Puppet is a powerful configuration management tool used for automating the deployment and management of software. Below are the step-by-step instructions to install and configure Puppet Master and Puppet Agent (Slave) on an Oracle VM running Ubuntu.

#Prerequisites

1. Two Ubuntu VMs (one for the Puppet Master and one for the Puppet Agent).

2. Static IPs or Hostnames for both VMs (Ensure they can communicate).

3. Root or Sudo Access.

4. Time Sync (NTP) to avoid certificate issues.

Step 1: Update and Configure Hostnames

Assign hostnames to both Puppet Master and Puppet Agent.

#On Puppet Master VM

**sudo hostnamectl set-hostname puppet-master**

#On Puppet Agent VM

**sudo hostnamectl set-hostname puppet-agent**

#Update `/etc/hosts` file on both VMs

Add the IP addresses of both systems:

**sudo nano /etc/hosts**

Example:

192.168.1.100 puppet-master (replace with IP address of your system)

192.168.1.101 puppet-agent (replace with IP address of your system)

Save and exit (`CTRL+X`, `Y`, `Enter`).

Step 2: Install Puppet Server on Puppet Master

#1. Add Puppet Repository

**wget https://apt.puppet.com/puppet7-release-focal.deb**

**sudo dpkg -i puppet7-release-focal.deb**

**sudo apt update**

#2. Install Puppet Server

**sudo apt install puppetserver -y**

#3. Configure Puppet Server

Modify Puppet Server's memory allocation (if needed):

**sudo nano /etc/default/puppetserver**

Change:

JAVA\_ARGS="-Xms512m -Xmx512m"

Adjust based on system RAM.

#4. Start and Enable Puppet Server

**sudo systemctl enable --now puppetserver**

**sudo systemctl status puppetserver**

Step 3: Install Puppet Agent on Puppet Agent

Run the following on the Puppet Agent VM:

#1. Add Puppet Repository

**wget https://apt.puppet.com/puppet7-release-focal.deb**

**sudo dpkg -i puppet7-release-focal.deb**

**sudo apt update**

#2. Install Puppet Agent

**sudo apt install puppet-agent -y**

#3. Configure Puppet Agent

Edit the Puppet config file:

**sudo nano /etc/puppetlabs/puppet/puppet.conf**

Add the following under `[main]`:

**server=puppet-master**

Save and exit.

#4. Start and Enable Puppet Agent

**sudo systemctl enable --now puppet**

**sudo systemctl status puppet**

Step 4: Configure SSL Certificates

Puppet uses SSL certificates for authentication between Master and Agent.

#1. On Puppet Agent

Request a certificate from the Puppet Master:

**sudo /opt/puppetlabs/bin/puppet agent --test --waitforcert 60**

This will generate a certificate request that needs to be signed by the Puppet Master.

#2. On Puppet Master

List pending certificate requests:

**sudo /opt/puppetlabs/bin/puppetserver ca list**

Sign the certificate request:

**sudo /opt/puppetlabs/bin/puppetserver ca sign --all**

#3. Verify Connection on Puppet Agent

After signing the certificate, run:

**sudo /opt/puppetlabs/bin/puppet agent --test**

Step 5: Create a Test Puppet Manifest

Now that Puppet is set up, let's create a simple test script.

#1. On Puppet Master

Create a simple Puppet manifest:

**sudo nano /etc/puppetlabs/code/environments/production/manifests/site.pp**

Add:

puppet

node 'puppet-agent' {

package { 'vim':

ensure => installed,

}

}

Save and exit.

#2. On Puppet Agent

Run Puppet manually to apply configurations:

**sudo /opt/puppetlabs/bin/puppet agent --test**

Check if `vim` is installed:

**vim --version**

Step 6: Automate Puppet Agent Runs

To ensure Puppet Agent automatically applies configurations, enable the service:

**sudo systemctl enable --now puppet**

By default, the Puppet Agent will check the Puppet Master every 30 minutes.

Final Verification

1. Ensure both services are running:

**sudo systemctl status puppetserver**

**sudo systemctl status puppet**

2. Check logs if needed:

**sudo journalctl -u puppetserver --no-pager**

**sudo journalctl -u puppet --no-pager**

3. Manually trigger Puppet Agent:

**sudo /opt/puppetlabs/bin/puppet agent --test**

Assigning Static IP

Sudo nano etc/network/interfaces

Auto enp0s3

Iface enp0s3 inet static

Address 192.168.1.10 (last number should be unique)

Netmask 255.255.255.0

Gateway 192.168.1.1

Dns-nameserver 8.8.8.8

Ctrl X, press y, press enter

Sudo systemctl restart networking