1- Install ansible

```
Some modules do not make sense in Ad-hoc (include, meta, etc)
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible --version
ansible 2.10.8
  config file = None
  configured module search path = ['/home/abdo/.ansible/plugins/modules', '/usr/share/ansible/plu
gins/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]
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ 
```
Go Live

2- Create a new user on control machine

```
python version = 3.10.12 (main, Jun 11 2023, 05:26:28) [GCC 11.4.0]
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ docker run --name host1 -itd ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
445a6a12be2b: Already exists
Digest: sha256:aabed3296a3d45cede1dc866a24476c4d7e093aa806263c27ddaadbdce3c1054
Status: Downloaded newer image for ubuntu:latest
a43bbc36fea80e609c7baa900771bbc84eb53112f025739bd24649c5f964b4b1
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ docker exec -it host1 bash
root@a43bbc36fea8:/# apt install
```

```
root@a43bbc36fea8:/# service ssh status
 * sshd is not running          ⟵
root@a43bbc36fea8:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd
root@a43bbc36fea8:/# service ssh status
 * sshd is running              ⟵
root@a43bbc36fea8:/# 
```

and new user on host 1

```
ansible@a43bbc36fea8:/$ 
```

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

```
]
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible$ ssh ansible@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:J48goWeebOMZU8rpzGnYCBcTd7QW4ExFPaudZZ+60bg.
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.
ansible@172.17.0.2's password:
Permission denied, please try again.
ansible@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.

ansible@a43bbc36fea8:~$ []  ←
```

4- Generate SSH key pair on control machine

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/abdo/.ssh/id_rsa): /home/abdo/.ssh/devops
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/abdo/.ssh/devops
Your public key has been saved in /home/abdo/.ssh/devops.pub
The key fingerprint is:
SHA256:Nz1pTp/4c0mXkLloB6xFFlwklnHKTcyhOha6s6VULtk abdo@abdo-Lenovo-ideapad-520-15IKB
The key's randomart image is:
+---[RSA 3072]----+
|        .=O*.    |
|        o=Bo     |
|       .++ .o    |
|      . o= =     |
|      .S== O o . |
|       Bo.B * +. |
|       * E. + + o|
|      . *    ....|
|       o     .o  |
+----[SHA256]-----+
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible$ ssh ansible@172.17.0.2[]
```

5- Copy the public key to host 1

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/.ssh$ ssh-copy-id -i devops.pub ansible@172.17.0.2
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "devops.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already ins
talled
/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
ansible@172.17.0.2's password:

Number of key(s) added: 1

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

abdo@abdo-Lenovo-ideapad-520-15IKB:~/.ssh$
```

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

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/.ssh$ ssh -i devops ansible@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 11:34:16 2023 from 172.17.0.1
ansible@a43bbc36fea8:~$
```

Test 1

```
not match 'all'
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible all -i 172.17.0.2, --private-key ~/.ssh/d
evops -u ansible -m ping
172.17.0.2 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$
```

Test 2

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible all -i 172.17.0.2, --private-key ~/.ssh/d
evops -u ansible -m command -a "touch hello"
[WARNING]: Consider using the file module with state=touch rather than running 'touch'.  If you need to use
command because file is insufficient you can add 'warn: false' to this command task or set
'command_warnings=False' in ansible.cfg to get rid of this message.
172.17.0.2 | CHANGED | rc=0 >>
```
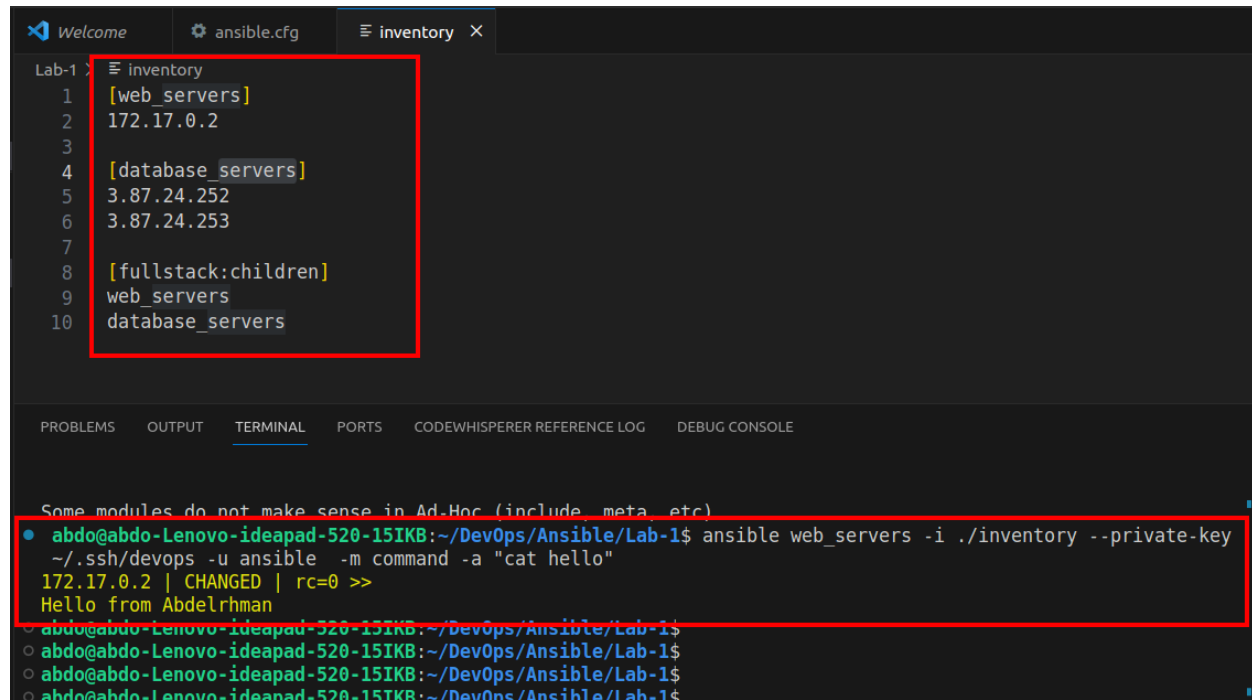
```
ansible@a43bbc36fea8:~/.ssh$ cd ..
ansible@a43bbc36fea8:~$ ls
hello
ansible@a43bbc36fea8:~$ []
```

Test 3

```
hello
ansible@a43bbc36fea8:~$ echo Hello from Abdelrhman >> hello
ansible@a43bbc36fea8:~$ []
```

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible all -i 172.17.0.2, --private-key ~/.ssh/d
evops -u ansible -m command -a "cat hello"
172.17.0.2 | CHANGED | rc=0 >>
Hello from Abdelrhman
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ []
```

7- Create the inventory file Put the IP of host 1 in the inventory file Use the inventory file path in your ad-hoc command instead of using the IP hard-coded
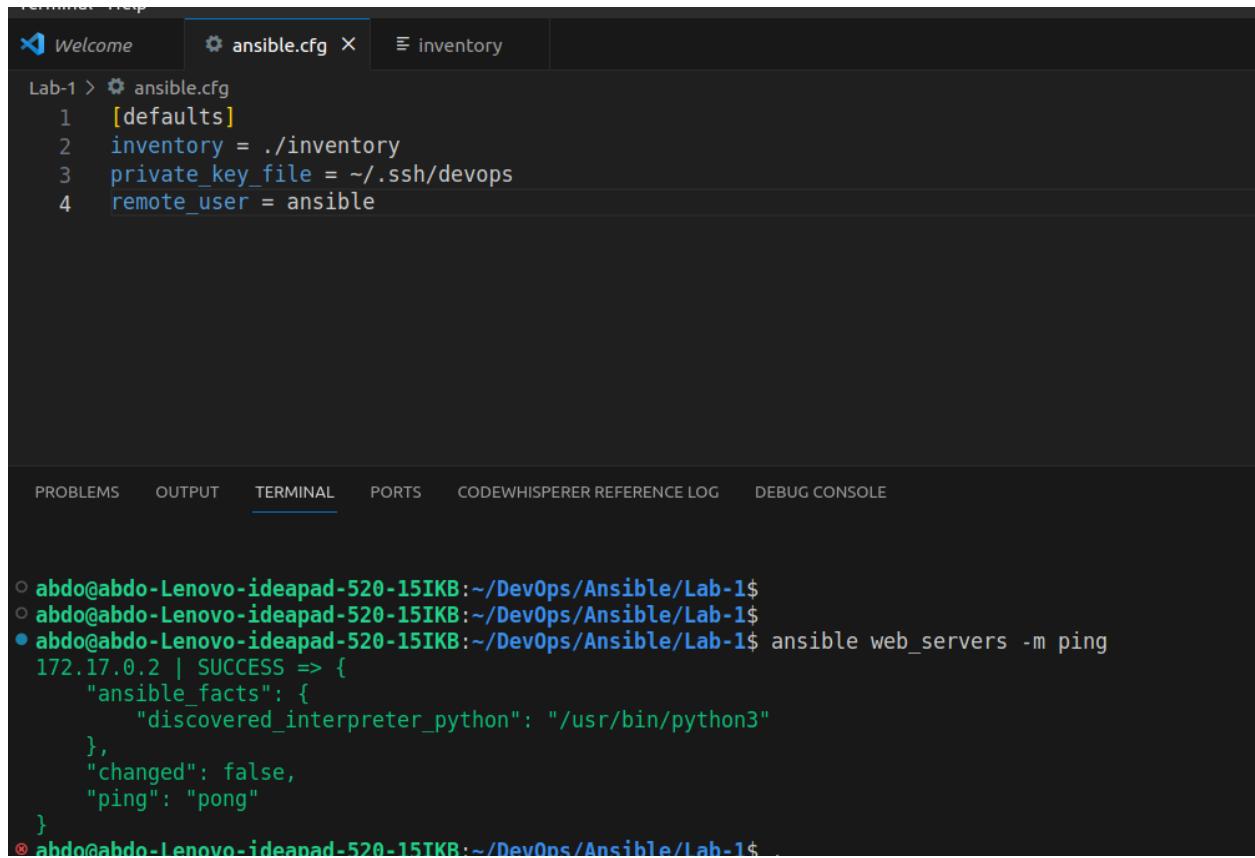
8- Create the configuration file Insert some values in the configuration file Run the minimized ad-hoc command

Welcome   ✿ ansible.cfg ✕   ≡ inventory

Lab-1 > ✿ ansible.cfg
```
1   [defaults]
2   inventory = ./inventory
3   private_key_file = ~/.ssh/devops
4   remote_user = ansible
```

PROBLEMS   OUTPUT   TERMINAL   PORTS   CODEWHISPERER REFERENCE LOG   DEBUG CONSOLE

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible web_servers -m ping
172.17.0.2 | SUCCESS => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "ping": "pong"
}
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$
```

9- Insert the correct values in the configuration file Example: ansible all -m command -a "whoami" What is the output of the command ?

```
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible web_servers -m "apt name=nginx"
[WARNING]: Updating cache and auto-installing missing dependency: python3-apt
172.17.0.2 | FAILED! => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "changed": false,
    "cmd": "apt-get update",
    "msg": "E: Could not open lock file /var/lib/apt/lists/lock - open (13: Permission denied)\nE: Unable to
lock directory /var/lib/apt/lists/",
    "rc": 100,
    "stderr": "E: Could not open lock file /var/lib/apt/lists/lock - open (13: Permission denied)\nE: Unable
to lock directory /var/lib/apt/lists/\n",
    "stderr_lines": [
        "E: Could not open lock file /var/lib/apt/lists/lock - open (13: Permission denied)",
        "E: Unable to lock directory /var/lib/apt/lists/"
    ],
    "stdout": "Reading package lists...\n",
    "stdout_lines": [
        "Reading package lists..."
    ]
}
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$
```

Error need sudo

```
Lab-1 >  ansible.cfg
   1    [defaults]
   2    inventory = ./inventory
   3    private_key_file = ~/.ssh/devops
   4    remote_user = ansible
   5
   6    [privilege_escalation]
   7    become = true
   8    become_ask_pass = true
   9    |
```

```
}
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible all -m command -a "whoami"
BECOME password:
3.87.24.253 | UNREACHABLE! => {
    "changed": false,
    "msg": "Failed to connect to the host via ssh: Unable to negotiate with 3.87.24.253 port 22: no matchi
key type found. Their offer: ssh-rsa,ssh-dss",
    "unreachable": true
}
172.17.0.2 | CHANGED | rc=0 >>
root
3.87.24.252 | UNREACHABLE! => {
    "changed": false,
    "msg": "Failed to connect to the host via ssh: ssh: connect to host 3.87.24.252 port 22: Connection ti
,
    "unreachable": true
}
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ []
Select Postgres Server                                                    Ln 8 Col 23   Spaces: 4   UTF-8   LF   Properties
```

Curl

```
}
abdo@abdo-Lenovo-ideapad-520-15IKB:~/DevOps/Ansible/Lab-1$ ansible web_servers -m "apt name=curl"
BECOME password:
[WARNING]: Updating cache and auto-installing missing dependency: python3-apt
172.17.0.2 | CHANGED => {
    "ansible_facts": {
        "discovered_interpreter_python": "/usr/bin/python3"
    },
    "cache_update_time": 1694697888,
    "cache_updated": false,
    "changed": true,
    "stderr": "debconf: delaying package configuration, since apt-utils is not installed\n",
    "stderr_lines": [
        "debconf: delaying package configuration, since apt-utils is not installed"
    ],
    "stdout": "Reading package lists...\nBuilding dependency tree...\nReading state information...\nThe following
additional packages will be installed:\n  libbrotli1 libcurl4 libldap-2.5-0 libldap-common libnghttp2-14 librtmp1\
n  libsasl2-2 libsasl2-modules libsasl2-modules-db libssh-4\nSuggested packages:\n  libsasl2-modules-gssapi-mit |
libsasl2-modules-gssapi-heimdal\n  libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql\nThe following
NEW packages will be installed:\n  curl libbrotli1 libcurl4 libldap-2.5-0 libldap-common libnghttp2-14 librtmp1\n
libsasl2-2 libsasl2-modules libsasl2-modules-db libssh-4\n0 upgraded, 11 newly installed, 0 to remove and 2 not u
pgraded.\nNeed to get 1461 kB of archives.\nAfter this operation, 4187 kB of additional disk space will be used.\n
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libnghttp2-14 amd64 1.43.0-1build3 [76.3 kB]\nGet:2 http:/
/archive.ubuntu.com/ubuntu jammy/main amd64 libbrotli1 amd64 1.0.9-2build6 [315 kB]\nGet:3 http://archive.ubuntu.c
om/ubuntu jammy-updates/main amd64 libsasl2-modules-db amd64 2.1.27+dfsg2-3ubuntu1.2 [20.5 kB]\nGet:4 http://archi
ve.ubuntu.com/ubuntu jammy-updates/main amd64 libsasl2-2 amd64 2.1.27+dfsg2-3ubuntu1.2 [53.8 kB]\nGet:5 http://arc
hive.ubuntu.com/ubuntu jammy-updates/main amd64 libldap-2.5-0 amd64 2.5.16+dfsg-0ubuntu0.22.04.1 [183 kB]\nGet:6 h
ttp://archive.ubuntu.com/ubuntu jammy/main amd64 librtmp1 amd64 2.4+20151223.gitfa8646d.1-2build4 [58.2 kB]\nGet:7
```

```
ansible
ansible@a43bbc36fea8:/$ curl google.com
<HTML><HEAD><meta http-equiv="content-type" content="text/html;charset=utf-8">
<TITLE>301 Moved</TITLE></HEAD><BODY>
<H1>301 Moved</H1>
The document has moved
<A HREF="http://www.google.com/">here</A>.
</BODY></HTML>
ansible@a43bbc36fea8:/$ []
Select Postgres Server                                                    Ln 9 Col 1   Spaces
```