Installation & Configuration of Puppet

I used 2 machines in which I installed the Puppet. One is used as the client and the other as the master (or server).

The server is an Ubuntu 12.04 LTS Server with the ip 192.168.2.112, and the following /etc/hosts file:

```
===================================
127.0.0.1       localhost
127.0.1.1       leon-server
192.168.2.112   leon-server.localdomain leon-server      <-  puppet-master
192.168.2.113   debian-server.myplace                     <-  puppet-client

# 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
======================================
```

The client is a Debian 6 Server with the ip 192.168.2.113 and the following /etc/hosts file:

```
======================================
127.0.0.1       localhost
127.0.1.1       debian-server.localdomain debian-server
192.168.2.113   debian-server.localdomain debian-server   <- puppet-client
192.168.2.112   leon-server.localdomain leon-server        <- puppet-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
=======================================
```

* Before we continue with the installation of the Puppet we have to be sure that the machines can reach and communicate each other. For this reason we use the ping command to send icmp requests from one machine to an other. Also it is important the two machines to have the same date. We can check it running the date command in each machine and compare the results. We can set a new date running for example date -s “17 MAY 2013 11:15:00”

I installed the **puppet-master** to the Ubuntu server: *sudo apt-get install puppetmaster*
I instaled the **puppet-client** to the Debian server: *sudo apt-get install puppet*

In each machine there is the */etc/puppet/puppet.conf file*. I edit this file and **in the master** I added at the end the line: *dns_alt_names = puppet, leon-server.localdomain, leon-server*
(dns_alt_names: A list of valid hostnames for the master, which will be embedded in its certificate.)

In the same file at the Debian machine (**client**) I added on the [main] blog the lines:

server=leon-server.localdomain <- The hostname of my puppet master-server
report=true
pluginsync=true
*** We can use also the certname parameter (The sitewide unique identifier for this node. Defaults to the node's fully qualified domain name, which is usually fine.)*
And after that I changed the value of START to yes at the /etc/default/puppet file.

The next step was to restart the puppet-master and puppet-client services:

```
sudo service puppet restart
sudo service puppetmaster restart
```

The two machines use the SSL protocol to communicate each other and for this reason I had to request a certificate from the master to the client and at the same time to sign this certificate. So I was connected to the puppet-client and with the
puppet agent --server leon-server.localdomain --waitforcert 60 --test --group 0 commant the client asked for a certificate from the server.
Then I connected to the puppet-master (without to stop the previous command) and using the command `puppet cert --list` I had the list with the certificate requests. The certification was signed using the command `puppet cert --sign debian-server.localdomain`.

Looking at the puppet-client we will see something like:

```
info: Creating a new SSL key for debian-server.localdomain
info: Caching certificate for ca
info: Creating a new SSL certificate request for debian-server.localdomain
info: Certificate Request fingerprint (md5): 72:39:2F:EE:8D:05:9D:CA:21:96:3A:98:87:49:45:B4
info: Caching certificate for debian-server.localdomain
info: Retrieving plugin
info: Caching certificate_revocation_list for ca
puppet://leon-server.localdomain/plugins
info: Creating state file /var/lib/puppet/state/state.yaml
info: Caching catalog for debian-server.localdomain
info: Applying configuration version '1368732656'
notice: Finished catalog run in 0.02 seconds
```

This means that the client's certification was signed and saved on the master

Just to test...
In the master, I created two folders at the etc/puppet/module directory

```
mkdir -p helloworld/manifests/
```

and inside the manifests folder I created the init.pp file (wich is a kind of module):

```
class helloworld {          #for puppet class is a block of commands and it has nothing to do
                              #with OOP
    file { '/tmp/helloFromMaster':          #create the file /tmp/helloFromMaster
        content => "See you at crowdpark!"   #wich contains something
    }
}
```

at the /etc/puppet/manifests/ I created the site.pp file wich contains only the line:

```
include helloworld  #the name of the class we want to use/execute at the client
```

After that I was connected to the client and I searched the helloFromMaster file

```
ls -l /tmp/
```

And I checked the content of the file `cat /tmp/helloFromMaster` ....

So, this the main idea how puppet works. We can write manifest-modules at the puppet-master in order for example to install and configure web-servers or databases at the puppet-client.

More reading...

http://terokarvinen.com/2012/puppetmaster-on-ubuntu-12-04
http://www.unixmen.com/install-puppet-master-and-client-in-ubuntu/
https://help.ubuntu.com/12.04/serverguide/puppet.html
http://docs.puppetlabs.com/
http://docs.puppetlabs.com/guides/installation.html#post-install
http://honglus.blogspot.de/2012/01/force-puppet-agent-to-regenerate.html

Troubleshouting...
http://terminalinflection.com/puppet-client-error-ssl_connect-certificate-verify-failed/
http://blog.adityapatawari.com/2012/02/puppet-and-common-errors.html
http://docs.puppetlabs.com/pe/2.0/maint_common_config_errors.html
http://bitcube.co.uk/content/puppet-errors-explained

Core types cheat sheet:
http://docs.puppetlabs.com/puppet_core_types_cheatsheet.pdf

Type references:
http://docs.puppetlabs.com/references/stable/type.html

Module cheat sheet:
http://docs.puppetlabs.com/module_cheat_sheet.pdf