# OS Assignment

## Documentation of setting up a linux server

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### Services

#### 1. Open SSH Server

Reference : [OpenSSH Server Installation](https://reintech.io/blog/setting-up-secure-openssh-server-rocky-linux-9)

[Fail2Ban Installation](https://www.digitalocean.com/community/tutorials/how-to-protect-ssh-with-fail2ban-on-rocky-linux-9)

**Installing** :

sudo dnf install -y openssh-server  
  
sudo systemctl enable sshd

**Configuration** :

1. **SSHD** is SSH server process, so we will configure that file
   * creating backup file
   * sudo cp /etc/ssh/sshd\_config /etc/ssh/sshd\_config.bak
   * edit sshd\_config and change port number and ssh permissions
   * Port 2024  
       
      PermitRootLogin no
2. Configuring firewall
   * Adding port 2024
   * sudo firewall-cmd --permanent --add-port=2222/tcp   
       
      sudo firewall-cmd --reload
3. Reload SSH

* sudo systemctl reload sshd

1. Installing **fail2ban** for giving SSH security such as prevent multiple failed logins
   * fail2ban is third-party not default, so need to install third-party package manager **EPEL**.
   * sudo dnf install epel-release -y  
       
      sudo dnf install -y fail2ban  
       
      sudo systemctl enable --now fail2ban
   * Create a local configuration file to override the defaults.
   * sudo cp /etc/fail2ban/jail.conf /etc/fail2ban/jail.local  
       
      sudo nano /etc/fail2ban/jail.local
   * Maximum retry of SSH will be 5.

#### 2. Web Server

Reference : [Web Server Installation](https://reintech.io/blog/setting-up-secure-openssh-server-rocky-linux-9)

**Installing** :

#### 3. Database Server

Reference : [Database Server Installation](https://docs.rockylinux.org/guides/database/database_mariadb-server/)

**Installing** :

sudo dnf install mariadb-server  
  
 sudo systemctl enable mariadb  
  
 sudo systemctl start mariadb

**Configuration**:

#### 4. File Sharing Server

#### 5. Email Server

#### 6. Security

### Issues

1. **Open SSH server**
   * Issue with SSH (solved)
   * **Reason** : SELinux does not recognize non standard port 2024
   * sudo semanage port -a -t ssh\_port\_t -p tcp 2024  
       
      sudo restorecon -Rv /etc/ssh
   * Reference : [Change to non standard port](https://www.techrepublic.com/article/how-to-configure-ssh-to-use-a-non-standard-port-with-selinux-set-to-enforcing/)
2. **Database Server**
   * Issue with starting installations

## Note

* check ssh status
* systemctl status sshd
* check firewall
* sudo firewall-cmd --list-all
* check fail2ban status
* systemctl status fail2ban
* check mariadb status
* systemctl status mariadb