Ansible Task-1

1. Install and configure ansible

curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py
python get-pip.py
sudo python -m pip install ansible

ansible --version

```
[nihad@localhost root]$ ansible --version
ansible [core 2.15.11]
  config file = None
  configured module search path = ['/home/nihad/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /home/nihad/.local/lib/python3.9/site-packages/ansible
  ansible collection location = /home/nihad/.ansible/collections:/usr/share/ansible/collections
  executable location = /home/nihad/.local/bin/ansible
  python version = 3.9.10 (main, Feb  9 2022, 00:00:00) [GCC 11.2.1 20220127 (Red Hat 11.2.1-9)] (/usr/bin/python)
  jinja version = 3.1.4
  libyaml = True
```

2. User sandy has been created on your control node with the appropriate permissions already, do not change or modify ssh keys. Install the necessary packages to run ansible on the control node. Configure ansible.cfg

useradd sandy
passwd sandy
echo 'sandy ALL=(ALL) ALL' >> /etc/sudoers
cat /etc/sudoers | grep sandy

```
[root@localhost ~]# useradd sandy
[root@localhost ~]# passwd sandy
Changing password for user sandy.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost ~]# echo 'sandy ALL=(ALL) ALL' >> /etc/sudoers
[root@localhost ~]# cat /etc/sudoers | grep sandy
sandy ALL=(ALL) ALL
[root@localhost ~]#
```

```
sandy ALL=(ALL) NOPASSWD:ALL
```

3. to be in folder /home/sandy/ansible/ansible.cfg and configure to access remote machines via the sandy user.

4. All roles should be in the path /home/sandy/ansible/roles. The inventory path should be in /home/sandy/ansible/inventory

mkdir -p /home/sany/ansible/
cd /home/sany/ansible/
vim ansible.cfg

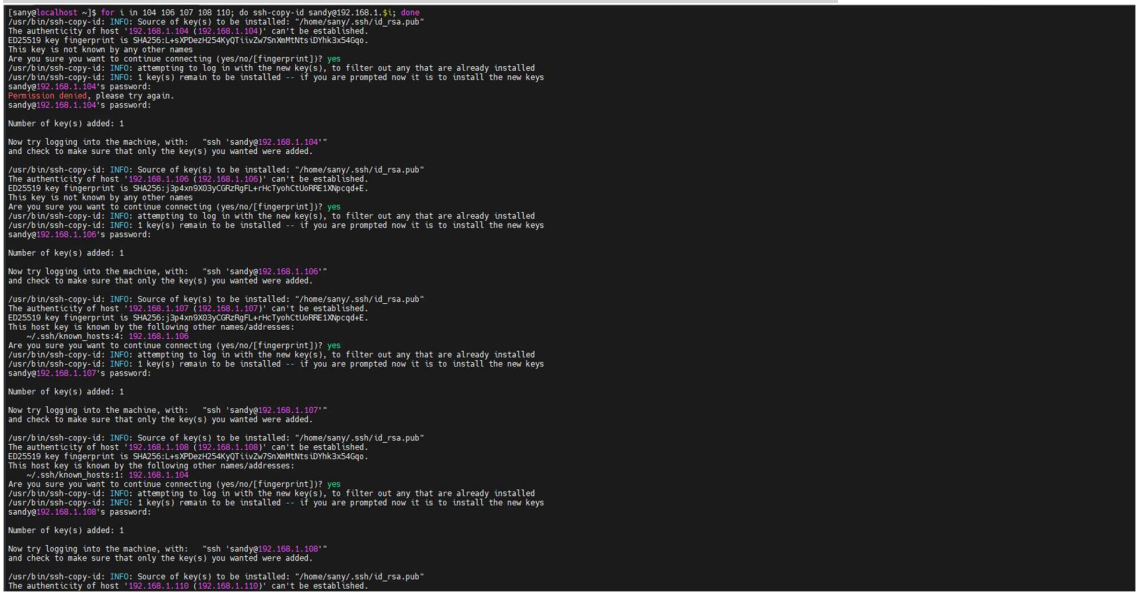
```
[defaults]
inventory = /home/sany/ansible/inventory
roles_path = /home/sany/ansible/roles
remote_user = sandy

[privilege_escalation]
become = true
become_method = sudo
become_user = root
become_ask_pass = false
```

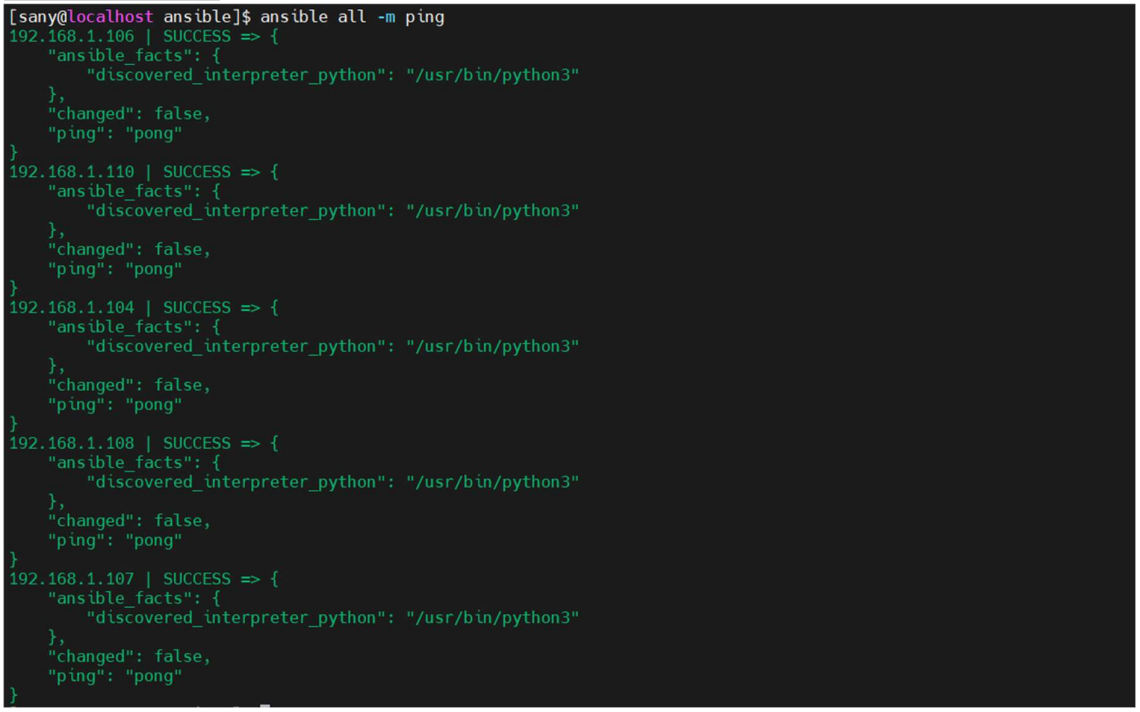
5. You will have access to 5 nodes. node1.example.com, node2.example.com, node3.example.com, node4.example.com, node5.example.com

ssh-keygen

for i in 104 106 107 108 110; do ssh-copy-id sandy@192.168.1.$i; done



ansible all -m ping



6. Configure these nodes to be in an inventory file where node1 is a member of group dev. node2 is a member of group test, node3 is a member of group proxy, node4 and node 5 are members of group prod. Also, prod is a member of group webservers.

vim /home/sandy/ansible/inventory

```
[dev]
192.168.1.106

[test]
192.168.1.107

[proxy]
192.168.1.104

[prod]
192.168.1.108
192.168.1.110

[webserver:children]
prod
```

7. Create a file called adhoc.sh in/home/sandy/ansible which will use adhoc commands to set up a new repository. The name of the repo will be 'EPEL REPO' the description 'RHEL8 TEST REPO' the base URL Is 'https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch.rmp' the GPG key is http://repo.mysql.com/RPM-GPG-KEY-mysql, disable gpg check but not enable the repo.

cd /home/sany/ansible/

vim adhoc.sh

```
ansible all -m yum_repository -a ' name="EPEL REPO" description="RHEL8 TEST REPO" file=external_repos baseurl="https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.
noarch.rmp" enabled=0 gpgcheck=0 gpgkey="http://repo.mysql.com/RPM-GPG-KEY-mysql"'
```

```
[sany@localhost ansible]$ ./adhoc.sh
192.168.1.108 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "repo": "EPEL REPO",
    "state": "present"
}
192.168.1.104 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "repo": "EPEL REPO",
    "state": "present"
}
192.168.1.110 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "repo": "EPEL REPO",
    "state": "present"
}
192.168.1.106 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "repo": "EPEL REPO",
    "state": "present"
}
192.168.1.107 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "repo": "EPEL REPO",
    "state": "present"
}
```

8. Install nano package in all server whith ansible adhoc

ansible -m yum -a ‘name=nano state=latest’

```
[sany@localhost ansible]$ ansible all -m yum -a 'name=nano state=latest'
192.168.1.108 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "Nothing to do",
    "rc": 0,
    "results": []
}
192.168.1.110 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "Nothing to do",
    "rc": 0,
    "results": []
}
192.168.1.107 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "Nothing to do",
    "rc": 0,
    "results": []
}
192.168.1.104 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "Nothing to do",
    "rc": 0,
    "results": []
}
192.168.1.106 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "msg": "Nothing to do",
    "rc": 0,
    "results": []
}
```

9. Ensure a service is started on all webservers (adhoc)

ansible webserver -m service -a ‘name=firewalld state=started’

```
[sany@localhost ansible]$ ansible webserver -m service -a 'name=firewalld state=started'
192.168.1.110 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "name": "firewalld",
    "state": "started",
    "status": {
        "ActiveEnterTimestamp": "Sat 2024-05-18 23:29:57 +04",
        "ActiveEnterTimestampMonotonic": "47263634",
        "ActiveExitTimestampMonotonic": "0",
        "ActiveState": "active",
        "After": "sysinit.target polkit.service basic.target system.slice dbus-broker.service dbus.socket",
        "AllowIsolate": "no",
        "AssertResult": "yes",
        "AssertTimestamp": "Sat 2024-05-18 23:29:49 +04",
        "AssertTimestampMonotonic": "39017820",
        "Before": "network-pre.target multi-user.target shutdown.target",
        "BlockIOAccounting": "no",
        "BlockIOWeight": "[not set]",
        "BusName": "org.fedoraproject.FirewallD1",
        "CPUAccounting": "yes",
        "CPUAffinityFromNUMA": "no",
        "CPUQuotaPerSecUSec": "infinity",
        "CPUQuotaPeriodUSec": "infinity",
        "CPUSchedulingPolicy": "0",
```

10. Create directory /tmp/ansible1 all prod host group servers (adhoc)

ansible prod -m file -a ‘path=/tmp/ansible1 state=directory’

```
[sany@localhost ansible]$ ansible prod -m file -a 'path=/tmp/ansible1 state=directory'
192.168.1.108 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "gid": 0,
    "group": "root",
    "mode": "0755",
    "owner": "root",
    "path": "/tmp/ansible1",
    "secontext": "unconfined_u:object_r:user_tmp_t:s0",
    "size": 6,
    "state": "directory",
    "uid": 0
}
192.168.1.110 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": true,
    "gid": 0,
    "group": "root",
    "mode": "0755",
    "owner": "root",
    "path": "/tmp/ansible1",
    "secontext": "unconfined_u:object_r:user_tmp_t:s0",
    "size": 6,
    "state": "directory",
    "uid": 0
}
```

11. Write all open ports to /tmp/listen_ports all proxy host group server (adhoc)

```
[sany@localhost ansible]$ ansible proxy -m shell -a "ss -ltn | awk 'NR>1 {print \$4}' | awk -F':' '{print \$NF}' > /tmp/listen_ports"
192.168.1.104 | CHANGED | rc=0 >>

[sany@localhost ansible]$ ansible proxy -m command -a 'cat /tmp/listen_ports'
192.168.1.104 | CHANGED | rc=0 >>
22
631
6010
6011
22
631
6010
6011
```