1. Create a new Ubuntu machine


```
1 update can be applied immediately.
To see these additional updates run: apt list --upgradable


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


This message is shown once a day. To disable it please create the
/home/bryan/.hushlogin file.
bryan@Bryan:~$ sudo su
[sudo] password for bryan:
root@Bryan:/home/bryan# aptitude update

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

apt install aptitude

root@Bryan:/home/bryan# aptitude update

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

apt install aptitude

root@Bryan:/home/bryan# ssh-keygen -t rsa -f /etc/ssh/ssh_host_rsa_key
Generating public/private rsa key pair.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /etc/ssh/ssh_host_rsa_key
Your public key has been saved in /etc/ssh/ssh_host_rsa_key.pub
```

2. Generate both private and public key


```
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /etc/ssh/ssh_host_rsa_key
Your public key has been saved in /etc/ssh/ssh_host_rsa_key.pub
The key fingerprint is:
SHA256:yVTIfBj2r97qBO6VvLjYTvVoppFOicIXTuFqaz/EDds root@Bryan
The key's randomart image is:
+---[RSA 3072]----+
|        oo+.      |
|       .=o.       |
|      . ...       |
|     ..+ . .      |
|     .+=S . .     |
|   . +++E* =      |
|    =.+ B X .     |
|   ..+.B X o      |
|    ...ooOo=..    |
+----[SHA256]-----+
root@Bryan:/home/bryan# ssh-keygen -t dsa -f /etc/ssh/ssh_host_dsa_key
Generating public/private dsa key pair.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /etc/ssh/ssh_host_dsa_key
Your public key has been saved in /etc/ssh/ssh_host_dsa_key.pub
The key fingerprint is:
SHA256:AlveeDgcIB2vtgmOexu3nJRHOMB4fJx6uD88MwlDwuY root@Bryan
The key's randomart image is:
+---[DSA 1024]----+
|   ..o.           |
| + o.+            |
```

3. Check the ssh status and restart to save the changes


```
root@Bryan:/home/bryan# service ssh restart
 * Restarting OpenBSD Secure Shell server sshd                    [ OK ]
root@Bryan:/home/bryan# service ssh status
 * sshd is running
root@Bryan:/home/bryan#
```

4. The next thing to do is check the connection

5. Then install ansible

6. Then install tree

```
root@Bryan:/etc/ansible# aptitude install tree
The following NEW packages will be installed:
  tree
0 packages upgraded, 1 newly installed, 0 to remove and 25 not upgraded.
Need to get 43.0 kB of archives. After unpacking 115 kB will be used.
Get: 1 http://archive.ubuntu.com/ubuntu focal/universe amd64 tree amd64 1.8.0-1 [43.0 kB]
Fetched 43.0 kB in 2s (20.4 kB/s)
Selecting previously unselected package tree.
(Reading database ... 42488 files and directories currently installed.)
Preparing to unpack .../tree_1.8.0-1_amd64.deb ...
Unpacking tree (1.8.0-1) ...
Setting up tree (1.8.0-1) ...
Processing triggers for man-db (2.9.1-1) ...

root@Bryan:/etc/ansible# tree ./
./
├── ansible.cfg
└── hosts

0 directories, 2 files
root@Bryan:/etc/ansible# 
```

7. Now lets créate an ansible playbook

```
root@Bryan:~/ansible-practice# mkdir project
root@Bryan:~/ansible-practice# cd project/
root@Bryan:~/ansible-practice/project# touch host site.yml
root@Bryan:~/ansible-practice/project# mkdir -p roles
root@Bryan:~/ansible-practice/project# cd roles/
root@Bryan:~/ansible-practice/project/roles# ansible-galaxy init common
- Role common was created successfully
root@Bryan:~/ansible-practice/project/roles# ansible-galaxy init web
- Role web was created successfully
root@Bryan:~/ansible-practice/project/roles# ansible-galaxy init db
- Role db was created successfully
root@Bryan:~/ansible-practice/project/roles#
```

8. Check the roles

```
root@Bryan: ~/ansible-practice/project/roles                              —   □   ✕
- Role db was created successfully
root@Bryan:~/ansible-practice/project/roles# tree .
.
├── common
│   ├── README.md
│   ├── defaults
│   │   └── main.yml
│   ├── files
│   ├── handlers
│   │   └── main.yml
│   ├── meta
│   │   └── main.yml
│   ├── tasks
│   │   └── main.yml
│   ├── templates
│   ├── tests
│   │   ├── inventory
│   │   └── test.yml
│   └── vars
│       └── main.yml
├── db
│   ├── README.md
│   ├── defaults
│   │   └── main.yml
│   ├── files
│   ├── handlers
│   │   └── main.yml
│   ├── meta
│   │   └── main.yml
│   ├── tasks
```

9. Check the files

```
root@Bryan:~/ansible-practice/project# root@Bryan:~/ansible-practice/project# cat host
[lemp]
server01 ansible_host=127.0.0.1
root@Bryan:~/ansible-practice/project# cat site.yml
---

- hosts: lemp
  remote_user: bryan
  become: yes

    roles:
      - common
      - web
      - db
root@Bryan:~/ansible-practice/project#
```

10. And créate the roles file

```
root@Bryan:~/ansible-practice/project/common/tasks# cat main.yml
- name: Change repository Ubuntu 18.04Step 4 - Setup 'web' Roles
  copy:
    src: sources.list
    dest: /etc/apt/
    backup: yes

- name: Update repository and Upgrade packages
  apt:
    upgrade: dist
    update_cache: yes

- name: Setup timezone to Asia/Jakarta
  timezone:
    name: Asia/Jakarta
    state: latest
root@Bryan:~/ansible-practice/project/common/tasks#
```

11. Then créate our first playbook


```
root@Bryan:~/ansible-practice/project/web/tasks# root@Bryan:~/ansible-practice/project/web/tasks# cat main.yml
- name: Install Nginx
  apt:
    name: nginx
    state: latest

- name: Instal PHP-FPM
  apt:
    name: ['php','php-fpm','php-common','php-cli','php-curl']
    state: latest

- name: Configure php.ini
  blockinfile:
    dest: /etc/php/{{ php_version }}/fpm/php.ini
    block: |
      date.time = Asia/Jakarta
      cgi-fix_pathinfo = 0
    backup: yes
  notify: restart php-fpm

- name: Create Nginx virtual host
  template:
    src: vhost.j2
    dest: /etc/nginx/sites-enabled/vhost-{{ domain_name }}
  notify: restart nginx


- name: Create web-root directory
  file:
    path: /var/www/{{ domain_name }}
```

12. And run with: ansible-playbook -i host site.yml


```
PLAY [lemp] ********************************************************************

TASK [Gathering Facts] ********************************************************
ok: [server01]

TASK [common : Change repository Ubuntu 18.04] ********************************
changed: [server01]

TASK [common : Update repository and Upgrade packages] ************************
ok: [server01]

TASK [common : Setup timezone to Asia/Jakarta] *******************************
changed: [server01]

TASK [web : Install Nginx] ****************************************************
changed: [server01]

TASK [web : Instal PHP-FPM] ***************************************************
changed: [server01] => (item=[u'php', u'php-fpm', u'php-common', u'php-cli', u'php-curl'])

TASK [web : Configure php.ini] ************************************************
changed: [server01]

TASK [web : Create Nginx virtual host] ***************************************
changed: [server01]

TASK [web : Create web-root directory] ***************************************
changed: [server01]
```

13.