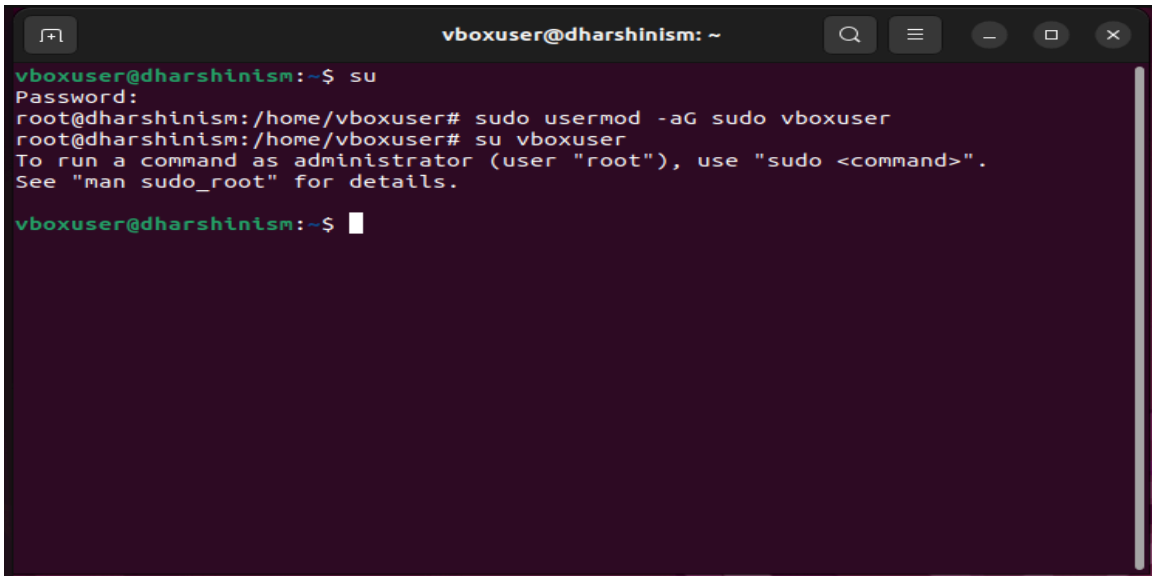
Ex No 10 **Install and configure Ansible**

AIM:

To install and configure Ansible.

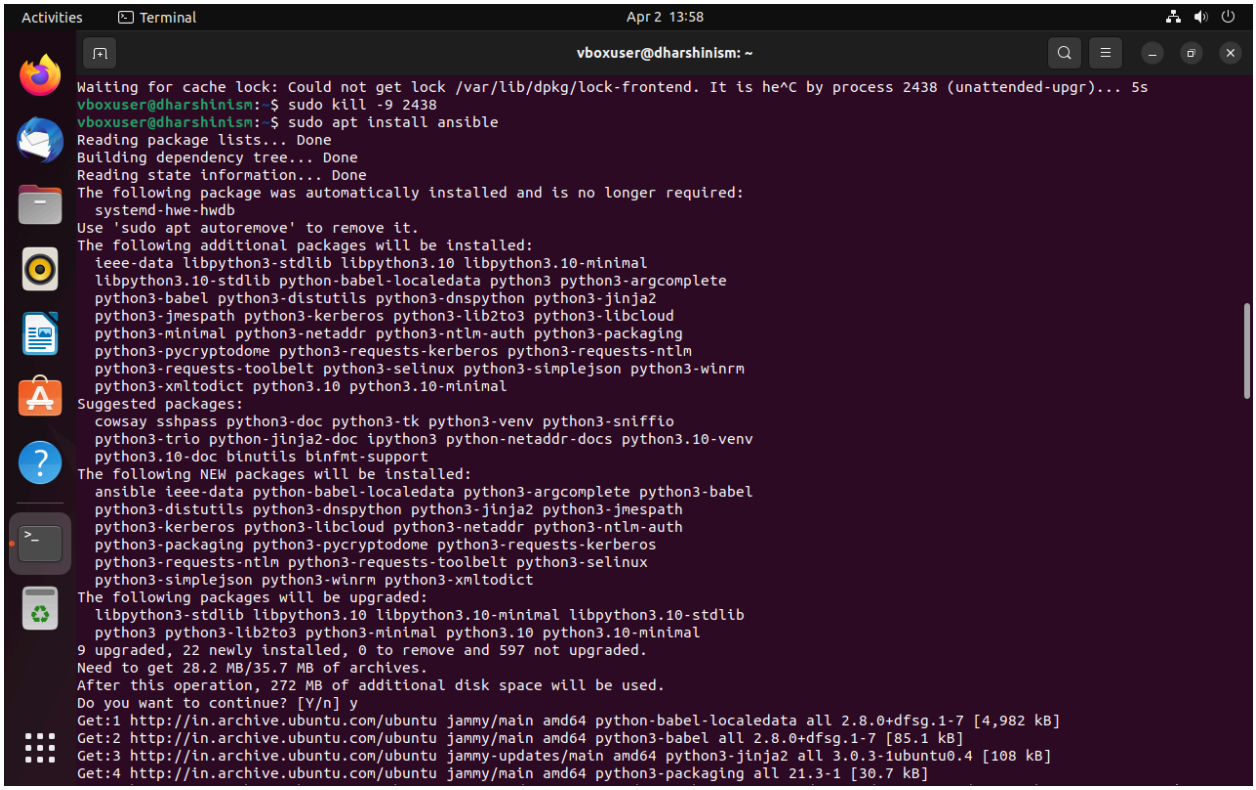
PROCEDURE:

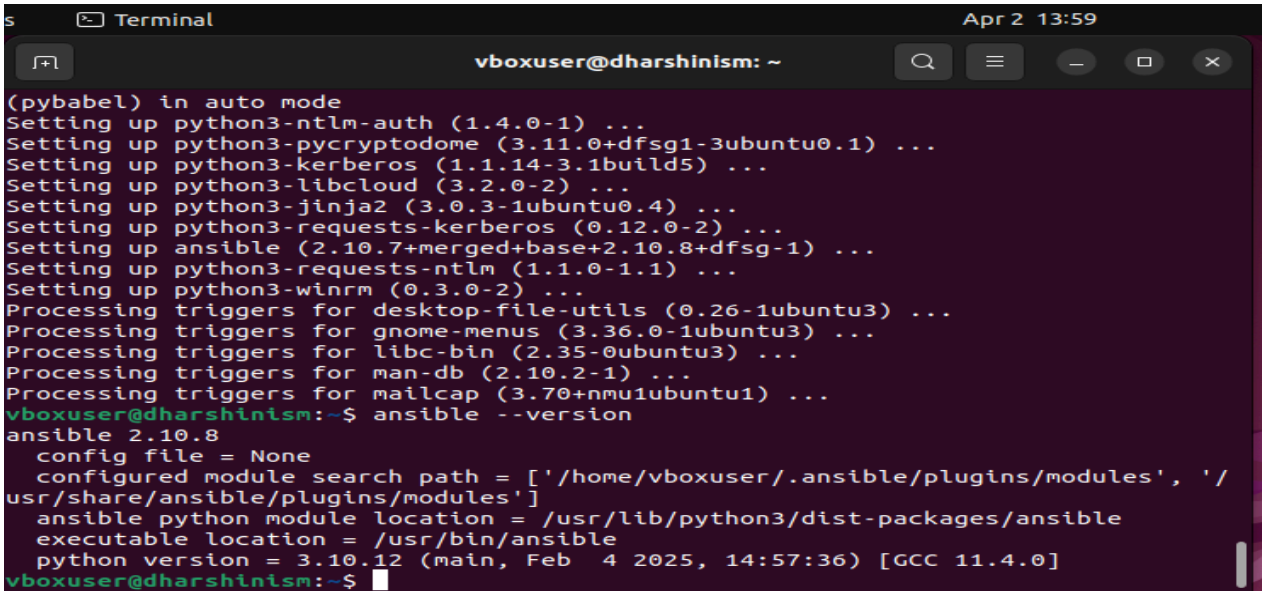
Step 1: Open terminal and switch to the root user in your Virtual machine



Step 2: Run the following commands,

1. sudo apt install ansible
2. ansible - -version


Activities
Terminal
Apr 2 13:58
vboxuser@dharshinism: ~
Waiting for cache lock: Could not get lock /var/lib/dpkg/lock-frontend. It is he^C by process 2438 (unattended-upgr)... 5s
vboxuser@dharshinism:~$ sudo kill -9 2438
vboxuser@dharshinism:~$ sudo apt install ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
systemd-hwe-hwdb
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
ieee-data libpython3-stdlib libpython3.10 libpython3.10-minimal
libpython3.10-stdlib python-babel-localedata python3 python3-argcomplete
python3-babel python3-distutils python3-dnspython python3-jinja2
python3-jmespath python3-kerberos python3-lib2to3 python3-libcloud
python3-minimal python3-netaddr python3-ntlm-auth python3-packaging
python3-pycryptodome python3-requests-kerberos python3-requests-ntlm
python3-requests-toolbelt python3-selinux python3-simplejson python3-winrm
python3-xmltodict python3.10 python3.10-minimal
Suggested packages:
cowsay sshpass python3-doc python3-tk python3-venv python3-sniffio
python3-trio python-jinja2-doc ipython3 python-netaddr-docs python3.10-venv
python3.10-doc binutils binfmt-support
The following NEW packages will be installed:
ansible ieee-data python-babel-localedata python3-argcomplete python3-babel
python3-distutils python3-dnspython python3-jinja2 python3-jmespath
python3-kerberos python3-libcloud python3-netaddr python3-ntlm-auth
python3-packaging python3-pycryptodome python3-requests-kerberos
python3-requests-ntlm python3-requests-toolbelt python3-selinux
python3-simplejson python3-winrm python3-xmltodict
The following packages will be upgraded:
libpython3-stdlib libpython3.10 libpython3.10-minimal libpython3.10-stdlib
python3 python3-lib2to3 python3-minimal python3.10 python3.10-minimal
9 upgraded, 22 newly installed, 0 to remove and 597 not upgraded.
Need to get 28.2 MB/35.7 MB of archives.
After this operation, 272 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python-babel-localedata all 2.8.0+dfsg.1-7 [4,982 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-babel all 2.8.0+dfsg.1-7 [85.1 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-jinja2 all 3.0.3-1ubuntu0.4 [108 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 python3-packaging all 21.3-1 [30.7 kB]


Terminal
Apr 2 13:59
vboxuser@dharshinism: ~
(pybabel) in auto mode
Setting up python3-ntlm-auth (1.4.0-1) ...
Setting up python3-pycryptodome (3.11.0+dfsg1-3ubuntu0.1) ...
Setting up python3-kerberos (1.1.14-3.1build5) ...
Setting up python3-libcloud (3.2.0-2) ...
Setting up python3-jinja2 (3.0.3-1ubuntu0.4) ...
Setting up python3-requests-kerberos (0.12.0-2) ...
Setting up ansible (2.10.7+merged+base+2.10.8+dfsg-1) ...
Setting up python3-requests-ntlm (1.1.0-1.1) ...
Setting up python3-winrm (0.3.0-2) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu3) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu3) ...
Processing triggers for libc-bin (2.35-0ubuntu3) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
vboxuser@dharshinism:~$ ansible --version
ansible 2.10.8
config file = None
configured module search path = ['/home/vboxuser/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
ansible python module location = /usr/lib/python3/dist-packages/ansible
executable location = /usr/bin/ansible
python version = 3.10.12 (main, Feb 4 2025, 14:57:36) [GCC 11.4.0]
vboxuser@dharshinism:~$

Step 3: Check for ansible installation using “ansible –version”

Error: UTF-8 encoding expected for ansible, run the following commands

- sudo nano /etc/default/locale
- Update the encoding to UTF-8

LANG="en_US.UTF-8"
LC_CTYPE="en.US.UTF-8"
(Or)

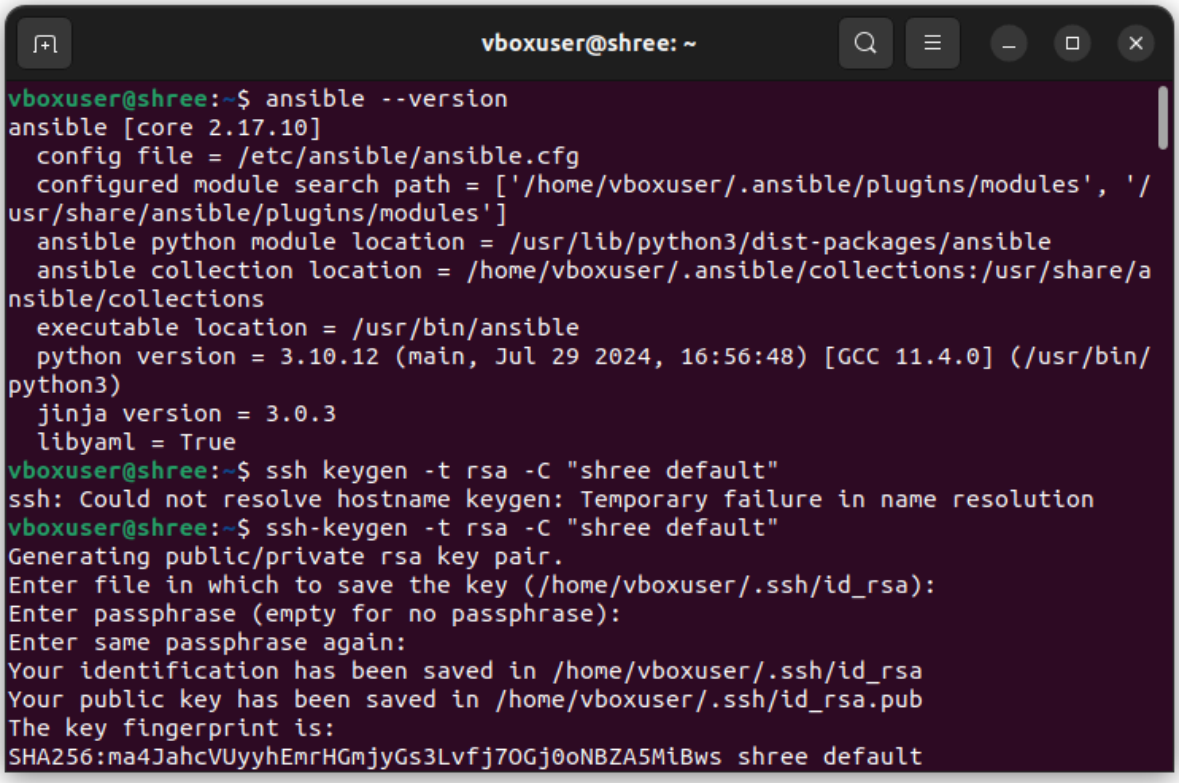
- Run the below command in terminal

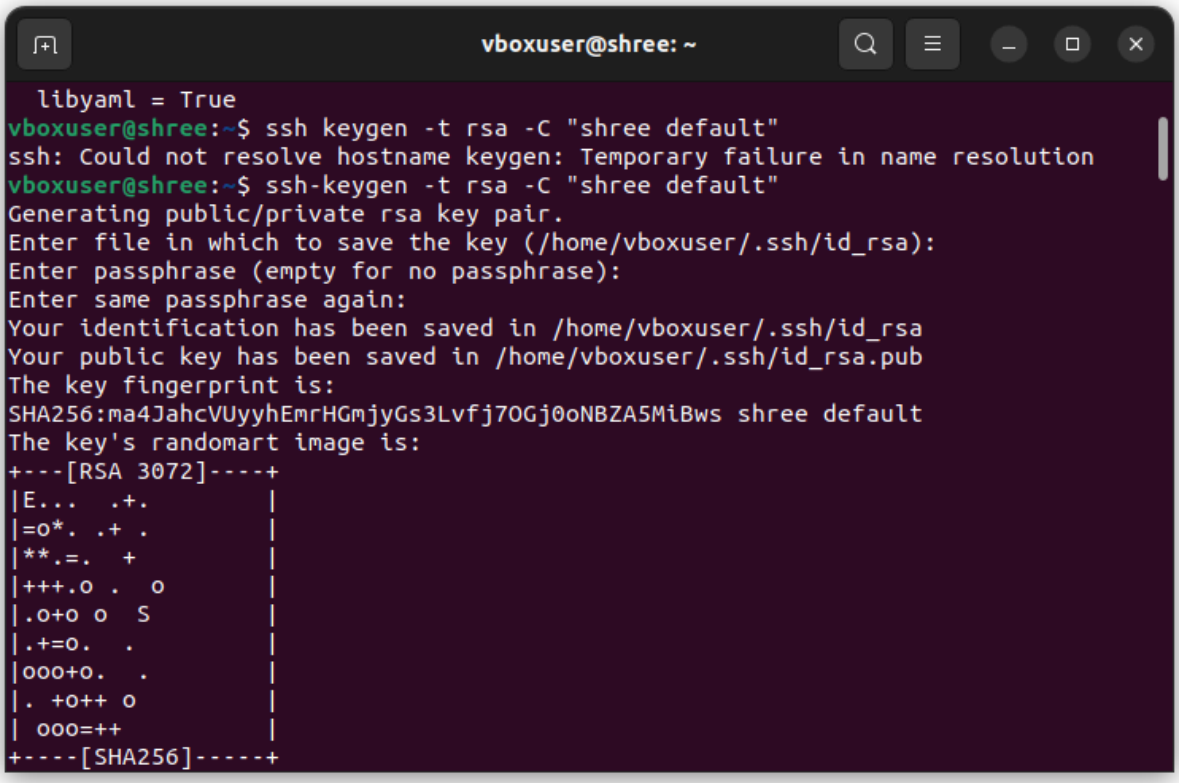
sudo update-locale LANG=en_US.UTF-8 LC_CTYPE=en_US.UTF-8

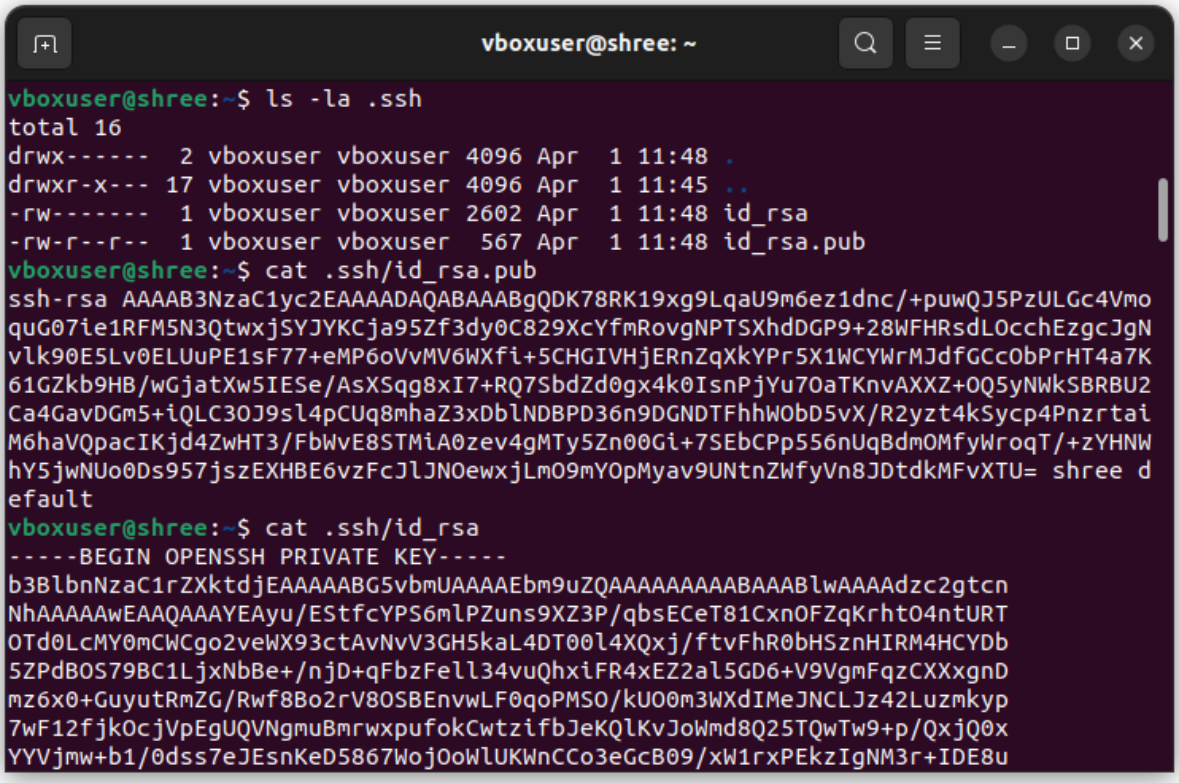
- Restart

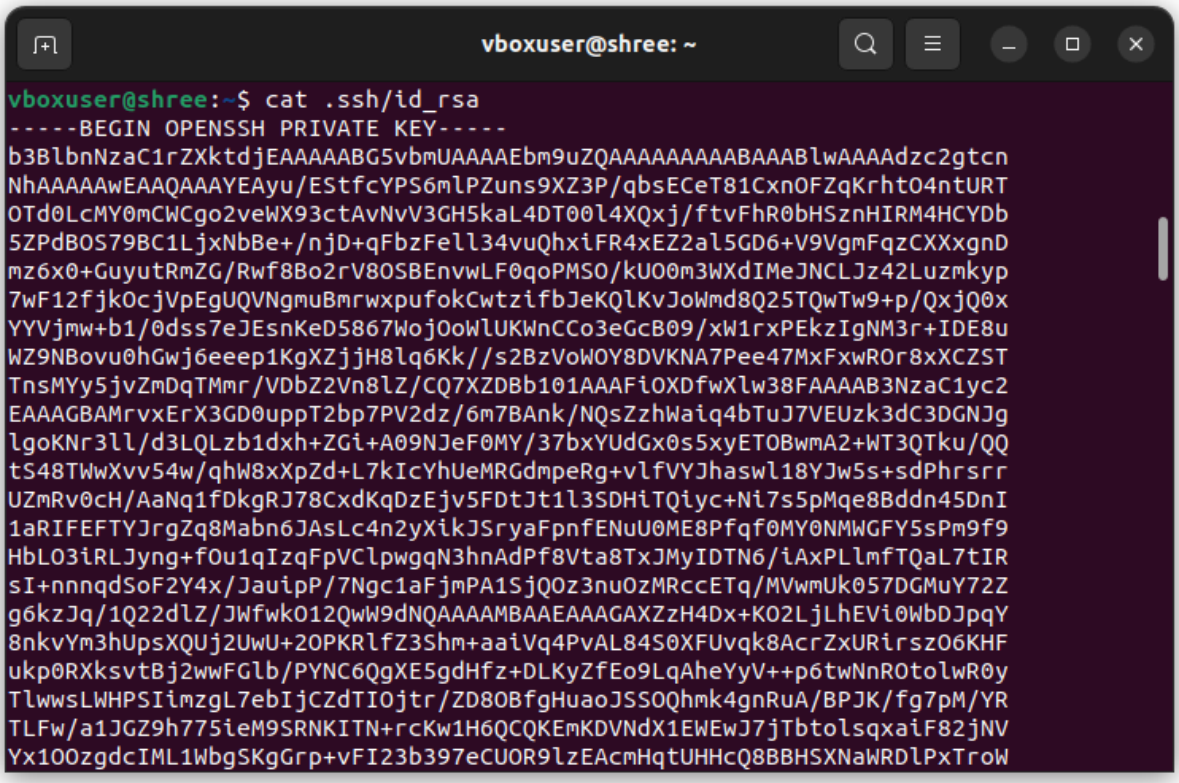
To create SSH key,

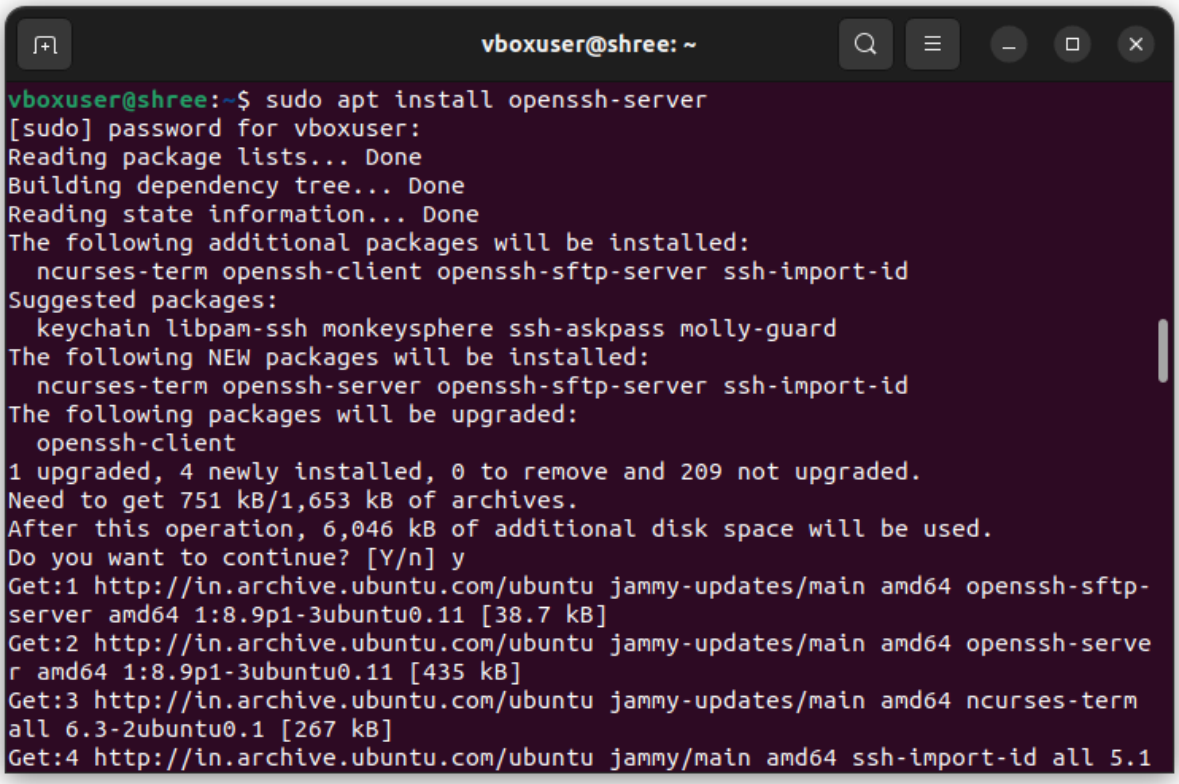
1. ssh-keygen -t rsa -C "demo_default"
2. ls -la .ssh
3. cat .ssh/id_rsa.pub
4. cat .ssh/id_rsa




vboxuser@shree: ~
libyaml = True
vboxuser@shree:~$ ssh keygen -t rsa -C "shree default"
ssh: Could not resolve hostname keygen: Temporary failure in name resolution
vboxuser@shree:~$ ssh-keygen -t rsa -C "shree default"
Generating public/private rsa key pair.
Enter file in which to save the key (/home/vboxuser/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/vboxuser/.ssh/id_rsa
Your public key has been saved in /home/vboxuser/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:ma4JahcVUyyhEmrHGmjyGs3Lvfj7OGj0oNBZA5MiBws shree default
The key's randomart image is:
+---[RSA 3072]----+
|E... .+. |
|=o*. .+ . |
|**.=. + |
|+++.o . o |
|.o+o o S |
|.+=o. . |
|ooo+o. . |
|. +o++ o |
| ooo=++ |
+----[SHA256]-----+

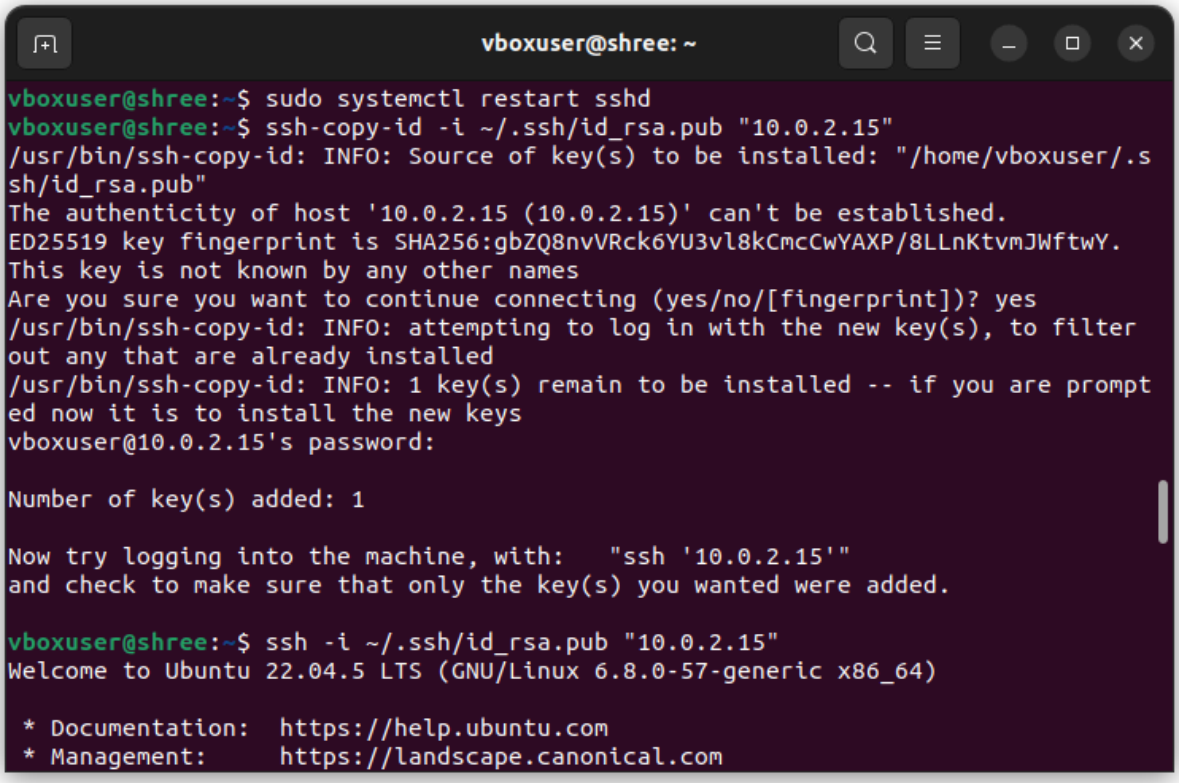

vboxuser@shree: ~
vboxuser@shree:~$ ls -la .ssh
total 16
drwx------ 2 vboxuser vboxuser 4096 Apr 1 11:48 .
drwxr-x--- 17 vboxuser vboxuser 4096 Apr 1 11:45 ..
-rw------- 1 vboxuser vboxuser 2602 Apr 1 11:48 id_rsa
-rw-r--r-- 1 vboxuser vboxuser 567 Apr 1 11:48 id_rsa.pub
vboxuser@shree:~$ cat .ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABgQDK78RK19xg9LqaU9m6ez1dnc/+puwQJ5PzULGc4Vmo
quG07ie1RFM5N3QtwxjSYJYKCja95Zf3dy0C829XcYfmRovgNPTSXhdDGP9+28WFHRsdLOcchEzgcJgN
vlk90E5Lv0ELUuPE1sF77+eMP6oVvMV6WXfi+5CHGIVHjERnZqXkYPr5X1WCYWrMJdfGCcObPrHT4a7K
61GZkb9HB/wGjatXw5IESe/AsXSqg8xI7+RQ7SbdZd0gx4k0IsnPjYu7OaTKnvAXXZ+OQ5yNWkSBRBU2
Ca4GavDGm5+iQLC3OJ9sl4pCUq8mhaZ3xDblNDBPD36n9DGNDTFhhWObD5vX/R2yzt4kSycp4Pnzrtai
M6haVQpacIKjd4ZwHT3/FbWvE8STMiA0zev4gMTy5Zn00Gi+7SEbCPp556nUqBdmOMfyWroqT/+zYHNW
hY5jwNUo0Ds957jszEXHBE6vzFcJlJNOewxjLmO9mYOpMyav9UNtnZWfyVn8JDtdkMFvXTU= shree d
efault
vboxuser@shree:~$ cat .ssh/id_rsa
-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAABG5vbmUAAAAEbm9uZQAAAAAAAAABAAABlwAAAAdzc2gtcn
NhAAAAAwEAAQAAAYEAyu/EStfcYPS6mlPZuns9XZ3P/qbsECeT81CxnOFZqKrhtO4ntURT
OTd0LcMY0mCWCgo2veWX93ctAvNvV3GH5kaL4DT00l4XQxj/ftvFhR0bHSznHIRM4HCYDb
5ZPdBOS79BC1LjxNbBe+/njD+qFbzFell34vuQhxiFR4xEZ2al5GD6+V9VgmFqzCXXxgnD
mz6x0+GuyutRmZG/Rwf8Bo2rV8OSBEnvwLF0qoPMSO/kUO0m3WXdIMeJNCLJz42Luzmkyp
7wF12fjkOcjVpEgUQVNgmuBmrwxpufokCwtzifbJeKQlKvJoWmd8Q25TQwTw9+p/QxjQ0x
YYVjmw+b1/0dss7eJEsnKeD5867WojOoWlUKWnCCo3eGcB09/xW1rxPEkzIgNM3r+IDE8u


vboxuser@shree: ~
vboxuser@shree:~$ cat .ssh/id_rsa
-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAABG5vbmUAAAAEbm9uZQAAAAAAAAABAAABlwAAAAdzc2gtcn
NhAAAAAwEAAQAAAYEAyu/EStfcYPS6mlPZuns9XZ3P/qbsECeT81CxnOFZqKrhtO4ntURT
OTd0LcMY0mCWCgo2veWX93ctAvNvV3GH5kaL4DT00l4XQxj/ftvFhR0bHSznHIRM4HCYDb
5ZPdBOS79BC1LjxNbBe+/njD+qFbzFell34vuQhxiFR4xEZ2al5GD6+V9VgmFqzCXXxgnD
mz6x0+GuyutRmZG/Rwf8Bo2rV8OSBEnvwLF0qoPMSO/kUO0m3WXdIMeJNCLJz42Luzmkyp
7wF12fjkOcjVpEgUQVNgmuBmrwxpufokCwtzifbJeKQlKvJoWmd8Q25TQwTw9+p/QxjQ0x
YYVjmw+b1/0dss7eJEsnKeD5867WojOoWlUKWnCCo3eGcB09/xW1rxPEkzIgNM3r+IDE8u
WZ9NBovu0hGwj6eeep1KgXZjjH8lq6Kk//s2BzVoWOY8DVKNA7Pee47MxFxwROr8xXCZST
TnsMYy5jvZmDqTMmr/VDbZ2Vn8lZ/CQ7XZDBb101AAAFiOXDfwXlw38FAAAAB3NzaC1yc2
EAAAGBAMrvxErX3GD0uppT2bp7PV2dz/6m7BAnk/NQsZzhWaiq4bTuJ7VEUzk3dC3DGNJg
lgoKNr3ll/d3LQLzb1dxh+ZGi+A09NJeF0MY/37bxYUdGx0s5xyETOBwmA2+WT3QTku/QQ
tS48TWwXvv54w/qhW8xXpZd+L7kIcYhUeMRGdmpeRg+vlfVYJhaswl18YJw5s+sdPhrsrr
UZmRv0cH/AaNq1fDkgRJ78CxdKqDzEjv5FDtJt1l3SDHiTQiyc+Ni7s5pMqe8Bddn45DnI
1aRIFEFTYJrgZq8Mabn6JAsLc4n2yXikJSryaFpnfENuU0ME8Pfqf0MY0NMWGFY5sPm9f9
HbLO3iRLJyng+fOu1qIzqFpVClpwgqN3hnAdPf8Vta8TxJMyIDTN6/iAxPLlmfTQaL7tIR
sI+nnnqdSoF2Y4x/JauipP/7Ngc1aFjmPA1SjQOz3nuOzMRccETq/MVwmUk057DGMuY72Z
g6kzJq/1Q22dlZ/JWfwkO12QwW9dNQAAAAMBAAEAAAGAXZzH4Dx+KO2LjLhEVi0WbDJpqY
8nkvYm3hUpsXQUj2UwU+2OPKRlfZ3Shm+aaiVq4PvAL84S0XFUvqk8AcrZxURirszO6KHF
ukp0RXksvtBj2wwFGlb/PYNC6QgXE5gdHfz+DLKyZfEo9LqAheYyV++p6twNnROtolwR0y
TlwwsLWHPSIimzgL7ebIjCZdTIOjtr/ZD8OBfgHuaoJSSOQhmk4gnRuA/BPJK/fg7pM/YR
TLFw/a1JGZ9h775ieM9SRNKITN+rcKw1H6QCQKEmKDVNdX1EWEwJ7jTbtolsqxaiF82jNV
Yx1OOzgdcIML1WbgSKgGrp+vFI23b397eCUOR9lzEAcmHqtUHHcQ8BBHSXNaWRDlPxTroW


vboxuser@shree: ~
vboxuser@shree:~$ sudo apt install openssh-server
[sudo] password for vboxuser:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-client openssh-sftp-server ssh-import-id
Suggested packages:
  keychain libpam-ssh monkeysphere ssh-askpass molly-guard
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
The following packages will be upgraded:
  openssh-client
1 upgraded, 4 newly installed, 0 to remove and 209 not upgraded.
Need to get 751 kB/1,653 kB of archives.
After this operation, 6,046 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 openssh-sftp-server amd64 1:8.9p1-3ubuntu0.11 [38.7 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 openssh-server amd64 1:8.9p1-3ubuntu0.11 [435 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 ncurses-term all 6.3-2ubuntu0.1 [267 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 ssh-import-id all 5.1

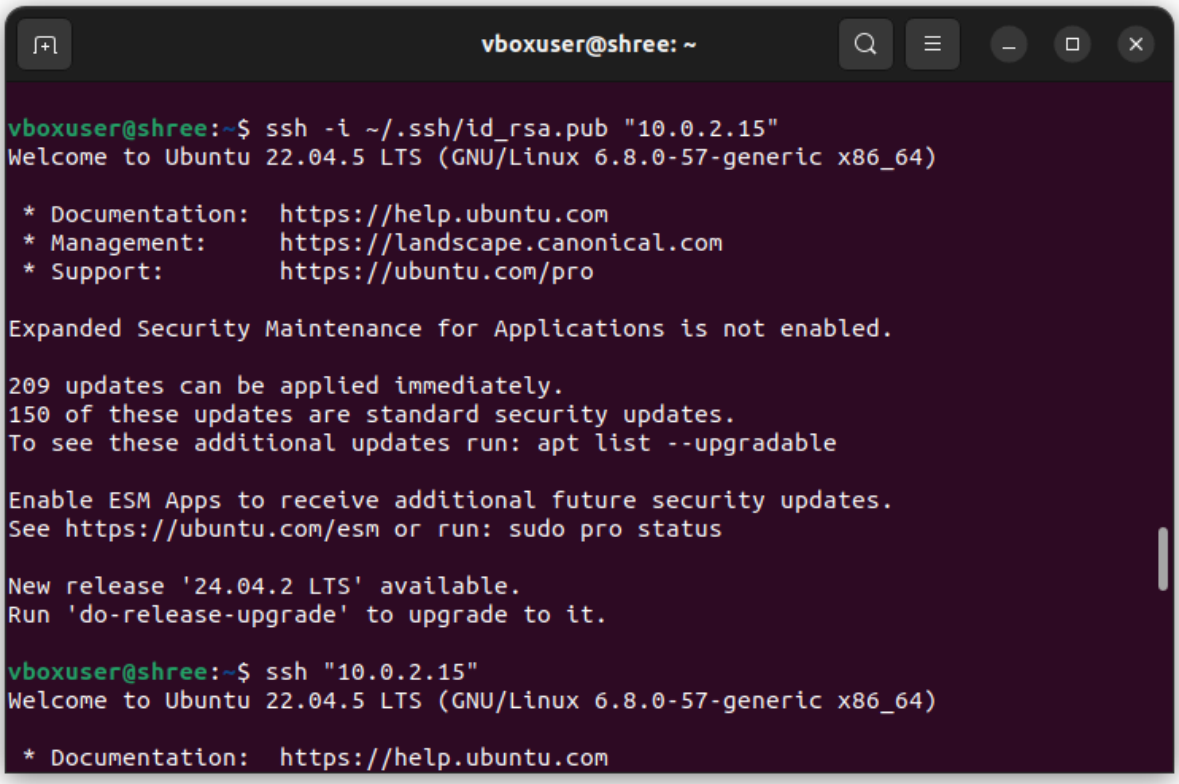
Step 4: To copy SSH key to the server,

1. ssh-copy-id -i ~/.ssh/id_rsa.pub "ipaddress" - 10.0.2.15



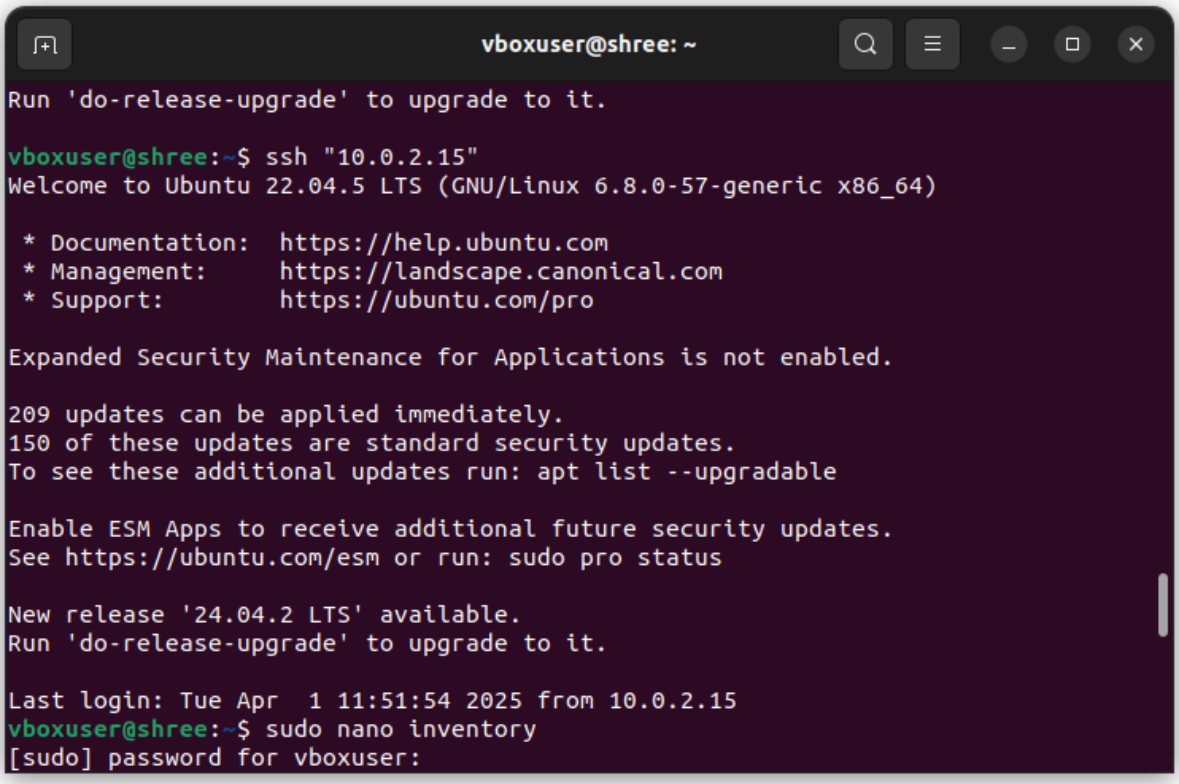
Step 5: To test the new key,

1. ssh -i ~/.ssh/”Keyname” “Address”



Step 6: To connect to the server,

1.ssh “ipaddress”



Step 7: To connect with the machines provided in the inventory

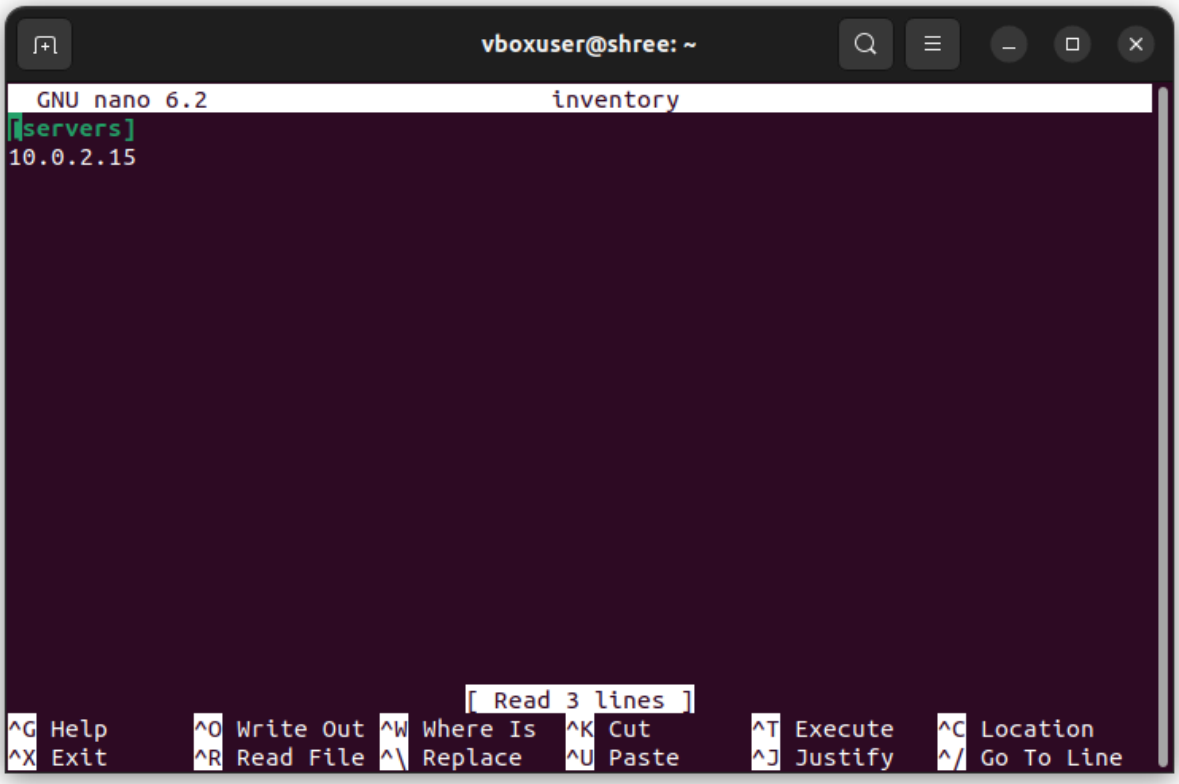
1.ansible all –key-file ~/.ssh ansible -i inventory -m ping

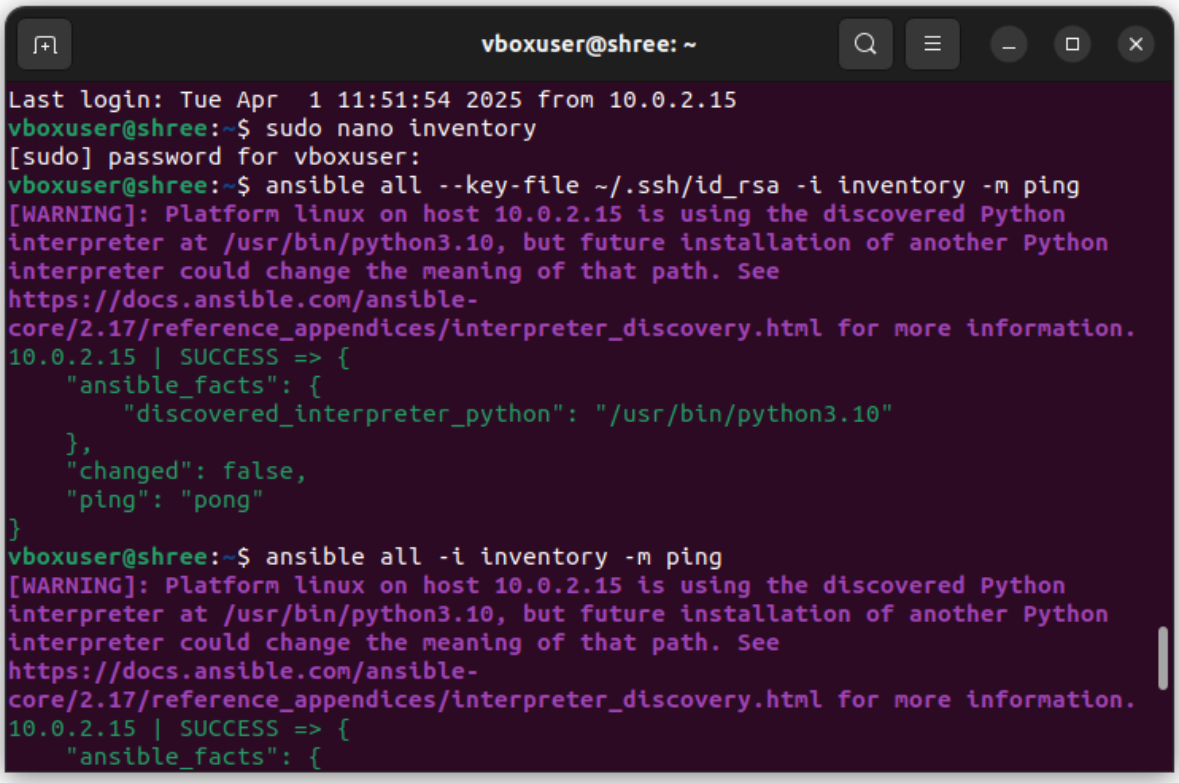
2. To create inventory

a.sudo nano inventory

b.To exit inventory ,

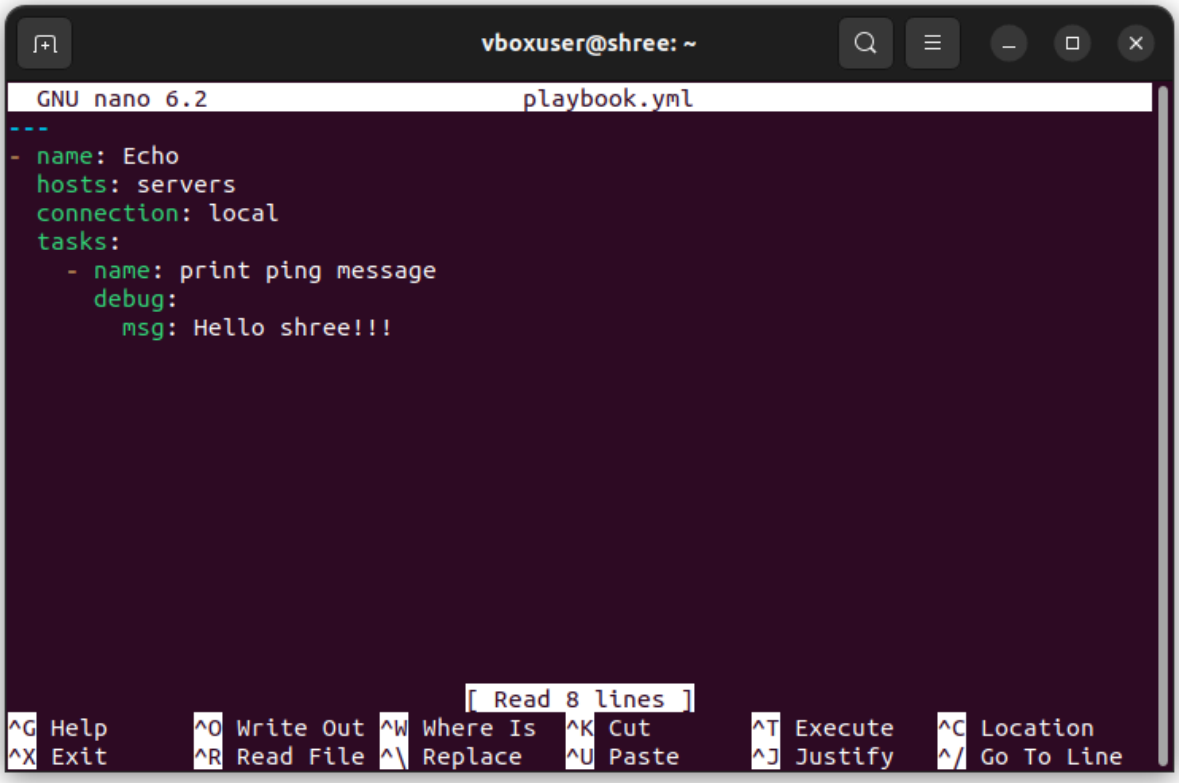
Ctrl+x -> shift Y -> Enter

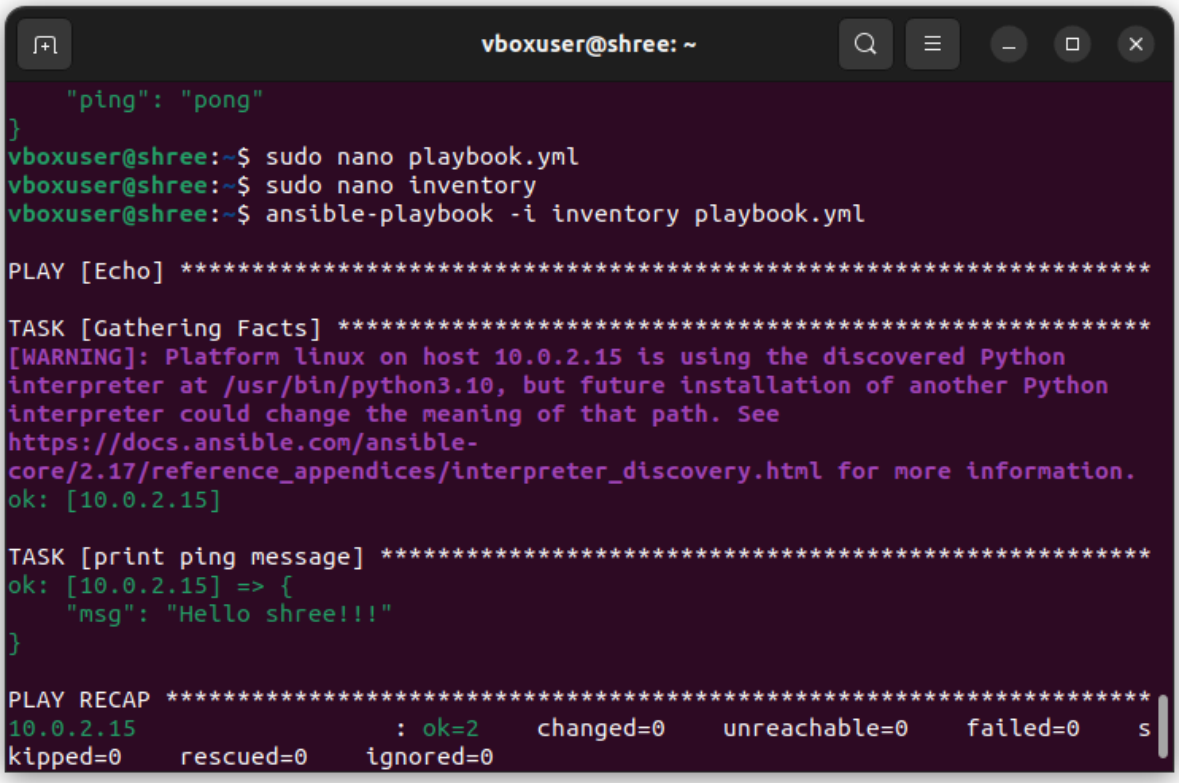



vboxuser@shree: ~
Last login: Tue Apr 1 11:51:54 2025 from 10.0.2.15
vboxuser@shree:~$ sudo nano inventory
[sudo] password for vboxuser:
vboxuser@shree:~$ ansible all --key-file ~/.ssh/id_rsa -i inventory -m ping
[WARNING]: Platform linux on host 10.0.2.15 is using the discovered Python
interpreter at /usr/bin/python3.10, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
10.0.2.15 | SUCCESS => {
"ansible_facts": {
"discovered_interpreter_python": "/usr/bin/python3.10"
},
"changed": false,
"ping": "pong"
}
vboxuser@shree:~$ ansible all -i inventory -m ping
[WARNING]: Platform linux on host 10.0.2.15 is using the discovered Python
interpreter at /usr/bin/python3.10, but future installation of another Python
interpreter could change the meaning of that path. See
https://docs.ansible.com/ansible-
core/2.17/reference_appendices/interpreter_discovery.html for more information.
10.0.2.15 | SUCCESS => {
"ansible_facts": {

Step 8: To execute playbook in ansible,

1.ansible-playbook -i inventory playbook.yml
2.To create a playbook -> sudo nano playbook.yml





RESULT:

Thus the installation and configuration of ansible is done.