Seif Eldin Mohamed Aboelhassan Mohamed Hendawy
Lab 1

1. Install ansible

```
seif@seif-Alienware-17-R5:~$ ansible --version
ansible 2.10.8
  config file = None
  configured module search path = ['/home/seif/.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, Jun 11 2023, 05:26:28) [GCC 11.4.0]
```

2. Create a new user on control machine and new user on host 1

```
seif@seif-Alienware-17-R5:~$ sudo useradd ansibleusr
seif@seif-Alienware-17-R5:~$ sudo passwd ansibleusr
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
seif@seif-Alienware-17-R5:~$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
445a6a12be2b: Pull complete
Digest: sha256:aabed3296a3d45cede1dc866a24476c4d7e093aa806263c27ddaadbdce3c1054
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
seif@seif-Alienware-17-R5:~$ docker run -itd --name my-ubuntu-container ubuntu
2b20433539649bcd5a2c2983a850397a36dbbfa17312981cbde077e4f61c6344
seif@seif-Alienware-17-R5:~$ docker exec -it my-ubuntu-container /bin/bash
root@2b2043353964:/# useradd ansibleusr
root@2b2043353964:/# passwd ansibleusr
New password:
Retype new password:
passwd: password updated successfully
root@2b2043353964:/#
```

3. Make sure you can ssh into host 1 (using password)

```
                                                    seif@seif-Alienware-17-R5: ~

  GNU nano 6.2                                              /etc/ssh/sshd_config *

# To disable tunneled clear text passwords, change to no here!
PasswordAuthentication yes
#PermitEmptyPasswords no
```

```
seif@seif-Alienware-17-R5:~$ sudo nano /etc/ssh/sshd_config
seif@seif-Alienware-17-R5:~$ sudo service ssh restart
seif@seif-Alienware-17-R5:~$ ssh ansibleusr@localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ED25519 key fingerprint is SHA256:Avn1xDwhH6uMy83Dy/9Xbzgt/yqLf2bp2vFtFszDwMU
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.
ansibleusr@localhost's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-32-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

24 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

$
```

4. Generate SSH key pair on control machine

```
seif@seif-Alienware-17-R5:~$ ssh-keygen -t rsa -b 2048 -f ~/.ssh/id_rsa
Generating public/private rsa key pair.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/seif/.ssh/id_rsa
Your public key has been saved in /home/seif/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:fjgzfIXMqw9Mwg2IEpKvs9vdKcOcEEmvwHSJwn0XWQE seif@seif-Alienware-17-R5
The key's randomart image is:
+---[RSA 2048]----+
|+.o .  E=o.      |
|+=.= o o         |
|=oooo o          |
|.o+ .. o o .     |
| o o  o S + .    |
|o o    * . o     |
| o + . X +       |
|.. .*. . O       |
|... .oo ...      |
+----[SHA256]-----+
```

5. Copy the public key to host 1

```
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:5rZiVXjQj+mzkGVC2DZopFsysOJa4Fyp/cox282PTSc root@2b2043353964
The key's randomart image is:
+---[RSA 3072]----+
|    .  ..+ .      |
|    o..+ * .      |
|o .o+..o + +      |
|+o+  =  o B .     |
| =...   SO        |
|..   . o+ o       |
|.  o . .oE +      |
|   . * =.+.+      |
|   + o =oo        |
+----[SHA256]-----+
root@2b2043353964:/# cat ~/.ssh/id_rsa.pub >> ~/.ssh/authorized_keys
root@2b2043353964:/# chmod 700 ~/.ssh
chmod 600 ~/.ssh/authorized_keys
root@2b2043353964:/# ssh ansibleusr@localhost
The authenticity of host 'localhost (127.0.0.1)' can't be established.
ED25519 key fingerprint is SHA256:vXqLMw5xv1gOh7PB2HqjitLzBe9insaunCxuI0V1YQQ.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.
ansibleusr@localhost's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-32-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

Could not chdir to home directory /home/ansibleusr: No such file or directory
$
```

```
seif@seif-Alienware-17-R5:~$ docker ps
CONTAINER ID   IMAGE    COMMAND       CREATED           STATUS           PORTS      NAMES
2b2043353964   ubuntu   "/bin/bash"   About an hour ago   Up About an hour            my-ubuntu-container
seif@seif-Alienware-17-R5:~$ docker inspect -f '{{range .NetworkSettings.Networks}}{{.IPAddress}}{{end}}' 2b2043353964
172.17.0.2
seif@seif-Alienware-17-R5:~$ ^C
seif@seif-Alienware-17-R5:~$ ssh ansibleusr1@172.17.0.2
The authenticity of host '172.17.0.2 (172.17.0.2)' can't be established.
ED25519 key fingerprint is SHA256:vXqLMw5xv1gOh7PB2HqjitLzBe9insaunCxuI0V1YQQ.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.17.0.2' (ED25519) to the list of known hosts.
ansibleusr1@172.17.0.2's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-32-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ansibleusr1@2b2043353964:~$
```

6. Make sure you can ssh into host 1 (using prv/pub)

```
seif@seif-Alienware-17-R5:~$ ssh -i ~/.ssh/id_rsa ansibleusr1@172.17.0.2
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-32-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

Last login: Thu Sep 14 18:00:36 2023 from 172.17.0.1
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ansibleusr1@2b2043353964:~$
```

7. Create the inventory file
8. Put the IP of host 1 in the inventory file

```
seif@seif-Alienware-17-R5:~$ echo "172.17.0.2" > inventory.txt
seif@seif-Alienware-17-R5:~$
```

9. Use the inventory file path in your ad-hoc command instead of using the IP hard-coded

```
Connection to 172.17.0.2 closed.
seif@seif-Alienware-17-R5:~$ nano inventory
seif@seif-Alienware-17-R5:~$ ansible all -i inventory --private-key ~/.ssh/id_rsa -u ansibleusr -m ping
172.17.0.2 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
seif@seif-Alienware-17-R5:~$
```

10. Create the configuration file
11. Insert some values in the configuration file

```
[defaults]
inventory = ./inventory
private-key = ~/.ssh/id_rsa
remote_user = ansibleusr
~
```

12. Run the minimized ad-hoc command

```
seif@seif-Alienware-17-R5:~/Documents/Ansible/Day01$ nano ansible.cfg
seif@seif-Alienware-17-R5:~/Documents/Ansible/Day01$ ansible all -m ping
172.17.0.2 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
seif@seif-Alienware-17-R5:~/Documents/Ansible/Day01$
```

13. Insert the correct values in the configuration file

```
[defaults]
inventory = ./inventory
private_key_file = ~/.ssh/id_rsa
remote_user = ansibleusr

[privilege_escalation]
become = true
become_method = sudo
become_ask_pass = true
```

14. Example: ansible all -m command -a "whoami"
15. What is the output of the command ?

```
seif@seif-Alienware-17-R5:~/Documents/Ansible/Day01$ vi ansible.cfg
seif@seif-Alienware-17-R5:~/Documents/Ansible/Day01$ ansible all -m command -a "whoami"
BECOME password:
172.17.0.2 | CHANGED | rc=0 >>
root
seif@seif-Alienware-17-R5:~/Documents/Ansible/Day01$
```