MariaDB

For Today's Class ...
Connect to a Linux EC2 Instance

1. Parameters:
    a. AMI: Amazon Linux 2
    b. Ensure Public IP is enabled
    c. Tag: Name=<your choice>
    d. SG:
        i. Port 22
        ii. Port 3306

Today's Takeaways

- Install and configure MariaDB Server in EC2
- Connect to database
  - locally
  - using another EC2 instance
  - using MySQL WorkBench (time permitting)

1 MariaDB

What is MariaDB

- MariaDB is an open source relational database management system (DBMS) that is a compatible drop-in replacement for the widely used MySQL database technology.
- It was created as a software fork (taking the source code from an open source software program and develop an entirely new one) of MySQL by developers who played key roles in building the original database.
- They devised MariaDB in 2009 in response to Oracle Corp.'s acquisition of MySQL, a commitment to stay open source.

MariaDB

Background

- “Fork” from MySQL in 2009

- Intended to maintain high compatibility with MySQL
  - Some new features have caused divergence

- Commitment to stay Open Source
  - MySQL ⇒ Sun MicroSystems (2008) ⇒ Oracle (2009)

- MariaDB meets the same standard enterprise requirements as MySQL, often with additional features, capabilities and options, and by implementing the MySQL protocol and maintaining compatibility with common MySQL data types and SQL syntax, it’s easy to migrate from MySQL to MariaDB without modifying applications and/or dropping requirements.

MariaDB

Comparison Amazon Aurora vs. MariaDB vs. Microsoft SQL Server

Name	Amazon Aurora	MariaDB	Microsoft SQL Server
Description	MySQL and PostgreSQL compatible cloud service by Amazon	MySQL application compatible open source RDBMS, enhanced with high availability, security, interoperability and performance capabilities.	Microsoft's flagship relational DBMS
Primary database model	Relational DBMS	Relational DBMS	Relational DBMS
Secondary database models	Document store	Document store Graph DBMS Spatial DBMS	Document store Graph DBMS Spatial DBMS
License	commercial	Open Source	commercial
Cloud-based only	yes	no	no
Server operating systems	hosted	FreeBSD Linux Solaris Windows	Linux Windows

SQL Join

A JOIN clause is used to combine rows from two or more tables, based on a related column between them.

a) Let's look at a selection from the "**Orders**" table,

OrderID	CustomerID	OrderDate
10308	2	2022-01-09
10309	27	2021-12-25
10310	65	2021-10-05

b) Then, look at a selection from the "**Customers**" table,

CustomerID	CustomerName	Country
1	Smitha Sajin	Ireland
2	Anu Daniel	India
3	Mary B	USA

Notice that the "CustomerID" column in the "Orders" table refers to the "CustomerID" in the "Customers" table. The relationship between the two tables above is the "CustomerID" column. Then, we can create the following SQL statement (that contains an INNER JOIN), that selects records that have matching values in both tables,

Example

```
SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate
FROM Orders
INNER JOIN Customers ON Orders.CustomerID=Customers.CustomerID;
```

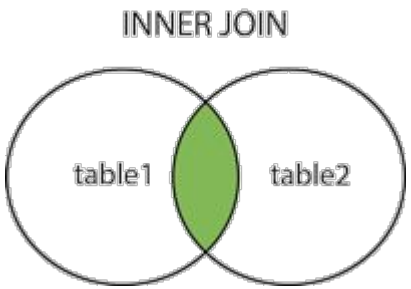
and it will produce something like this:

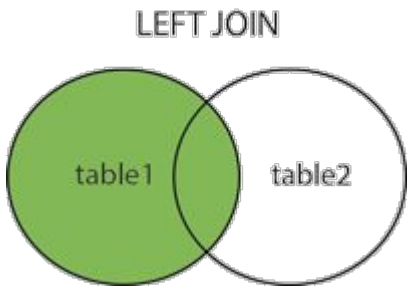
OrderId	CustomerName	OrderDate
10308	Anu Daniel	2022-01-09

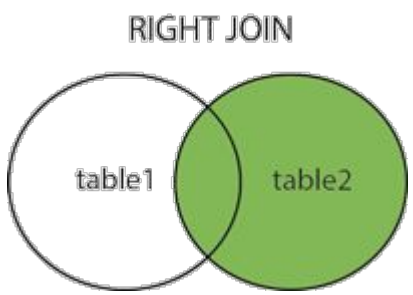
Different Types of SQL JOINS

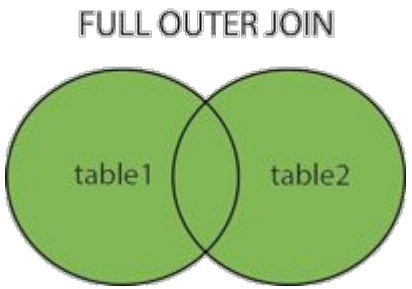
Here are the different types of the JOINs in SQL:

- (INNER) JOIN: Returns records that have matching values in both tables
- LEFT (OUTER) JOIN: Returns all records from the left table, and the matched records from the right table
- RIGHT (OUTER) JOIN: Returns all records from the right table, and the matched records from the left table
- FULL (OUTER) JOIN: Returns all records when there is a match in either left or right table



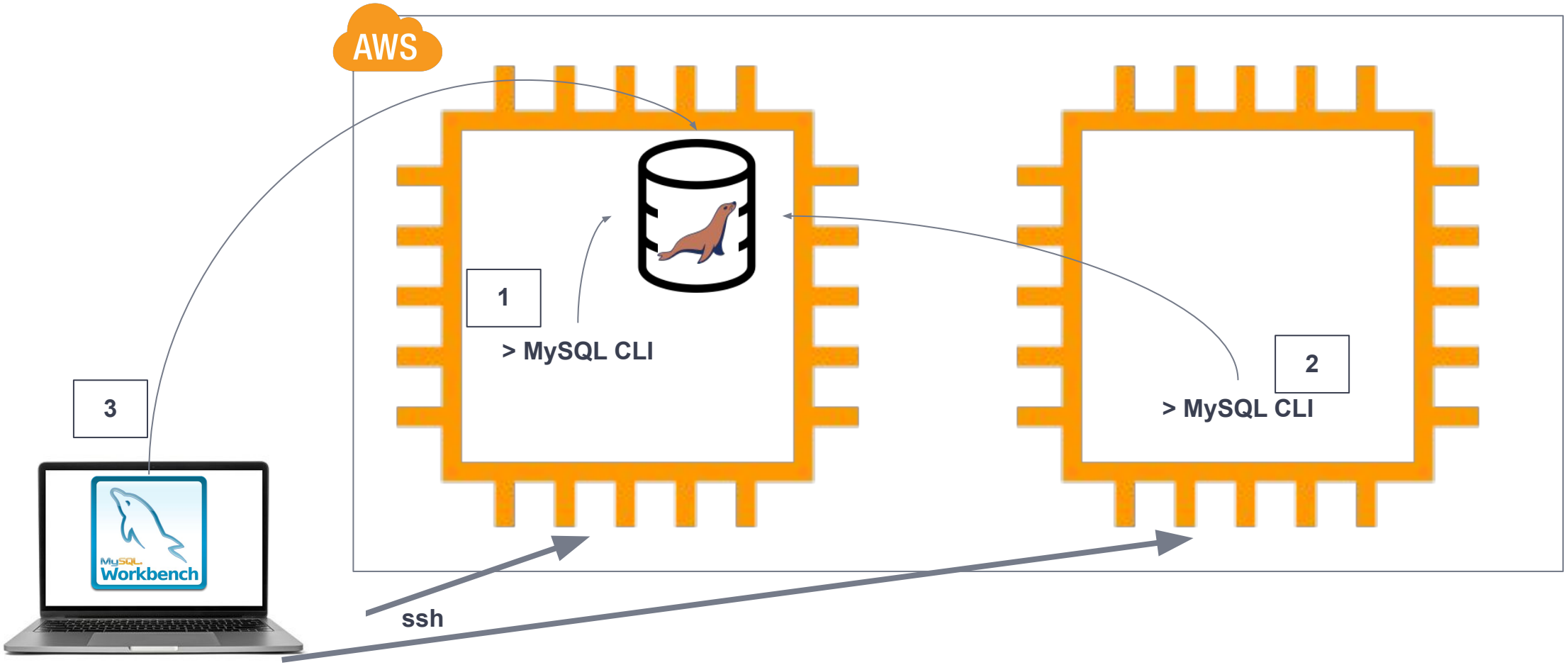






MariaDB

Database Architecture / Access



** compare to RDS **

Lifecycle Management & Bucket Replication

Let's get our hands dirty!

- Installing and configuring MariaDB

THANKS!

Any questions?

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