Lesson 7 Demo 7: Install PHP in Agent Node

This section will guide you to:

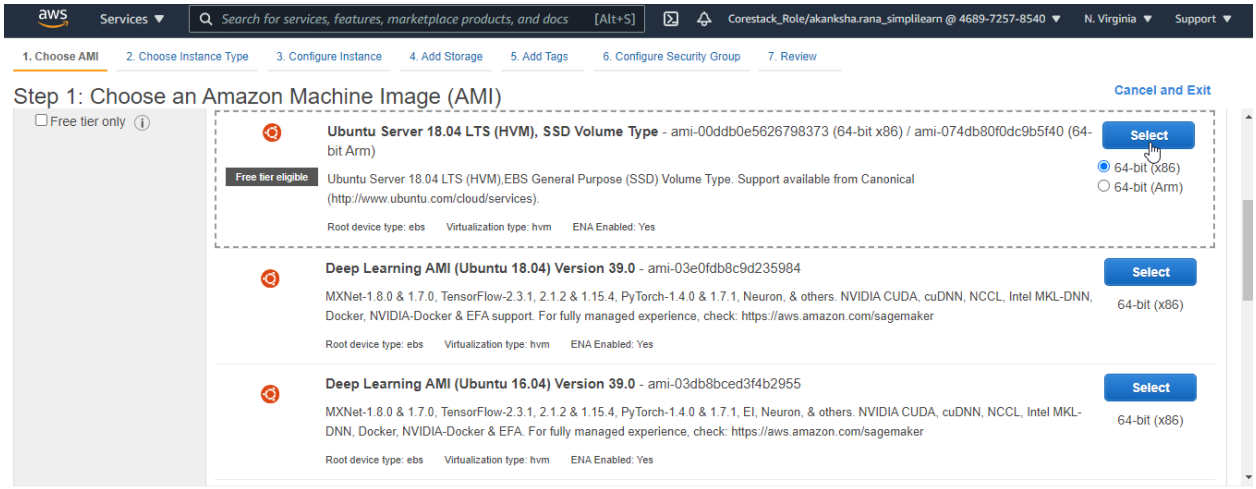
- Install PHP from Puppet master to Puppet agent using a manifest

This lab has six subsections, namely:

1. Launching AWS instances
2. Setting up the puppet master server
3. Setting up the puppet agent node
4. Establishing the connection between puppet master and agent node
5. Writing the puppet manifest
6. Pulling configuration in the agent node from puppet master

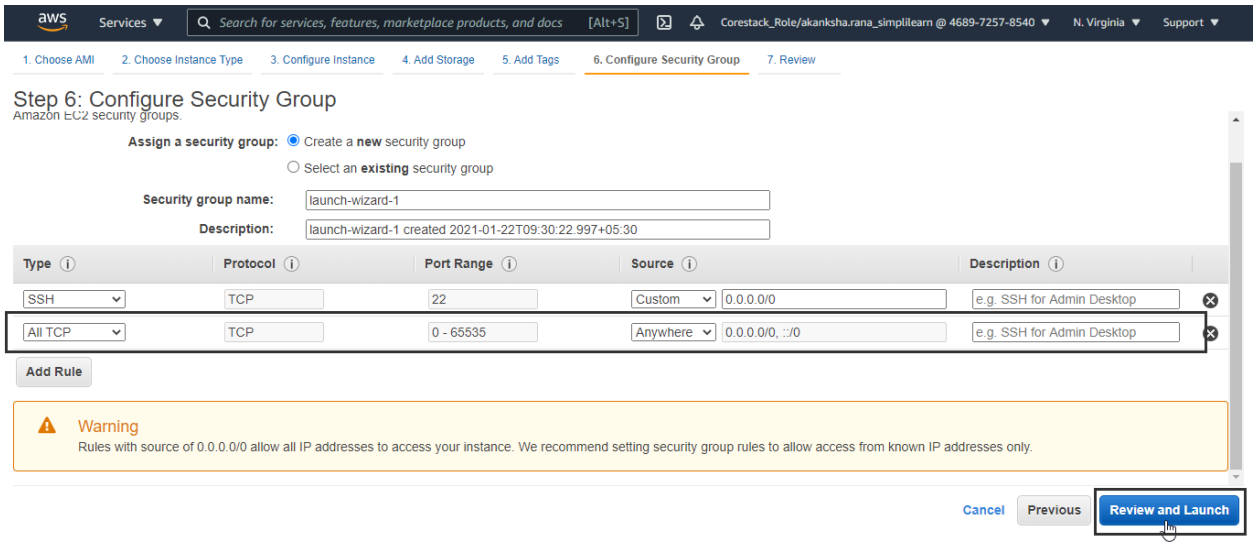
Step 1: Launching AWS instances

- Launch the AWS lab
- Navigate to the EC2 dashboard and click on the launch instance button
- For the AMI, choose Ubuntu Server 18.04

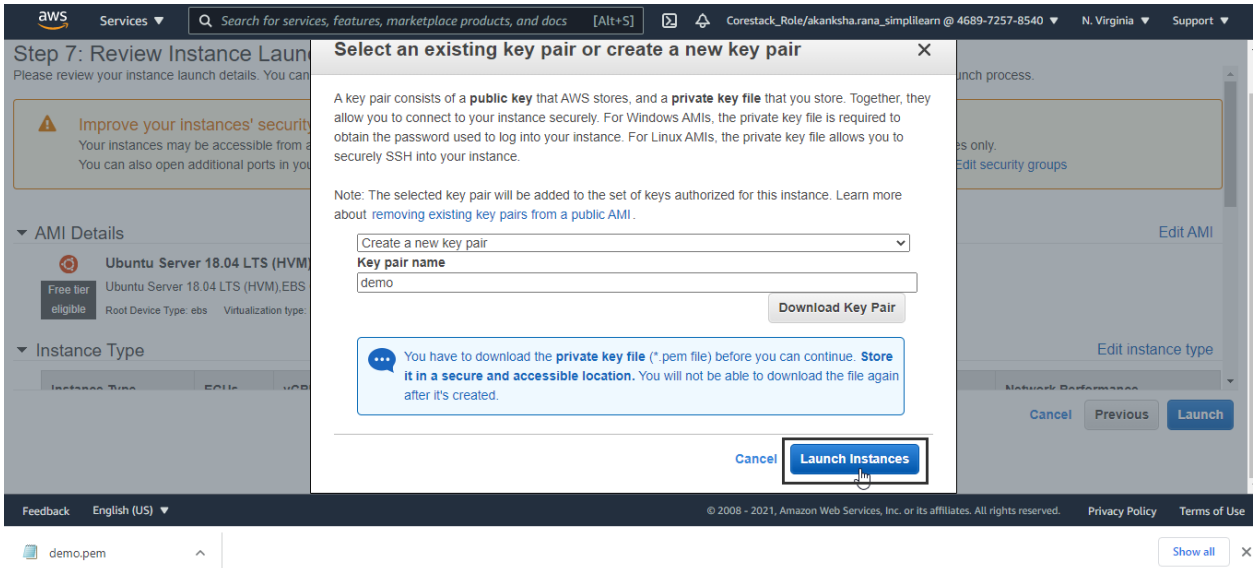


- For instance type, choose **t2.micro** and click on the **Next: Configuration Instance Details** button

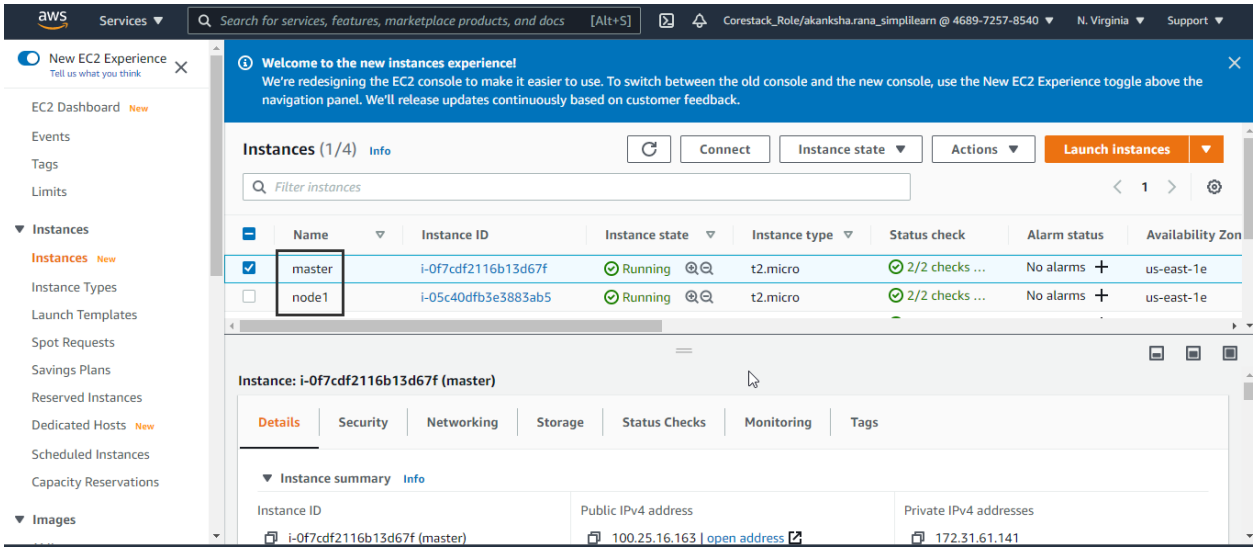
- Enter 2 in the number of instances field
- Go with the default settings for storage and tags
- On the Configure security group page, click on the **Add rule** button
- Add the **All tcp** rule and select the source as **anywhere**
- Click on the **Review and Launch** button



- Click on the **Launch** button on the Review Instance Launch page
- Create a new key pair, download it, and click on the **Launch Instance** button



- Name the instances as master and node



- SSH into both the instances using putty

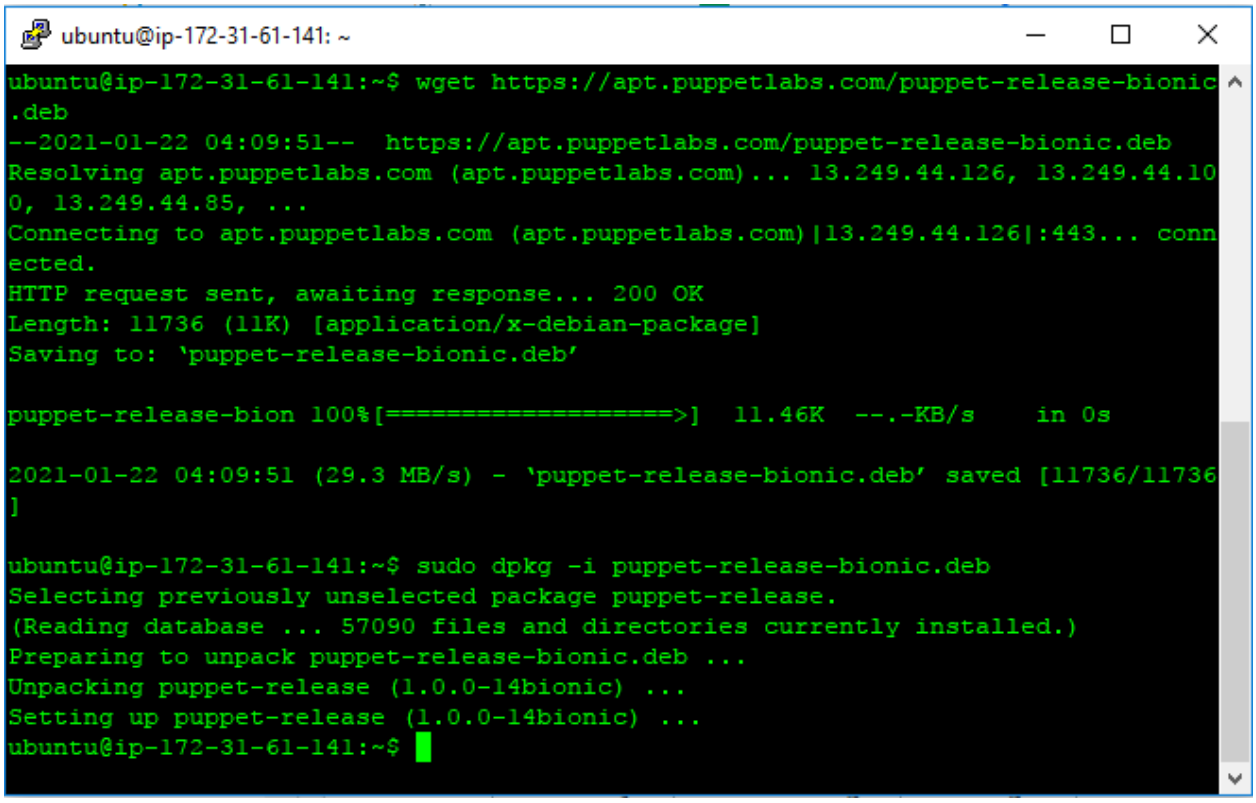
Step 2: Setting up the puppet master server

- Type in the following command in the master instance to update the already existing modules and packages:

```
$ sudo apt-get update
```

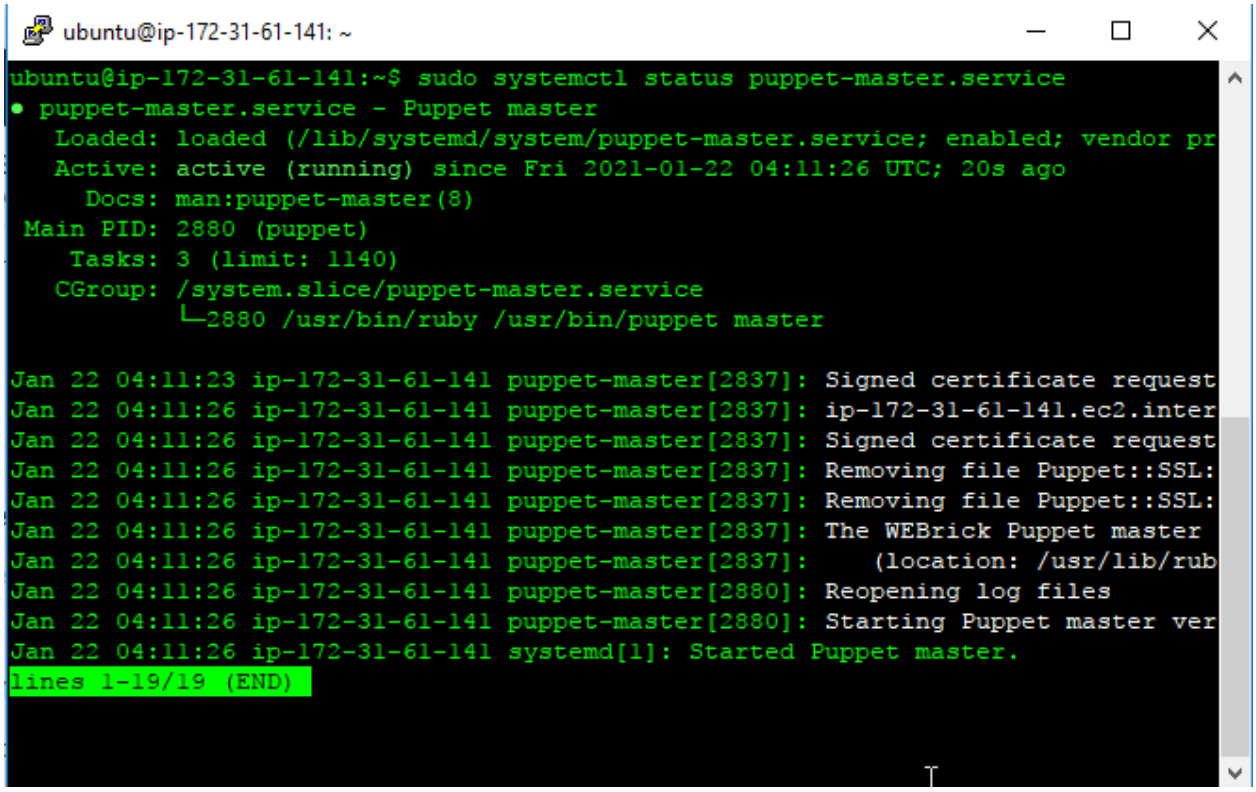
- Type in the following commands to install puppet master:

```
$ wget https://apt.puppetlabs.com/puppet-release-bionic.deb
$ sudo dpkg -i puppet-release-bionic.deb
$ sudo apt-get install puppetmaster
```



- Run the following command to verify the installation of puppet master:

```
$ sudo systemctl status puppet-master.service
```

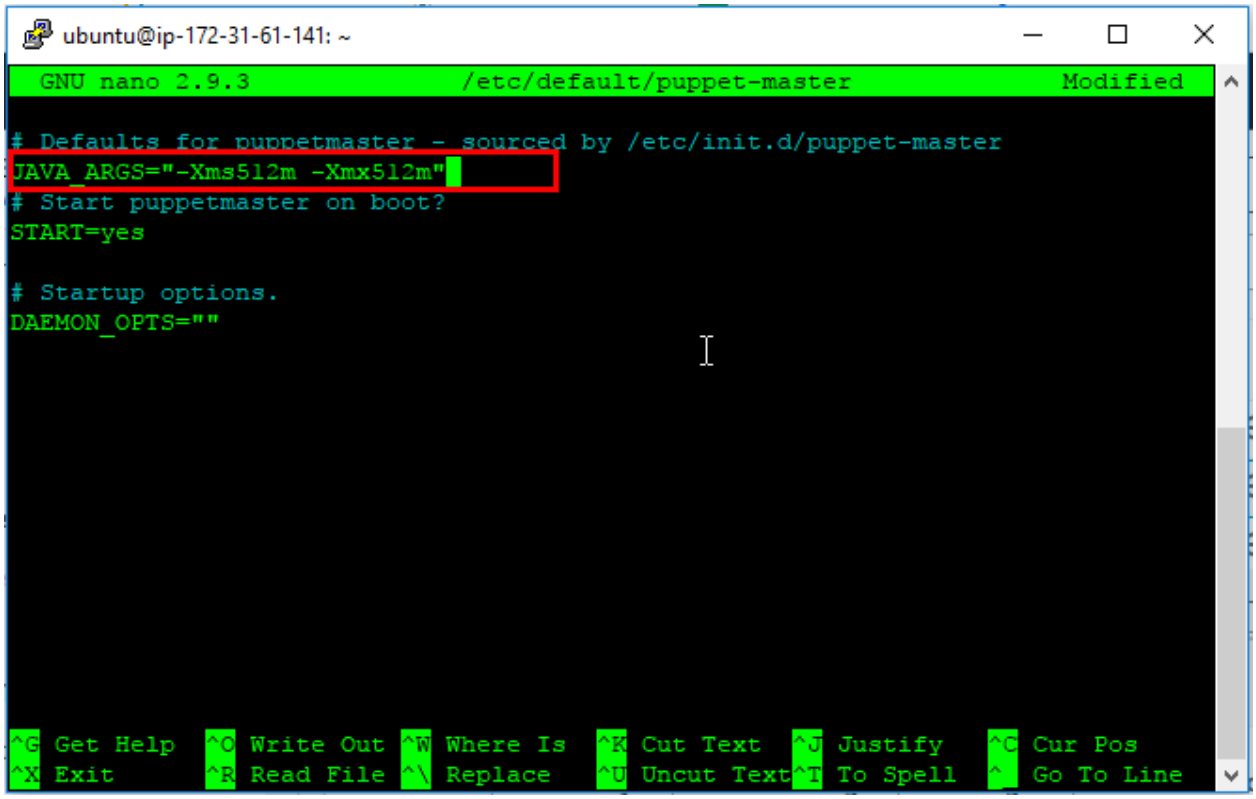


- Puppet master will be active and running as shown in the above screenshot
- Press **ctrl+z** and **Enter** to exit the status reading
- Type in the following command:

```
$ sudo nano /etc/default/puppet-master
```

- Add the following code snippet in the file, as shown in the screenshot:

```
JAVA_ARGS="-Xms512m -Xmx512m"
```

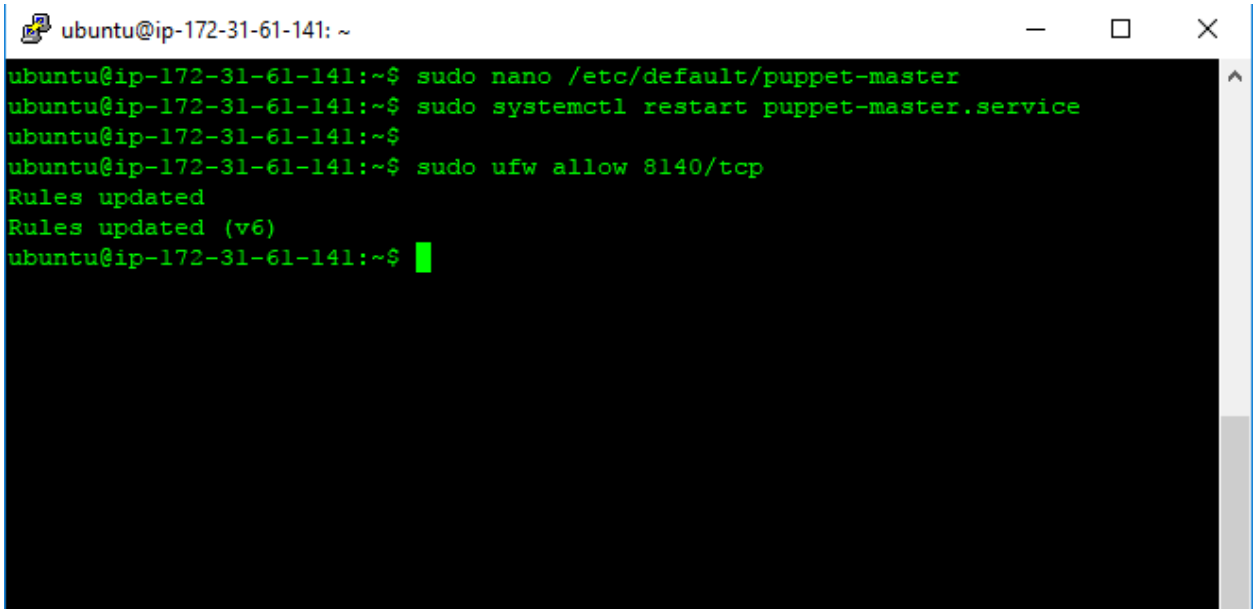


- Use the following command to start the puppet master

```
$ sudo systemctl restart puppet-master.service
```

- Use the following command to open the port for tcp connection

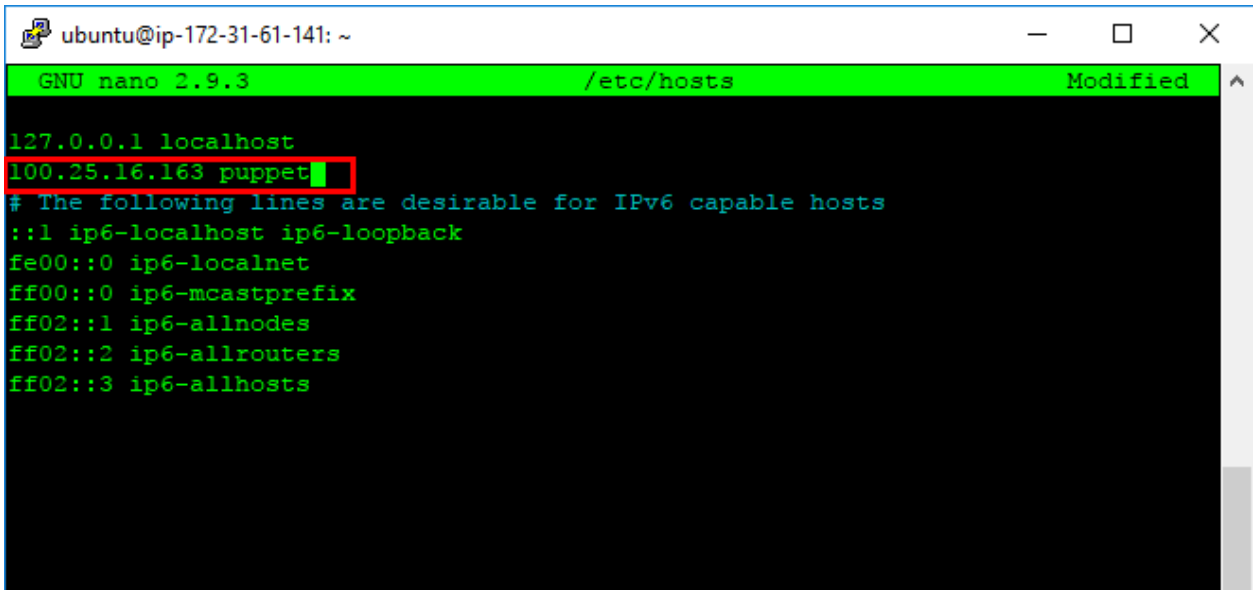
```
$ sudo ufw allow 8140/tcp
```



- Enter the following command to edit the host's file

```
$ sudo nano /etc/hosts
```

- Add the public IP address of puppet master in the file as shown in the following screenshot:



- Save and exit the file

Step 3: Setting up the puppet agent node

- Type in the following command in the agent node instance to update the already existing modules and packages:

```
$ sudo apt-get update
```

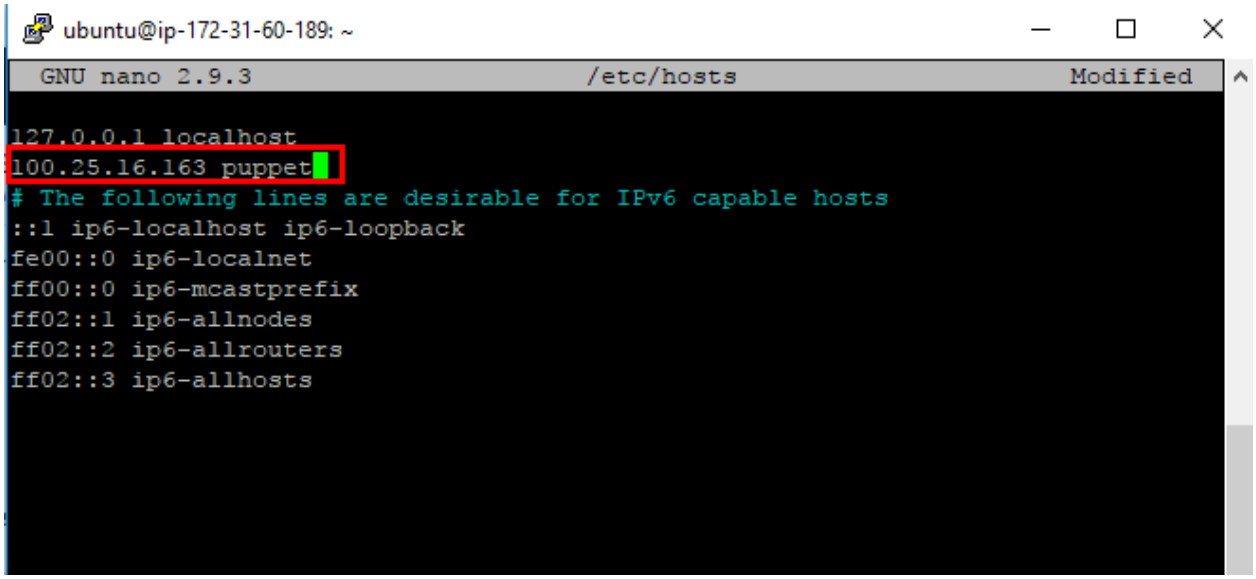
- Type in the following commands to install puppet agent:

```
$ wget https://apt.puppetlabs.com/puppet-release-bionic.deb
$ sudo dpkg -i puppet-release-bionic.deb
$ sudo apt-get install puppet
```

- Enter the following command to edit the hosts file:

```
$ sudo nano /etc/hosts
```

- Add the public IP address of puppet master in the file as shown in the following screenshot:

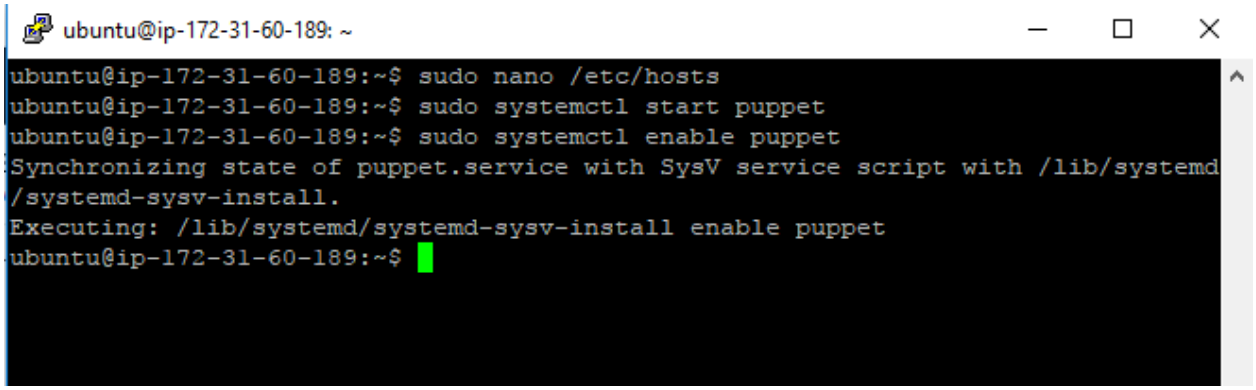


- Save and exit the file

Step 4: Establishing the connection between puppet master and agent node

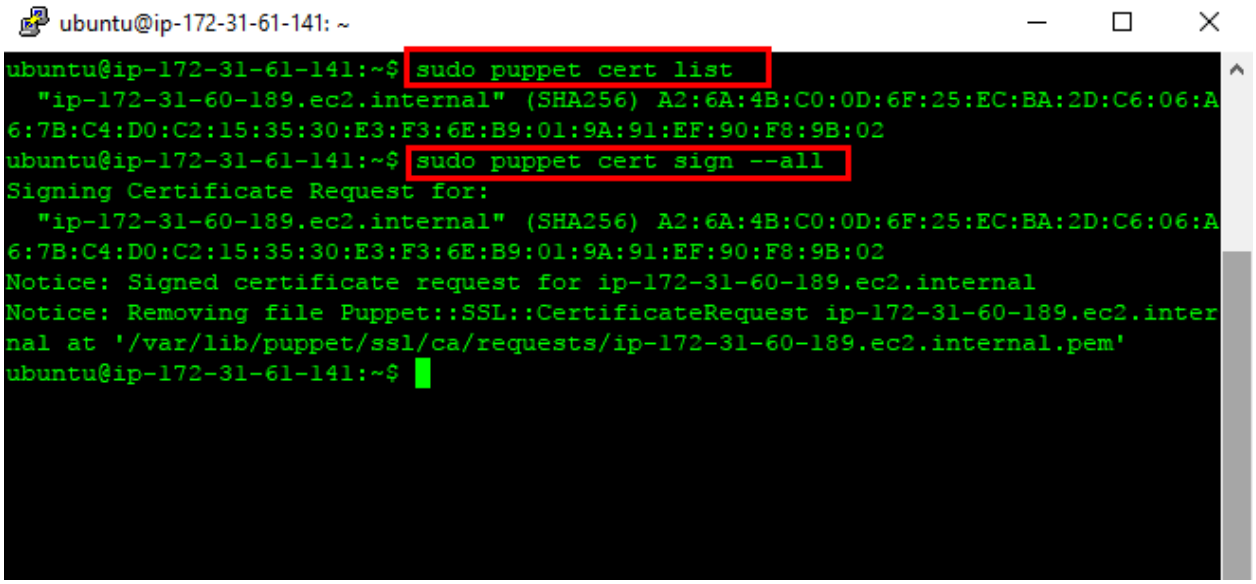
- Run the following command on the agent node to start and enable the puppet agent:

```
$ sudo systemctl start puppet
$ sudo systemctl enable puppet
```



- Use the following command on the puppet master to accept and sign the certificate sent by the puppet agent:

```
$ sudo puppet cert list
$ sudo puppet cert sign --all
```



Step 5: Writing the puppet manifest on *puppetmaster*

- Use the following command to create a directory for a manifest:

```
$ sudo mkdir -p /etc/puppet/code/environments/production/manifests/
```

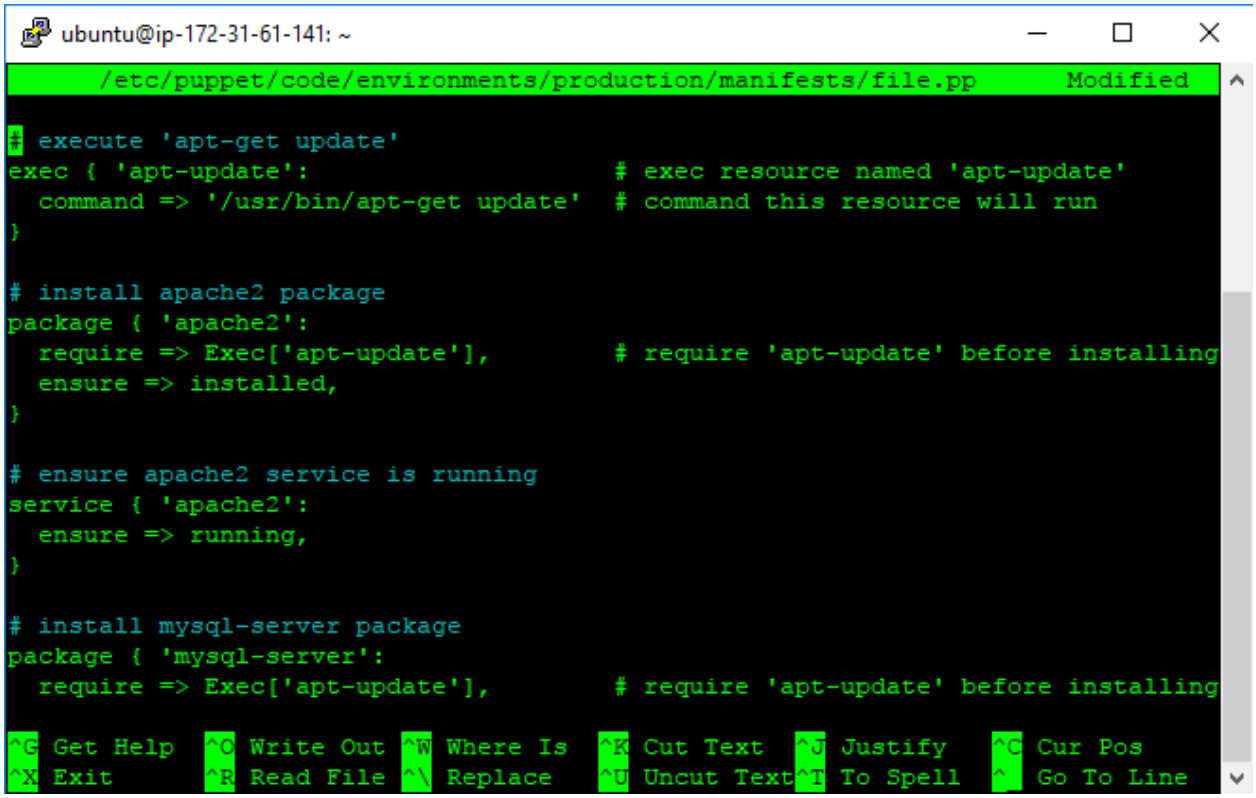
- Use the following command to create a the manifest:

```
$ sudo vi /etc/puppet/code/environments/production/manifests/file.pp
```

- Add the following content in the file:

```
# execute 'apt-get update'
exec { 'apt-update':                    # exec resource named 'apt-update'
  command => '/usr/bin/apt-get update'  # command this resource will run
}

# install apache2 package
package { 'apache2':
  require => Exec['apt-update'],        # require 'apt-update' before installing
  ensure => installed,
}

# ensure apache2 service is running
service { 'apache2':
  ensure => running,
}

# install mysql-server package
package { 'mysql-server':
  require => Exec['apt-update'],        # require 'apt-update' before installing
  ensure => installed,
}

# ensure mysql service is running
service { 'mysql':
  ensure => running,
}

# install php package
package { 'php':
  require => Exec['apt-update'],        # require 'apt-update' before installing
  ensure => installed,
}
```

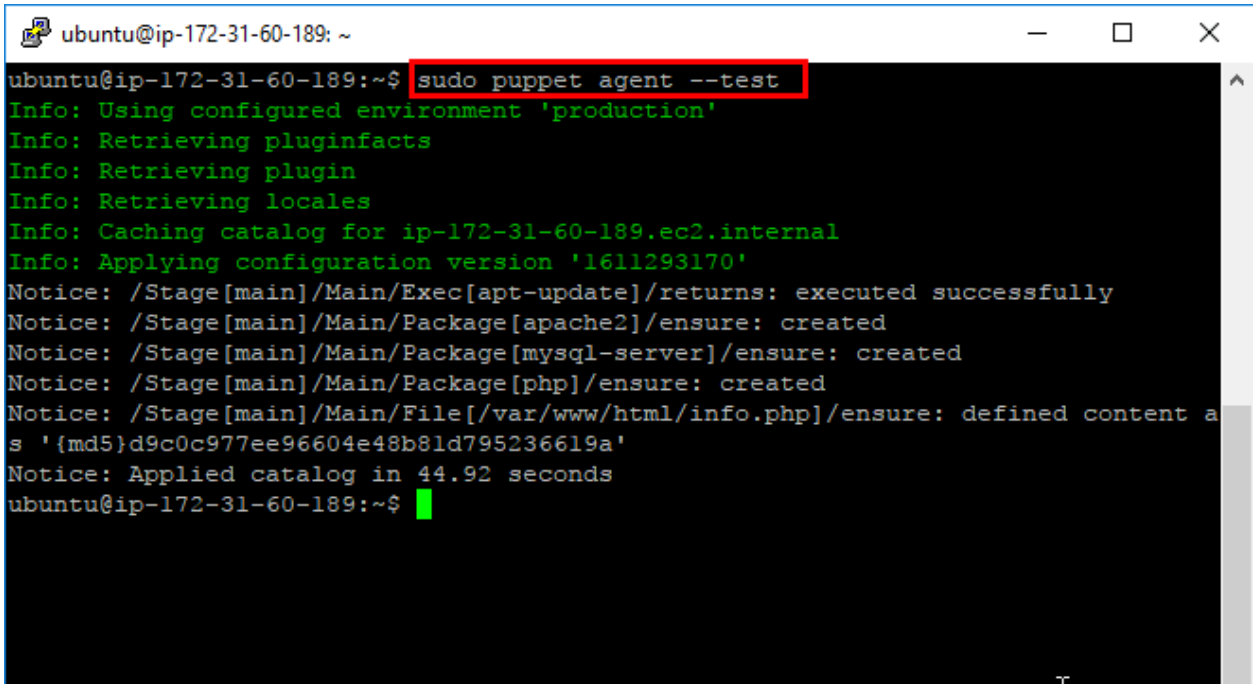
- Save and exit the file



Step 6: Pulling configuration in the agent node from puppet master

- Run the following command on the agent node to pull the configurations from puppet master:

```
$ sudo puppet agent --test
```



- Run the following command on the agent node to verify the installation of php on the agent node:

```
$ php -v
```