

Ansible Assignment 1

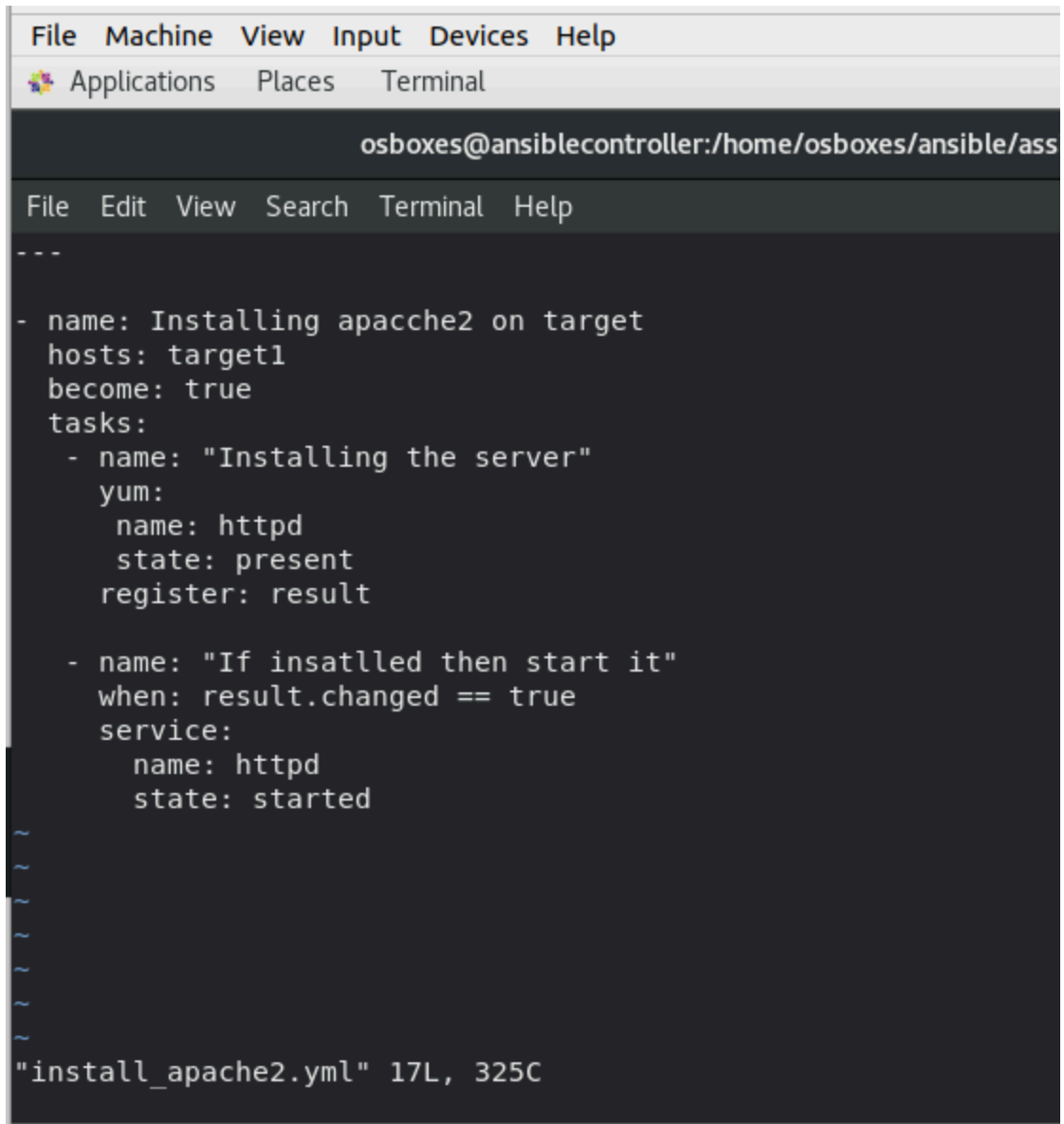
1. Write ansible playbook for
 - installing and configuring apache

Soln:

- A. Check for apache2 in target

```
Complete!  
[root@target1 osboxes]# httpd -v  
bash: httpd: command not found...
```

- B. Install apache 2 on target



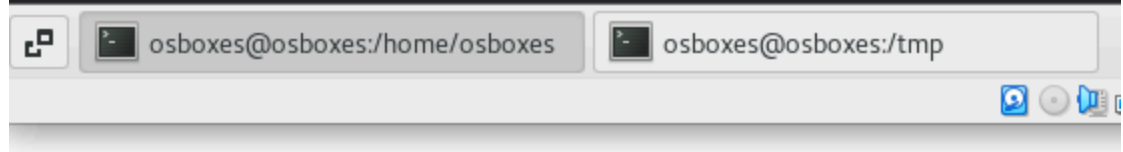
The image shows a terminal window with a menu bar at the top containing 'File', 'Machine', 'View', 'Input', 'Devices', and 'Help'. Below the menu bar is a toolbar with icons for 'Applications', 'Places', and 'Terminal'. The terminal title bar reads 'osboxes@ansiblecontroller:/home/osboxes/ansible/ass'. The terminal content displays an Ansible playbook snippet for installing Apache2. The snippet includes a play with a name, hosts, become flag, and two tasks: installing httpd and starting the service. The status bar at the bottom indicates the file is 'install_apache2.yml' with 17 lines and 325 characters.

```
File Machine View Input Devices Help
Applications Places Terminal
osboxes@ansiblecontroller:/home/osboxes/ansible/ass
File Edit View Search Terminal Help
- - -
- name: Installing apache2 on target
  hosts: target1
  become: true
  tasks:
    - name: "Installing the server"
      yum:
        name: httpd
        state: present
        register: result
    - name: "If insatlled then start it"
      when: result.changed == true
      service:
        name: httpd
        state: started
~
~
~
~
~
~
~
"install_apache2.yml" 17L, 325C
```

C. Check httpd version on target

```
osboxes@osboxes:/home/osboxes
File Edit View Search Terminal Help
[root@target1 osboxes]# clear

[root@target1 osboxes]# httpd -v
Server version: Apache/2.4.6 (CentOS)
Server built:   May 30 2023 14:01:11
[root@target1 osboxes]# systemctl httpd status
Unknown operation 'httpd'.
[root@target1 osboxes]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled)
   Active: active (running) since Fri 2024-02-09 11:54:27 EST;
     Docs: man:httpd(8)
           man:apachectl(8)
  Main PID: 21120 (httpd)
    Status: "Total requests: 0; Current requests/sec: 0; Current
   Tasks: 6
  Memory: 3.4M
    CGroup: /system.slice/httpd.service
            └─21120 /usr/sbin/httpd -DFOREGROUND
              └─21125 /usr/sbin/httpd -DFOREGROUND
                └─21126 /usr/sbin/httpd -DFOREGROUND
                  └─21127 /usr/sbin/httpd -DFOREGROUND
                    └─21128 /usr/sbin/httpd -DFOREGROUND
                      └─21129 /usr/sbin/httpd -DFOREGROUND
```



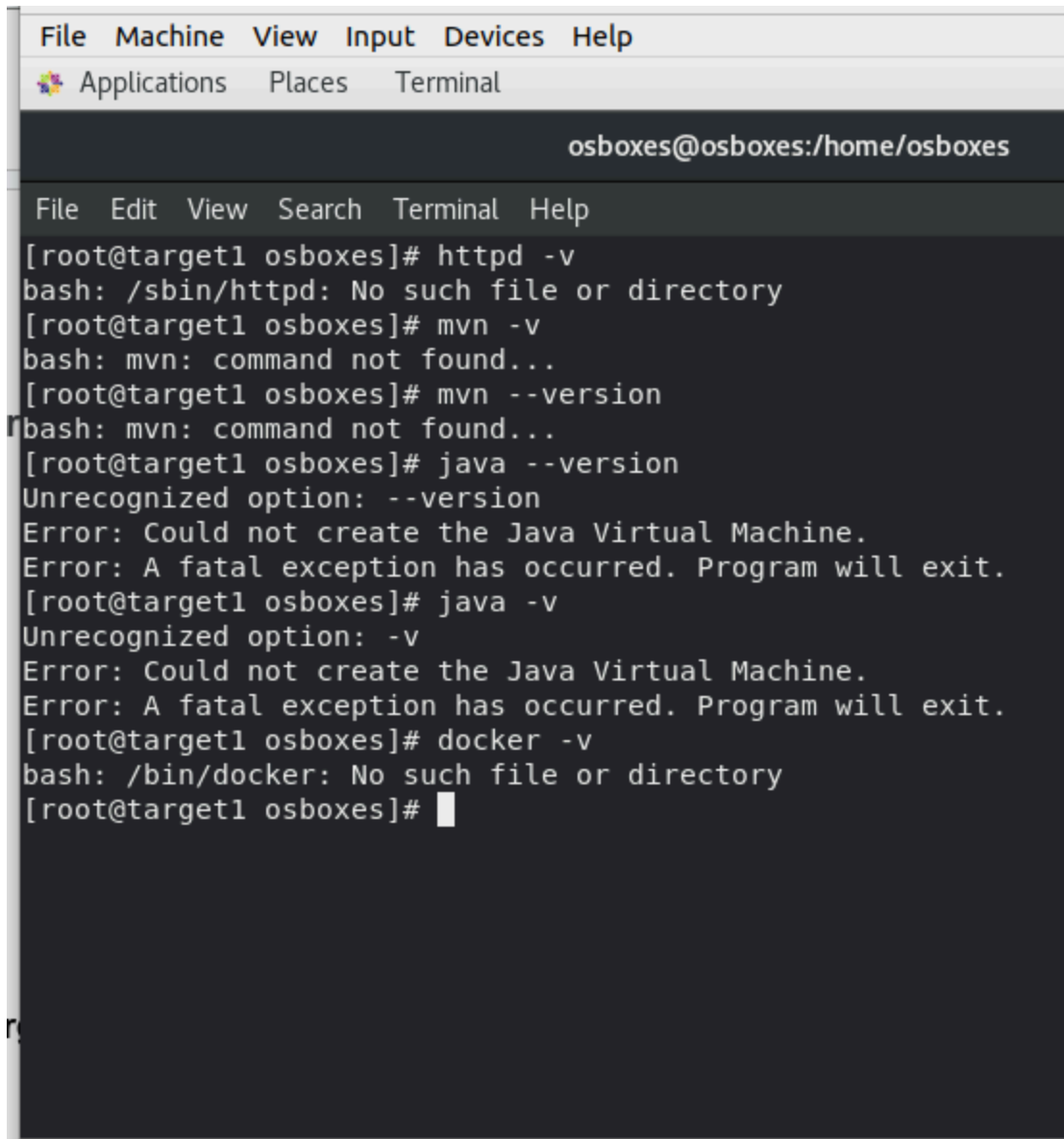
The image shows a terminal window with a dark background and light text. The terminal output displays the status of the httpd service, which is active and running. Below the main status, it lists the main PID and the status of the service. At the bottom, the CGroup is shown with a tree structure of processes. The terminal window is part of a desktop environment with a taskbar at the bottom. The taskbar has two tabs: 'osboxes@osboxes:/home/osboxes' and 'osboxes@osboxes:/tmp'. There are also some system icons on the right side of the taskbar.

2. Write ansible playbook for installing the following services using loops in ansible

- httpd
- maven
- java
- docker

Soln:

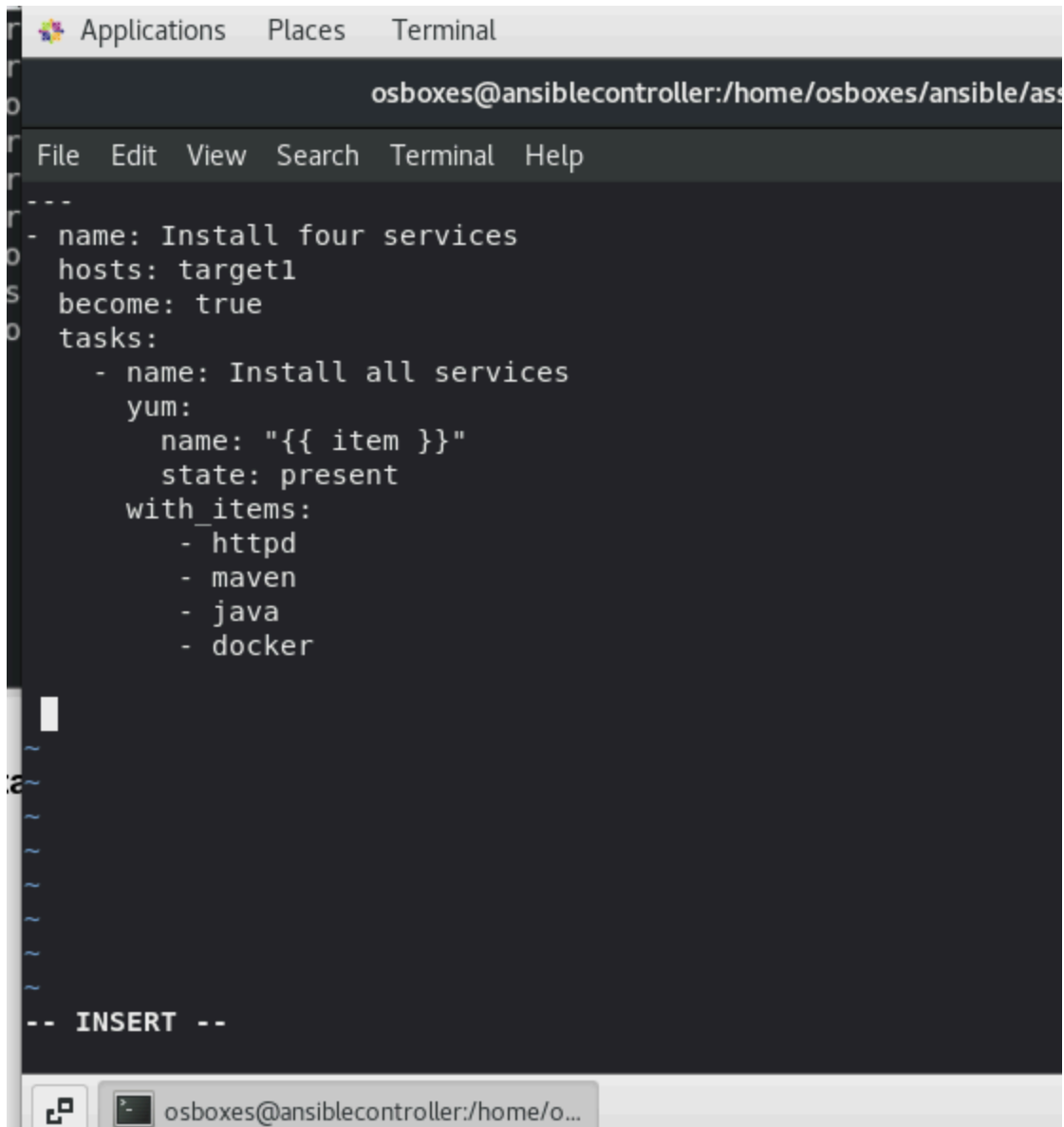
A. Checking whether they are installed previously on target or not



The image shows a terminal window within a virtual machine environment. The window has a title bar with 'File', 'Machine', 'View', 'Input', 'Devices', and 'Help' menus. Below the title bar, there are tabs for 'Applications', 'Places', and 'Terminal'. The terminal itself has a dark background and a light-colored text area. The prompt is 'osboxes@osboxes:/home/osboxes'. The terminal shows a series of commands and their outputs:

```
File Edit View Search Terminal Help
[root@target1 osboxes]# httpd -v
bash: /sbin/httpd: No such file or directory
[root@target1 osboxes]# mvn -v
bash: mvn: command not found...
[root@target1 osboxes]# mvn --version
bash: mvn: command not found...
[root@target1 osboxes]# java --version
Unrecognized option: --version
Error: Could not create the Java Virtual Machine.
Error: A fatal exception has occurred. Program will exit.
[root@target1 osboxes]# java -v
Unrecognized option: -v
Error: Could not create the Java Virtual Machine.
Error: A fatal exception has occurred. Program will exit.
[root@target1 osboxes]# docker -v
bash: /bin/docker: No such file or directory
[root@target1 osboxes]#
```

B. Installing all service in loop

A terminal window titled 'Applications Places Terminal' with a dark background. The prompt is 'osboxes@ansiblecontroller:/home/osboxes/ansible/ass'. The menu bar includes 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The content is an Ansible playbook snippet. It starts with '---', followed by a play definition: 'name: Install four services', 'hosts: target1', 'become: true', and 'tasks:'. Inside 'tasks', there is a task 'name: Install all services' which uses the 'yum' module. The module parameters are 'name: "{{ item }}"' and 'state: present'. A 'with_items:' loop lists 'httpd', 'maven', 'java', and 'docker'. At the bottom, there is a comment '-- INSERT --'. The terminal window has a status bar at the bottom showing a file icon and the path 'osboxes@ansiblecontroller:/home/o...'.

```
---
- name: Install four services
  hosts: target1
  become: true
  tasks:
    - name: Install all services
      yum:
        name: "{{ item }}"
        state: present
      with_items:
        - httpd
        - maven
        - java
        - docker

-- INSERT --
```

C. Verifying in target machine

```
[root@target1 osboxes]# docker -v
Docker version 1.13.1, build 7d71120/1.13.1
[root@target1 osboxes]# mvn --version
Apache Maven 3.0.5 (Red Hat 3.0.5-17)
Maven home: /usr/share/maven
Java version: 1.8.0_402, vendor: Red Hat, Inc.
Java home: /usr/lib/jvm/java-1.8.0-openjdk-1.8.0.402.b06-1.el7_9.x86_64/jre
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "3.10.0-1160.el7.x86_64", arch: "amd64", family: "unix"
[root@target1 osboxes]# httpd -v
Server version: Apache/2.4.6 (CentOS)
Server built:   May 30 2023 14:01:11
[root@target1 osboxes]# java -version
openjdk version "1.8.0_402"
OpenJDK Runtime Environment (build 1.8.0_402-b06)
OpenJDK 64-Bit Server VM (build 25.402-b06, mixed mode)
[root@target1 osboxes]#
```

Ansible Assignment 2

1. Understand how ansible roles work.

2. Write ansible roles for installing

- httpd

- docker

Soln:

- A. Make one roles folder
- B. Go to that folder
- C. Run ansible-galaxy init httpd/docker
- D. After installing the package go to tasks folder of the package
- E. Modify the tasks folder as per need
- F. Move out from roles folder
- G. Make one playbook and use roles: to give the name of the role to download it to a target

```

[root@ansiblecontroller ~]# ls
anaconda-ks.cfg  initial-setup-ks.cfg
[root@ansiblecontroller ~]# exit
exit
[osboxes@ansiblecontroller assignment1]$ cd
[osboxes@ansiblecontroller ~]$ cd ansible/assignment2
[osboxes@ansiblecontroller assignment2]$ ls
install-docker.yml  install_httpd_role.yml  inventory1.yml  inventory.txt  roles
[osboxes@ansiblecontroller assignment2]$ cd roles/
[osboxes@ansiblecontroller roles]$ ls
httpd
[osboxes@ansiblecontroller roles]$ ansible-galaxy init docker
- Role docker was created successfully
[osboxes@ansiblecontroller roles]$ ls
docker  httpd
[osboxes@ansiblecontroller roles]$

```

Modifying the tasks for each service

```

[osboxes@ansiblecontroller assignment2]$ cd roles/
[osboxes@ansiblecontroller roles]$ cat docker/tasks/main.yml
---
- name: Remove docker package if already installed
  yum:
    name: docker-ce
    state: absent
- name: remove docker-ce.repo
  file:
    path: /etc/yum.repos.d/docker-ce.repo
    state: absent
- name: Install docker
  yum:
    name: docker
    state: present
- name: Start docker service
  service:
    name: docker
    state: started

```

```

[osboxes@ansiblecontroller roles]$ cat httpd/tasks/main.yml
---
- name: Install httpd
  yum:
    name: httpd
    state: present
[osboxes@ansiblecontroller roles]$

```

Playbook to run both at a time


```

- name: Play to install docker and httpd through roles
  hosts: target1
  become: true
  roles:
    - docker
    - httpd

```

Logs on Controller machine

```

File Edit View Search Terminal Help
BECOME password:

PLAY [Play to install docker and httpd through roles] *****

TASK [Gathering Facts] *****
ok: [target1]

TASK [Remove docker package if already installed] *****
ok: [target1]

TASK [remove docker-ce.repo] *****
changed: [target1]

TASK [Install docker] *****
ok: [target1]

TASK [Start docker service] *****
ok: [target1]

TASK [Install httpd] *****
changed: [target1]

PLAY RECAP *****
target1 : ok=6    changed=2    unreachable=0    failed=0    skipped=
0      rescued=0    ignored=0

```

Verification on target machine

```

httpd.x86_64 0:2.4.6-99.el7.centos.1

*** Complete!
[root@target1 osboxes]# httpd -v
Server version: Apache/2.4.6 (CentOS)
*** Server built:   May 30 2023 14:01:11
[root@target1 osboxes]# docker -v
*** Docker version 1.13.1, build 7d71120/1.13.1
ble=[root@target1 osboxes]#

```