LaTeX Puppet - Automatic Configration management

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Cloud providers today need to deliver pre installed infrastructure , operating system or programing language as per the service level agreements. There would be need to maintain multiple instances with various dependencies installed. It would become extremely impossible to maintain the configurations manually ,hence configuration management tools become a necessary in the cloud era. Puppet is one of the configuration management tool available today
Sharelatex systems.

Keywords: Cloud, I524

https://github.com/justbbusy/sp17-i524/tree/master/paper2/S17-IO-3024/report.pdf

1. INTRODUCTION

Puppet can mean the programming language in which the end state required is defined. unlike the procedural steps there is no need to know the required steps to achieve the end state , puppet would internally manage the required steps and ensures the end state is achieved. The same Puppet language code works between various operating systems. [1]

Puppet Language alone cannot achieve the configuration management required , puppet code needs to be maintained on regular basis to ensure the required dependencies are properly getting installed on the client servers. Puppet platform provides the required framework to maintain the puppet code. [1]

2. ARCHITECTURE

Catalog is the file which contains the end state of required at the client , it is defined in puppet language. This file is maintained at the puppet master, It would be downloaded by puppet client from the puppet master when it is run. The changes are applied by compiling and running the catalog.[2]

Puppet agent is a daemon process runs on the client machine where the configuration is required to be managed. Puppet master is a daemon process that runs on the host which manages the configuration across the various clients. The puppet agent and master would be communicated through a secure SSL connection. The puppet master would keep checking with client if the required installations are done or not , if there is any change in the end state required at a given client the puppet agent would run and ensures the end state is changed as per the configuration. It is also possible to define the time interval required for the puppet master to check with the client.[3]

Puppet is developed by Puppet Labs using ruby language and released as GNU General Public License (GPL) until version 2.7.0 and the Apache License 2.0 after that.[4]

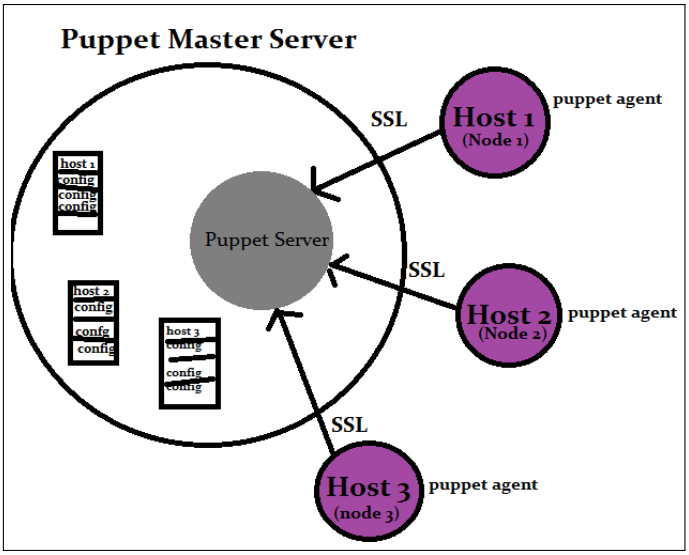

Fig. 1. Puppet Master Puppet Client Communication

3. CONFIGURATION

The below screenshots expains how the configure the puppet master and client and also to make the the puppet client have the changes immediately.

3.1. Puppet Master Configuration

```
#Add Puppet repos
[user@client ~]# sudo rpm -ivh
http://yum.puppetlabs.com/puppetlabs-release-el-6.noarch.rpm

[user@client ~]# sudo yum install puppet

#Open the conf file and add the puppet server hostname
[user@client ~]#sudo vim /etc/puppet/puppet.conf
[main]
# The puppetmaster server
server=puppet.yourserver.com



[user@client ~]# sudo service puppet start
```

Fig. 2. Puppet Master Configuration

[5]

3.2. Puppet Client Configuration

```
#Add Puppet repos
[user@puppet ~]# sudo rpm -ivh
http://yum.puppetlabs.com/puppetlabs-release-el-6.noarch.rpm

[user@puppet ~]# sudo yum install puppet-server

# Add your puppet server hostnames to the conf file under the
[main] section
[user@puppet ~]# sudo vim /etc/puppet/puppet.conf

 dns_alt_names = puppet,puppet.yourserver.com

[user@puppet ~]# sudo  service puppetmaster start
```

Fig. 3. Puppet Client Configuration

[5]

3.3. If Client needs to changes immediately

```
[user@puppet ~]# sudo puppet agent --test
```

Fig. 4. If Client needs to changes immediately

[5]

4. ADVANTAGES

1. Puppet Labs provides very good support for this tool.
2. Good interface and runs on almost all operating systems.
3. Installation and setup is simple
4. Strong reporting capabilities

[6]

5. DISADVANTAGES

1. For more advanced tasks, one need to use the CLI, which is Ruby-based makes it necessary to have ruby knowledge.
2. Support for pure-Ruby versions is being scaled back.
3. DSL and a design that does not focus on simplicity, the Puppet code base can grow large, unwieldy, and hard to pick up for new people in your organization at higher scale.
4. Model-driven approach means less control compared to code-driven approaches.[6]

6. CONCLUSION

The need of configuration is essential with the cloud offering with various tools like Chef , Ansible , Puppet , Salt etc in market gives freedom for the configuration management team to use the the applicable tool based on the case to case need.

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