Puppet Installation Guide

Installation Notes

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Connect to an EC2 instance(Ubuntu).

Puppet Installation:

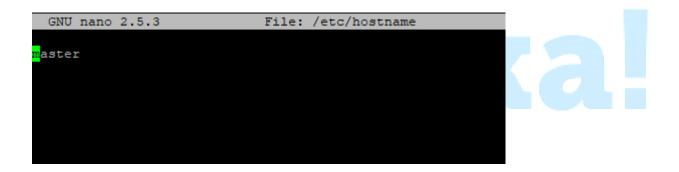All the commands in this installation are run as root.

Syntax: sudo su

Setup hosts file on Machines:

Step 1: On the master edit the /etc/hosts file and add the IP address of the master itself in the hosts file naming it puppet

Step 2: On the Agent machines add the master IP as puppet and the Agent's IP address as puppet-agent in the /etc/hosts file

```
root@ip-172-31-84-165:/home/ubuntu# sudo nano /etc/hostname
root@ip-172-31-84-165:/home/ubuntu#
```

```
  GNU nano 2.5.3              File: /etc/hostname

master
```

```
  GNU nano 2.5.3              File: /etc/hostname

slave
```

```
  GNU nano 2.5.3                  File: /etc/hosts

127.0.0.1 localhost
172.31.83.230 slave
172.31.95.26 master
# 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
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts
```

Setup the Puppet Server:

Step 1: Download the puppet package for ubuntu using

 Syntax: wget https://apt.puppetlabs.com/puppetlabs-release-pc1-xenial.deb

```
root@ip-172-31-84-165:/home/ubuntu# wget https://apt.puppetlabs.com/puppetlabs-r
elease-pcl-xenial.deb
--2018-09-28 15:34:44--  https://apt.puppetlabs.com/puppetlabs-release-pcl-xenia
l.deb
Resolving apt.puppetlabs.com (apt.puppetlabs.com)... 54.230.195.122, 54.230.195.
6, 54.230.195.53, ...
Connecting to apt.puppetlabs.com (apt.puppetlabs.com)|54.230.195.122|:443... con
nected.
HTTP request sent, awaiting response... 200 OK
Length: 13662 (13K) [application/x-debian-package]
Saving to: 'puppetlabs-release-pcl-xenial.deb'

puppetlabs-release- 100%[===================>]  13.34K  --.-KB/s    in 0s

2018-09-28 15:34:44 (461 MB/s) - 'puppetlabs-release-pcl-xenial.deb' saved [1366
2/13662]
```

Step 2: After downloading the package install it using dpkg with -i flag

 Syntax: sudo dpkg -i puppetlabs-release-pc1-xenial.deb

```
root@ip-172-31-84-165:/home/ubuntu# sudo dpkg -i puppetlabs-release-pcl-xenial.d
eb
Selecting previously unselected package puppetlabs-release-pcl.
(Reading database ... 54380 files and directories currently installed.)
Preparing to unpack puppetlabs-release-pcl-xenial.deb ...
Unpacking puppetlabs-release-pcl (1.1.0-2xenial) ...
Setting up puppetlabs-release-pcl (1.1.0-2xenial) ...
root@ip-172-31-84-165:/home/ubuntu#
```

Step 3: Run the ubuntu update command to ensure all the packages are up-to-date

 Syntax: apt-get update

Step 4: Now install the puppet server using the apt-get command

Syntax: apt-get install puppetserver

```
root@ip-172-31-84-165:/home/ubuntu# sudo apt-get install puppetserver
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  puppet-agent
The following NEW packages will be installed:
  puppet-agent puppetserver
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 50.7 MB of archives.
After this operation, 137 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://apt.puppetlabs.com xenial/PC1 amd64 puppet-agent amd64 1.10.14-1xe
ial [16.2 MB]
Get:2 http://apt.puppetlabs.com xenial/PC1 amd64 puppetserver all 2.8.1-1puppet
abs1 [34.5 MB]
Fetched 50.7 MB in 1s (31.1 MB/s)
Selecting previously unselected package puppet-agent.
```

This has installed puppet server on the master machine.

Configuring Puppet Server

NOTE: If you've allocated the virtual machine less than 4GB of memory, you'll have to change the default(2GB) memory size for Puppet

Step 1: Open puppetserver default file

 Syntax: nano /etc/default/puppetserver

```
ails.
root@ip-172-31-84-165:/home/ubuntu# sudo nano /etc/default/puppetserver
```

Step 2: The Xms and Xmx parameter of the JAVA_ARGS dictates the amount of memory Puppet Server is going to consume

```
  GNU nano 2.5.3           File: /etc/default/puppetserver

###########################################
# Init settings for puppetserver
###########################################

# Location of your Java binary (version 7 or higher)
JAVA_BIN="/usr/bin/java"

# Modify this if you'd like to change the memory allocation, enable JMX, etc
JAVA_ARGS="-Xms512m -Xmx512m -XX:MaxPermSize=256m"

# These normally shouldn't need to be edited if using OS packages
USER="puppet"
GROUP="puppet"
INSTALL_DIR="/opt/puppetlabs/server/apps/puppetserver"
CONFIG="/etc/puppetlabs/puppetserver/conf.d"

# Bootstrap path
BOOTSTRAP_CONFIG="/etc/puppetlabs/puppetserver/services.d/,/opt/puppetlabs/se
```

Step 3: For a system with memory less than 4GB decrease it to approx. half the system memory

Step 4: Open port number 8140 for puppet

 Syntax: ufw allow 8140

Setup Puppet-Agent

Note: Follow step 1-3 of the Puppet Server setup.

Step 1: Install puppet agent using apt-get command

Syntax: apt-get install puppet-agent

```
root@slave:/home/ubuntu# wget https://apt.puppetlabs.com/puppetlabs-release-pcl-
xenial.deb
--2018-09-29 17:38:40--  https://apt.puppetlabs.com/puppetlabs-release-pcl-xenia
l.deb
Resolving apt.puppetlabs.com (apt.puppetlabs.com)... 54.230.195.98, 54.230.195.1
22, 54.230.195.6, ...
Connecting to apt.puppetlabs.com (apt.puppetlabs.com)|54.230.195.98|:443... conn
ected.
HTTP request sent, awaiting response... 200 OK
Length: 13662 (13K) [application/x-debian-package]
Saving to: 'puppetlabs-release-pcl-xenial.deb.2'

puppetlabs-release- 100%[===================>]  13.34K  --.-KB/s    in 0s

2018-09-29 17:38:40 (352 MB/s) - 'puppetlabs-release-pcl-xenial.deb.2' saved [13
662/13662]

root@slave:/home/ubuntu# sudo dpkg -i puppetlabs-release-pcl-xenial.deb
dpkg: warning: downgrading puppetlabs-release-pcl from 1.1.0-4xenial to 1.1.0-2x
enial
(Reading database ... 84148 files and directories currently installed.)
Preparing to unpack puppetlabs-release-pcl-xenial.deb ...
Unpacking puppetlabs-release-pcl (1.1.0-2xenial) over (1.1.0-4xenial) ...
Setting up puppetlabs-release-pcl (1.1.0-2xenial) ...
root@slave:/home/ubuntu# sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu xenial-backports InRelease
Ign:4 http://apt.puppetlabs.com xenial InRelease
Get:5 http://security.ubuntu.com/ubuntu xenial-security InRelease [107 kB]
Hit:6 http://apt.puppetlabs.com xenial Release
Ign:8 http://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:9 http://pkg.jenkins.io/debian-stable binary/ Release
Fetched 107 kB in 1s (68.4 kB/s)
Reading package lists... Done
root@slave:/home/ubuntu# sudo apt-get upgrade
```

Step 2: Start and enable the puppet service

 Syntax: systemctl start puppet

 Syntax: systemctl enable puppet

```
root@slave:/home/ubuntu# sudo apt-get install puppet-agent
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  puppet-agent
0 upgraded, 1 newly installed, 0 to remove and 3 not upgraded.
Need to get 0 B/16.2 MB of archives.
After this operation, 92.7 MB of additional disk space will be used.
Selecting previously unselected package puppet-agent.
(Reading database ... 84148 files and directories currently installed.)
Preparing to unpack .../puppet-agent_1.10.14-1xenial_amd64.deb ...
Unpacking puppet-agent (1.10.14-1xenial) ...
Processing triggers for libc-bin (2.23-0ubuntu10) ...
Setting up puppet-agent (1.10.14-1xenial) ...
Created symlink from /etc/systemd/system/multi-user.target.wants/puppet.service
to /lib/systemd/system/puppet.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/mcollective.ser
vice to /lib/systemd/system/mcollective.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/pxp-agent.servi
ce to /lib/systemd/system/pxp-agent.service.
Removed symlink /etc/systemd/system/multi-user.target.wants/pxp-agent.service.
Processing triggers for libc-bin (2.23-0ubuntu10) ...
root@slave:/home/ubuntu# systemctl start puppet
root@slave:/home/ubuntu# systemctl status puppet
● puppet.service - Puppet agent
   Loaded: loaded (/lib/systemd/system/puppet.service; enabled; vendor preset: e
   Active: active (running) since Sat 2018-09-29 17:40:53 UTC; 8s ago
 Main PID: 4729 (puppet)
    Tasks: 2
   Memory: 60.3M
      CPU: 4.831s
   CGroup: /system.slice/puppet.service
           └─4729 /opt/puppetlabs/puppet/bin/ruby /opt/puppetlabs/puppet/bin/pup

Sep 29 17:40:53 slave systemd[1]: Started Puppet agent.
```

```
root@slave:/home/ubuntu# systemctl enable puppet
```

Signing Certifactes

Step 1: To show the all the Unsigned Certificates on Puppet Server Use cert list command

 Syntax: sudo /opt/puppetlabs/bin/puppet cert list

```
root@master:/home/ubuntu# /opt/puppetlabs/bin/puppet cert list --all
  "slave"             (SHA256) 85:E8:93:55:DE:6E:59:AE:8D:DA:E0:4D:66:0A:4F:76
:C0:32:3D:65:91:8D:1B:77:4E:EF:AC:A2:D1:24:5D:2B
+ "master.ec2.internal" (SHA256) C3:13:7F:8F:0E:56:1B:8E:0A:CA:28:B4:AD:BD:2A:11
:AB:ED:46:70:1D:6E:6C:CB:B5:9D:04:AC:CB:8E:BD:2F (alt names: "DNS:puppet", "DNS:
master.ec2.internal")
```

Step 2: Certificates can be signed individually using sign command with the Agent Name

Syntax: /opt/puppetlabs/bin/puppet cert sign <agent name>

    OR

All the pending certificates can be signed at once by adding the --all flag

 Syntax: /opt/puppetlabs/bin/puppet cert sign –all

```
root@master:/home/ubuntu# /opt/puppetlabs/bin/puppet cert sign slave
Signing Certificate Request for:
  "slave" (SHA256) 85:E8:93:55:DE:6E:59:AE:8D:DA:E0:4D:66:0A:4F:76:C0:32:3D:65:9
1:8D:1B:77:4E:EF:AC:A2:D1:24:5D:2B
Notice: Signed certificate request for slave
Notice: Removing file Puppet::SSL::CertificateRequest slave at '/etc/puppetlabs/
puppet/ssl/ca/requests/slave.pem'
```

On the agent run, run puppet agent -t

```
root@slave:/home/ubuntu# /opt/puppetlabs/bin/puppet agent -t
Info: Using configured environment 'production'
Info: Retrieving pluginfacts
Info: Retrieving plugin
Info: Caching catalog for slave
Info: Applying configuration version '1538243786'
Notice: Applied catalog in 0.02 seconds
```

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