

BCDV4033 – LAB3

BY Xiaogang Dong 101492108

Setup docker container and check ansible is installed.

```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli - docker exec -it ansible_control bash — 177x49
xiaogangdong@Xiaogangs-Air Lab3 % # Build the control node image
docker build -t ansible-control -f Dockerfile.control .

# Build the managed node image
docker build -t managed-node -f Dockerfile.node .

zsh: command not found: #
[+] Building 0.9s (9/10)
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load build definition from Dockerfile.control
=> => transferring dockerfile: 507B
=> [internal] load metadata for docker.io/library/python:3
=> [auth] library/python:pull token for registry-1.docker.io
=> CACHED [1/5] FROM docker.io/library/python:3@sha256:e83d1f4d0c735c7a54fc9dae3cca8c58473e3b3de08fcb7ba3d342ee75cfc09d
=> [internal] load build context
=> => transferring context: 2B
=> CANCELED [2/5] RUN pip install ansible
=> CACHED [3/5] RUN mkdir /root/.ssh
=> ERROR [4/5] COPY ssh_config /root/.ssh/config
-----
> [4/5] COPY ssh_config /root/.ssh/config:
-----
Dockerfile.control:14
12 |
13 | # Copy the SSH configuration file for non-interactive SSH connections
14 | >>> COPY ssh_config /root/.ssh/config
15 |
16 | # Set correct permissions
-----
ERROR: failed to solve: failed to compute cache key: failed to calculate checksum of ref b23b923b-c1d9-4361-a7d4-463d435eb113::x89kljwp5t2zse4v3i9jd1mv2: "/ssh_config":
d
View build details: docker-desktop:///dashboard/build/desktop-linux/desktop-linux/zrw26lhx2s3sz45gj7bp3mt
zsh: command not found: #
[+] Building 23.5s (9/9) FINISHED
=> [internal] load build definition from Dockerfile.node
=> => transferring dockerfile: 594B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/ubuntu:latest
=> CACHED [1/5] FROM docker.io/library/ubuntu:latest
=> [2/5] RUN apt-get update && apt-get install -y openssh-server sudo
=> [3/5] RUN echo 'root:root' | chpasswd
=> [4/5] RUN mkdir /var/run/ssh
=> [5/5] RUN sed -i 's/#PermitRootLogin prohibit-password/PermitRootLogin yes/' /etc/ssh/sshd_config
=> exporting to image
=> => exporting layers
```

```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli • docker exec -it ansible_control bash — 177x49

[ => => exporting layers                                0.8s
[ => => writing image sha256:d00bdc091b2e4304d9582b4615a87350ebbbhead55384880d098778fb8a938cda 0.8s
[ => => naming to docker.io/library/managed-node         0.8s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/xsuqe608b78j5q29hp0z494xq

What's Next?
View a summary of image vulnerabilities and recommendations → docker scout quickview
xiaogangdong@Xiaogangs-Air Lab3 % # Create and run the control node container
docker run -d --name ansible_control ansible-control

zsh: command not found: #
ec2645cff34329c464954c9369e29a552db7fb792fa5b6e9e781ac0b00d2ac57
xiaogangdong@Xiaogangs-Air Lab3 % # Create and run the first managed node container
docker run -d --name node1 managed-node

# Create and run the second managed node container
docker run -d --name node2 managed-node

zsh: command not found: #
f9ee6cd1ec9dad33d172fa786d7ce8dd2ffdc7b8c582431316e9fb8795e83190
zsh: command not found: #
6888cfe0deb45e4be2e49906e8bca340c4268ab191f45e2461ef875ef5669488
xiaogangdong@Xiaogangs-Air Lab3 % docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS          NAMES
6888cfe0deb4   managed-node                        "/usr/sbin/sshd -D"     6 seconds ago Up 5 seconds  22/tcp         node2
f9ee6cd1ec9d   managed-node                        "/usr/sbin/sshd -D"     6 seconds ago Up 5 seconds  22/tcp         node1
ec2645cff343   ansible-control                    "/usr/sbin/sshd -D"     About a minute Up About a minute 22/tcp         ansible_control
6b5569c98e5e   dockersamples/examplevotingapp_worker:latest "dotnet Worker.dll"     13 hours ago  Up 13 hours   22/tcp         vote_worker.1.69746hvgwsr019dm
5             redis:alpine                       "docker-entrypoint.s..." 13 hours ago  Up 13 hours   6379/tcp       vote_redis.1.37m0whyyv83ryybg4
d15fe9f0bbe0   dockersamples/examplevotingapp_vote:after "gunicorn app:app -b..." 13 hours ago  Up 13 hours   80/tcp         vote_vote.1.gfarj4h8c513br3jn8
fc2db4a1eafe   redis:alpine                       "docker-entrypoint.s..." 13 hours ago  Up 13 hours   6379/tcp       vote_redis.2.w9v6y8xi6u3rankun
bb11a6380f5b   dockersamples/examplevotingapp_vote:after "gunicorn app:app -b..." 13 hours ago  Up 13 hours   80/tcp         vote_vote.2.a606mqe42n87p2880b
89c2aa6afc94   dockersamples/examplevotingapp_result:after "/usr/bin/tini -- no..." 13 hours ago  Up 13 hours   80/tcp         vote_result.1.ty5amzfxm3uibeu
v
xiaogangdong@Xiaogangs-Air Lab3 % # Get IP address for node1
docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' node1

# Get IP address for node2
docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' node2

zsh: command not found: #
172.17.0.3
zsh: command not found: #
172.17.0.4
xiaogangdong@Xiaogangs-Air Lab3 % docker exec -it ansible_control bash
root@ec2645cff343:/usr/src/app# ssh-keygen -t rsa -N "" -f /root/.ssh/id_rsa
Generating public/private rsa key pair.

root@ec2645cff343:/etc/ansible# ansible --version
ansible [core 2.16.3]
  config file = None
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/local/lib/python3.12/site-packages/ansible
  ansible collection location = /root/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/local/bin/ansible
  python version = 3.12.2 (main, Feb 13 2024, 08:24:27) [GCC 12.2.0] (/usr/local/bin/python)
  jinja version = 3.1.3
  libyaml = True
root@ec2645cff343:/etc/ansible#
```

Set up SSH connection and connect from control node to managed nodes

```

Generating public/private rsa key pair.
/root/.ssh/id_rsa already exists.
Overwrite (y/n)? y
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:RIxkTmXtbtxcuatRQNGKM5QXfuymbCWyzeUZvQMntoE root@ec2645cff343
The key's randomart image is:
+---[RSA 3072]-----+
|      .+++ .++      |
|     +.o. +o...     |
|    .o oo.o. |
|    . = o+o. |
|   So.E.*Bo. |
|  +**OBo. |
| .. B.o+ |
| . . . |
| .. |
+---[SHA256]-----+
root@ec2645cff343:/usr/src/app# ssh-copy-id root@node1_ip_address
ssh-copy-id root@node2_ip_address
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.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: ERROR: ssh: Could not resolve hostname node1_ip_address: Name or service not known

/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.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: ERROR: ssh: Could not resolve hostname node2_ip_address: Name or service not known

root@ec2645cff343:/usr/src/app# ssh-copy-id root@172.17.0.3
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
The authenticity of host '172.17.0.3 (172.17.0.3)' can't be established.
ED25519 key fingerprint is SHA256:5jixebGTK6ilKZu19zUIn3SE4Wows1xhAomJNhOSQdw.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/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
root@172.17.0.3's password:

Number of key(s) added: 1

Now try logging into the machine, with:  "ssh 'root@172.17.0.3'"
and check to make sure that only the key(s) you wanted were added.

root@ec2645cff343:/usr/src/app# ssh root@172.17.0.3

```

```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli - docker exec -it ansible_control bas
and check to make sure that only the key(s) you wanted were added.

root@ec2645cff343:/usr/src/app# ssh root@172.17.0.3
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.5.11-linuxkit aarch64)

 * 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.
root@f9ee6cd1ec9d:~# exit
logout
Connection to 172.17.0.3 closed.
root@ec2645cff343:/usr/src/app# ssh-copy-id root@172.17.0.4
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
The authenticity of host '172.17.0.4 (172.17.0.4)' can't be established.
ED25519 key fingerprint is SHA256:5jixebGTK6ilKZu19zUIn3SE4Wows1xhAomJNhOSQdw.
This host key is known by the following other names/addresses:
  ~/.ssh/known_hosts:1: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/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
root@172.17.0.4's password:

Number of key(s) added: 1

Now try logging into the machine, with:  "ssh 'root@172.17.0.4'"
and check to make sure that only the key(s) you wanted were added.

root@ec2645cff343:/usr/src/app# exit
exit
xiaogangdong@Xiaogangs-Air Lab3 % docker exec -it ansible_control bash
root@ec2645cff343:/usr/src/app# ssh root@172.17.0.4
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.5.11-linuxkit aarch64)

 * 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.
root@6888cfe0deb4:~# ls
root@6888cfe0deb4:~# exit
logout
```

```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli · docker exec -it ansible_control bash — 177x49

root@6888cfe0deb4:~# exit
logout
Connection to 172.17.0.4 closed.
root@ec2645cfff343:/usr/src/app# nano /etc/ansible/hosts
bash: nano: command not found
root@ec2645cfff343:/usr/src/app# apt-get update
Hit:1 http://deb.debian.org/debian bookworm InRelease
Get:2 http://deb.debian.org/debian bookworm-updates InRelease [55.4 kB]
Get:3 http://deb.debian.org/debian-security bookworm-security InRelease [48.0 kB]
Fetched 103 kB in 0s (458 kB/s)
Reading package lists... Done
root@ec2645cfff343:/usr/src/app# apt-get install nano -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  hunspell
The following NEW packages will be installed:
  nano
0 upgraded, 1 newly installed, 0 to remove and 15 not upgraded.
Need to get 680 kB of archives.
After this operation, 2916 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bookworm/main arm64 nano arm64 7.2-1 [680 kB]
Fetched 680 kB in 0s (9138 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package nano.
(Reading database ... 27985 files and directories currently installed.)
Preparing to unpack .../archives/nano_7.2-1_arm64.deb ...
Unpacking nano (7.2-1) ...
Setting up nano (7.2-1) ...
update-alternatives: using /bin/nano to provide /usr/bin/editor (editor) in auto mode
update-alternatives: using /bin/nano to provide /usr/bin/pico (pico) in auto mode
root@ec2645cfff343:/usr/src/app# nano /etc/ansible/hosts
root@ec2645cfff343:/usr/src/app# ls
root@ec2645cfff343:/usr/src/app# nano /etc/ansible/hosts
root@ec2645cfff343:/usr/src/app# cd /etc
root@ec2645cfff343:/etc# cd ansible
bash: cd: ansible: No such file or directory
root@ec2645cfff343:/etc# mkdir ansible
root@ec2645cfff343:/etc# cd ansible
root@ec2645cfff343:/etc/ansible# nano hosts
root@ec2645cfff343:/etc/ansible# nano hosts
root@ec2645cfff343:/etc/ansible# ansible all -m ping
[node1 | FAILED! => {
  "msg": "to use the 'ssh' connection type with passwords or pkcs11_provider, you must install the sshpass program"
}]
[node2 | FAILED! => {
  "msg": "to use the 'ssh' connection type with passwords or pkcs11_provider, you must install the sshpass program"
}]
```

```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli - docker exec -it ansible_control bash — 177x49
"msg": "to use the 'ssh' connection type with passwords or pkcs11_provider, you must install the sshpass program"
}
root@ec2645cfff343:/etc/ansible# nano hosts
root@ec2645cfff343:/etc/ansible# apt-get update && apt-get install -y sshpass
Hit:1 http://deb.debian.org/debian bookworm InRelease
Hit:2 http://deb.debian.org/debian bookworm-updates InRelease
Hit:3 http://deb.debian.org/debian-security bookworm-security InRelease
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  sshpass
0 upgraded, 1 newly installed, 0 to remove and 15 not upgraded.
Need to get 12.5 kB of archives.
After this operation, 36.9 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bookworm/main arm64 sshpass arm64 1.09-1 [12.5 kB]
Fetched 12.5 kB in 0s (340 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package sshpass.
(Reading database ... 28097 files and directories currently installed.)
Preparing to unpack .../sshpass_1.09-1_arm64.deb ...
Unpacking sshpass (1.09-1) ...
Setting up sshpass (1.09-1) ...
root@ec2645cfff343:/etc/ansible# nano hosts
root@ec2645cfff343:/etc/ansible# ansible all -m ping
node1 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
node2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
```

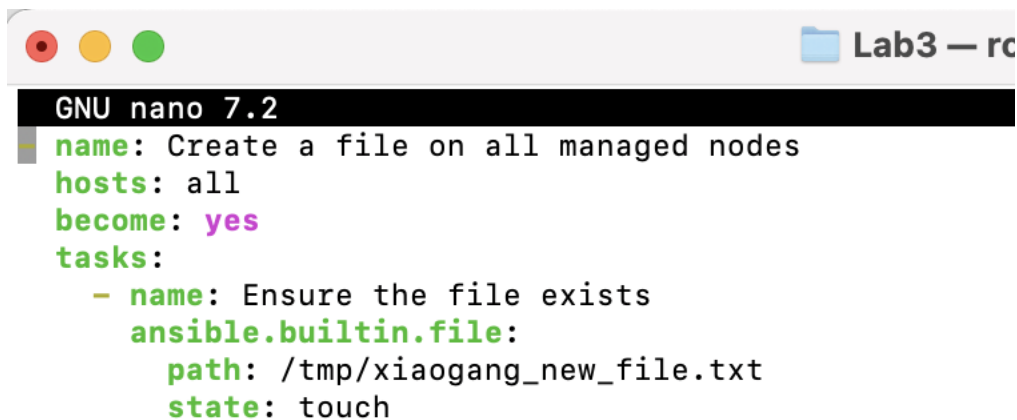
Lab3 - Try to create a directory using the ad-hoc command. Present screenshots of the successful ansible run and directory in the nodes.


```

xiaoqiang@ec2-2645cfff343:/etc/ansible# ansible all -m file -a "path=/tmp/new_folder state=directory" -b
node1 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "gid": 0,
  "group": "root",
  "mode": "0755",
  "owner": "root",
  "path": "/tmp/new_folder",
  "size": 4096,
  "state": "directory",
  "uid": 0
}
node2 | CHANGED => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": true,
  "gid": 0,
  "group": "root",
  "mode": "0755",
  "owner": "root",
  "path": "/tmp/new_folder",
  "size": 4096,
  "state": "directory",
  "uid": 0
}
root@ec2-2645cfff343:/etc/ansible# ansible all -a "ls -lah /tmp" -b
node1 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:01 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:01 ansible_ansible.legacy.command_payload_yd5ne7d7
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
node2 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:01 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:01 ansible_ansible.legacy.command_payload_crbx74f6
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
root@ec2-2645cfff343:/etc/ansible#

```

Lab 3 - Create the file playbook yml and create file in both nodes. Show using screenshot that you have successfully created the file using playbook



```

GNU nano 7.2
name: Create a file on all managed nodes
hosts: all
become: yes
tasks:
  - name: Ensure the file exists
    ansible.builtin.file:
      path: /tmp/xiaogang_new_file.txt
      state: touch

```

```
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"state": "directory",
"uid": 0
}
root@ec2645cff343:/etc/ansible# ansible all -a "ls -lah /tmp" -b
node1 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:01 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:01 ansible_ansible.legacy.command_payload_yd5ne7d7
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
node2 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:01 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:01 ansible_ansible.legacy.command_payload_crbx74f6
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
root@ec2645cff343:/etc/ansible# nano create_file.yml
root@ec2645cff343:/etc/ansible# ansible-playbook create_file.yml

PLAY [Create a file on all managed nodes] *****

TASK [Gathering Facts] *****
ok: [node2]
ok: [node1]

TASK [Ensure the file exists] *****
changed: [node2]
changed: [node1]

PLAY RECAP *****
node1                : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
node2                : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

root@ec2645cff343:/etc/ansible# ansible all -a "ls -lah /tmp" -b
node1 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:24 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:24 ansible_ansible.legacy.command_payload_7qd1rl1k
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
-rw-r--r-- 1 root root  0 Feb 27 04:23 xiaogang_new_file.txt
node2 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:24 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:24 ansible_ansible.legacy.command_payload_stvzzemg
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
-rw-r--r-- 1 root root  0 Feb 27 04:23 xiaogang_new_file.txt
root@ec2645cff343:/etc/ansible#
```

Lab3 - Create a new playbook to delete the file you created previously. Submit screenshots for the playbook run and screenshots that the file has been deleted from both nodes

```
Lab3 —

GNU nano 7.2
- name: Delete a file from managed nodes
  hosts: all
  become: yes
  tasks:
    - name: Ensure the file is absent
      ansible.builtin.file:
        path: /tmp/test_group_file.txt
        state: absent
```



```

[root@ec2645cff343:/etc/ansible# nano delete.yml
[root@ec2645cff343:/etc/ansible# ansible-playbook delete_file.yml
ERROR! the playbook: delete_file.yml could not be found
[root@ec2645cff343:/etc/ansible# ansible-playbook delete.yml

PLAY [Delete a file from managed nodes] *****

TASK [Gathering Facts] *****
ok: [node1]
ok: [node2]

TASK [Ensure the file is absent] *****
changed: [node2]
changed: [node1]

PLAY RECAP *****
node1      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
node2      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

[root@ec2645cff343:/etc/ansible# ansible all -a "ls -lah /tmp" -b
node1 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:27 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:27 ansible_ansible.legacy.command_payload_dz3jm45i
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
node2 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:27 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:27 ansible_ansible.legacy.command_payload_gc77_ses
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
root@ec2645cff343:/etc/ansible#

```

Lab3 - Create a new playbook for test group and demonstrate using the playbook output that you have updated only the test node

```

Lab3 — root@6888cfe0deb4: ~
GNU nano 7.2
[managed_nodes]
node1 ansible_host=172.17.0.3 ansible_user=root ansible_ssh_pass=root
node2 ansible_host=172.17.0.4 ansible_user=root ansible_ssh_pass=root

[test]
node2 ansible_host=172.17.0.4

```

```
Lab3 — ro

GNU nano 7.2
name: Update test group nodes
hosts: test
become: yes
tasks:
  - name: Create a file on test group nodes
    ansible.builtin.file:
      path: /tmp/test_group_file.txt
      state: touch

root@ec2645cff343:/etc/ansible# nano /etc/ansible/hosts
root@ec2645cff343:/etc/ansible# nano update_test_group.yml
root@ec2645cff343:/etc/ansible# ansible-playbook update_test_group.yml

PLAY [Update test group nodes] *****

TASK [Gathering Facts] *****
ok: [node2]

TASK [Create a file on test group nodes] *****
changed: [node2]

PLAY RECAP *****
node2      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

root@ec2645cff343:/etc/ansible# ansible all -a "ls -lah /tmp" -b
node1 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:37 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:37 ansible_ansible.legacy.command_payload_3fz08whw
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
node2 | CHANGED | rc=0 >>
total 16K
drwxrwxrwt 1 root root 4.0K Feb 27 04:37 .
drwxr-xr-x 1 root root 4.0K Feb 26 03:08 ..
drwx----- 2 root root 4.0K Feb 27 04:37 ansible_ansible.legacy.command_payload_j6pyigdn
drwxr-xr-x 2 root root 4.0K Feb 27 04:01 new_folder
-rw-r--r-- 1 root root 0 Feb 27 04:37 test_group_file.txt
root@ec2645cff343:/etc/ansible#
```

Lab3 - Install Nodejs using nodejs yaml. There is a issue with yaml file you need to fix it. Once installed you will get the node and npm version screenshots. Also, the successful playbook run screenshot.

```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli ◀ docke
GNU nano 7.2 nodejs.yml
--
- hosts: all
  gather_facts: yes
  become: yes
  tasks:
    - name: Update apt cache
      apt:
        update_cache: yes
        when: ansible_os_family == "Debian"

    - name: Install Node.js dependencies
      apt:
        name: "{{ item }}"
        state: present
      loop:
        - curl
        - software-properties-common
      when: ansible_os_family == "Debian"

    - name: Import NodeSource GPG key
      ansible.builtin.apt_key:
        url: https://deb.nodesource.com/gpgkey/nodesource.gpg.key
        state: present
      when: ansible_os_family == "Debian"

    - name: Add NodeSource repository
      apt_repository:
        repo: "deb https://deb.nodesource.com/node_14.x {{ ansible_distribution_release }} main"
        state: present
        update_cache: yes
      when: ansible_os_family == "Debian"

    - name: Install Node.js
      apt:
        name: nodejs
        state: present
      when: ansible_os_family == "Debian"

    - name: Install build-essential
      apt:
        name: build-essential
        state: present
      when: ansible_os_family == "Debian"

    - name: Get Node version

[ Read 58 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify
^_           ^C Location  ^/ Go To Lin
```

```
- name: Install build-essential
  apt:
    name: build-essential
    state: present
    when: ansible_os_family == "Debian"

- name: Get Node version
  command: node -v
  register: node_version
  changed_when: false

- name: Get npm version
  command: npm -v
  register: npm_version
  changed_when: false

- debug:
  msg:
    - "Node version: {{ node_version.stdout }}"
    - "npm version: {{ npm_version.stdout }}"
```

^G Help
^X Exit

^O Write Out
^R Read File

^W Where Is
^Replace****

^K Cut
^U Paste

^T Execute
^J Justify



```
root@ec2645cff343:/etc/ansible# nano nodejs.yml
root@ec2645cff343:/etc/ansible# rm nodejs.yml
root@ec2645cff343:/etc/ansible# nano nodejs.yml
root@ec2645cff343:/etc/ansible# ansible-playbook nodejs.yml
```

```
PLAY [all] *****
```

```
TASK [Gathering Facts] *****
ok: [node1]
ok: [node2]
```

```
TASK [Update apt cache] *****
ok: [node1]
ok: [node2]
```

```
TASK [Install Node.js dependencies] *****
ok: [node1] => (item=curl)
ok: [node2] => (item=curl)
ok: [node1] => (item=software-properties-common)
ok: [node2] => (item=software-properties-common)
```

```
TASK [Import NodeSource GPG key] *****
changed: [node1]
changed: [node2]
```

```
TASK [Add NodeSource repository] *****
changed: [node1]
changed: [node2]
```

```
TASK [Install Node.js] *****
changed: [node2]
changed: [node1]
```

```
TASK [Install build-essential] *****
changed: [node2]
changed: [node1]
```

```
TASK [Get Node version] *****
ok: [node1]
ok: [node2]
```

```
TASK [Get npm version] *****
ok: [node2]
ok: [node1]
```

```
TASK [debug] *****
ok: [node2] => {
  "msg": [
```

```

TASK [Get npm version] *****
ok: [node2]
ok: [node1]

TASK [debug] *****
ok: [node2] => {
  "msg": [
    "Node version: v14.21.3",
    "npm version: 6.14.18"
  ]
}
ok: [node1] => {
  "msg": [
    "Node version: v14.21.3",
    "npm version: 6.14.18"
  ]
}

PLAY RECAP *****
node1      : ok=10  changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
node2      : ok=10  changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

root@ec2645cff343:/etc/ansible#

```

Lab3 - Use the example node.yaml and clone the Lab 1 repo to both the nodes. Build the node modules


```
Lab3 — root@6888cfe0deb4: ~ — com.docker.cli ◀ dock
GNU nano 7.2 clone.yml
--
- name: Setup Node.js environment and clone repository
  hosts: all
  become: yes
  tasks:
    - name: Update apt cache
      apt:
        update_cache: yes
        when: ansible_os_family == "Debian"

    - name: Install Git
      apt:
        name: git
        state: present
        when: ansible_os_family == "Debian"

    - name: Execute NodeSource Node.js setup script
      ansible.builtin.shell: |
        curl -fsSL https://deb.nodesource.com/setup_14.x | bash -
      when: ansible_os_family == "Debian"

    - name: Install Node.js
      apt:
        name: nodejs
        state: present
        when: ansible_os_family == "Debian"

    - name: Clone the GitHub repository
      git:
        repo: https://github.com/Xiaogang-GBC/DevOpsLab.git
        dest: /opt/DevOpsLab
        version: main
        register: git_clone

    - name: Install Node.js modules
      shell: npm install
      args:
        chdir: /opt/DevOpsLab/Lab1
      when: git_clone.changed
```

```
root@ec2645cff343:/etc/ansible# nano clone.yml
root@ec2645cff343:/etc/ansible# ansible-playbook clone.yml

PLAY [Setup Node.js environment and clone repository] *****

TASK [Gathering Facts] *****
ok: [node2]
ok: [node1]

TASK [Update apt cache] *****
changed: [node1]
changed: [node2]

TASK [Install Git] *****
ok: [node2]
ok: [node1]

TASK [Execute NodeSource Node.js setup script] *****
changed: [node2]
changed: [node1]

TASK [Install Node.js] *****
ok: [node2]
ok: [node1]

TASK [Clone the GitHub repository] *****
changed: [node2]
changed: [node1]

TASK [Install Node.js modules] *****
changed: [node1]
changed: [node2]

PLAY RECAP *****
node1      : ok=7    changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
node2      : ok=7    changed=4    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

root@ec2645cff343:/etc/ansible# nano clone.yml
root@ec2645cff343:/etc/ansible#
```