Install Puppet

Welcome to our install guide of Puppet! With puppet, you can automize the configuration for multiple servers. For this tutorial, we will use a master server and an agent server. In these steps we will tell you how you can prepare your Zabbix master, how you can configure the Zabbix web interface, how to prepare your Zabbix client, add them to the web interface and how you can use notifications.

1) Prepare VM's
   In order to install Puppet, you'll need to adjust a couple of things on your VM's!
   First of all, you'll need to change 3 things:
   - DNS settings → First change the DNS server addresses in the /etc/system/resolved.conf file:
     Sudo nano /etc/system/resolved.conf
     Change the DNS to a DNS address of your liking!
     Restart the system-resolved service:
     Sudo service system-resolved restart
     Also delete the nameservers in your netplan and apply those (see Zabbix tutorial)
   - Hostname → It's best to change your hostname! You need to configure 3 files for this! The first one is:
     Sudo nano /etc/hostname
     This one only contains the current hostname. Change this to puppet on the master and a name of your liking on the agent.
     The next one is:
     Sudo nano /etc/hosts
     Here you need to map each ip address and the hostname of the puppet server and agents
     i.e. 192.168.1.1 example
     The last file is:
     Sudo nano /etc/cloud/cloud.cfg
     Somewhere in this file is the line "preserve_hostname". The value behind this, must be "true".
     Every time you make changes to the hosts file, you must reboot:
     Reboot

2) Install NTP
   It's important to install NTP, because puppet works with certificates. So the time must be accurate for both machines. We will do this on **both machines**!
   First (as always):
   Sudo apt-get update
   Now install the NTP package:
   sudo apt-get install ntp ntpdate
   Perform a synchronization with the other NTP servers:

sudo ntpdate -u 0.ubuntu.pool.ntp.org

We will also set the time zone to:

sudo timedatectl set-timezone Europe/Brussels

This should be your output:

```
rsync@portahost:~$ sudo ntpdate -u 0.ubuntu.pool.ntp.org
20 May 09:23:09 ntpdate[13470]: adjust time server 195.200.224.66 offset 0.002316 sec
rsync@portahost:~$ sudo timedatectl set-timezone Europe/Brussels
rsync@portahost:~$ _
```

3) Install puppet server + configure the server

We only need to configure this part on the **master server (puppet)**!

Start with installing the puppetmaster software:

sudo apt-get install puppetmaster

It's installed now, but we need to start this yet with the right configurations!

Open the next file:

sudo nano /etc/puppet/puppet.conf

This must be the settings:

```
  GNU nano 2.9.3                        /etc/puppet/puppet.conf

[main]
ssldir = /var/lib/puppet/ssl
certname = puppet
server = puppet
environment = production
runinterval = 1h

[master]
vardir = /var/lib/puppet
cadir  = /var/lib/puppet/ssl/ca
dns_alt_names = puppet

                                [ Read 11 lines ]
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  M-U Undo
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo
```

Now start and enable the Puppet server at boot time:

sudo systemctl start puppet-master

sudo systemctl enable puppet-master

4) Install puppet agent

The Puppet server is up and running! Now it's time for the agent. This step is only for **the agent (name of your choosing)**!

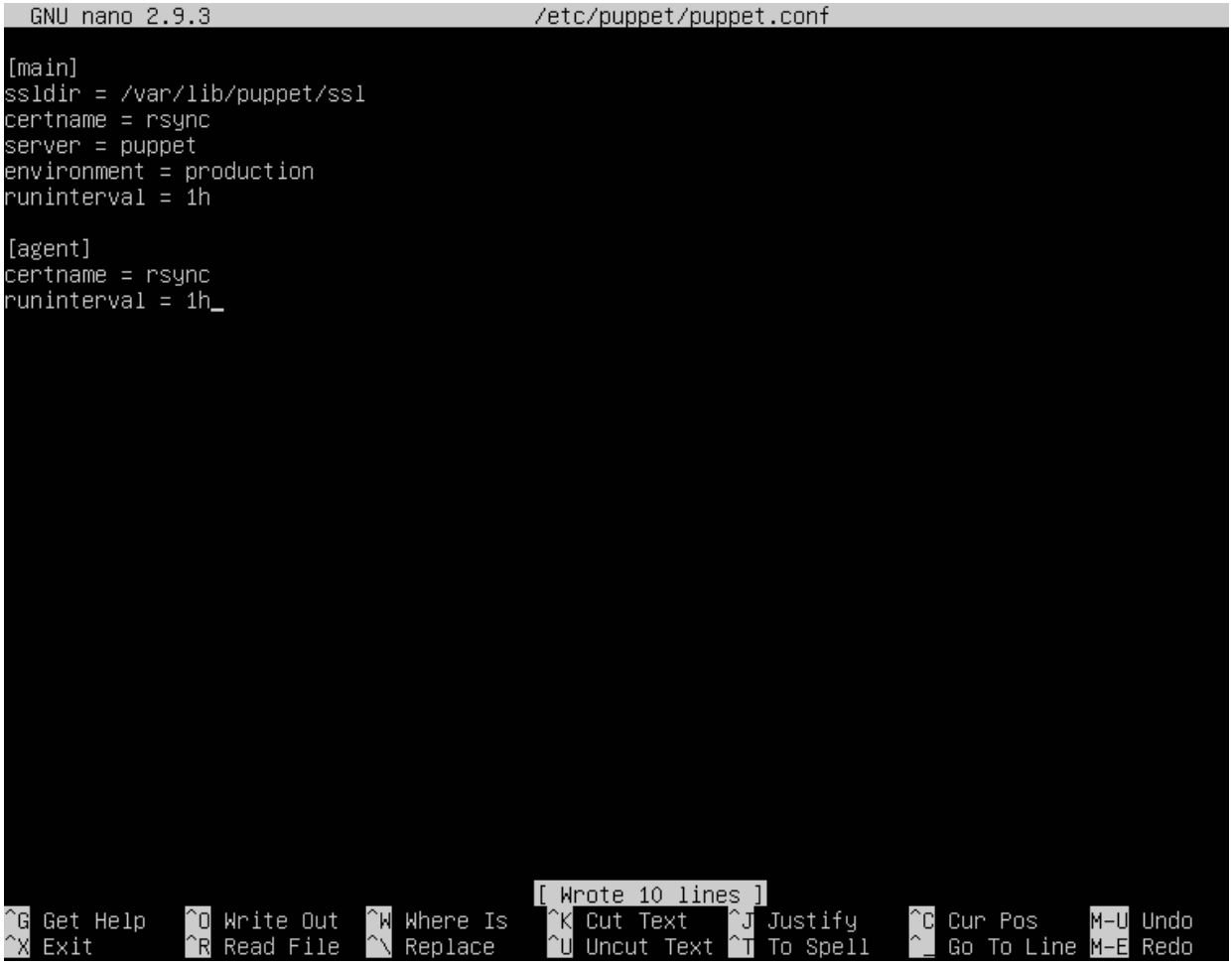
Let's start with installing the puppet agent:

sudo apt-get install puppet

Now we also need to adjust the configuration file:

Sudo nano /etc/puppet/puppet.conf

It should look like this:



You can choose the certname!

Now exit this!

You should now start the puppet agent on the client node of 'rsync' and make sure it's started at boot time:

sudo /usr/bin/puppet resource service puppet ensure=running enable=true

This must be the output:

5) Sign the agent nodes

The agent has already sent a certificate to the master server.

On the **puppet master**, you can see all the certificates:

sudo /usr/bin/puppet cert list –all

```
[sudo] password for puppetmain:
  "rsync"  (SHA256) 32:0B:9A:F4:B3:7B:50:26:40:02:85:8B:53:98:D5:2C:73:75:27:21:A2:F3:90:B8:F0:
:99:B5:27:93:52
+ "puppet" (SHA256) 8C:AF:B5:62:22:45:36:01:23:4A:F2:86:73:3E:79:17:26:5E:1C:B1:15:06:04:AE:7D:
:9B:3A:6D:96:3F (alt names: "DNS:puppet")
+ "zabbix" (SHA256) 92:D7:0D:B5:B6:59:AA:EF:37:38:7F:FF:07:64:12:F8:57:8D:8D:6A:A6:F3:40:AD:7C:
:13:F9:DA:8F:07
```

Here you see all my certificates!

Now I want to sign the “rsync”:

sudo /usr/bin/puppet cert sign rsync

We can also see if the certificate is signed correctly! Type in the next command on the **puppet agent**!

Sudo /usr/bin/puppet agent –test

This should be the result:

```
rsync@portahost:~$ sudo /usr/bin/puppet agent --test
[sudo] password for rsync:
Info: Using configured environment 'production'
Info: Retrieving pluginfacts
Info: Retrieving plugin
Info: Retrieving locales
Info: Caching catalog for rsync
Info: Applying configuration version '1589969771'
Notice: Applied catalog in 0.03 seconds
rsync@portahost:~$ _
```

6) Example!

The environment we’ll use is = ITF!

Let’s adjust this in this file on the **puppet agent**:

Sudo nano /etc/puppet/puppet.conf

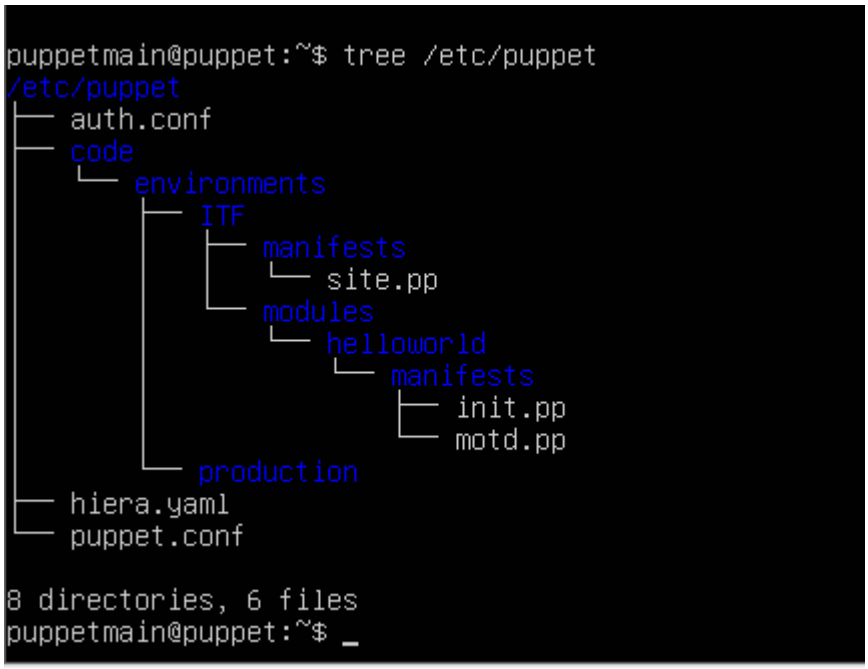
This is the output:

```
  GNU nano 2.9.3                        /etc/puppet/puppet.conf

[main]
ssldir = /var/lib/puppet/ssl
certname = rsync
server = puppet
environment = production
runinterval = 1h

[agent]
certname = rsync
runinterval = 1h
environment = ITF
```

We also need to create a directory structure on **the master**:



And that's how you can start off with Puppet! Now you can add configurations to the init.pp file and site.pp file!