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***Project**- Deploying services on Ansible Clients*

In this document, I'll walk you through how to deploy services on ansible using playbooks. We will create three plays

Play1: Deploy apache on ubuntu clients

Play2: Deploy apache on amazon clients

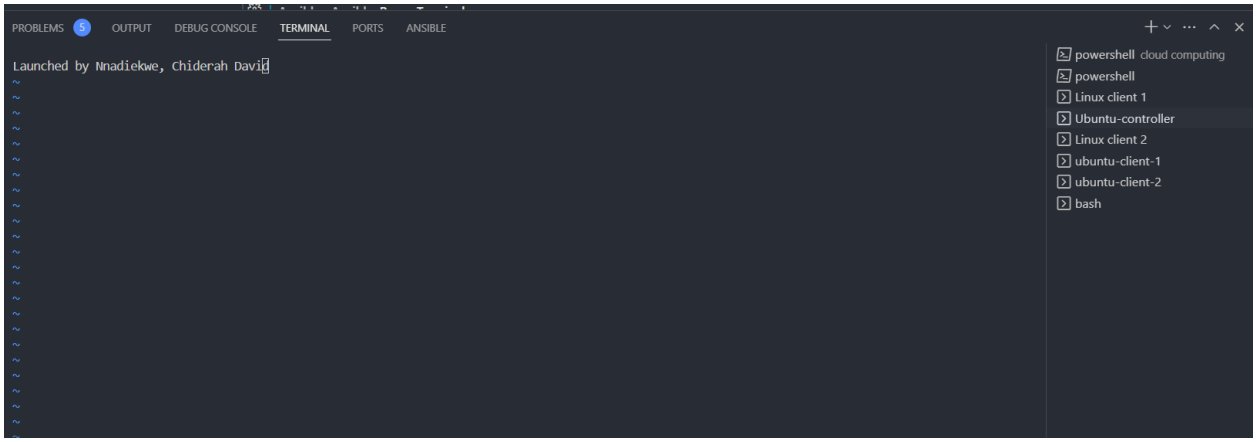
Play3: Deploy git on all target servers (amazon and ubuntu clients)

Reference: docs.ansible.com/ansible/latest/collections/ansible/builtin/apt_module.html

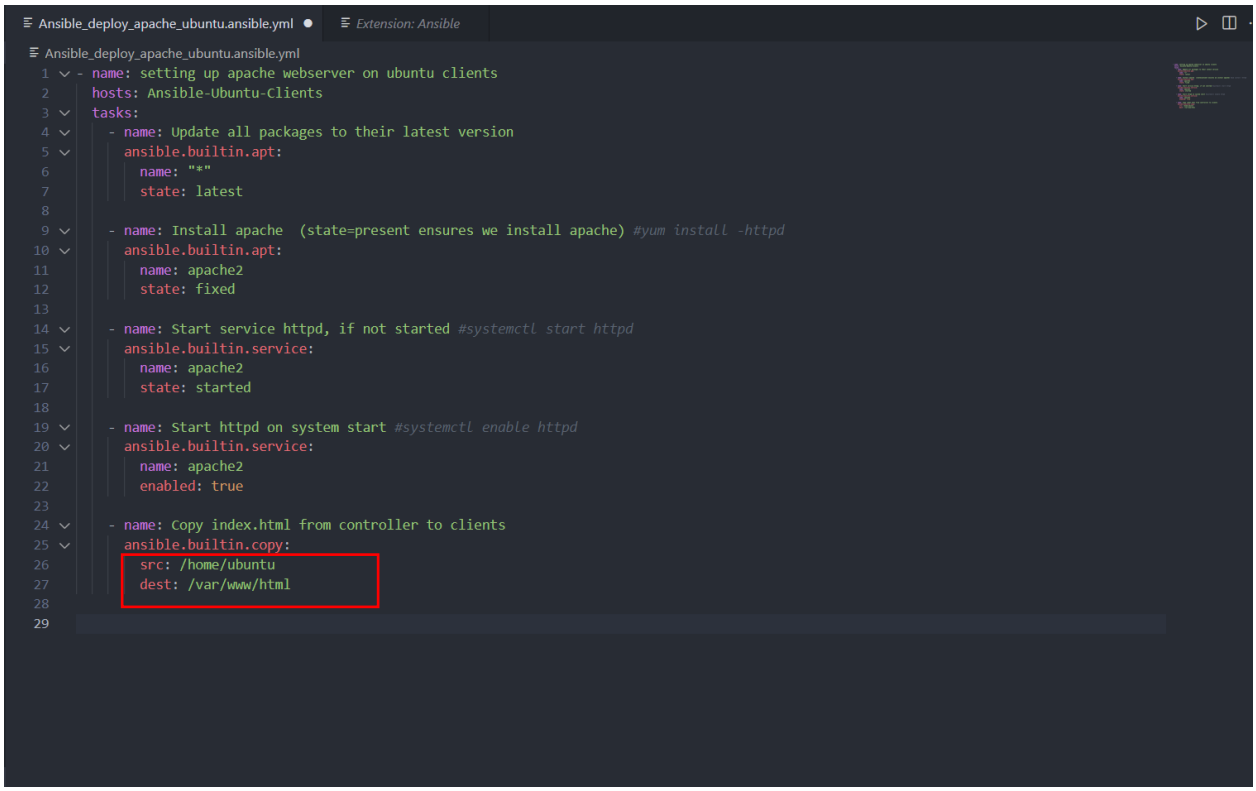
- ## Installing apache on the ubuntu clients

with reference to the documentation, there are some requirements the hosts needs to meet in order to execute the module.

I added an index.html document to the controller so that I can copy the index file from the controller to the ubuntu clients.



Next, I modified the playbook to contain the source of the index.html file in the controller and also the destination where I want it copied to in the client.



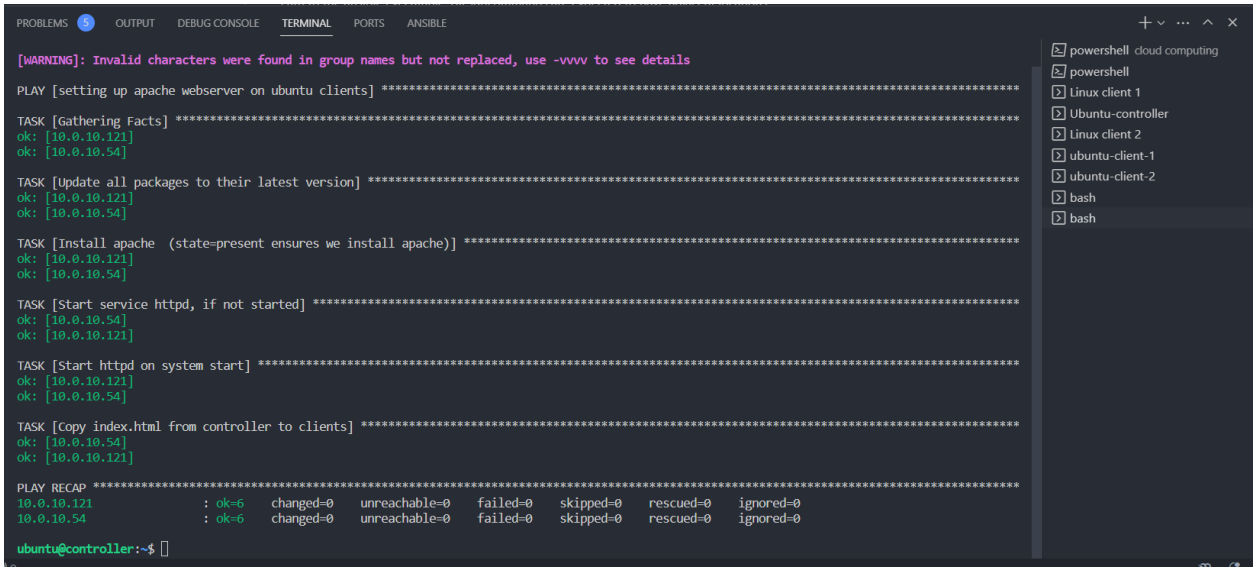
Next, I created a new yaml file in the controller, copied the playbook script and pasted in it.

```
ubuntu@controller:~$ cat apache_setup.yml
- name: setting up apache webserver on ubuntu clients
  hosts: Ansible-Ubuntu-Clients
  tasks:
    - name: Update all packages to their latest version
      ansible.builtin.apt:
        name: "*"
        state: latest

    - name: Install apache  (state=present ensures we install apache) #yum install -httpd
      ansible.builtin.apt:
        name: apache2
        state: fixed

    - name: Start service httpd, if not started #systemctl start httpd
      ansible.builtin.service:
        name: apache2
        state: started

    - name: Start httpd on system start #systemctl enable httpd
      ansible.builtin.service:
        name: apache2
        enabled: true

    - name: Copy index.html from controller to clients
      ansible.builtin.copy:
        src: /home/ubuntu
        dest: /var/www/html
```

Next, I run the playbook on the controller using the command: sudo ansible-playbook apache_setup.yml

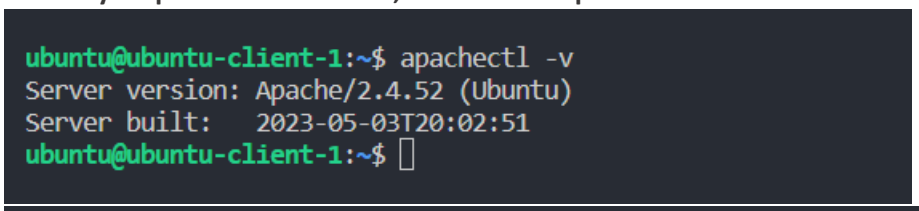
Note that I saved my playbook as “apache.setup.yml” in the controller.

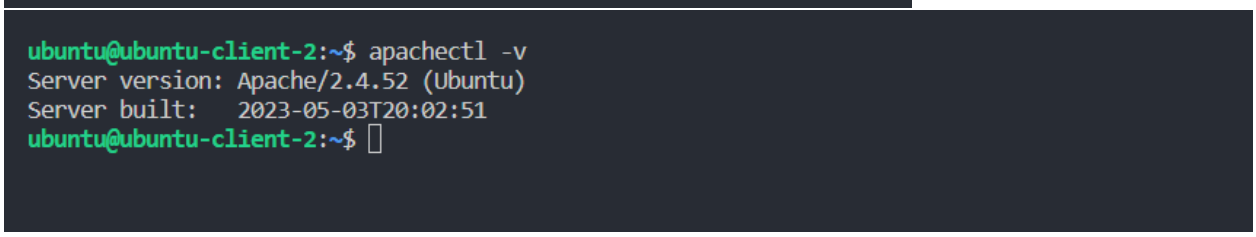
Result:



As seen above, Apache has been installed in the ubuntu clients successfully.

To verify if apache was installed, we use the “apachectl -v” command in the clients





Apache has been installed successfully! On the clients

- **Installing apache on the Linux clients**

We apply the same process as what we did in the ubuntu clients

We need to create an ansible documentation for the linux clients and save it into the controller so that we can deploy apache installation from the controller to the clients.

```yaml
- name: setting up apache webserver on ubuntu clients
  hosts: Ansible-Linux-Clients
  tasks:

    - name: Update all packages to their latest version
      ansible.builtin.yum:
        name: "*"
        state: latest

    - name: Install apache  (state=present ensures we install apache) #yum install -httpd
      ansible.builtin.yum:
        name: httpd
        state: present

    - name: Start service httpd, if not started #systemctl start httpd
      ansible.builtin.service:
        name: httpd
        state: started

    - name: Start httpd on system start #systemctl enable httpd
      ansible.builtin.service:
        name: httpd
        enabled: true

    - name: Copy index.html from controller to clients
      ansible.builtin.copy:
        src: /home/ubuntu
        dest: /var/www/html
```

This time, I saved the ansible template as “apache_setup_Linux.yml” Hence, I ran the command:

“sudo ansible-playbook apache_setup_Linux.yml”

```
- name: setting up apache webserver on ubuntu clients
ubuntu@controller:~$ vim apache_setup_Linux.yml
ubuntu@controller:~$ sudo ansible-playbook apache_setup_Linux.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [setting up apache webserver on ubuntu clients] ***************************************************************

TASK [Gathering Facts] *********************************************************************************************
[WARNING]: Platform linux on host 10.0.2.192 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of another
Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [10.0.2.192]
[WARNING]: Platform linux on host 10.0.11.194 is using the discovered Python interpreter at /usr/bin/python3.9, but future installation of
another Python interpreter could change the meaning of that path. See https://docs.ansible.com/ansible-
core/2.15/reference_appendices/interpreter_discovery.html for more information.
ok: [10.0.11.194]

TASK [Update all packages to their latest version] *****************************************************************
ok: [10.0.2.192]
ok: [10.0.11.194]

TASK [Install apache  (state=present ensures we install apache)] ***************************************************
changed: [10.0.2.192]
changed: [10.0.11.194]

TASK [Start service httpd, if not started] *************************************************************************
changed: [10.0.11.194]
changed: [10.0.2.192]

TASK [Start httpd on system start] *********************************************************************************
changed: [10.0.11.194]
changed: [10.0.2.192]
```

- ## Installing Git on the Linux clients

  Since we already have a Playbook to deploy apache to the Linux clients, I will just add another Play to install Git inside the same playbook

```yaml
- name: setting up apache webserver on ubuntu clients
  hosts: Ansible-Linux-Clients
  tasks:

    - name: Update all packages to their latest version
      ansible.builtin.yum:
        name: "*"
        state: latest

    - name: Install apache  (state=present ensures we install apache) #yum install -httpd
      ansible.builtin.yum:
        name: httpd
        state: present

    - name: Start service httpd, if not started #systemctl start httpd
      ansible.builtin.service:
        name: httpd
        state: started

    - name: Start httpd on system start #systemctl enable httpd
      ansible.builtin.service:
        name: httpd
        enabled: true

    - name: Copy index.html from controller to clients
      ansible.builtin.copy:
        src: /home/ubuntu
        dest: /var/www/html

- name: Installing git
  hosts: Ansible-Linux-Clients
  tasks:

    - name: Update all packages to their latest version
      ansible.builtin.yum:
        name: "*"
        state: latest
    - name: Install git
      ansible.builtin.service:
        name: git
```

```
ok: [10.0.11.194]

TASK [Start service httpd, if not started] ************************************************************************************************
ok: [10.0.11.194]
ok: [10.0.2.192]

TASK [Start httpd on system start] ********************************************************************************************************
ok: [10.0.11.194]
ok: [10.0.2.192]

TASK [Copy index.html from controller to clients] *****************************************************************************************
changed: [10.0.2.192]
changed: [10.0.11.194]

PLAY [Installing git] *********************************************************************************************************************

TASK [Gathering Facts] ********************************************************************************************************************
ok: [10.0.2.192]
ok: [10.0.11.194]

TASK [Update all packages to their latest version] ****************************************************************************************
ok: [10.0.2.192]
ok: [10.0.11.194]

TASK [Install git] ************************************************************************************************************************
ok: [10.0.11.194]
ok: [10.0.2.192]

PLAY RECAP ********************************************************************************************************************************
10.0.11.194                : ok=9    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
10.0.2.192                 : ok=9    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

ubuntu@controller:~$
```

- ## Installing Git on the Ubuntu clients

Modifying the playbook to add a new play to install git

```yaml
- name: setting up apache webserver on ubuntu clients
  hosts: Ansible-Ubuntu-Clients
  tasks:

    - name: Update all packages to their latest version
      ansible.builtin.apt:
        name: "*"
        state: latest

    - name: Install apache  (state=present ensures we install apache) #yum install -httpd
      ansible.builtin.apt:
        name: apache2
        state: present

    - name: Start service httpd, if not started #systemctl start httpd
      ansible.builtin.service:
        name: apache2
        state: started

    - name: Start httpd on system start #systemctl enable httpd
      ansible.builtin.service:
        name: apache2
        enabled: true

    - name: Copy index.html from controller to clients
      ansible.builtin.copy:
        src: /home/ubuntu
        dest: /var/www/html

- name: Installing git
  hosts: Ansible-Ubuntu-Clients
  tasks:

    - name: Update all packages to their latest version
      ansible.builtin.apt:
        name: "*"
        state: latest
    - name: Install git
      ansible.builtin.service:
        name: git

```

Result:

```
ubuntu@controller:~$ vim apache_setup.yml
ubuntu@controller:~$ sudo ansible-playbook apache_setup.yml
[WARNING]: Invalid characters were found in group names but not replaced, use -vvvv to see details

PLAY [setting up apache webserver on ubuntu clients] ***************************************************************************************************************************
***********

TASK [Gathering Facts] *********************************************************************************************************************************************************
***********
ok: [10.0.10.54]
ok: [10.0.10.121]

TASK [Update all packages to their latest version] *****************************************************************************************************************************
***********
ok: [10.0.10.54]
ok: [10.0.10.121]

TASK [Install apache  (state=present ensures we install apache)] ***************************************************************************************************************
***********
ok: [10.0.10.121]
ok: [10.0.10.54]

TASK [Start service httpd, if not started] *************************************************************************************************************************************
***********
ok: [10.0.10.54]
ok: [10.0.10.121]

TASK [Start httpd on system start] *********************************************************************************************************************************************
ok: [10.0.10.54]

TASK [Start service httpd, if not started] *************************************************************************************************************************************
***********ok: [10.0.10.54]
ok: [10.0.10.121]

TASK [Start httpd on system start] *********************************************************************************************************************************************
***********ok: [10.0.10.121]
ok: [10.0.10.54]

TASK [Copy index.html from controller to clients] ******************************************************************************************************************************
***********changed: [10.0.10.54]
changed: [10.0.10.121]

PLAY [Installing git] **********************************************************************************************************************************************************
***********
TASK [Gathering Facts] *********************************************************************************************************************************************************
***********ok: [10.0.10.121]
```