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Experiment No. 1.8

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Semester: III
Subject Name: DevOps Process Automation Lab
Subject Code: 22CAP-745

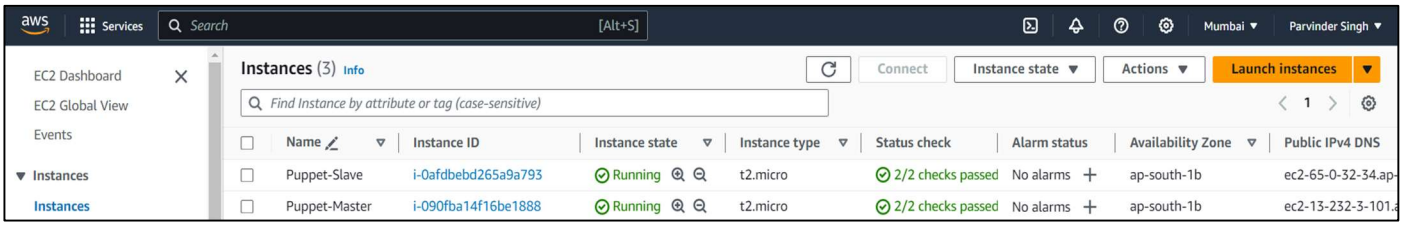
1. Aim/Overview of the practical:

- Install and configure Puppet (Master and Slave).
- Generate, Send and Sign SSL certificate by Puppet Slave and Verify SSL Certificate on Puppet Master.

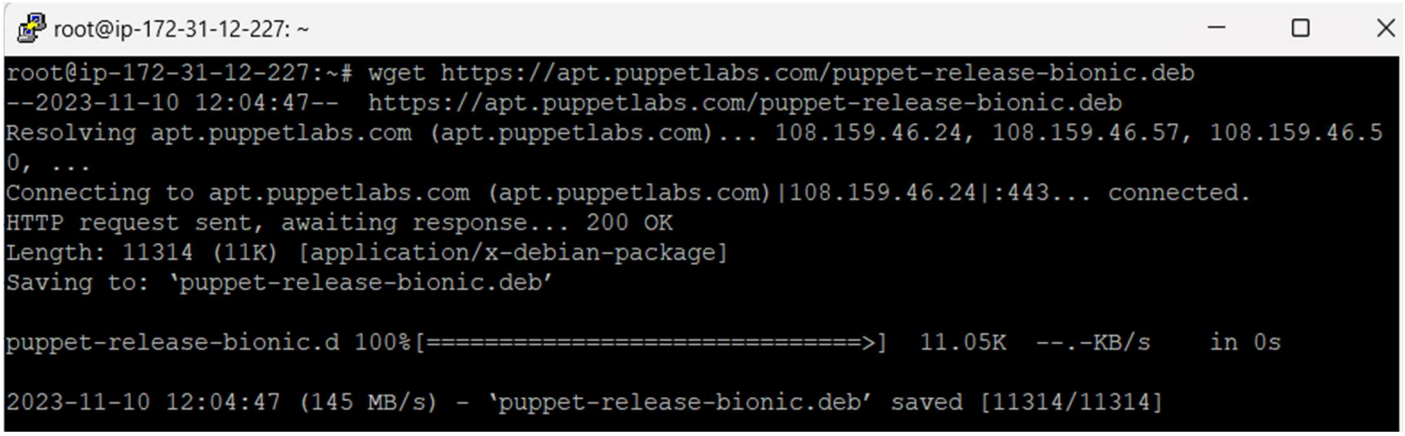
2. Code for experiment/practical:

A. Install and configure Puppet (Master and Slave).

- Go to AWS and Create two Ec2 instances (I'm using Ubuntu 20.04) and Access both by Putty.



- Once both machines are accessed, First go to Puppet-Master and download the Puppet package.
  # wget https://apt.puppetlabs.com/puppet-release-bionic.deb



- Now unpack the package # sudo dpkg -I puppet-release-bionic.deb

```
root@ip-172-31-12-227: ~
root@ip-172-31-12-227:~# sudo dpkg -i puppet-release-bionic.deb
Selecting previously unselected package puppet-release.
(Reading database ... 62002 files and directories currently installed.)
Preparing to unpack puppet-release-bionic.deb ...
Unpacking puppet-release (1.0.0-28bionic) ...
Setting up puppet-release (1.0.0-28bionic) ...
root@ip-172-31-12-227:~#
```

- Install the Puppet package # sudo apt-get install puppetmaster

```
root@ip-172-31-12-227: ~
root@ip-172-31-12-227:~# sudo apt-get install puppetmaster
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  augeas-lenses debconf-utils facter fonts-lato hiera javascript-common libaugeas0
  libboost-filesystem1.71.0 libboost-locale1.71.0 libboost-log1.71.0
  libboost-program-options1.71.0 libboost-regex1.71.0 libboost-thread1.71.0 libcpp-hocon0.1.7
  libfacter3.11.0 libjs-jquery libleatherman1.4.2 libruby2.7 libyaml-cpp0.6 puppet
  puppet-master rake ruby ruby-augeas ruby-deep-merge ruby-minitest ruby-net-telnet
  ruby-power-assert ruby-selinux ruby-shadow ruby-sync ruby-test-unit ruby-xmlrpc ruby2.7
  rubygems-integration unzip zip
```

- Edit puppet master configuration file. # sudo vim /etc/default/puppet-master
  Add JAVA_ARGS="-Xms512m -Xmx512m"

```
root@ip-172-31-12-227: ~
root@ip-172-31-12-227:~# sudo vim /etc/default/puppet-master
```

```
root@ip-172-31-12-227: ~
# Defaults for puppetmaster - sourced by /etc/init.d/puppet-master
JAVA_ARGS="-Xms512m -Xmx512m"
# Start puppetmaster on boot?
START=yes

# Startup options.
DAEMON_OPTS=""
~
```

- Enable and start or restart the puppet-master services. # sudo systemctl restart puppet-master.service
  Also allow 8140/tcp connection

```
root@ip-172-31-12-227: ~
root@ip-172-31-12-227:~# sudo systemctl restart puppet-master.service
root@ip-172-31-12-227:~# sudo ufw allow 8140/tcp
Rules updated
Rules updated (v6)
root@ip-172-31-12-227:~#
```

- Now go to Puppet-Slave machine and download the Puppet package.
  # wget https://apt.puppetlabs.com/puppet-release-bionic.deb

```
root@ip-172-31-0-192: ~
root@ip-172-31-0-192:~# wget https://apt.puppetlabs.com/puppet-release-bionic.deb
--2023-11-10 12:25:33--  https://apt.puppetlabs.com/puppet-release-bionic.deb
Resolving apt.puppetlabs.com (apt.puppetlabs.com)... 108.159.80.88, 108.159.80.39, 108.159.80.32
, ...
Connecting to apt.puppetlabs.com (apt.puppetlabs.com)|108.159.80.88|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 11314 (11K) [application/x-debian-package]
Saving to: 'puppet-release-bionic.deb'

puppet-release-bionic.d 100%[=================================>]  11.05K  --.-KB/s    in 0s

2023-11-10 12:25:34 (118 MB/s) - 'puppet-release-bionic.deb' saved [11314/11314]
```

- Now Unpack the package and install puppet. # sudo apt-get install puppet

```
root@ip-172-31-0-192: ~
root@ip-172-31-0-192:~# sudo apt-get install puppet
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  augeas-lenses debconf-utils facter fonts-lato hiera javascript-common libaugeas0
  libboost-filesystem1.71.0 libboost-locale1.71.0 libboost-log1.71.0
  libboost-program-options1.71.0 libboost-regex1.71.0 libboost-thread1.71.0 libcpp-hocon0.1.7
  libfacter3.11.0 libjs-jquery libleatherman1.4.2 libruby2.7 libyaml-cpp0.6 rake ruby
```

- Go to hosts file of Puppet-Master machine and config IP address of Puppet-Master machine.

```
root@ip-172-31-0-192: ~
root@ip-172-31-0-192:~# sudo nano /etc/hosts
root@ip-172-31-0-192: ~
  GNU nano 4.8                          /etc/hosts
127.0.0.1 localhost
13.232.3.101 puppet
# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
```

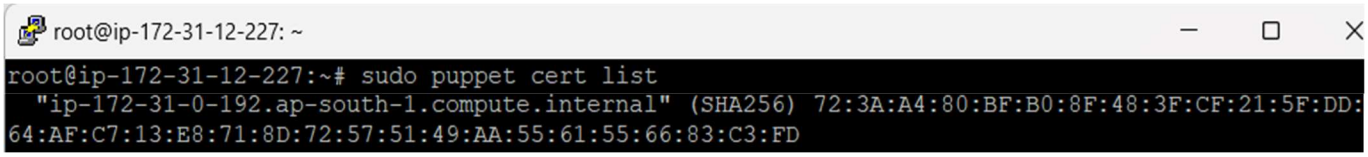
- Enable and start the puppet services # sudo systemctl start puppet # sudo systemctl enable puppet.

```
root@ip-172-31-0-192: ~
root@ip-172-31-0-192:~# sudo systemctl start puppet
root@ip-172-31-0-192:~# sudo systemctl enable puppet
Synchronizing state of puppet.service with SysV service script with /lib/systemd/systemd-sysv-in
stall.
Executing: /lib/systemd/systemd-sysv-install enable puppet
Created symlink /etc/systemd/system/multi-user.target.wants/puppet.service → /lib/systemd/system
/puppet.service.
root@ip-172-31-0-192:~#
```

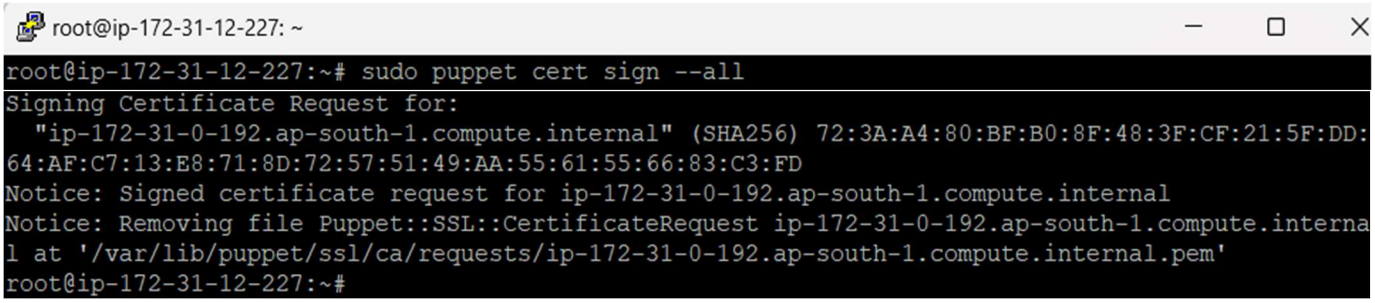
- Your Puppet-Master and Puppet-Slave machine are configured till now.

B. Generate, Send and Sign SSL certificate by Puppet Slave and Verify SSL Certificate on Puppet Master.

- Once Puppet-Master and Puppet-Slave machine are configured and connected Puppet-Slave machine generate and send the SSL certificate to Puppet-Master certificate.
- Now go to Puppet-Master machine and list the SSL certificate. # sudo puppet cert list



- Confirm the IP address by checking the SSL certificate request
- Now, Sign the SSL certificate request one by one manually or all (here I'm sign all certificate by –all flag).
  # sudo puppet cert sign –all



- SSL certificate signed successfully.