

Fall-2018 CMPE 272 Enterprise Software Platforms

Assignment- 1(Ansible)

Assignment Requirements

- 1) Configure Ansible to deploy webserver, and bring it up a port 80 with a web page that is publically accessible that displays the message: "Hello World".
- 2) Include in the Ansible playbook, plays to deploy and undeploy the resources

Team

Name: Dexters

Program: Masters in Software Engineering, Spl Data Science

Github Repository: <https://github.com/SammyDexters/ESP>

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Following is a step by step detailed guide to install Ansible. Then deploy & undeploy required resources with snapshots.

Installation of Ansible

Ansible is open source software that allows, configuration management, application deployment and automation of tasks.

Pre-requisite: Ubuntu machine

Open terminal and use command “apt-get upgrade” that will fetch new versions of packages existing on the machine. Also upgrade any supporting packages on the system.

```
ubuntu-18.04.1-desktop-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Wed 14:41
saurabh@saurabh-VirtualBox: ~
File Edit View Search Terminal Help
saurabh@saurabh-VirtualBox:~$ sudo apt-get update
[sudo] password for saurabh:
Hit:1 http://us.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://security.ubuntu.com/ubuntu bionic-security InRelease [83.2 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://security.ubuntu.com/ubuntu bionic-security/main amd64 DEP-11 Metadata [204 B]
Get:6 http://us.archive.ubuntu.com/ubuntu bionic-updates/main i386 Packages [276 kB]
Get:7 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 DEP-11 Metadata [6,820 B]
Get:8 http://security.ubuntu.com/ubuntu bionic-security/universe DEP-11 48x48 Icons [9,088 B]
Get:9 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [308 kB]
Get:10 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 DEP-11 Metadata [138 kB]
Get:11 http://us.archive.ubuntu.com/ubuntu bionic-updates/main DEP-11 48x48 Icons [31.4 kB]
Get:12 http://us.archive.ubuntu.com/ubuntu bionic-updates/main DEP-11 64x64 Icons [53.7 kB]
Get:13 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe i386 Packages [173 kB]
Get:14 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [173 kB]
Get:15 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 DEP-11 Metadata [153 kB]
Get:16 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe DEP-11 48x48 Icons [160 kB]
Get:17 http://us.archive.ubuntu.com/ubuntu bionic-updates/universe DEP-11 64x64 Icons [269 kB]
Get:18 http://us.archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 DEP-11 Metadata [2,468 B]
Get:19 http://us.archive.ubuntu.com/ubuntu bionic-backports/universe amd64 DEP-11 Metadata [5,096 B]
Fetched 2,005 kB in 3s (573 kB/s)
Reading package lists... Done
saurabh@saurabh-VirtualBox:~$
```

```
Fetched 2,005 kB in 3s (573 kB/s)
Reading package lists... Done
saurabh@saurabh-VirtualBox:~$ sudo apt-get install software-properties-common
Reading package lists... Done
Building dependency tree
Reading state information... Done
software-properties-common is already the newest version (0.96.24.32.4).
0 upgraded, 0 newly installed, 0 to remove and 82 not upgraded.
saurabh@saurabh-VirtualBox:~$
```

```
0 upgraded, 0 newly installed, 0 to remove and 82 not upgraded.
saurabh@saurabh-VirtualBox:~$ sudo apt-add-repository ppa:ansible/ansible
Ansible is a radically simple IT automation platform that makes your applications and systems easier to deploy. Avoid writing scripts or cust
on code to deploy and update your applications- automate in a language that approaches plain English, using SSH, with no agents to install on
remote systems.
http://ansible.com/
More info: https://launchpad.net/~ansible/+archive/ubuntu/ansible
Press [ENTER] to continue or Ctrl-c to cancel adding it.
Hit:1 http://us.archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://us.archive.ubuntu.com/ubuntu bionic-updates InRelease
Get:3 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic InRelease [15.9 kB]
Hit:4 http://us.archive.ubuntu.com/ubuntu bionic-backports InRelease
Hit:5 http://security.ubuntu.com/ubuntu bionic-security InRelease
Get:6 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main amd64 Packages [540 B]
Get:7 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main i386 Packages [540 B]
Get:8 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main Translation-en [344 B]
Fetched 17.3 kB in 2s (9,416 B/s)
Reading package lists... Done
saurabh@saurabh-VirtualBox:~$
```

Install Ansible

From the terminal in Ubuntu machine, Install Ansible using the command,

sudo apt-get install ansible

```
saurabh@saurabh-VirtualBox:~$ sudo apt-get install ansible
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libpython-stdlib python python-asn1crypto python-cffi-backend
  python-ipaddress python-jinja2 python-markupsafe python-minimal
  python-six python-yaml python2.7 python2.7-minimal sshpass
Suggested packages:
  python-doc python-tk python-crypto-doc python-cryptography-
  python-gssapi python-setuptools-doc python2.7-doc binfmt-support
The following NEW packages will be installed:
  ansible libpython-stdlib python python-asn1crypto python-cf
  python-idna python-ipaddress python-jinja2 python-markupsaf
  python-setuptools python-six python-yaml python2.7 python2.
0 upgraded, 23 newly installed, 0 to remove and 82 not upgrad
Need to get 6,783 kB of archives.
After this operation, 43.6 MB of additional disk space will be
Do you want to continue? [Y/n]
```

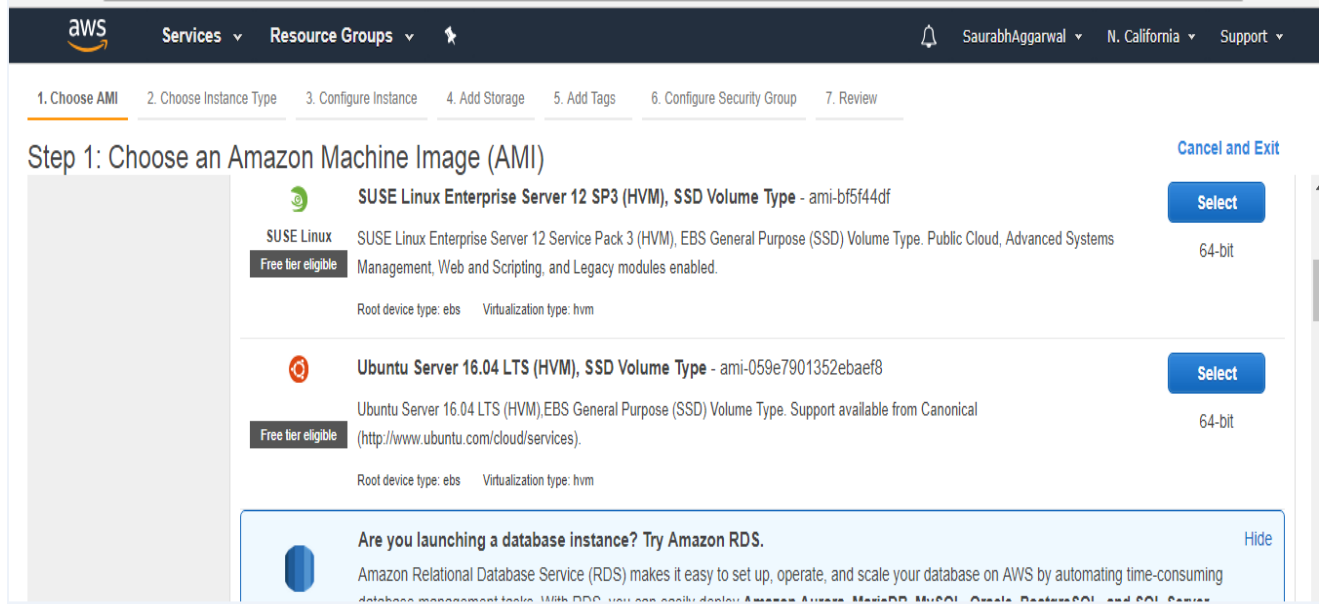
Press **Y** to continue installation of Ansible

```
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python2.7-minimal amd64 2.7.15-rc1-1 [1,292 kB]
Get:2 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic/main amd64 ansible all 2.6.3-1ppa-bionic [3,498 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-minimal amd64 2.7.15-rc1-1 [28.1 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python2.7 amd64 2.7.15-rc1-1 [238 kB]
Get:5 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 libpython-stdlib amd64 2.7.15-rc1-1 [7,620 B]
Get:6 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python amd64 2.7.15-rc1-1 [140 kB]
Get:7 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-markupsafe amd64 1.0-1build1 [13.0 kB]
Get:8 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-jinja2 all 2.10-1 [94.6 kB]
Get:9 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-yaml amd64 3.12-1build2 [115 kB]
Get:10 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-asn1crypto all 0.24.0-1 [72.7 kB]
Get:11 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-cffi-backend amd64 1.11.5-1 [63.4 kB]
Get:12 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-enum34 all 1.1.6-2 [34.8 kB]
Get:13 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-idna all 2.6-1 [32.4 kB]
Get:14 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-ipaddress all 1.0.17-1 [18.2 kB]
Get:15 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-six all 1.11.0-2 [11.3 kB]
Get:16 http://us.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python-cryptography amd64 2.1.4-1ubuntu1.2 [221 kB]
Get:17 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-pyasn1 all 0.4.2-3 [46.7 kB]
Get:18 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-paramiko all 2.0.0-1ubuntu1 [110 kB]
Get:19 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-httplib2 all 0.9.2+dfsg-1 [34.6 kB]
Get:20 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-crypto amd64 2.6.1-8ubuntu2 [244 kB]
Get:21 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-pkg-resources all 30.0.1-2 [128 kB]
Get:22 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 python-setuptools all 39.0.1-2 [329 kB]
Get:23 http://us.archive.ubuntu.com/ubuntu bionic/universe amd64 sshpass amd64 1.06-1 [10.5 kB]
Fetched 6,783 kB in 13s (523 kB/s)
```

Create an Amazon EC2 Instance and run


- 1) To make the web pages, allow accessible on the public domain, the web server is hosted on the amazon-cloud's EC2 instance.

- 2) Visit <https://us-west-1.console.aws.amazon.com/ec2> create an amazon's free student account, along with a username and a password.
- 3) We chose free version available for Ubuntu Server 16.04 LTS 64 bit, 8GB for our EC2 instance.
- 4) Choose EC2 and launch an instance
- 5) Choose Port 80 from the dropdown menu for HTTP:// connection. Visit the Security Groups Tab for the EC2 instance. There edit the rules for enabling the PORT: 80. This will allow the HTTP:// connection requests.
- 6) EC2 will be running with Public DNS Information as displayed in snapshots.
- 7) Below are the snapshots for the steps applied from amazon's account.




Enable Port 80 for HTTP Requests

Type <i>i</i>	Protocol <i>i</i>	Port Range <i>i</i>	Source <i>i</i>	Description <i>i</i>	
SSH ▾	TCP	22	Custom ▾ 0.0.0.0/0	e.g. SSH for Admin Desktop	✕
HTTP ▾	TCP	80	Custom ▾ 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop	✕
<button>Add Rule</button>					


 **Warning**
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.


[Cancel](#)[Previous](#)[Review and Launch](#)

 Services ▾ Resource Groups ▾ ⚙

SaurabhAggarwal ▾ N. California ▾ Support ▾

Launch Status

 **Your instances are now launching**
The following instance launches have been initiated: [i-0263660cac1432cc9](#) [View launch log](#)

 **Get notified of estimated charges**
[Create billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

Amazon's EC2 instance is setup and now running and can be accessed with the url

<http://ec2-54-193-6-253.us-west-1.compute.amazonaws.com>

Filter by tags and attributes or search by keyword						
Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
i-0203000cac1432cc9	t2.micro	us-west-1c	running	Initializing	None	ec2-54-193-0-253.us-w...

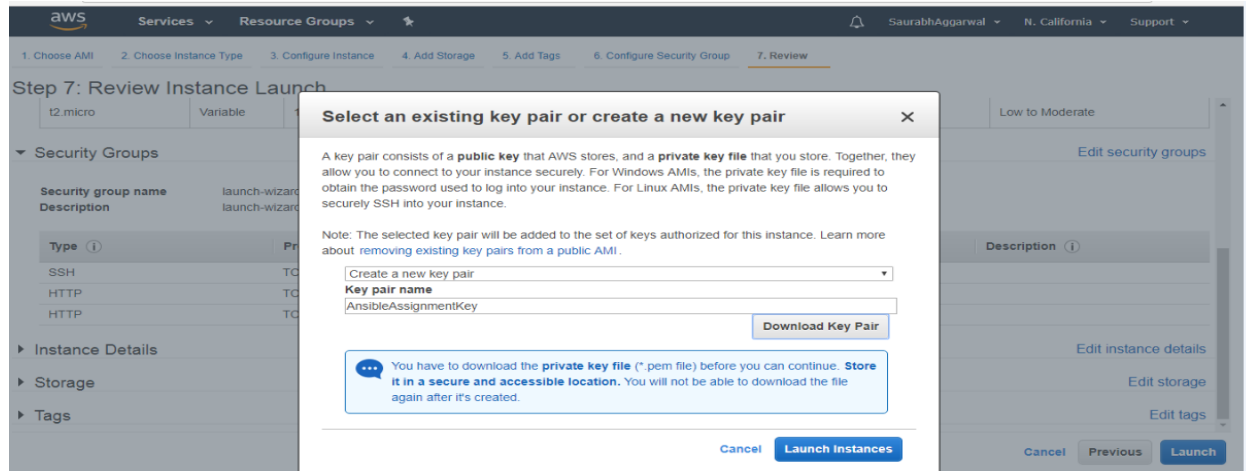
SSH Key Generation

Generate RSA public/private key pair using the following command. SSH keys can be used to establish a secure connection.

Ssh-keygen -t rsa

```
Setting up ansible (2.6.3-1ppa~bionic) ...
saurabh@saurabh-VirtualBox:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/saurabh/.ssh/id_rsa):
Created directory '/home/saurabh/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/saurabh/.ssh/id_rsa.
Your public key has been saved in /home/saurabh/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:cA0pJrHX2SAGp8jGehU[REDACTED]sTYTw saurabh@saurabh-VirtualBox
The key's randomart image is:
+----[RSA 2048]-----+
|  .++=00.  |
| o .+B+00* |
| =.+*E.+00 |
| o .==00=0 . |
| . . .0S   |
| . . .+.0   |
| . . .0     |
| . . .0     |
| .0==0.    |
+-----[SHA256]-----+
saurabh@saurabh-VirtualBox:~$
```

- 1) Public key so generated will be saved in the location user/.ssh/id_rsa.pub.
- 2) Permissions will be required to be reduced which are assigned to the ".pem" file as it should only access to privileged users. In our case "AnsibleAssignmnetKey.pem" is the file-name.



3) Run the below command

```
chmod 400 AnsibleAssignmentKey.pem
```

4) To allow communication between our local machine and the EC2 instance, run the below command to allow the communication.

```
Ssh -i AnsibleAssignmentKey.pem ubuntu@IPAddress_Amazon_EC2_Instance
```

```

saurabh@saurabh-VirtualBox:~$ ls
Desktop Documents Downloads examples.desktop Music Pictures Public Templates Videos
saurabh@saurabh-VirtualBox:~$ cd Desktop
saurabh@saurabh-VirtualBox:~/Desktop$ ls
AnsibleAssignmentKey.pem
saurabh@saurabh-VirtualBox:~/Desktop$ chmod 400 AnsibleAssignmentKey.pem
saurabh@saurabh-VirtualBox:~/Desktop$ ssh -i AnsibleAssignmentKey.pem ubuntu@54.193.6.253
The authenticity of host '54.193.6.253 (54.193.6.253)' can't be established.
ECDSA key fingerprint is SHA256:itv5WI7RcL7wInf5T1GQgkLRCf0gq3COzc0YeSkDLiE.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '54.193.6.253' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 16.04.5 LTS (GNU/Linux 4.4.0-1065-aws x86_64)

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

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

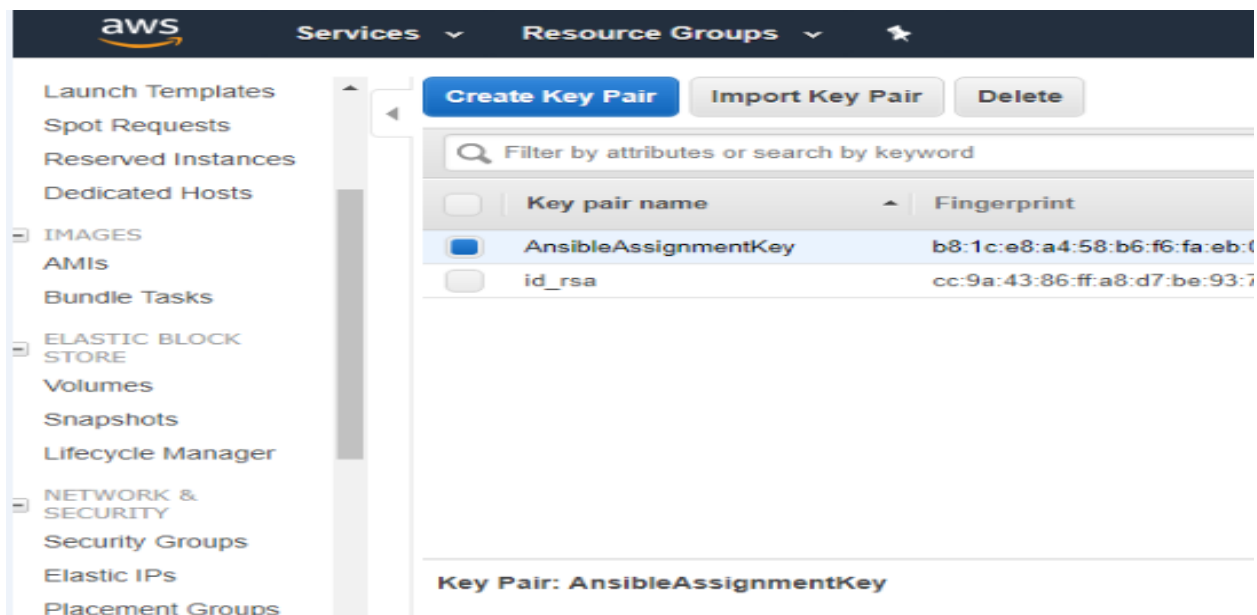
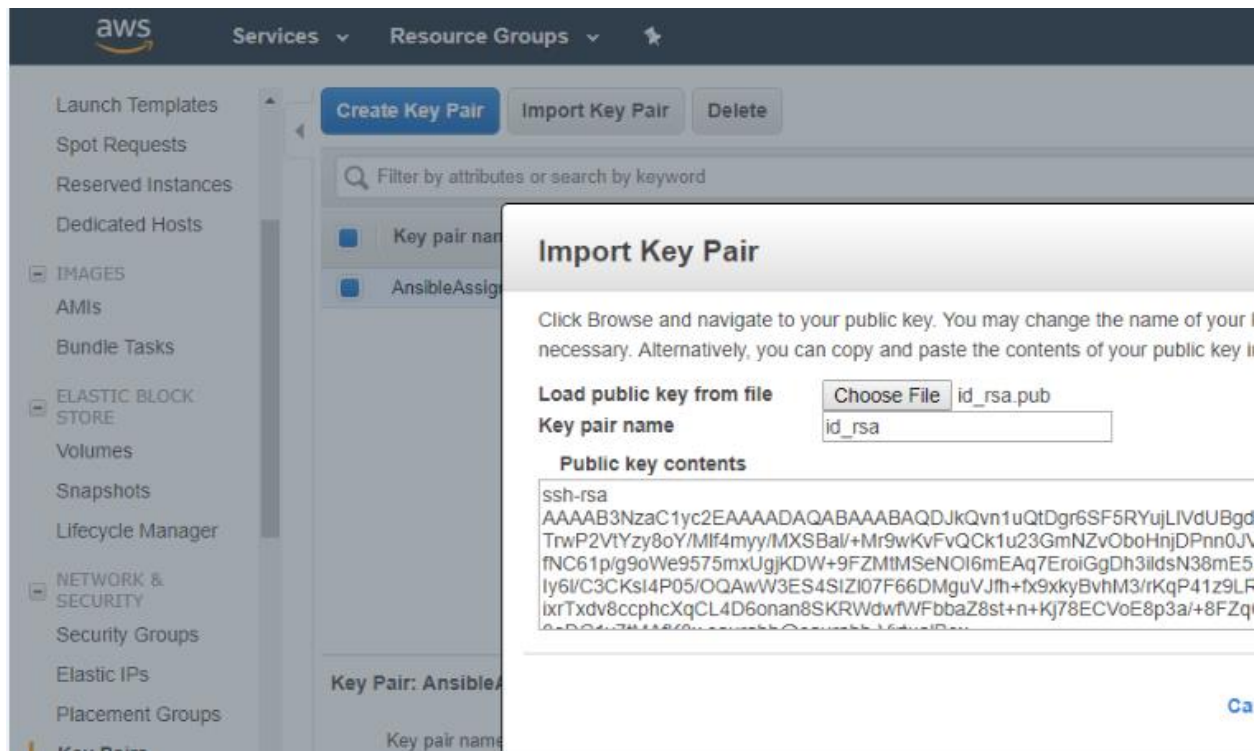
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

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.

```

- 5) Navigate to AWS Console now and import the public key.
- 6) In Amazon's EC2 control instance tab look for Network and Security and press Key Pairs tab.
- 7) Click on Import Key Pair. Search for the location ssh/id_rsa.pub and import as mentioned below:



Install VIM for Ubuntu to allow editing in files

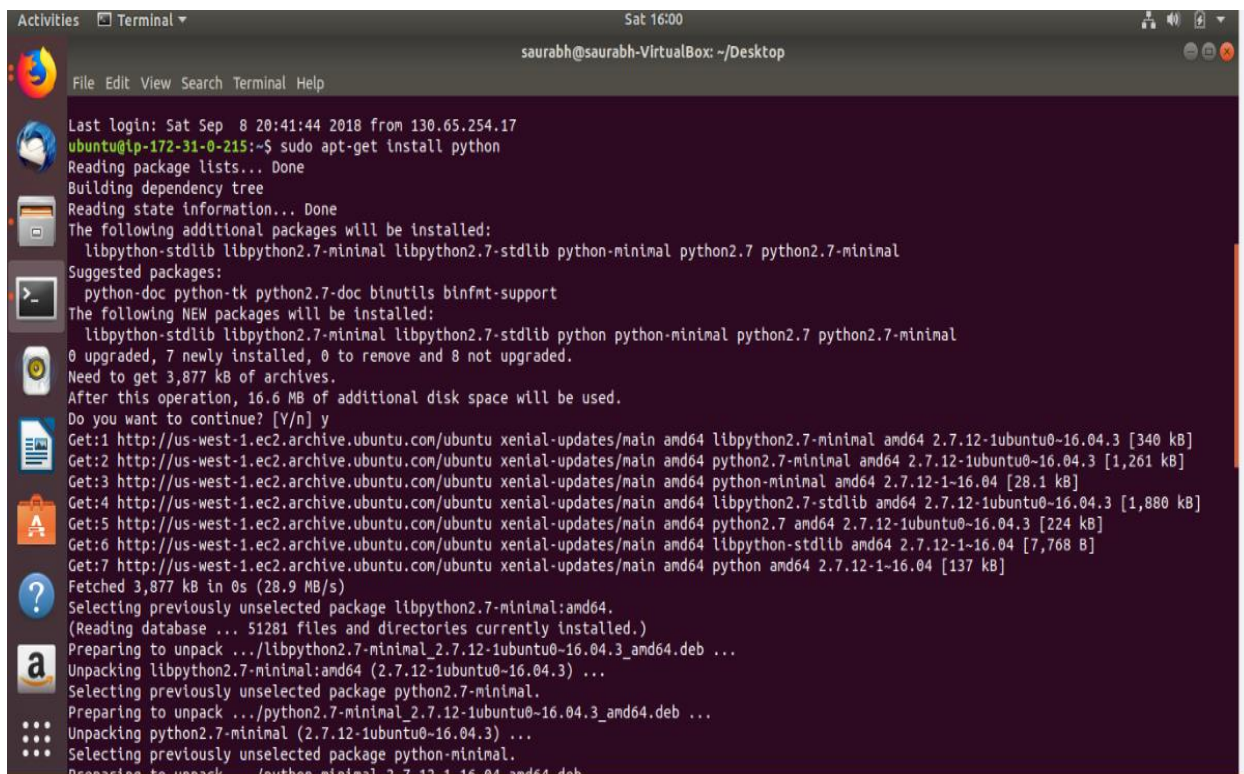
```

saurabh@saurabh-VirtualBox:/etc/ansible$ sudo apt-get install vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 82 not upgraded.
Need to get 6,589 kB of archives.
After this operation, 32.0 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 vim-runtime all 2:8.0.1453-1ubuntu1 [5,437 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu bionic/main amd64 vim amd64 2:8.0.1453-1ubuntu1 [1,152 kB]
Fetched 6,589 kB in 13s (514 kB/s)
Selecting previously unselected package vim-runtime.
(Reading database ... 129726 files and directories currently installed.)
Preparing to unpack .../vim-runtime_2%3a8.0.1453-1ubuntu1_all.deb ...
Adding 'diversion of /usr/share/vim/vim80/doc/help.txt to /usr/share/vim/vim80/doc/help.txt.vim-tiny by vim-runtime'
Adding 'diversion of /usr/share/vim/vim80/doc/tags to /usr/share/vim/vim80/doc/tags.vim-tiny by vim-runtime'
Unpacking vim-runtime (2:8.0.1453-1ubuntu1) ...
Selecting previously unselected package vim.
Preparing to unpack .../vim_2%3a8.0.1453-1ubuntu1_amd64.deb ...
Unpacking vim (2:8.0.1453-1ubuntu1) ...

```

Install Python using the command

Sudo apt-get install python



```

Activities  Terminal  Sat 16:00
saurabh@saurabh-VirtualBox: ~/Desktop

Last login: Sat Sep  8 20:41:44 2018 from 130.65.254.17
ubuntu@ip-172-31-0-215:~$ sudo apt-get install python
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libpython-stdlib libpython2.7-minimal libpython2.7-stdlib python-minimal python2.7 python2.7-minimal
Suggested packages:
  python-doc python-tk python2.7-doc binutils binfmt-support
The following NEW packages will be installed:
  libpython-stdlib libpython2.7-minimal libpython2.7-stdlib python python-minimal python2.7 python2.7-minimal
0 upgraded, 7 newly installed, 0 to remove and 8 not upgraded.
Need to get 3,877 kB of archives.
After this operation, 16.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 libpython2.7-minimal amd64 2.7.12-1ubuntu0~16.04.3 [340 kB]
Get:2 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 python2.7-minimal amd64 2.7.12-1ubuntu0~16.04.3 [1,261 kB]
Get:3 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 python-minimal amd64 2.7.12-1~16.04 [28.1 kB]
Get:4 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 libpython2.7-stdlib amd64 2.7.12-1ubuntu0~16.04.3 [1,880 kB]
Get:5 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 python2.7 amd64 2.7.12-1ubuntu0~16.04.3 [224 kB]
Get:6 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 libpython-stdlib amd64 2.7.12-1~16.04 [7,768 B]
Get:7 http://us-west-1.ec2.archive.ubuntu.com/ubuntu xenial-updates/main amd64 python amd64 2.7.12-1~16.04 [137 kB]
Fetched 3,877 kB in 0s (28.9 MB/s)
Selecting previously unselected package libpython2.7-minimal:amd64.
(Reading database ... 51281 files and directories currently installed.)
Preparing to unpack .../libpython2.7-minimal_2.7.12-1ubuntu0~16.04.3_amd64.deb ...
Unpacking libpython2.7-minimal:amd64 (2.7.12-1ubuntu0~16.04.3) ...
Selecting previously unselected package python2.7-minimal.
Preparing to unpack .../python2.7-minimal_2.7.12-1ubuntu0~16.04.3_amd64.deb ...
Unpacking python2.7-minimal (2.7.12-1ubuntu0~16.04.3) ...
Selecting previously unselected package python-minimal.
Preparing to unpack .../python-minimal_2.7.12-1~16.04_amd64.deb ...
Unpacking python-minimal (2.7.12-1~16.04) ...

```

Update the Hosts File, in etc/Ansible/ and provide the server information as following

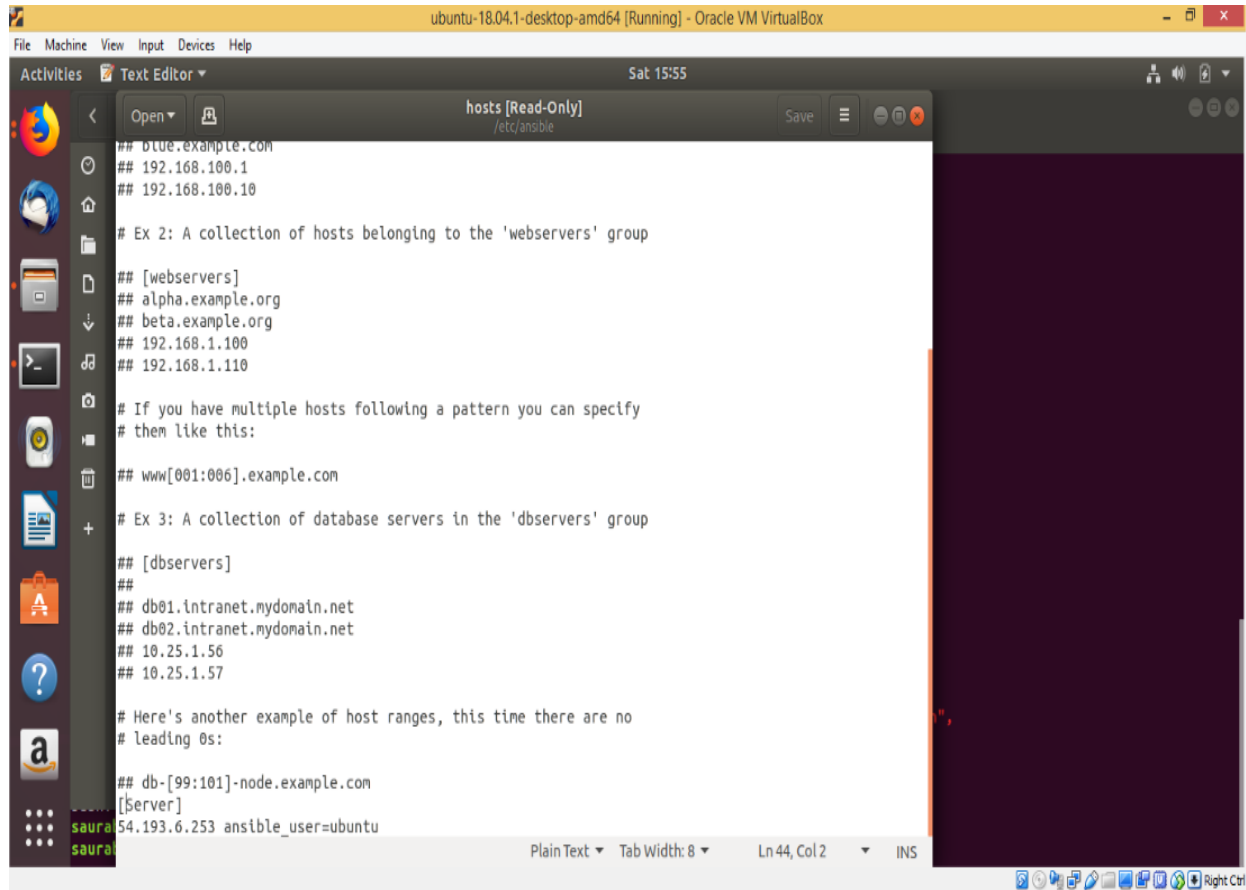
A “hosts” file in Ansible folder is required give information to Ansible for which hosts or the server to have a communication with.

Go to the directory /etc/Ansible and open the file using vim filename command.

Edit the file with following command now:

[Server]

IPAddress_Server Ansible_user=ubuntu

A screenshot of a text editor window titled 'hosts [Read-Only]' showing the content of the /etc/ansible/hosts file. The file contains several entries for hosts, including example domains and IP addresses, and groups of hosts like 'webservers' and 'dbservers'. The editor interface includes a sidebar with icons for various applications and a status bar at the bottom showing 'Plain Text', 'Tab Width: 8', 'Ln 44, Col 2', and 'INS'.

```
## blue.example.com
## 192.168.100.1
## 192.168.100.10

# Ex 2: A collection of hosts belonging to the 'webservers' group

## [webservers]
## alpha.example.org
## beta.example.org
## 192.168.1.100
## 192.168.1.110

# If you have multiple hosts following a pattern you can specify
# them like this:

## www[001:006].example.com

# Ex 3: A collection of database servers in the 'dbservers' group

## [dbservers]
##
## db01.intranet.mydomain.net
## db02.intranet.mydomain.net
## 10.25.1.56
## 10.25.1.57

# Here's another example of host ranges, this time there are no
# leading 0s:

## db-[99:101]-node.example.com
[Server]
54.193.6.253 ansible_user=ubuntu
```

Also update the Config File in .ssh/ folder with the following command.

A screenshot of a text editor window titled 'config' showing the content of the ~/.ssh/config file. The file contains a single line: 'IdentityFile ~/.ssh/AnsibleAssignmentKey.pem'. The editor interface includes a sidebar with icons for various applications and a status bar at the bottom showing 'Sat 16:02', 'Save', and 'Right Ctrl'.

Check Ansible Ping Connection All

```
saurabh@saurabh-VirtualBox:~/Desktop$ ansible -m ping all
54.193.6.253 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
saurabh@saurabh-VirtualBox:~/Desktop$
```

Creating a Playbook

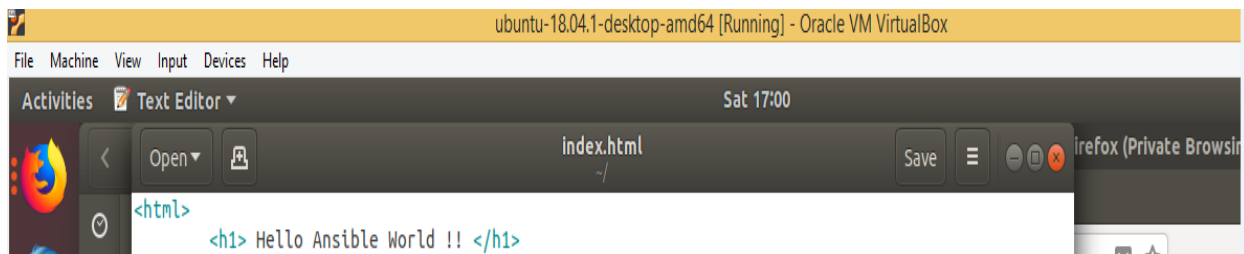
Playbooks are a set of “YAML” files that tells the number of tasks which are to be performed on the host being connected to.

Create a yml file names- ***"install_resource_apache.yml"***

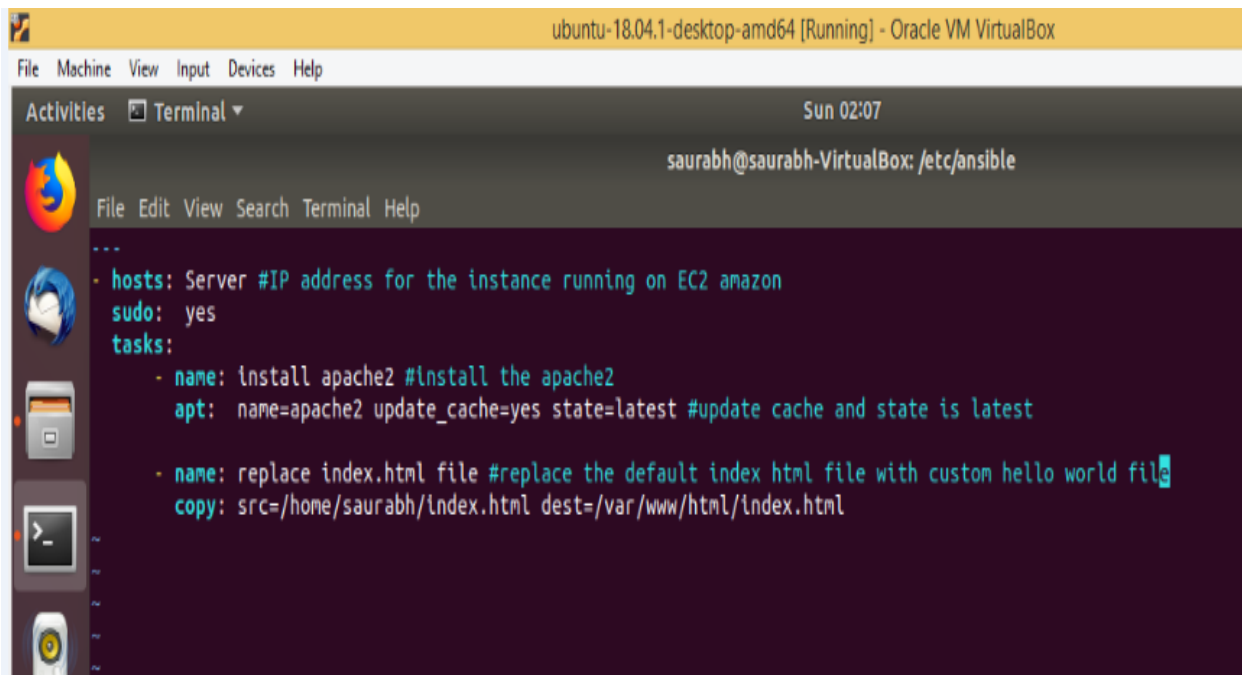
```
saurabh@saurabh-VirtualBox:~/Desktop$ cd ..
saurabh@saurabh-VirtualBox:~$ cd /etc/ansible
saurabh@saurabh-VirtualBox:/etc/ansible$ sudo vim install_resource_apache.yml
[sudo] password for saurabh:
saurabh@saurabh-VirtualBox:/etc/ansible$ cd ..
saurabh@saurabh-VirtualBox:/etc$ cd ..
```

Create an HTML file called- index.html with the following text- "Hello Ansible World!!"

The file should be placed at `/home/Saurabh/index.html`



Open the playbook install_resource_apache.yml and insert the commands as following:



The screenshot shows a terminal window titled 'ubuntu-18.04.1-desktop-amd64 [Running] - Oracle VM VirtualBox'. The terminal displays the content of an Ansible playbook file located at /etc/ansible. The playbook includes a hosts section, a sudo section, and a tasks section with two tasks: installing apache2 and replacing the index.html file.

```
---
- hosts: Server #IP address for the instance running on EC2 amazon
  sudo: yes
  tasks:
    - name: Install apache2 #Install the apache2
      apt: name=apache2 update_cache=yes state=latest #update cache and state is latest

    - name: replace index.html file #replace the default index html file with custom hello world file
      copy: src=/home/saurabh/index.html dest=/var/www/html/index.html
```

This playbook performs the following tasks:

- 1) **Install apache2** : installs the apache2 on the server
- 2) **[Server]** , here refers to the hosts information in the hosts file already setup earlier
- 3) **Replace index.html** will place our index file with message Hello Ansible World to the hosts url at dest address /var/www/html/index.html

Deploying the Resources

Run the playbook install_resource_apache.yml using the command

Ansible-playbook install_resource_apache.yml

```
saaurabh@saaurabh-VirtualBox:/etc/ansible$ ansible-playbook install_resource_apache.yml
[DEPRECATION WARNING]: Instead of sudo/sudo_user, use become/become_user and make sure become_method is 'sudo' (default). This feature will be removed in version 2.6. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.

PLAY [Server] *****

TASK [Gathering Facts] *****
ok: [54.193.6.253]

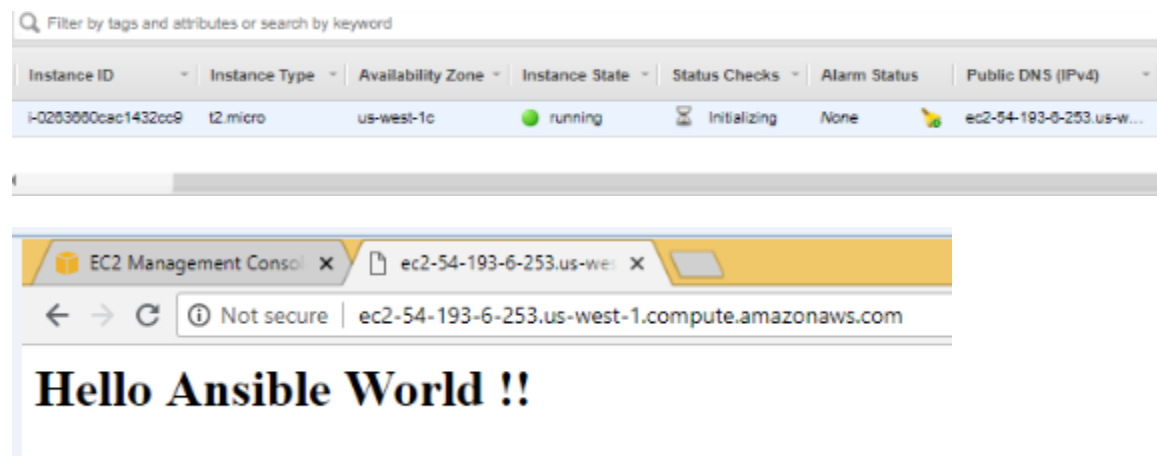
TASK [install apache2] *****
ok: [54.193.6.253]

PLAY RECAP *****
54.193.6.253          : ok=2    changed=0    unreachable=0    failed=0

saaurabh@saaurabh-VirtualBox:/etc/ansible$
```

Hit the following url now to See the “Hello Ansible World !!” html being displayed after resource deployed yml playbook is run.

<http://ec2-54-193-6-253.us-west-1.compute.amazonaws.com>



Undeploying the resources

Create the playbook to undeploy the resources

```
---
- hosts: Servers
  user: ubuntu
  sudo: yes

  tasks:
    - name: Delete index.html file
      file: path=/var/www/html/index.html state=absent
~
~
~
~
```

The tasks defined in playbook will delete the index file hosted and will uninstall the apache server instance.

Run the playbook `uninstall_resource_apache.yml` using the command

Ansible-playbook uninstall_resource_apache.yml

```
saurabh@saurabh-VirtualBox:/etc/ansible$ sudo vim uninstall_resource_apache.yml
saurabh@saurabh-VirtualBox:/etc/ansible$ ansible-playbook uninstall_resource_apache.yml
```

```
PLAY [Server] *****
TASK [Gathering Facts] *****
ok: [54.193.6.253]
TASK [apache2] *****
ok: [54.193.6.253]
PLAY RECAP *****
54.193.6.253      : ok=2   changed=0    unreachable=0    failed=0
saurabh@saurabh-VirtualBox:/etc/ansible$
```

Hit the URL again to see the following output

Index of /

Name	Last modified	Size	Description
----------------------	-------------------------------	----------------------	-----------------------------

Apache/2.4.18 (Ubuntu) Server at ec2-54-67-40-239.us-west-1.compute.amazonaws.com Port 80