Academic Year: 2024-25 **Semester: V Class /**
Branch: TE IT
Subject: DevOPs Lab (DL)
Subject Lab In-charge: Prof. Sujata Oak

EXPERIMENT NO.12

Aim: Deploy a website code on the node by provisioning mysql server and database using ansible playbook.

Theory: MySQL Database is a client/server system that consists of a multithreaded SQL server that supports different back ends, several different client programs and libraries, administrative tools, and a wide range of application-programming interfaces (APIs).

Primary Terminologies

- **MySQL:** For the storage and management of structured data, a lot of people use MySQL, an open-source relational database management system (RDBMS). It offers components, for instance, SQL support, data security, versatility, and execution.
- **Ansible** is a configuration management tool. it is a suit of software tools that enables infrastructure as code.it is an open source and suit includes software provisioning, configuration management and application deployment functionality. There is no need to install run time, as it is a stand-alone tool.
- **Ansible Playbooks-** playbooks are the basis for really a simple configuration management and multi-machine deployment system. Ansible playbooks are YAML documents containing a set of instructions for Ansible to execute on remote hosts. Playbooks automate tasks like software installation, service configuration, and file management by defining the desired state of systems.
- **Modules for Ansible-** Ansible modules are little projects that perform tasks on remote hosts. For common tasks like package management, file manipulation, and service control, Ansible has a lot of built-in modules. The Ansible engine runs modules on the target hosts and sends back the results to the control node.

STEP1:

Ansible-master:

root@ip-172-31-18-177:~/ansible-lab/ansible-codes# nano mysqlmodule.yml

```
root@ip-172-31-18-177:~/ansible-lab/ansible-codes# nano mysqlmodule.yml
```

```
  GNU nano 7.2                          mysqlmodule.yml
- hosts: client_1
  remote_user: root
  tasks:
    - name: 2. Start Mysql Service
      service: name=mysql state=started enabled=true

    - name: Install python package #required for mysql_db tasks
      apt: name=python3-pip state=present

    - name: Install Mysql-python package #required for mysql_db tasks
      apt: name=python3-mysqldb state=present

    - name: 3. Create a new database
      mysql_db: name=demo state=present collation=utf8_general_ci

    - name: 4. Create a database user
      mysql_user: name=sujata password=123456 priv=*.*:ALL host=localhost state=present

    - name: 5a. Copy sample data
      copy: src=users.sql dest=/tmp/dump.sql

    - name: 5b. Insert sample data
      shell: cat /tmp/dump.sql | mysql -u sujata -p123456 demo

^G Help        ^O Write Out   ^W Where Is    ^K Cut         ^T Execute     ^C Location
^X Exit        ^R Read File   ^\ Replace     ^U Paste       ^J Justify     ^/ Go To Line
```

root@ip-172-31-18-177:~/ansible-lab/ansible-codes# cat users.sql

```
root@ip-172-31-18-177:~/ansible-lab/ansible-codes# cat users.sql
-- phpMyAdmin SQL Dump
-- version 4.1.14
-- http://www.phpmyadmin.net
--
-- Host: 127.0.0.1
-- Generation Time: Apr 28, 2017 at 02:20 PM
-- Server version: 5.6.17
-- PHP Version: 5.5.12

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET time_zone = "+00:00";


/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8 */;

--
-- Database: `demo`
--

-- --------------------------------------------------------

--
-- Table structure for table `users`
```

STEP2:

root@ip-172-31-18-177:~/ansible-lab/ansible-codes# ansible-playbook mysqlmodule.yml

```
root@ip-172-31-18-177:~/ansible-lab/ansible-codes# ansible-playbook mysqlmodule.yml

PLAY [client_1] ****************************************************************

TASK [Gathering Facts] *********************************************************
ok: [172.31.16.10]

TASK [2. Start Mysql Service] **************************************************
ok: [172.31.16.10]

TASK [Install python package] **************************************************
changed: [172.31.16.10]

TASK [Install Mysql-python package] ********************************************
changed: [172.31.16.10]

TASK [3. Create a new database] ************************************************
changed: [172.31.16.10]

TASK [4. Create a database user] ***********************************************
[WARNING]: Option column_case_sensitive is not provided. The default is now false, so
the column's name will be uppercased. The default will be changed to true in
community.mysql 4.0.0.
changed: [172.31.16.10]
```

```
TASK [5a. Copy sample data] ****************************************************
changed: [172.31.16.10]

TASK [5b. Insert sample data] **************************************************
changed: [172.31.16.10]

PLAY RECAP *********************************************************************
172.31.16.10               : ok=8    changed=6    unreachable=0    failed=0    skipped=
0    rescued=0    ignored=0
```

STEP3: ansible-slave

root@ip-172-31-16-10:~# mysql -u sujata -p123456

```
root@ip-172-31-16-10:~# mysql -u sujata -p123456
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.39-0ubuntu0.24.04.2 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

mysql> show databases;

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| demo               |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.00 sec)
```

mysql> use mysql;

```
mysql> use mysql;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
```

mysql> show tables;

```
mysql> show tables;
+---------------------------------------------------------+
| Tables_in_mysql                                         |
+---------------------------------------------------------+
| columns_priv                                            |
| component                                               |
| db                                                      |
| default_roles                                           |
| engine_cost                                             |
| func                                                    |
| general_log                                             |
| global_grants                                           |
| gtid_executed                                           |
| help_category                                           |
| help_keyword                                            |
| help_relation                                           |
| help_topic                                              |
| innodb_index_stats                                      |
| innodb_table_stats                                      |
| password_history                                        |
| plugin                                                  |
| procs_priv                                              |
```

mysql> select * from db;

```
mysql> select * from db;
+-----------+-------------------------+----------------------+---------------+-----------+--
----------+--------------+--------------+------------+-------------+--------------
--+------------+------------+-------------------------+--------------------+-------
-----------+--------------+-------------------------+-------------------+------
----+-----------+------------+
| Host      | Db                      | User                 | Select_priv | Insert_priv | U
pdate_priv | Delete_priv | Create_priv | Drop_priv | Grant_priv | References_pri
v | Index_priv | Alter_priv | Create_tmp_table_priv | Lock_tables_priv | Create_
view_priv | Show_view_priv | Create_routine_priv | Alter_routine_priv | Execute_
priv | Event_priv | Trigger_priv |
+-----------+-------------------------+----------------------+---------------+-----------+--
----------+--------------+--------------+------------+-------------+--------------
--+------------+------------+-------------------------+--------------------+-------
```

mysql> exit

```
mysql> exit
Bye
```

STEP4: ansible-master

root@ip-172-31-18-177:~/ansible-lab/ansible-codes# nano deploywebsite.yml

```
  GNU nano 7.2                    deploywebsite.yml
---
- name: copy
  hosts: client_1
  become: true
  become_user: root
  gather_facts: true
  tasks:
    - name: copy file
      copy: src=login.php dest=/var/www/html/login.php
    - name: copy file
      copy: src=reset-password.php dest=/var/www/html/reset-passowrd.php
    - name: copy file
      copy: src=logout.php dest=/var/www/html/logout.php
    - name: copy file
      copy: src=register.php dest=/var/www/html/register.php
    - name: copy file
      copy: src=config.php dest=/var/www/html/config.php
    - name: copy file
      copy: src=welcome.php dest=/var/www/html/welcome.php



                                   [ Read 19 lines ]
^G Help        ^O Write Out   ^W Where Is    ^K Cut         ^T Execute     ^C Location
^X Exit        ^R Read File   ^\ Replace     ^U Paste       ^J Justify     ^/ Go To Line
```

root@ip-172-31-18-177:~/ansible-lab/ansible-codes# ansible-playbook deploywebsite.yml

```
root@ip-172-31-18-177:~/ansible-lab/ansible-codes# ansible-playbook deploywebsite.yml

PLAY [copy] ********************************************************************

TASK [Gathering Facts] *********************************************************
ok: [172.31.16.10]

TASK [copy file] ***************************************************************
changed: [172.31.16.10]

TASK [copy file] ***************************************************************
changed: [172.31.16.10]

TASK [copy file] ***************************************************************
changed: [172.31.16.10]

TASK [copy file] ***************************************************************
changed: [172.31.16.10]

TASK [copy file] ***************************************************************
changed: [172.31.16.10]

TASK [copy file] ***************************************************************
changed: [172.31.16.10]

PLAY RECAP *********************************************************************
172.31.16.10               : ok=7    changed=6    unreachable=0    failed=0    skipped=
0    rescued=0    ignored=0
```

Ansible-slave:

root@ip-172-31-16-10:~# cd /var/www/html

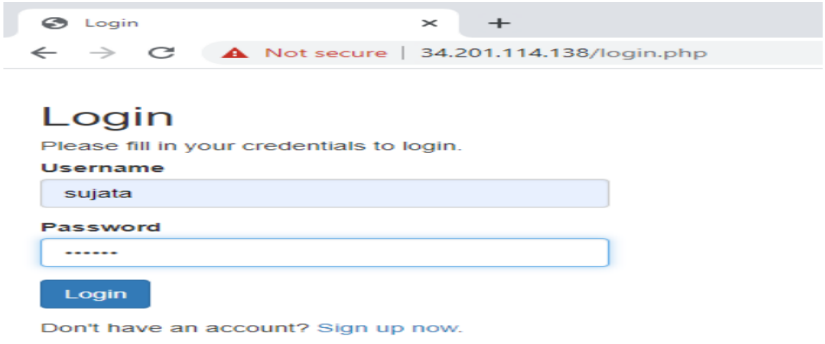
root@ip-172-31-16-10:/var/www/html# ls

config.php login.php register.php welcome.php

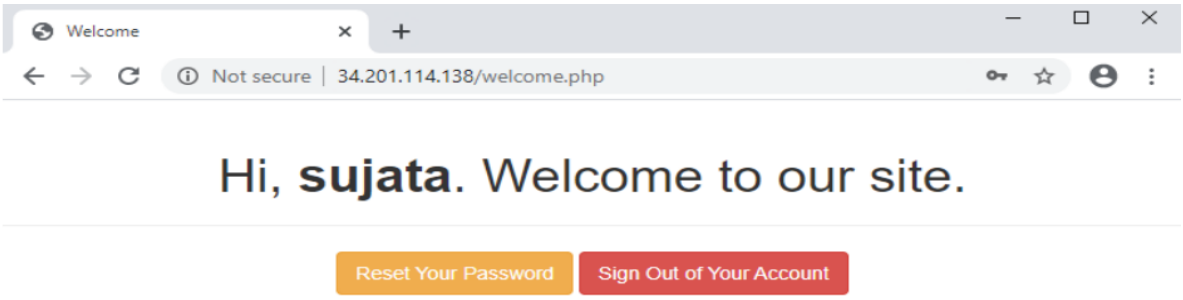
index.html logout.php reset-passowrd.php

```
root@ip-172-31-16-10:~# cd /var/www/html
root@ip-172-31-16-10:/var/www/html# ls
config.php  login.php  register.php  welcome.php
index.html  logout.php  reset-passowrd.php
```

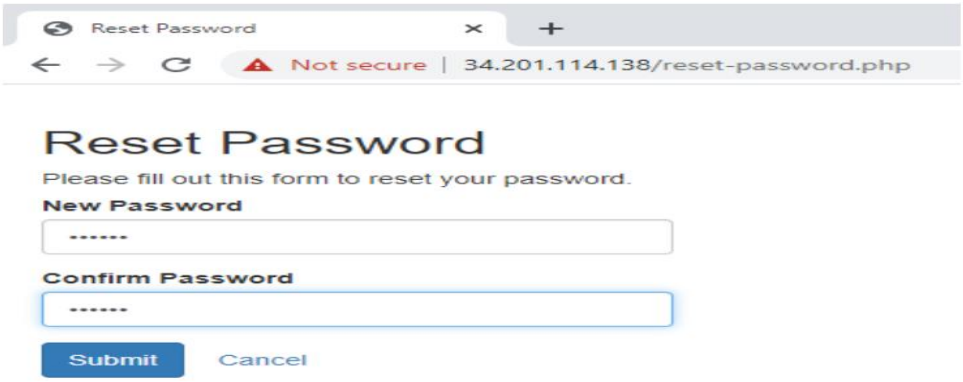
STEP5: Goto Browser: ansible-slave machine IP address/login.php



IP address/welcome.php



IP address/reset-password.php



Conclusion: In the experiment, we successfully deploy a website code on the node by provisioning mysql server and database using ansible playbook.