Guided Practice: Run an Ansible Playbook

Outcome

In this Guided Practice, you will run an Ansible playbook on your CentOS computer to configure your Ubuntu computer.

Resources Needed

- VCASTLE Pod configured for the class. For this Guided Practice, we use the CentOS 8 and Ubuntu 20.04 LTS machines.
- Your user needs to be able to elevate their privileges with sudo.

Level of Difficulty

Moderate

Deliverables

Deliverables are marked in red font or with a red picture border around the screenshot. Additionally, there are questions at the end. **Your username or studentID should be visible in all screenshots that you submit.**

General Considerations

You should be familiar with configuring Linux networking. ssh should already be configured on your Ubuntu computer from a prior Guided Practice. Ansible should already be installed and configured on your CentOS Computer from a prior Guided Practice.

Write a Playbook to Install Apache On the Remote Ubuntu Machine

Playbooks are used by Ansible to automate tasks. We're going to write two simple Playbooks. The first one will install apache on your Ubuntu computer. The second Playbook will setup a web page. Then, we'll test our work by logging directly onto the Ubuntu computer and looking at the web page.

Later in the course, we configure network services, so this is a preview of what's to come! You'll need to sign in as root, as you learned in a prior guided practice.

1. Log in with the studentID you created in a previous Guided Practice. **If the student ID user does not exist, it must be created as follows:**

   Create a studentID account on your CentOS computer, where studentID is your ecpi student ID.

   ```
   adduser studentID
   ```

   Then, assign a password of Password1

   ```
   passwd studentID
   ```

   Then, add the user to the wheel group:

   ```
   usermod -aG wheel ranbel1234
   ```

   Log on as studentID.

   ```
   [root@cis321-centos cis321@ecpiscripting.local]# usermod -aG wheel ranbel1234
   [root@cis321-centos cis321@ecpiscripting.local]#
   [root@cis321-centos cis321@ecpiscripting.local]# su ranbel1234
   [ranbel1234@cis321-centos cis321@ecpiscripting.local]$ █
   ```

   Change to your home directory by typing:

   ```
   cd
   ```

   ```
   [ranbel1234@cis321-centos cis321@ecpiscripting.local]$ cd
   [ranbel1234@cis321-centos ~]$ ls
   ```

2. On your CentOS computer, you'll write your first Playbook. Consider creating a new directory called **playbooks**, and make that your working directory. Using nano, write the following Playbook, and save it as apache.yml. (**NOTE**: Use the spacebar instead of tab to add spaces to your YAML file.)

```
File  Edit  View  Search  Terminal  Help
GNU nano 2.9.8                              apache.yml

---
- hosts: all
  become: true
  tasks:
    - name: install apache2
      apt: name=apache2 update_cache=yes state=latest
```

3. Check the syntax of your Playbook. If there are no errors, you should receive the output reflected in the image below (**playbook: apache.yml**). If there are errors, you'll need to correct them before proceeding. Type:

```
ansible-playbook apache.yml --syntax-check
```

```
[ranbel1234@localhost ~]$ ansible-playbook apache.yml --syntax-check

playbook: apache.yml
[ranbel1234@localhost ~]$
```

4. Check your **/etc/ansible/hosts** file, and then make sure that the IP Address of your Ubuntu computer is entered correctly. Type:

```
cat /etc/ansible/hosts
```

Run the Playbook

5. Run the Playbook using the syntax below**.** (You'll need to know the sudo password of the Ubuntu computer.) When prompted, the **become** password is the password of the administrative user, usually the student account.

```
ansible-playbook apache.yml --ask-become-pass
```

6. Your output should resemble this.

Take a screenshot like the one above, and paste it into your Lab Report.

7. If your Playbook is unsuccessful, you may need to recheck your sudo password, or the IP address of the remote computer, or whether ssh is enabled on the remote computer.

Check the Success of the Playbook on the Remote Machine

8. Log directly onto the Ubuntu computer, and check whether apache is running by typing

```
sudo systemctl status apache2
```

Your output should look like this:

Take a screenshot like the one above, and paste it into your Lab Report.

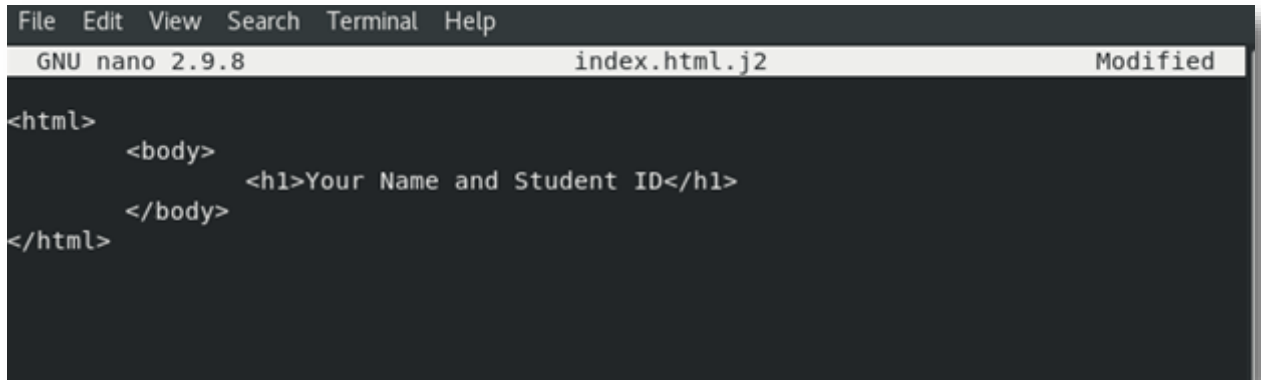Type the following to return to the command prompt:

```
q
```

Write Another Playbook to Deploy a Web Page to the Remote Ubuntu Machine

9. Since your Ubuntu computer is running the apache web service, we'll create a simple web page on the CentOS Ansible workstation and use Ansible to deploy the web page to the Ubuntu computer.

   On the CentOS workstation, use nano to create a web page that displays your name. **Be sure to insert your name and Student ID in the file.**

   Your nano file should look like this:
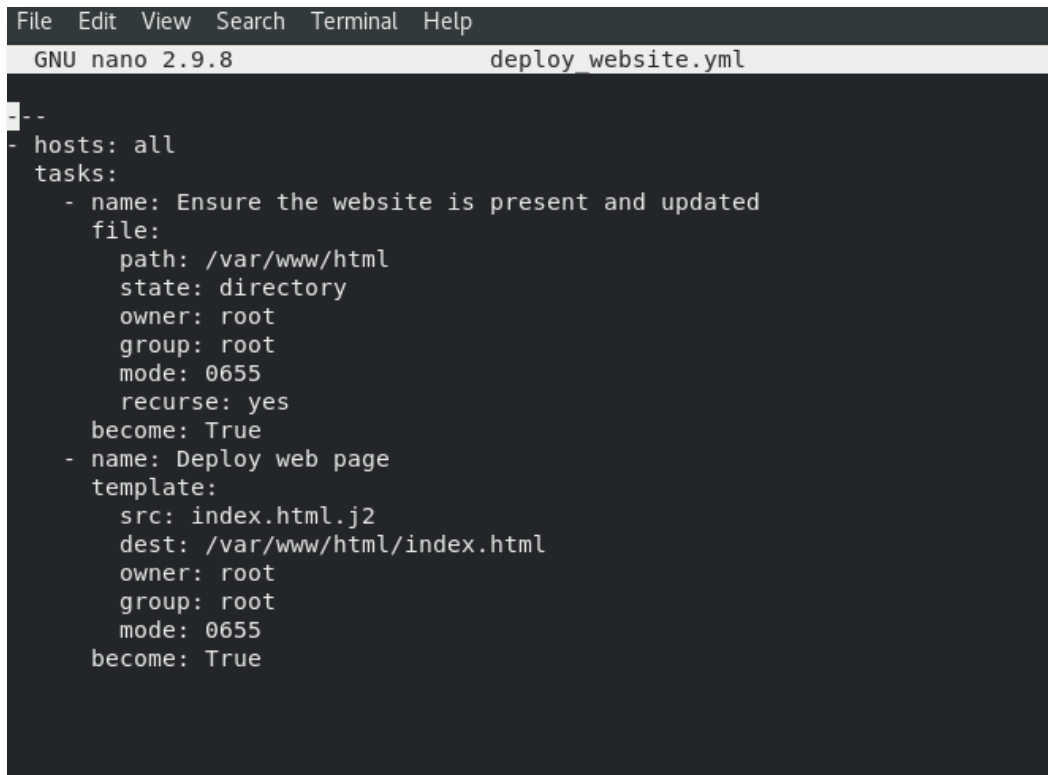
```
File  Edit  View  Search  Terminal  Help
  GNU nano 2.9.8                        index.html.j2                        Modified

<html>
        <body>
                <h1>Your Name and Student ID</h1>
        </body>
</html>
```

   Save the file, and return to the terminal.

10. Write a Playbook to deploy the web page you just created. The file should look like this:

```
File  Edit  View  Search  Terminal  Help
  GNU nano 2.9.8                        deploy_website.yml

---
- hosts: all
  tasks:
    - name: Ensure the website is present and updated
      file:
        path: /var/www/html
        state: directory
        owner: root
        group: root
        mode: 0655
        recurse: yes
      become: True
    - name: Deploy web page
      template:
        src: index.html.j2
        dest: /var/www/html/index.html
        owner: root
        group: root
        mode: 0655
      become: True
```

   Save the file.

11. Check the syntax. Type

```
ansible-playbook deploy_website.yml --syntax-check
```

If the syntax is good, your output should look like this:

```
[ranbel1234@localhost ~]$ ansible-playbook deploy_website.yml --syntax-check

playbook: deploy_website.yml
```

Run the Second Playbook

12. Before running the Playbook, make sure that the file containing the web page, **index.html.j2**, is in the same directory as the playbook (**deploy_website.yml**). Type

```
ansible-playbook deploy_website.yml --ask-become-pass
```

You'll be asked for the password of the "Become" user.

```
[ranbel1234@localhost ~]$ ansible-playbook deploy_website.yml --ask-become-pass
BECOME password:
```

Your output should resemble this:

```
[ranbel1234@localhost ~]$ ansible-playbook deploy_website.yml --ask-become-pass
BECOME password:

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

TASK [Gathering Facts] ***********************************************************
ok: [192.168.1.171]

TASK [Ensure the website is present and updated] *********************************
changed: [192.168.1.171]

TASK [Deploy web page] **********************************************************
changed: [192.168.1.171]

PLAY RECAP **********************************************************************
192.168.1.171              : ok=3    changed=2    unreachable=0    failed=0    skip
ped=0    rescued=0    ignored=0
```

Take a screenshot like the one above, and paste it into your Lab Report.

Check the Success of the Second Playbook on the Remote Machine

13. To test, log directly onto the Ubuntu machine, launch Firefox, and, in the address bar, type
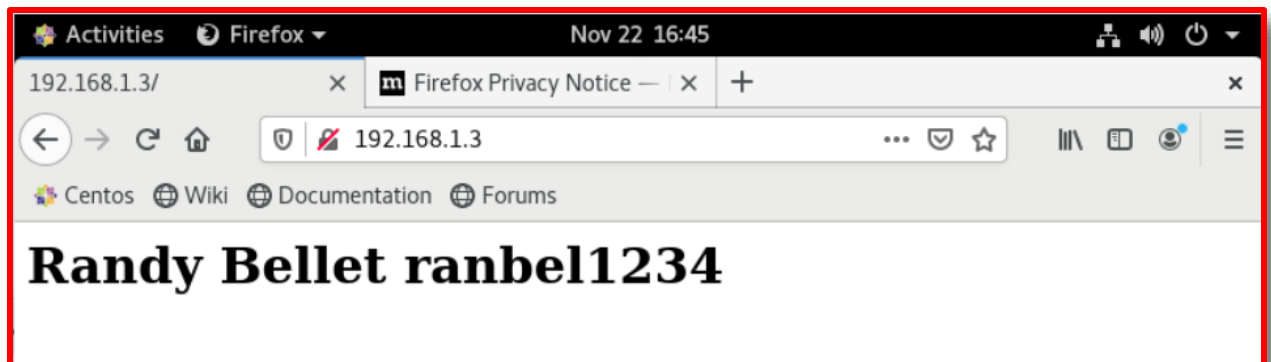
```
localhost
```

You could also type the IP Address of the Ubuntu computer. Your output should resemble this and should contain your name and Student ID.

Take a screenshot like the one above, and paste it into your Lab Report.

14. Now, from the CentOS computer (the one running Ansible), open Firefox, and type in the IP Address of the Ubuntu computer. You should see the same web page.

Take a screenshot like the one above, and paste it into your Lab Report.

Guided Practice Questions

In your **Guided Practice Lab Report**, answer the following questions about this learning activity. Some may require research.

1. Explain the "Become" syntax in the Playbook.
2. What protocol is used by Ansible to run the Playbook on the remote computer?