**Ansible**

Installation Guide - <https://docs.ansible.com/ansible/latest/installation_guide/index.html>

sudo apt update

sudo apt install software-properties-common

sudo add-apt-repository --yes --update ppa:ansible/ansible

sudo apt install ansible

ssh-keygen

**Ansible Inventory File**

Filepath - /etc/ansible/hosts

cd /etc/ansible

echo “” | sudo tee /etc/ansible/hosts

vim /etc/ansible/hosts

10.0.0.2

10.0.0.3

[webservers]

172.31.20.91

172.26.65.5

[dbservers]

172.46.7.34

192.46.7.4

[ftpservers]

192.26.36.3

172.26.6.3

103.62.4.6

[server:children]

webservers

dbservers

**To List hosts in the hostgroup**

ansible host\_group\_name --list-hosts

ansibel all --list-host

ansible ungrouped --list-host

ansible webservers --list-hosts

**Inventory file**

10.0.0.3

10.0.0.4

10.0.0.5

[webservers]

172.31.[1:5].[1:100]

[dbservers]

server[1:3].example.com

server[a:z].example.com

[ftpservers]

192.26.36.3

172.26.6.3

103.62.4.6

[server:children]

webservers

Dbservers

**To check connectivity between controlled node and managed node**

ansible all -m ping

**Modules:**

[**https://docs.ansible.com/ansible/2.9/modules/modules\_by\_category.html**](https://docs.ansible.com/ansible/2.9/modules/modules_by_category.html)

**Some comman modules to learn:**

**https://docs.ansible.com/ansible/2.9/modules/list\_of\_all\_modules.html**

apt

yum

systemd

copy

file

shell

firewall (ufw)

**Ansible Playbook**

Playbook.yaml

# play 1

- name: "My Play for webserver host group" # Play name

hosts: webservers # host group name which is present in your inventory file

remote\_user: ubuntu # the user name with which controller node will be connecting with to the managed node

become: yes # It will run the task on the managed node as sudo.

tasks:

- name: "Install Apache2 Package on Managed Node"

apt: # module name

name: apache2 # package name

state: present # state of the package

**To validate the playbook**

ansible-playbook playbook.yaml --syntax-check

**To execute the playbook**

ansible-playbook playbook.yaml

- name: "My First Play"

hosts: webservers

remote\_user: ubuntu

become: yes

tasks:

- name: "Install Apache2 on webservers host group"

apt:

name: apache2

state: present

- name: "Copy Files to webserver host group"

copy:

src: /tmp/index.html

dest: /var/www/html/index.html

- name: "Start Apache2 Service"

systemd:

name: apache2

state: started # systemctl start apache2

enabled: yes # systecmtl enable apache2

- name: "My Second Play"

hosts: dbservers

remote\_user: ubuntu

become: yes

tasks:

- name: "Install Mysql on dbserver host group"

apt:

name: mysql-server

state: present

- name: "start mysql service"

systemd:

name: mysql

state: started

enabled: yes

**Ansible Handlers**

- name: "My First Play"

hosts: webservers

remote\_user: tom

become: yes

tasks:

- name: "Install Apache2 on webservers host group"

apt:

name: apache2

state: absent

- name: "Copy Files to webserver host group"

copy:

src: /tmp/index.html # path on the controller node

dest: /var/www/html/index.html # path on the managed node

notify: "Restart Apache2 Service"

handlers:

- name: "Restart Apache2 Service"

systemd:

name: apache2

state: restarted # systemctl restart apache2

enabled: yes

**# Homework**

Integrate Ansible with Jenkins

**Ansible Variables**

- name: "My First Play"

hosts: webservers

become: yes

vars:

pkg: vsftpd

tasks:

## Installing Apache2 and Starting Apache2 service on the Manage Node

# apache2

# nginx

- name: "Install {{ pkg }} on webservers host group"

apt:

name: "{{ pkg }}"

state: present

update\_cache: yes

- name: "Restart {{ pkg }} Service"

systemd:

name: "{{ pkg }}"

state: restarted

enabled: yes

**To pass variable value in run time:**

Ansible-playbook playbook.yaml -e “variable\_name=variable\_value”

- name: "My First Play"

hosts: webservers

become: yes

tasks:

- name: "Install {{ item }} on webservers host group"

apt:

name: "{{ item }}"

state: present

with\_items:

- apache2

- openssh-server

- vsftpd

- wget

- curl

- name: "My First Play"

hosts: webservers

become: yes

tasks:

- name: "Copy Files to webserver host group"

copy:

src: "{{ item }}" # path on the controller node

with\_items:

- /etc/hosts

- /etc/resolv.conf

**Ansible Variable**

- name: "My First Play"

hosts: webservers

become: yes

vars:

pkg:

- apache2

- openssh-server

- vsftpd

- wget

- curl

- nginx

files:

- /tmp/index.html

- /etc/hosts

tasks:

- name: "Install on webservers host group"

apt:

name: "{{ item }}"

state: present

with\_items:

- "{{ pkg }}"

- name: "Copy Files to webserver host group"

copy:

src: "{{ item }}" # path on the controller node

dest: /var/www/html/index.html # path on the managed node

with\_items:

- "{{ files }}"

**Ansible Looping**

- name: "My First Play"

hosts: webservers

become: yes

vars:

pkg:

- apache2

- openssh-server

- vsftpd

- wget

- curl

- nginx

files:

- /tmp/index.html

- /etc/hosts

tasks:

- name: "Install on webservers host group"

apt:

name: "{{ item }}"

state: present

with\_items:

- "{{ pkg }}"

- name: "Copy Files to webserver host group"

copy:

src: "{{ item }}" # path on the controller node

dest: /var/www/html/index.html # path on the managed node

with\_items:

- "{{ files }}"

**Homework**

**Integrate Ansible with Jenkins**

**Ansible Roles**

sudo apt install tree -y

ansible-galaxy init role\_name

cd role\_name

tree

├── defaults

│ └── main.yml # in this file we have to add default variables.

├── files # in this dir we have to keep our application files or the files which we want to copy to the managed node.

├── handlers

│ └── main.yml # in this file we have to add all the handlers which are part of our playbook

├── meta

│ └── main.yml # in this file we have to add metadata related to the role

├── tasks

│ └── main.yml # in this filw we have to add all the tasks which are part of our playbook.

├── templates # Ansible Jinja Templates

├── tests

│ ├── inventory

│ └── test.yml

└── vars

└── main.yml # in this file we have to add all the vars which are part of our playbook

**- name: "My Play"**

**hosts: webservers**

**become: yes**

**remote\_user: ubuntu**

**roles:**

**- webserver**

**Sample Roles - https://github.com/ansible/ansible-examples**