

Ansible

Lab 1

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Q1)

- Setting up container host1 and ssh

```
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
root@956e377ca70f:/# service ssh status
* sshd is not running
root@956e377ca70f:/# service ssh start
bash: service: command not found
root@956e377ca70f:/# service ssh start
* Starting OpenSSH Secure Shell server sshd
root@956e377ca70f:/# service ssh status
* sshd is running
```

- Creating user

```
root@956e377ca70f:/# adduser muhammad
Adding user 'muhammad' ...
Adding new group 'muhammad' (1000) ...
Adding new user 'muhammad' (1000) with group 'muhammad' ...
Creating home directory '/home/muhammad' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for muhammad
Enter the new value, or press ENTER for the default
  Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
root@956e377ca70f:/#
```

- Ssh into host using muhammad user

```
mohammed-osana@mohammed-osana-MS-7C52:~$ ssh muhammad@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:IdhtFoxoohQidFTKRp9/S2RQ8CUsLEahtFMvsotqyE.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added '172.17.0.2' (ED25519) to the list of known hosts.
muhammad@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.

muhammad@956e377ca70f:~$
```

- Key pair generated

```
mohammed-osana@mohammed-osana-MS-7C52:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/mohammed-osana/.ssh/id_rsa): /home/mohammed-osana/.ssh/devops
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/mohammed-osana/.ssh/devops
Your public key has been saved in /home/mohammed-osana/.ssh/devops.pub
The key fingerprint is:
SHA256:NGYKtT8JyPCyH+2lStCal0x2LrQkhvnlVwmy7icRXw mohammed-osana@mohammed-osana-MS-7C52
The key's randomart image is:
+----[RSA 3072]-----+
|
| .
| .
| . oo=
| . o.O+o
| o+EoSo
| o=+*o+..
| ..+Xo=..
| ..B..+..
| ..oOB+..
+----[SHA256]-----+
```

- Copy public key to host1

```
root@devops:~# ssh-copy-id: Error: failed to open id file 'devops.pub': no such file
mohammed-osana@mohammed-osana-MS-7C52: ~/.ssh$ ssh-copy-id -i ~/.ssh/devops.pub muhammad@172.17.0.2
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: '/home/mohammed-osana/.ssh/devops.pub'
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
muhammad@172.17.0.2's password:

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'muhammad@172.17.0.2'"
and check to make sure that only the key(s) you wanted were added.
```

- Ssh using private key

```
mohammed-osana@mohammed-osana-MS-7C52: ~$ ssh -i ~/.ssh/devops muhammad@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.
Last login: Thu Sep 14 11:19:12 2023 from 172.17.0.1
muhammad@956e377ca70f:~$
```

Q2)

- Creating inventory and adding host1 ip to it

```
mohammed-osana@mohammed-osana-MS-7C52: ~/.ssh$ ls
authorized_keys  devops  devops.pub  inventory  known_hosts  known_hosts.old
mohammed-osana@mohammed-osana-MS-7C52: ~/.ssh$ vim inventory
mohammed-osana@mohammed-osana-MS-7C52: ~/.ssh$
```

```
172.17.0.2
-- INSERT --
1,11
```

- Using inventory instead of hardcoded ip

```
mohammed-osana@mohammed-osana-MS-7C52: ~/.ssh$ ansible all -i inventory --private-key ~/.ssh/devops -u muhammad -m ping
172.17.0.2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
mohammed-osana@mohammed-osana-MS-7C52: ~/.ssh$
```

Q3)

- Creating config file and inserting values

```
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ touch ansible.cfg
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ vim ansible.cfg
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$
```

```
[defaults]
inventory = ~/.ssh/inventory
private_key_file = ~/.ssh/devops
remote_user = muhammad
```

- Running the minimised adhoc command

```
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ touch ansible.cfg
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ vim ansible.cfg
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ ansible all -m ping
172.17.0.2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$
```

Q4)

- Editing the config file

```
[defaults]
inventory = ~/.ssh/inventory
private_key_file = ~/.ssh/devops
remote_user = muhammad
```

```
[privilege_escalation]
become = true
```

- Adding muhammad user to sudoers first

```
root@956e377ca70f:/# apt install sudo
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  sudo
0 upgraded, 1 newly installed, 0 to remove and 2 not upgraded.
Need to get 821 kB of archives.
After this operation, 2568 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 sudo 1.9.9-1ubuntu2.4 [821 kB]
Fetched 821 kB in 1s (648 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package sudo.
(Reading database ... 10378 files and directories currently installed.)
Preparing to unpack .../sudo_1.9.9-1ubuntu2.4_amd64.deb ...
Unpacking sudo (1.9.9-1ubuntu2.4) ...
Setting up sudo (1.9.9-1ubuntu2.4) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
root@956e377ca70f:/# usermod -aG sudo muhammad
root@956e377ca70f:/#
```

- Ansible all -m command -a "whoami"
Gives missing sudo password we will have to add
--ask-become-pass or add it to the config file

```

mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ ansible all -m command -a "whoami"
172.17.0.2 | FAILED | rc=1 >>
Missing sudo password
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$ ansible all -m command -a "whoami" --ask-become-pass
BECOME password:
172.17.0.2 | CHANGED | rc=0 >>
root
mohammed-osana@mohammed-osana-MS-7C52:~/.ssh$
```

