



Ansible Playbook - Web App Use-case

MANUAL STEP:

1. Install all required dependencies
2. Install and Configure Database
3. Start Database Service
4. Install and Configure Web Server
5. Start Web Server
6. Test

MANUAL STEP:

This is a manual installation process to setup a web application which runs on flask with backed mysql, we will be converting this into a playbook.

These commands are tested and supported on ubuntu OS.

1. Install all required dependencies

Python and its dependencies

```
apt-get install -y python python-setuptools python-dev build-essential python3-pip python-pip python-mysqldb
```

2. Install and Configure Database

Install MySQL database

```
apt-get install -y mysql-server mysql-client
```

3. Start Database Service

- Start the database service

```
service mysql start
```

- Login as root user to mysql database

```
# sudo mysql -u root -p
```

Create a new db_user and set password

```
mysql> CREATE USER db_user IDENTIFIED by 'Passw0rd';
```

Create database and database users

```
mysql> CREATE DATABASE employee_db;
mysql> GRANT ALL ON *.* to db_user@'%' IDENTIFIED BY 'Passw0rd';
mysql> USE employee_db;
mysql> CREATE TABLE employees (name VARCHAR(20));
```

- Insert some test data

```
mysql> INSERT INTO employees VALUES ('RAJESH');
```

4. Install and Configure Web Server

Install Python Flask dependency, if pip fails use pip3 module.

```
pip install flask
pip install flask-mysql
```

- Copy app.py and save it to /opt/app.py

```
import os
from flask import Flask
from flaskext.mysql import MySQL      # For newer versions of flask-mysql
# from flask.ext.mysql import MySQL  # For older versions of flask-mysql
app = Flask(__name__)

mysql = MySQL()

mysql_database_host = 'MYSQL_DATABASE_HOST' in os.environ and os.environ['MYSQL_DATABASE_HOST'] or 'localhost'

# MySQL configurations
app.config['MYSQL_DATABASE_USER'] = 'db_user'
app.config['MYSQL_DATABASE_PASSWORD'] = 'Passw0rd'
app.config['MYSQL_DATABASE_DB'] = 'employee_db'
app.config['MYSQL_DATABASE_HOST'] = mysql_database_host
mysql.init_app(app)

conn = mysql.connect()

cursor = conn.cursor()

@app.route("/")
def main():
    return "Welcome!"

@app.route('/how are you')
def hello():
    return 'I am good, how about you?'

@app.route('/read from database')
def read():
    cursor.execute("SELECT * FROM employees")
    row = cursor.fetchone()
    result = []
    while row is not None:
        result.append(row[0])
        row = cursor.fetchone()

    return ",".join(result)
```

```
if __name__ == "__main__":  
    app.run()
```

- Configure database credentials and parameters

5. Start Web Server

Start web server

```
export FLASK_APP=app.py
```

```
flask run --host=0.0.0.0
```

6. Test

Open a browser and go to URL

```
http://<IP>:5000                => Welcome  
http://<IP>:5000/how%20are%20you  => I am good, how about you?  
http://<IP>:5000/read%20from%20database => RAJESH
```