TP Linux

1. Installer nginx sur votre système ubuntu
2. Puis déployer une mini application front
3. Ajouter le port forwading pour mysql 3306 pour guest et 3306 pour host mysql server sur le même serveur
4. Connecter vous sur le serveur mysql à partir de la machine via ssh

1- vagrant init : to initialize a vagrantfile in the current directory.

Vagrantfile

tp1_nginx_mysql > Vagrantfile

```
Vagrant.configure("2") do |config|
  # Configuration de la machine
  config.vm.box = "ubuntu/bionic64"
  config.vm.boot_timeout = 600
  config.vm.define "nginx-mysql-server" do |server|
    server.vm.network "private_network", ip: "192.168.56.11"
    server.vm.hostname = "nginx-mysql-node"
    server.vm.provider "virtualbox" do |vb|
      vb.name = "nginx-mysql-server"
      vb.memory = "1024"
      vb.cpus = 2
      vb.gui = false  # Ensure the GUI is disabled for headless operation
      vb.customize ["modifyvm", :id, "--graphicscontroller", "vmsvga"]
    end
    # Port forwarding pour MySQL
    server.vm.network "forwarded_port", guest: 3306, host: 3307
```

1- vagrant init : to initialize a vagrantfile in the current directory.

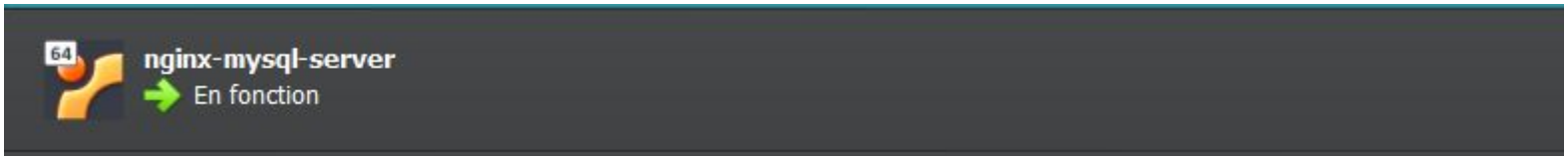
```
    # Provisioning : installation de Nginx et MySQL
    server.vm.provision "shell", inline: <<-SHELL
    # Mise à jour du système
      sudo apt update
      sudo apt upgrade -y

      # Installation de Nginx
      sudo apt install nginx -y

      # Installation de MySQL
      sudo apt install mysql-server -y
      sudo systemctl start mysql
      sudo systemctl enable mysql

      # Configuration de MySQL pour accepter les connexions externes
      sudo sed -i "s/bind-address.*/bind-address = 0.0.0.0/"/etc/mysql/mysql.conf.d/mysqld.cnf
      sudo systemctl restart mysql

      # Déploiement d'une application front simple dans Nginx
      echo '<!DOCTYPE html><html><head><title>Bienvenue</title></head><body>
      <h1>Bienvenue sur le serveur Nginx !</h1></body></html>' | sudo tee /var/www/html/index.html
      sudo systemctl restart nginx
    SHELL
  end
end
```

2- vagrant validate: to ensure that the vagrantfile is correct.

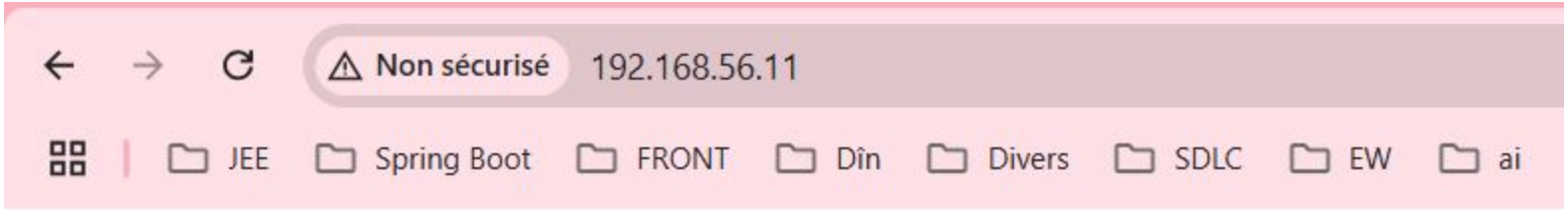
```
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\vagrant\tp1_nginx_mysql> vagrant validate
==> vagrant: A new version of Vagrant is available: 2.4.3 (installed version: 2.4.1)!
==> vagrant: To upgrade visit: https://www.vagrantup.com/downloads.html

Vagrantfile validated successfully.
```

3- vagrant up

```
==> nginx-mysql-server: Booting VM...
==> nginx-mysql-server: Waiting for machine to boot. This may take a few minutes...
    nginx-mysql-server: SSH address: 127.0.0.1:2222
    nginx-mysql-server: SSH username: vagrant
    nginx-mysql-server: SSH auth method: private key
```



2- check front deployment



4- vagrant ssh: to connect to the VM via SSH.

```
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\vagrant\tp1_nginx_mysql> vagrant ssh nginx-mysql-server
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 4.15.0-213-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

  System information as of Thu Jan 16 21:16:22 UTC 2025

  System load:  0.96              Processes:             106
  Usage of /:   5.4% of 38.70GB   Users logged in:       1
  Memory usage: 30%               IP address for enp0s3: 10.0.2.15
  Swap usage:   0%                IP address for enp0s8: 192.168.56.11

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Infrastructure is not enabled.

0 updates can be applied immediately.

141 additional security updates can be applied with ESM Infra.
Learn more about enabling ESM Infra service for Ubuntu 18.04 at
https://ubuntu.com/18-04

New release '20.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


Last login: Thu Jan 16 21:15:20 2025
vagrant@nginx-mysql-node:~$
```

5- Check mysql status

```
vagrant@nginx-mysql-node:~$  sudo systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2025-01-16 21:15:05 UTC; 4min 57s ago
  Process: 1153 ExecStart=/usr/sbin/mysqld --daemonize --pid-file=/run/mysqld/mysqld.pid (code=exited, status=0/SUCCESS)
  Process: 882 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
 Main PID: 1156 (mysqld)
    Tasks: 27 (limit: 1150)
   CGroup: /system.slice/mysql.service
           └─1156 /usr/sbin/mysqld --daemonize --pid-file=/run/mysqld/mysqld.pid

Jan 16 21:14:57 nginx-mysql-node systemd[1]: Starting MySQL Community Server...
Jan 16 21:15:05 nginx-mysql-node systemd[1]: Started MySQL Community Server.
```

5- connect to mysql

```
vagrant@nginx-mysql-node:~$  sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.42-0ubuntu0.18.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
```

6- stop the VM

```
mysql> exit
Bye
vagrant@nginx-mysql-node:~$ vagrant halt

Command 'vagrant' not found, but can be installed with:

apt install vagrant
Please ask your administrator.

vagrant@nginx-mysql-node:~$ exit
logout
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\vagrant\tp1_nginx_mysql> vagrant halt
==> nginx-mysql-server: Attempting graceful shutdown of VM...
PS C:\Users\fazeyna\Desktop\COURS_ISI_M2\DEVOPS\vagrant\tp1_nginx_mysql>
```