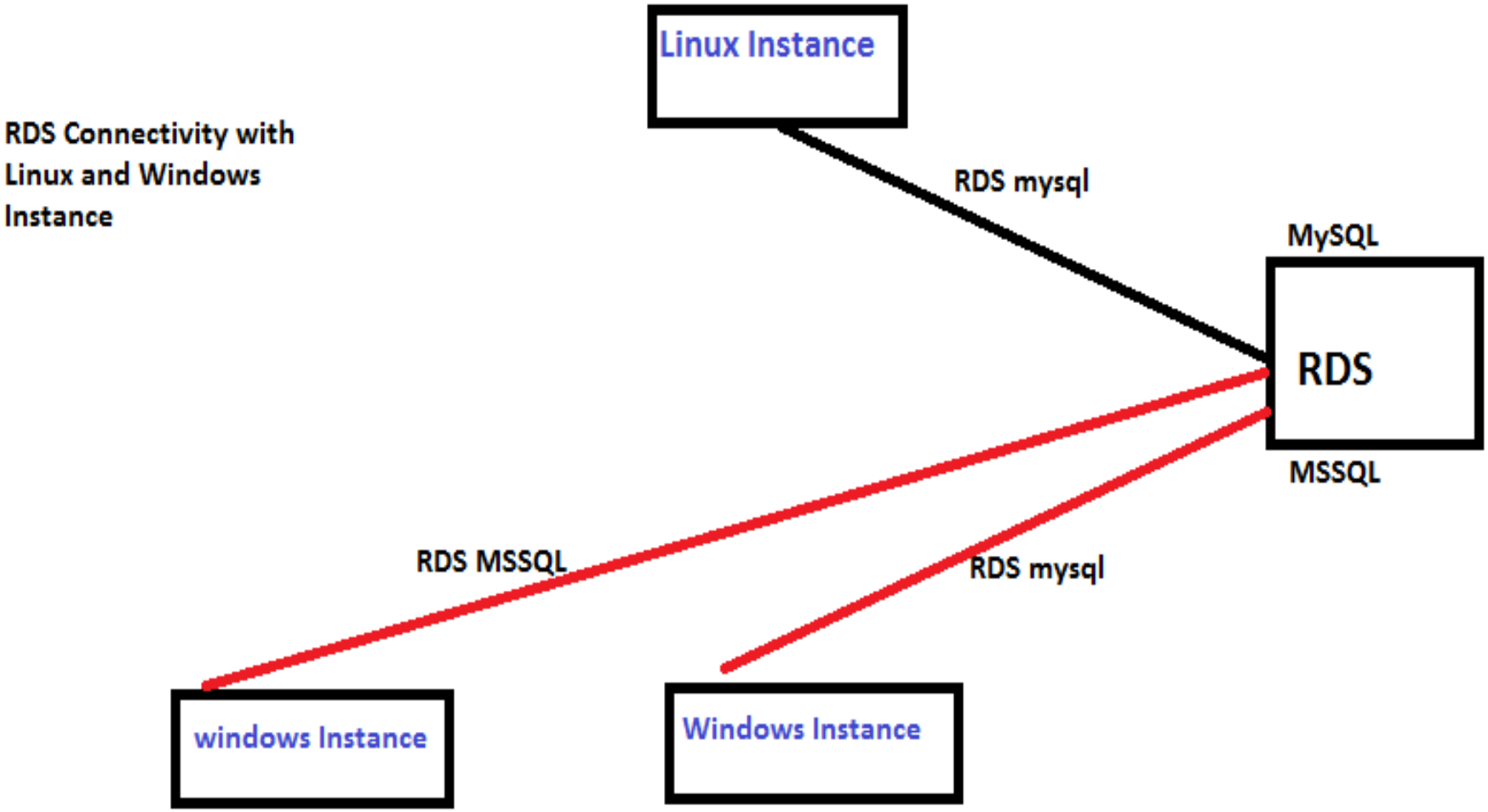
Cost of Amazon RDS

- **Instance class** − Pricing is based on the class of the DB instance consumed.
- **Running time** − Price is calculated by the instance-hour, which is equivalent to a single instance running per hour.
- **Storage** − Bill is calculated as per the storage capacity plan chosen in terms of per GB.
- **I/O requests per month** − Billing structure also includes total number of storage I/O requests made in a billing cycle.
- **Backup storage** − There is no additional charges for backup storage up to 100% of database. This service is free only for active DB instances.

How to Create MySQL Database with AWS RDS



RDS connection with Linux and Windows Instances



How to Set Up Amazon RDS

1) Open RDS –Create Database-select mysql—fill the detail---------create

2) After creating –click on security group(default)—edit inbound port –add rule—mysql/aurora---anywhere---save

3) Open RDS—database –open it –check Endpoint –copy it

How to Connect Database to MySQL DB Instance(Linux)

1) Launch one Linux instance

2) # yum install mysql -y

mysql -h <myDBI> -P 3306 -u <myusername> -p

After running the above command, the output looks like −

Welcome to the MySQL monitor. Commands end with ; or \g. Your MySQL connection id is 350 Server version: 5.2.33-log MySQL Community Server (GPL)Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql>

How to Connect Database to MySQL DB Instance(Windows)

1) Launch one Windows Server—open it

2) Open server manager –keep IE enhanced security—Off and windows defender firewall—off

3)Open IE –Internet options-Security—Custom –downloads—enable—yes

4) Open google—download –Web platform installer(5.1) –install this extension

5)After installation –open start –open Web platform installer(5.1 –in search box type “mysql” – add my sql 5.5 –install- put RDS user and password –next—close

6) Open cmd---and type ----

mysql -h <myDBI> -P 3306 -u <myusername> -p

Now RDS is connected

How to Connect Database to MSSQL DB Instance(Windows)

1) Launch one Windows Server—open it

2)Open IE –Download Mcrosoft SQL Server management studio.

3) Install and open it – Put RDS MSSQL server database endpoint link –user and password.

Now RDS is connected

How to Delete a DB Instance

- **Step 1** - Open RDS
- **Step 2** – In the DB Instances list, select the DB instances to be deleted.
- **Step 3** – Click the Instance Actions button and then select the Delete option from the dropdown menu.
- **Step 4** – Select No in the Create Final Snapshot.
- **Step 5** – Click the Yes, Delete to delete the DB instance.