Using Puppet to Create Your Robot Army

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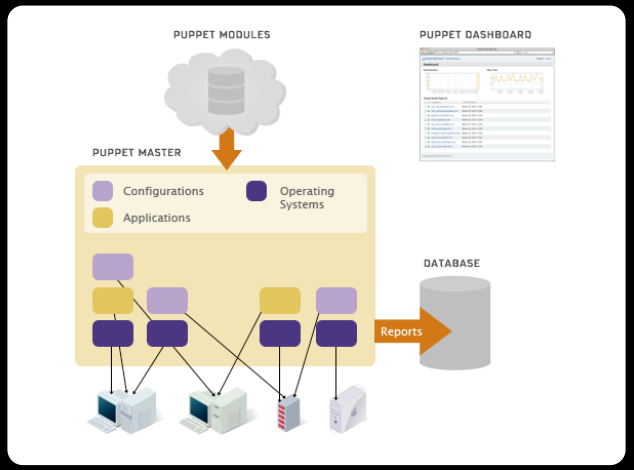
What is Puppet?

Puppet is an open source project for automation and configuration management with a declarative language and a flexible client-server architecture

Puppet Architecture



Who Uses Puppet?

Puppet Features

- Cross platform tool
- Centralized server(s) for configurations
- Web based reporting console
- Public key infrastructure for secure communications
- Community module library

Requirements

- Linux, Solaris, BSD or OS X
- Ruby 1.8.4

Installation

- Download distribution files from http://www.puppetlabs.com/misc/download-options
  - Puppet 2.6.4
  - Facter 1.5.8
  - MCollective 1.0.0 (if desired)

Installation

- Installation is as simple as extracting the source file and running the ruby install script (facter does need to be installed first)

```
% tar xzf puppet-2.6.4.tar.gz
% cd puppet-2.6.4
% sudo ruby install.rb
```

Creating the puppetmaster

- Puppet configuration files are in `/etc/puppet`

- Generate basic configuration with

```
puppet master --genconfig > /etc/puppet/puppet.conf
```

Creating the puppetmaster

- Naming your puppetmaster "puppet" is not neccessary, but use FQDN!
  - Will need to modify reportserver, ca_server, server accordingly
  - Default for report_server is server (probably have to comment)

Creating the puppetmaster

- puppetmasterd is not able to make the puppet user and group on OS X
- Create a locked account called puppet and a group also called puppet
- Create OD MCX to deny puppet from logging in and showing up on login panel

Creating the puppetmaster

- Create `/Library/LaunchDaemons/com.puppetlabs.puppetmasterd.plist`

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
        <key>Disabled</key>
        <false/>
        <key>Label</key>
        <string>com.puppetlabs.puppetmasterd</string>
        <key>Program</key>
        <string>/usr/sbin/puppetmasterd</string>
        <key>RunAtLoad</key>
        <true/>
        <key>ServiceDescription</key>
        <string>Launchd script for starting puppetmasterd</string>
        <key>StartInterval</key>
        <integer>5</integer>
</dict>
</plist>
```

- `launchctl load <path to plist>`

Adding a puppet Client

- For the first client execute:
  `sudo puppetd --server <SERVER> --waitforcert 60 --test`
- On puppetmaster, see cert to be signed
  `sudo puppetca --list`
- Sign cert to have client load initial manifest
  `sudo puppetca --sign <CLIENT>`

Adding a puppet Client

- Normally a client just executes puppetd
- The default time for waiting for the cert is 2 minutes
- puppetd will keep checking server for signed cert and then load the manifests

Adding a puppet Client

- Create `/Library/LaunchDaemons/com.puppetlabs.puppetd.plist`

```
<?xml version="1.0" encoding="UTF-8"?>
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        <key>Program</key>
        <string>/usr/sbin/puppetd</string>
        <key>RunAtLoad</key>
        <true/>
        <key>ServiceDescription</key>
        <string>Launchd script for starting puppetd</string>
</dict>
</plist>
```

- `launchctl load <path to plist>`

Adding a puppet Client

- Generate puppet.conf

```
puppet agent --genconfig > /etc/puppet/puppet.conf
```

- Set server value to puppetmaster
- Paths may be incorrect. May be easier:

```
[agent]
     server = <PUPPETMASTER>
```

- Again use FQDN!

Puppet Language

- Define a series of resources
- Classes function as conditional statements
- Resources can be grouped together

Reference Sites

- Pulling Strings with Puppet
  - http://tinyurl.com/puppet-mw

- http://www.puppetlabs.com/