





About Me

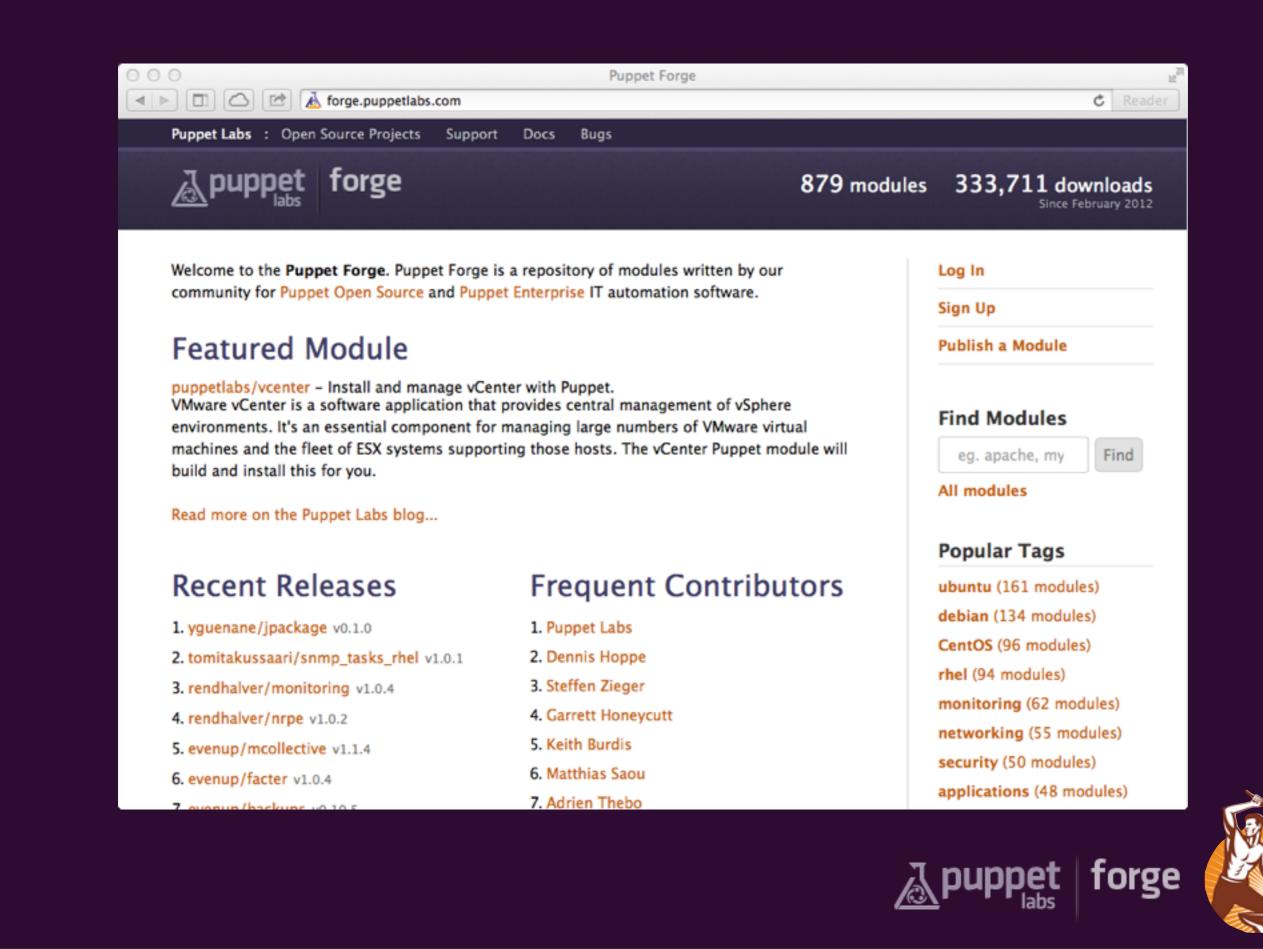




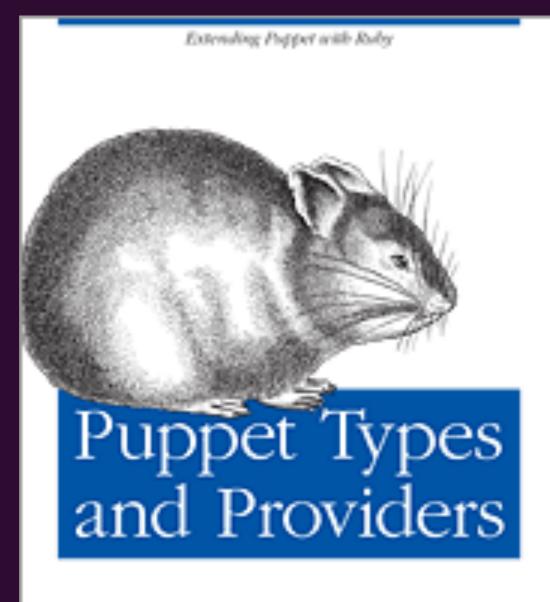


Tuesday, February 26, 13

Ryan was a RedHat sysadmin for Penn State before joining Puppet Labs as a professional services engineer. Now is product owner for the Forge.

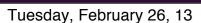


The Puppet Forge is a community driven web service for contributing and finding Puppet modules.



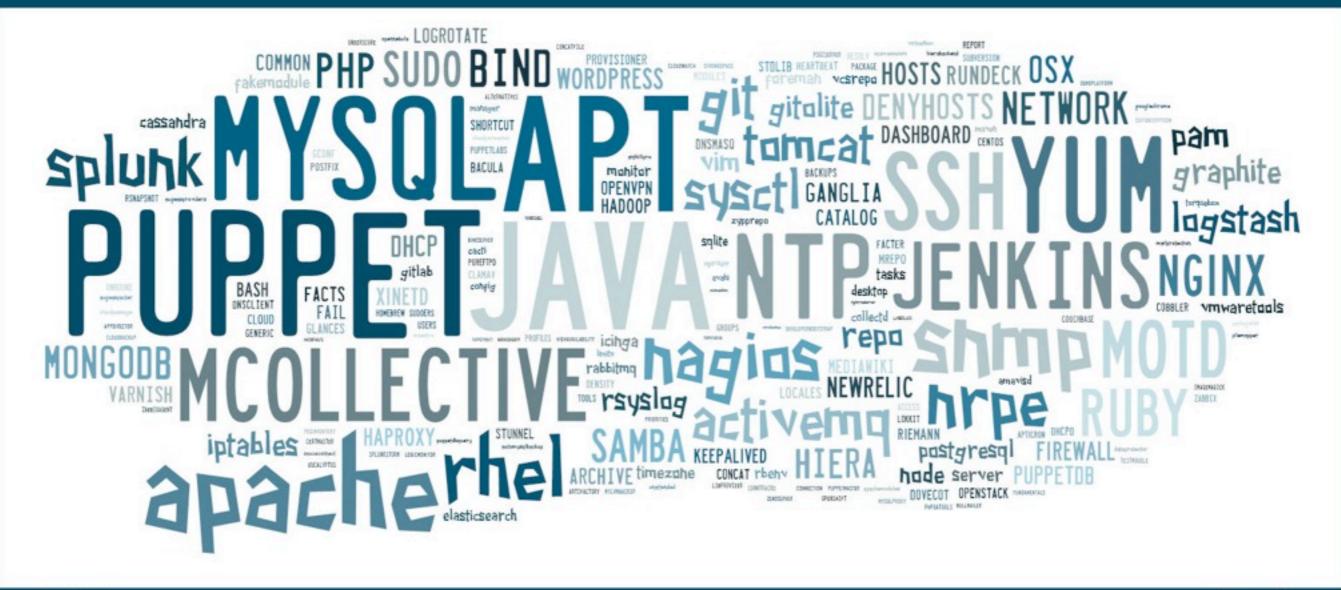
O'REILLY"

Dan Bode & Nan Liu









Copyright 2013

tagxedo.com





Tuesday, February 26, 13 Word cloud made from forge module names. Size = frequency

Puppet Labs : Open Source Projects Sup	port Docs	Bugs		
Jpuppet forge			879 modules	333,721 downl Since Februa
cprice404/inifile				Log In
Author: cprice404		Latest release: 0.9.0		Sign Up
Links: Project URL Tags: ini, settings, files		Release date: Nov 2, 2012 Total downloads: 6,619		Publish a Module
		Other releases: 0.9.0 +		Find Modules
How to Install				eg. apache, my
Run this code on your puppet node using the Puppet Module Tool: puppet module install cprice404/inifile The Puppet Module Tool is available in Puppet 2.7.14+ and Puppet Enterprise 2.5+ <u>Read about</u> installing modules				All modules
			bout	Popular Tags
Or: <u>Download as a .tar.gz</u>				ubuntu (161 modules) debian (134 modules)
				CentOS (96 modules)
README Changelog Types				rhel (94 modules)
				monitoring (62 modules networking (55 modules
INI-file module				security (50 modules)
		ing INI-style configuration file	r The	applications (48 module

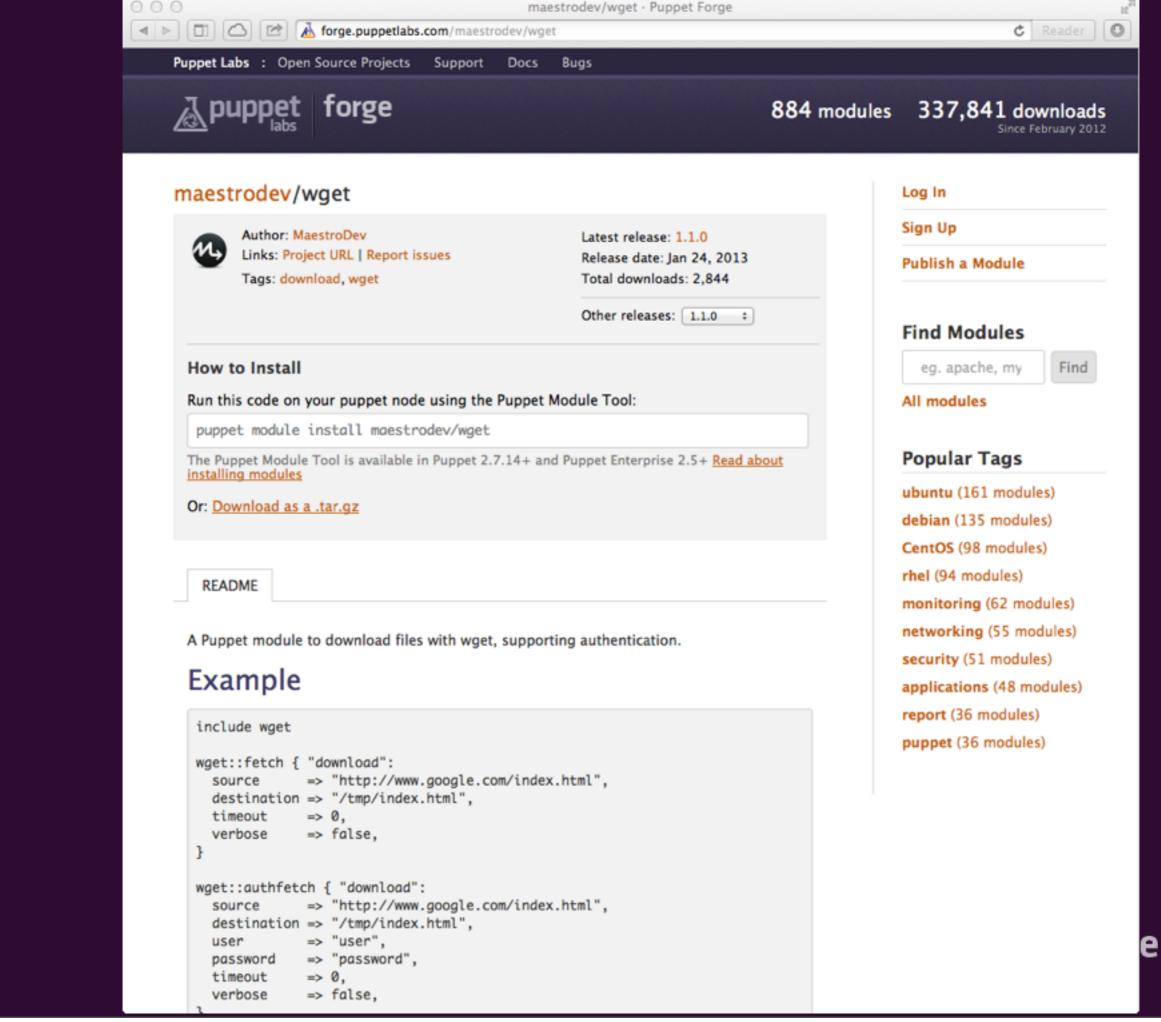
Tuesday, February 26, 13 The following are examples of what you might find on the Forge.

inifile.pp Puppet $\langle \rangle$ ര ini_setting { 'enable plugin sync': 1 ensure => present, 2 => '/etc/puppet/puppet.conf', path 3 section => 'agent', 4 setting => 'pluginsync', 5 value => 'true', 6 7 }

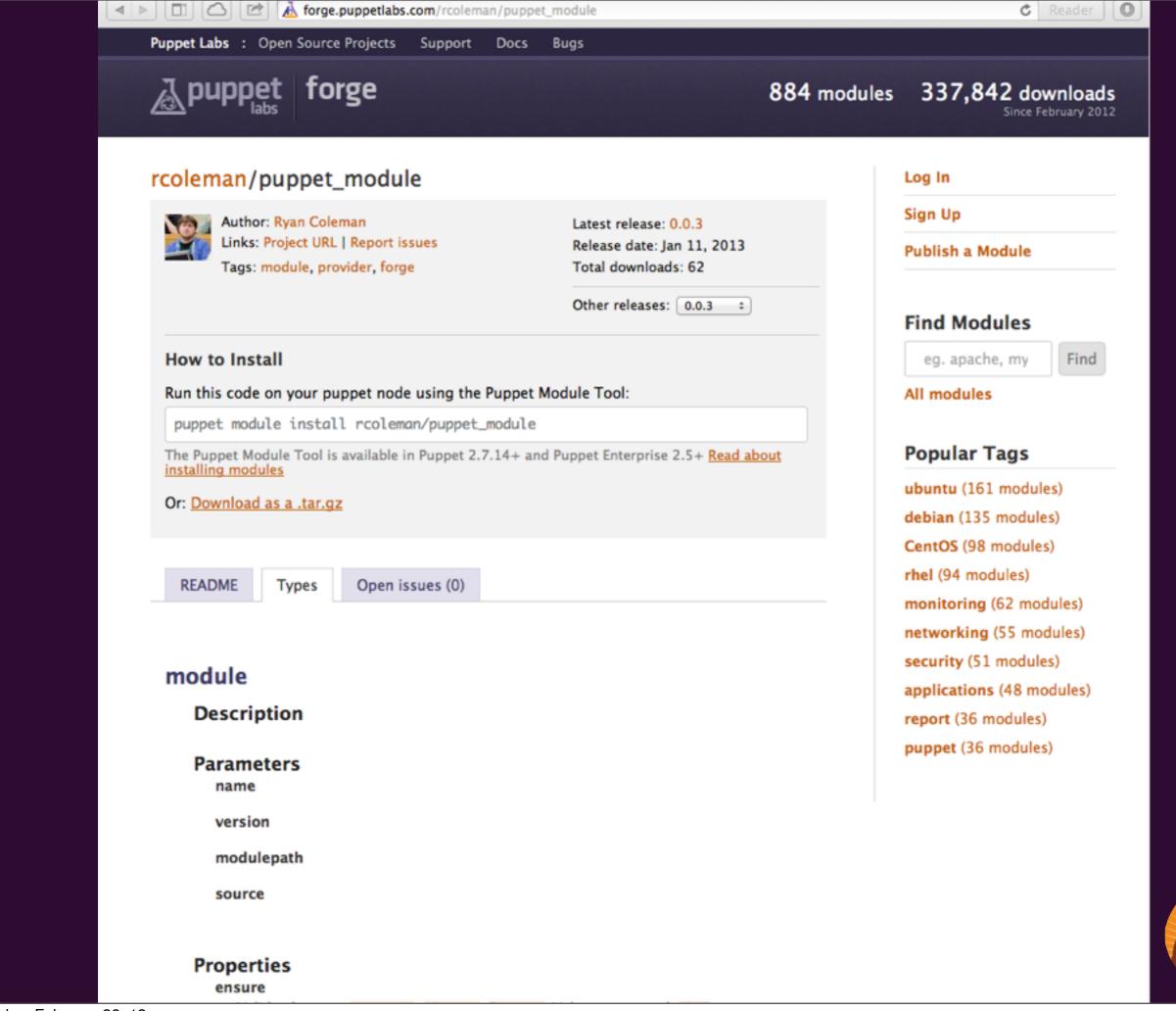




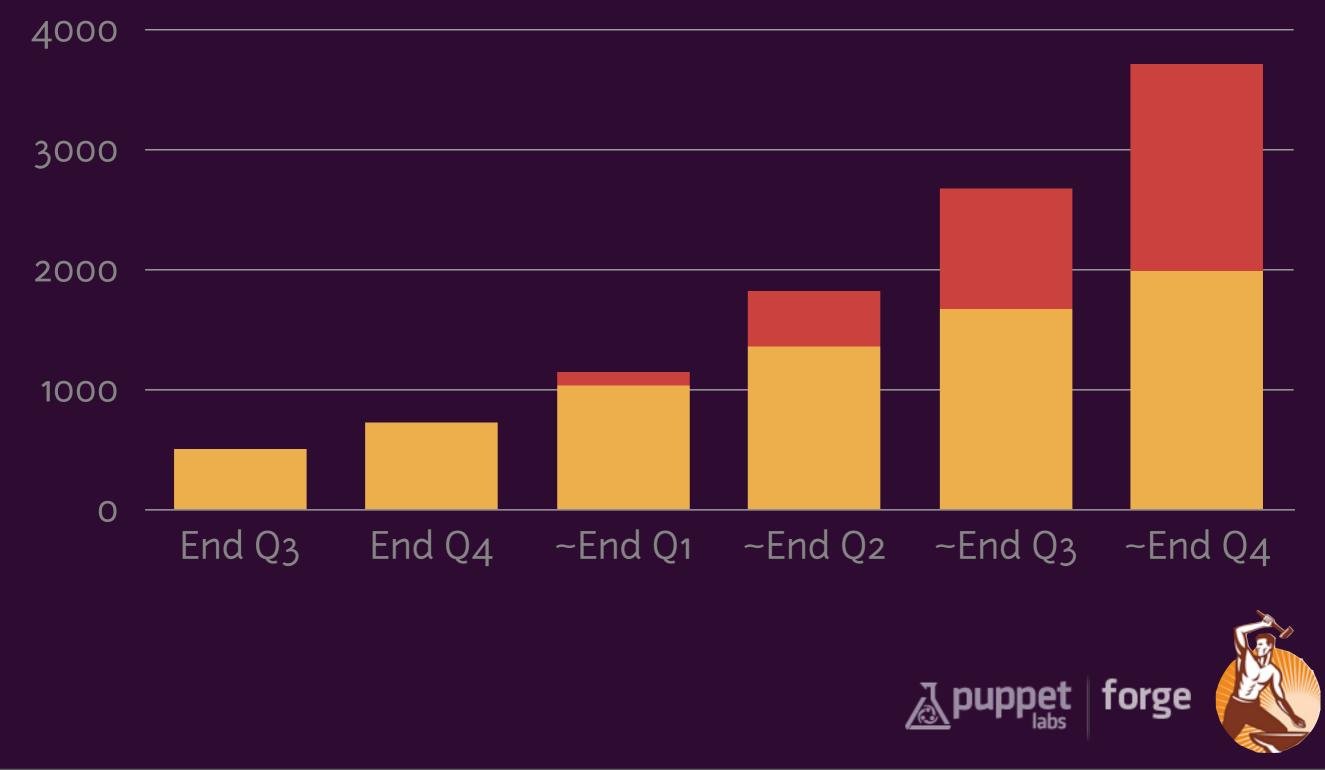
	Bugs	
Juppet forge	884 modules	337,840 downle Since Februar
jhaals/warranty		Log In
Author: Johan Haals	Latest release: 0.0.4	Sign Up
Links: Project URL Tags: lenovo, dell, warranty, linux, mac, windows	Release date: Sep 20, 2012 Total downloads: 168	Publish a Module
	Other releases: 0.0.4 ‡	Find Modules
How to Install		eg. apache, my
Run this code on your puppet node using the Puppet M	lodule Tool:	All modules
<pre>puppet module install jhaals/warranty</pre>		
The Puppet Module Tool is available in Puppet 2.7.14+ and installing modules	Puppet Enterprise 2.5+ Read about	Popular Tags
Or: Download as a .tar.gz		ubuntu (161 modules)
on <u>pownload as a mange</u>		debian (135 modules)
		CentOS (98 modules)
README		rhel (94 modules)
		monitoring (62 modules networking (55 modules
		security (51 modules)
Warranty		applications (48 module
This module provides additional warranty facts.		report (36 modules)
Supported Manufacturers		puppet (36 modules)
Machintosh		
Dell		
Lenovo		
Please contribute with for more manufacturers.		
Facts		
warranty => true		

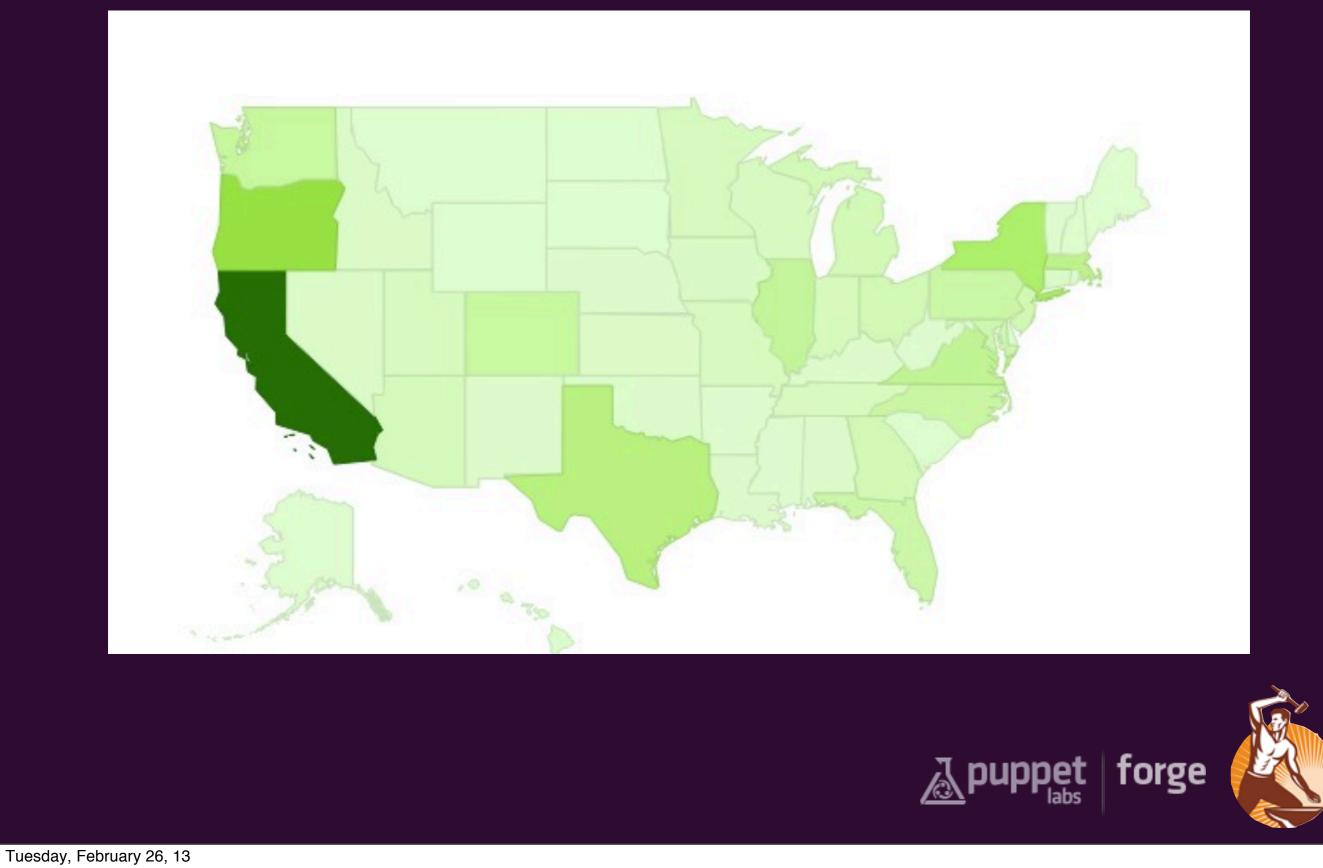


Puppet Labs : Open Source Project	s Support Docs	Bugs	884 modulos	227 9/1 download
			884 modules	337,841 download Since February 201
simondean/iis				Log In
Author: Simon Dean		Latest release: 0.1.3		Sign Up
Links: Project URL Repo Tags: appcmd, dotnet, as		Release date: Oct 6, 2012 Total downloads: 426		Publish a Module
webserver		Other releases: 0.1.3 ‡		Find Modules
How to Install				eg. apache, my Find
Run this code on your puppet n	ode using the Puppet M	Module Tool:		All modules
puppet module install sime	ndean/iis			
The Puppet Module Tool is availab	le in Puppet 2.7.14+ and	d Puppet Enterprise 2.5+ Read abo	ut	Popular Tags
Or: Download as a .tar.gz				ubuntu (161 modules)
				debian (135 modules)
				CentOS (98 modules)
Types Open issues (3)				rhel (94 modules) monitoring (62 modules)
				networking (55 modules)
				security (51 modules)
iis_apppool				applications (48 modules)
Description				report (36 modules)
IIS App Pool				puppet (36 modules)
Parameters				
name App pool name				
App poor name				
Properties				
ensure The basic property th	at the resource should	be in. Valid values are present		
absent.	at the resource should	be in value values are present	,	
queuelength				



Forge Module Count





From the US, LA is the 5th largest city regarding forge traffic – Behind the bay

install

Install a module from the Forge or a release archive.

puppet module install puppetlabs-apache --version 0.0.2

list

List installed modules.

puppet module list

search

Search the Forge for a module.

puppet module search apache

uninstall

Uninstall a puppet module.

puppet module uninstall puppetlabs-apache

upgrade

Upgrade a puppet module.

puppet module upgrade puppetlabs-apache --version 0.0.3





Jpuppet forge	882 modules	224 254 1
		334,254 downloads Since February 2012
puppetlabs/puppetdb		Log In
Author: Puppet Labs Latest release: 1.1.4		Sign Up
Links: Project URL Report issues Tags: storeconfig, puppetdb, puppet Total downloads: 5,154		Publish a Module
Other releases: 1.1.4 ‡		Find Modules
How to Install		eg. apache, my Find
Run this code on your puppet node using the Puppet Module Tool:		All modules
<pre>puppet module install puppetlabs/puppetdb</pre>		
The Puppet Module Tool is available in Puppet 2.7.14+ and Puppet Enterprise 2.5+ <u>Read ab</u> installing modules	out	Popular Tags
Or: Download as a .tar.gz		ubuntu (161 modules)
on <u>bounded as a stange</u>		debian (134 modules)
	1	CentOS (97 modules)
README Changelog Dependencies Types Open issues (8)		rhel (94 modules)
		monitoring (62 modules)
 cprice404/inifile (>= 0.9.0) 		networking (55 modules)
 puppetlabs/postgresql (2.x) 		security (50 modules) applications (48 modules)
 puppetlabs/firewall (>= 0.0.4) 		report (36 modules)

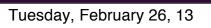
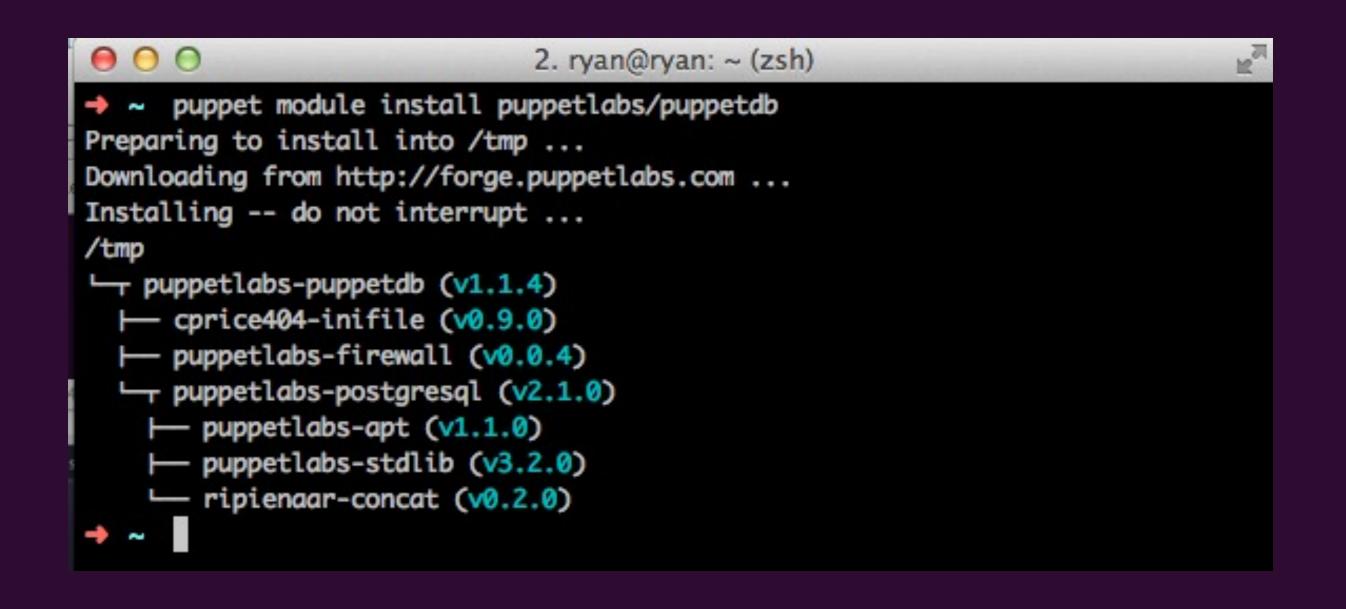


 Image: second condition
 Image: second condition

 Image: second condition
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 </t

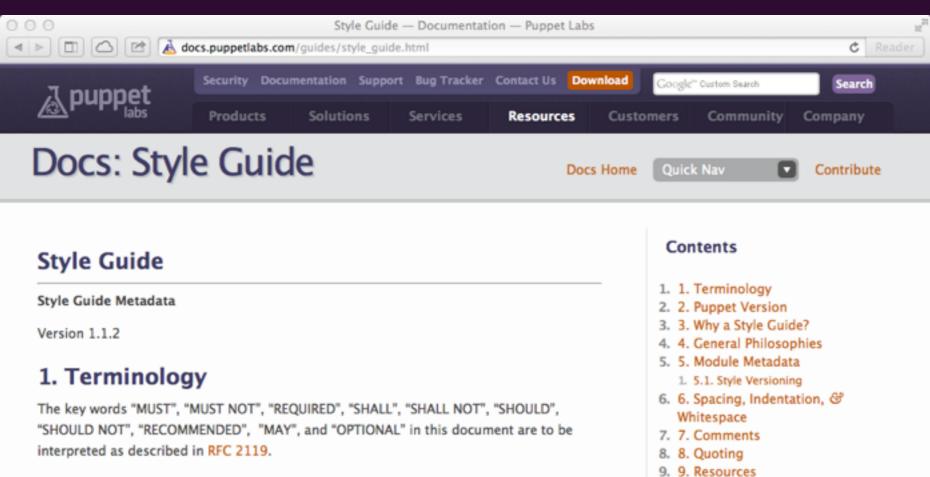




Best Good Practices







2. Puppet Version

This style guide is largely specific to Puppet versions 2.6.x; some of its recommendations are based on some language features that became available in version 2.6.0 and later.

3. Why a Style Guide?

Puppet Labs develops modules for customers and the community, and these modules should represent the best known practice for module design and style. Since these modules are developed by many people across the organisation, a central reference was needed to ensure a consistent pattern, design, and style.

- 9. Resources
- 1. 9.1. Resource Names
- 9.2. Arrow Alignment
 9.3. Attribute Ordering
- 4. 9.4. Compression
- 5. 9.5. Symbolic Links
- 6. 9.6. File Modes
- 7. 9.7. Resource Defaults
- 10. Conditionals

 10.1. Keep Resource
 - Declarations Simple 2. 10.2. Defaults for Case
 - Statements and Selectors

puppet

11. 11. Classes

 11.1. Separate Files

PL Style Guide



forge

9.1. Resource Names

All resource titles should be quoted. (Puppet supports unquoted resource titles if they do not contain spaces or hyphens, but you should avoid them in the interest of consistent look-and-feel.)

Good:

package { 'openssh': ensure => present }

Bad:

package { openssh: ensure => present }





9.2. Arrow Alignment

All of the fat comma arrows (=>) in a resource's attribute/value list should be aligned. The arrows should be placed one space ahead of the longest attribute name.

Good:

```
exec { 'blah':
    path => '/usr/bin',
    cwd => '/tmp',
}
exec { 'test':
    subscribe => File['/etc/test'],
    refreshonly => true,
}
```

Bad:

```
exec { 'blah':
    path => '/usr/bin',
    cwd => '/tmp',
}
exec { 'test':
    subscribe => File['/etc/test'],
    refreshonly => true,
}
```





11.1. Separate Files

All classes and resource type definitions must be in separate files in the manifests directory of their module. For example:

/etc/puppetlabs/puppet/modules/apache/manifests

```
# init.pp
class apache { }
# ssl.pp
class apache::ssl { }
# virtual_host.pp
define apache::virtual_host () { }
```

This is functionally identical to declaring all classes and defines in init.pp, but highlights the structure of the module and makes everything more legible.



< ▶ □ △ 🖻 🚱 puppet-lint.com

000



Check that your Puppet manifest conform to the style guide

puppet-lint

Install It!

\$ gem install puppet-lint

Run It!

\$ puppet-lint --with-filename /etc/puppet/modules foo/manifests/bar.pp: trailing whitespace found on line 1 apache/manifests/server.pp: variable not enclosed in {} on line 56 ...

Fix Them!

Head on over to the checks page to see a description of each check and get some help on how to clear those errors.

Hosted on GitHub Pages using the Dinky theme





Tuesday, February 26, 13

C Reader

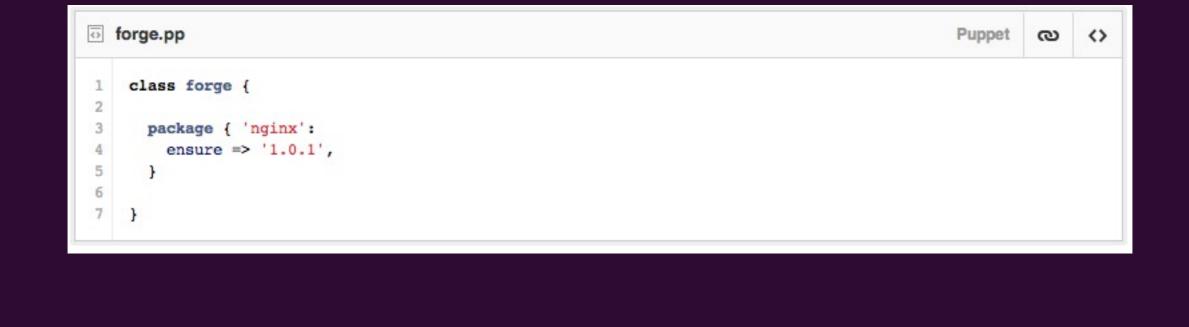
12

Code VS Data



Tuesday, February 26, 13

As you get further along with your Puppet Deployments, separating your code (puppet resources) from the data (what package, what version) becomes increasingly important.





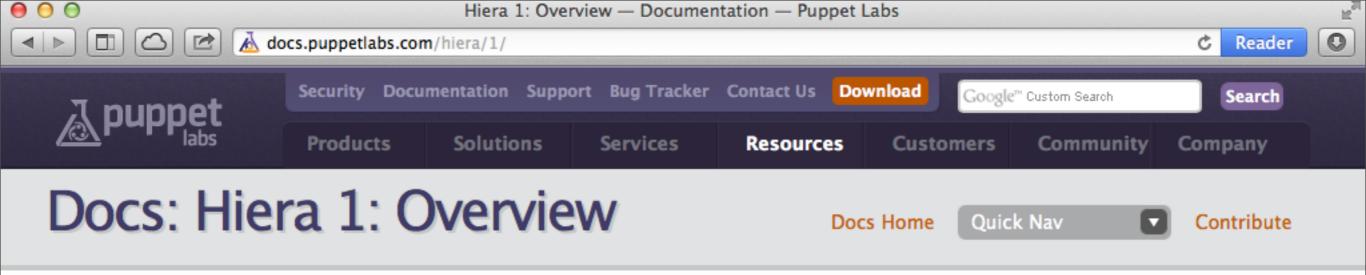


$\overline{\langle \rangle}$	Puppet	ര	\diamond
1	class forge {		
3 4	<pre>package { 'nginx': ensure => '1.0.1',</pre>		
5	}		
7	}		

⇔	forge.pp Puppet	ര	\diamond
1 2	class forge {		
3 4	<pre>package { \$package_name: ensure => \$package_version,</pre>		
5	}		
7	}		



Tuesday, February 26, 13 How do you get from A to B?



Hiera 1

- Overview
- Complete Example
- Installation
- Configuration and hiera.yaml
- Hierarchies
- Writing Data Sources
- Variables and Interpolation
- Usage with Puppet
- Usage on the Command Line
- Writing New Backends

Download the Docs



Download Puppet Enterprise

Tuesday, February 26, 13

The answer, use Hiera!

Hiera 1: Overview

- 1. Getting Started With Hiera
 - 1. Learning From Example
- 2. Why Hiera?
 - 1. Making Puppet Better
 - 2. Avoiding Repetition

Hiera is a key/value lookup tool for configuration data, built to **make Puppet better** and let you **set node-specific data without repeating yourself.** See "Why Hiera?" below for more information, or get started using it right away:

Getting Started With Hiera

To get started with Hiera, you'll need to do all of the following:

- Install Hiera, if it isn't already installed.
- Make a hiera.yaml config file.
- Arrange a hierarchy that fits your site and data.
- Write data sources.
- Use your Hiera data in Puppet (or any other tool).

Seriously, these docs rock. Read them. <u>http://docs.puppetlabs.com/hiera/1/index.html</u>

It's MAGIC

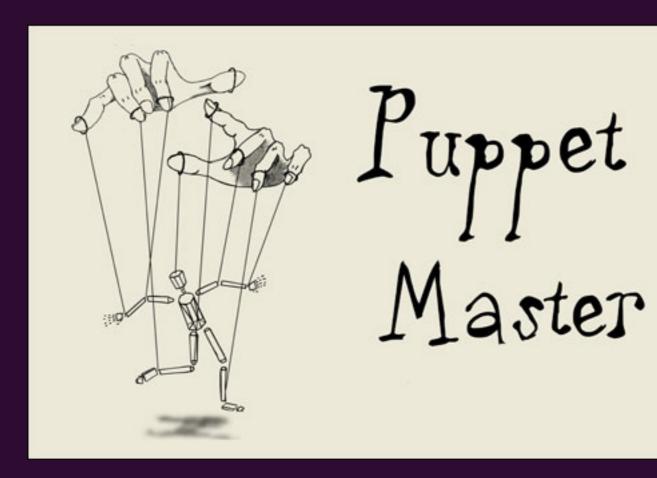
But also, it's not...

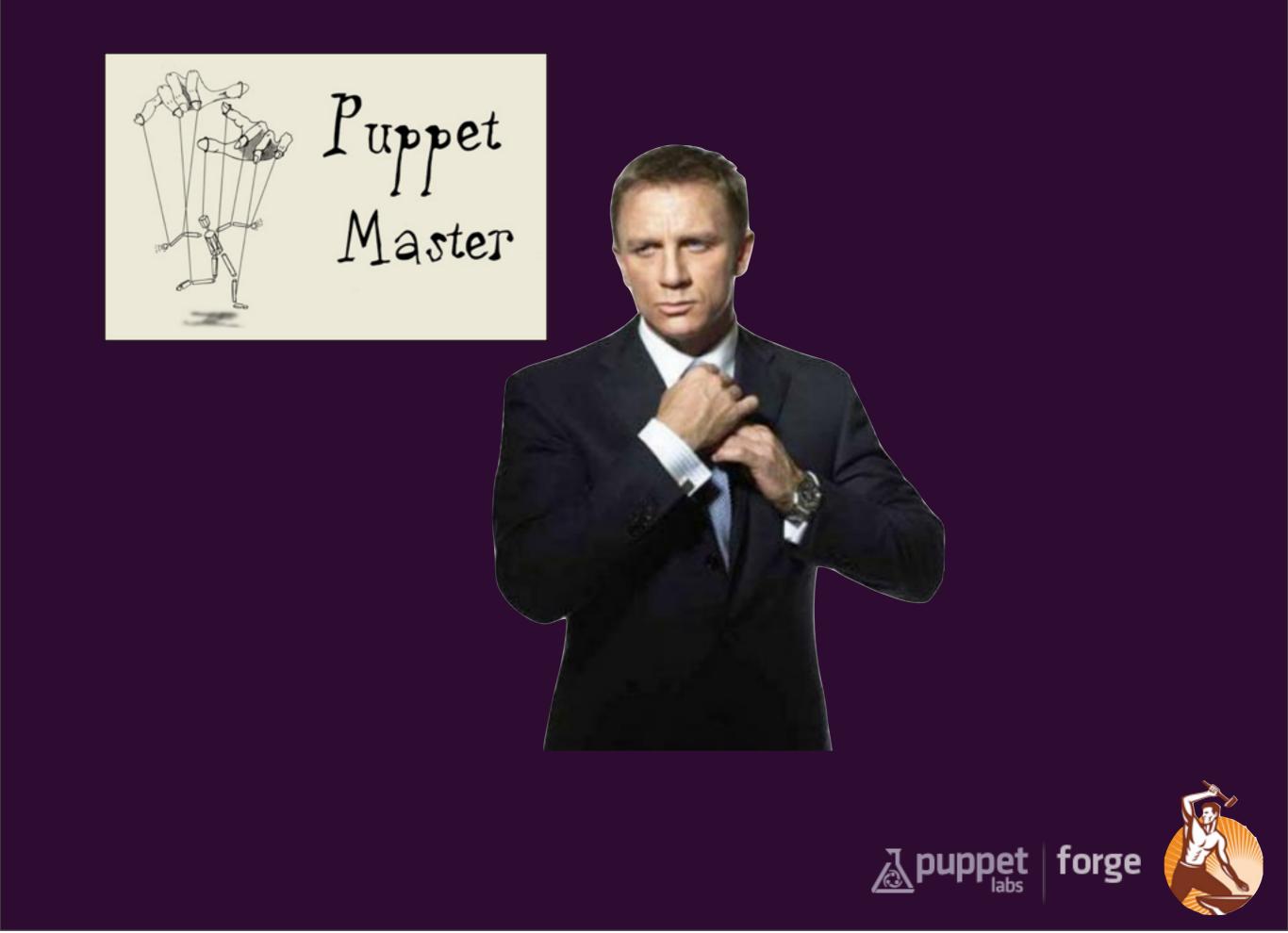


Tuesday, February 26, 13 But first, let's take a closer look at a Puppet run.















Puppet Master

I need the value for \$forge::package_name.

How should I conduct my search?



≩puppet | forge

I need the value for \$forge::package_name.

How should I conduct my search?

3 -	ckends: • yaml		
	ml: datadir: /etc/puppet/hieradata		
:hi	erarchy: *{::clientcert}		
	<pre>%{::operatingsystem} common</pre>		





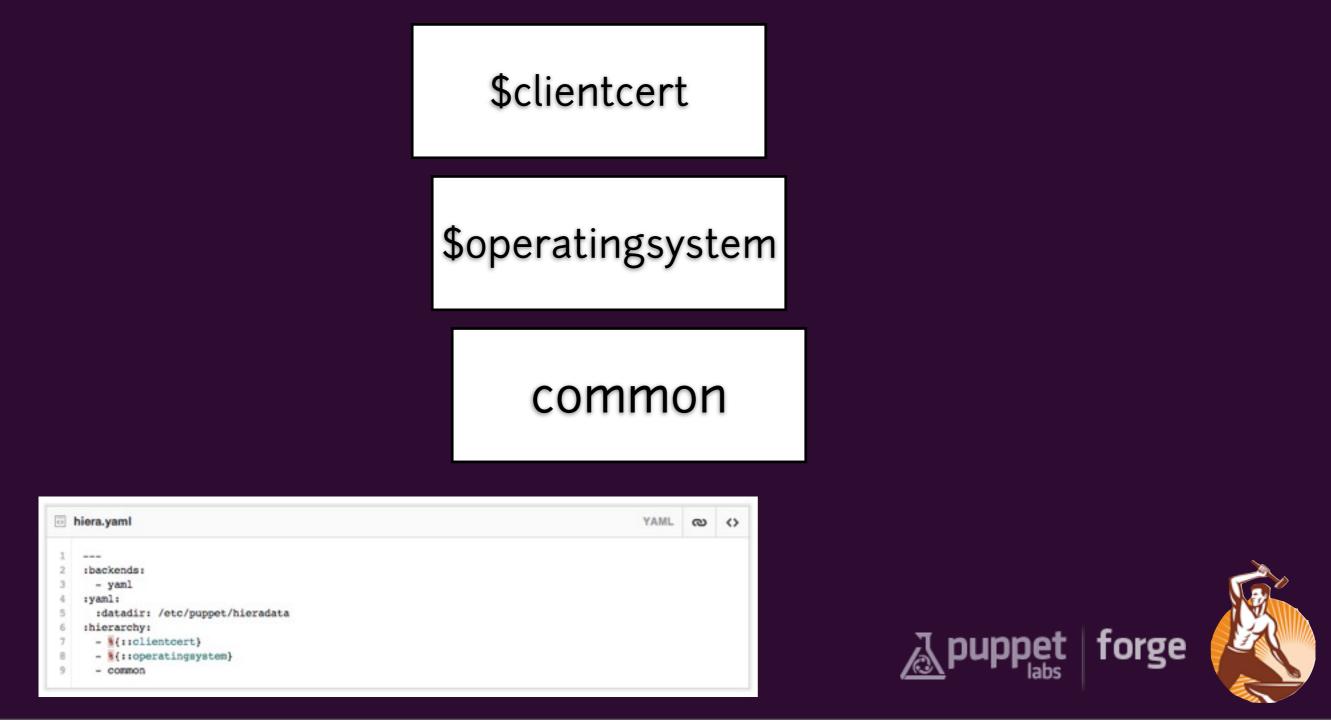
Tuesday, February 26, 13

Hiera lets you express data in some structured format (which is pluggable).

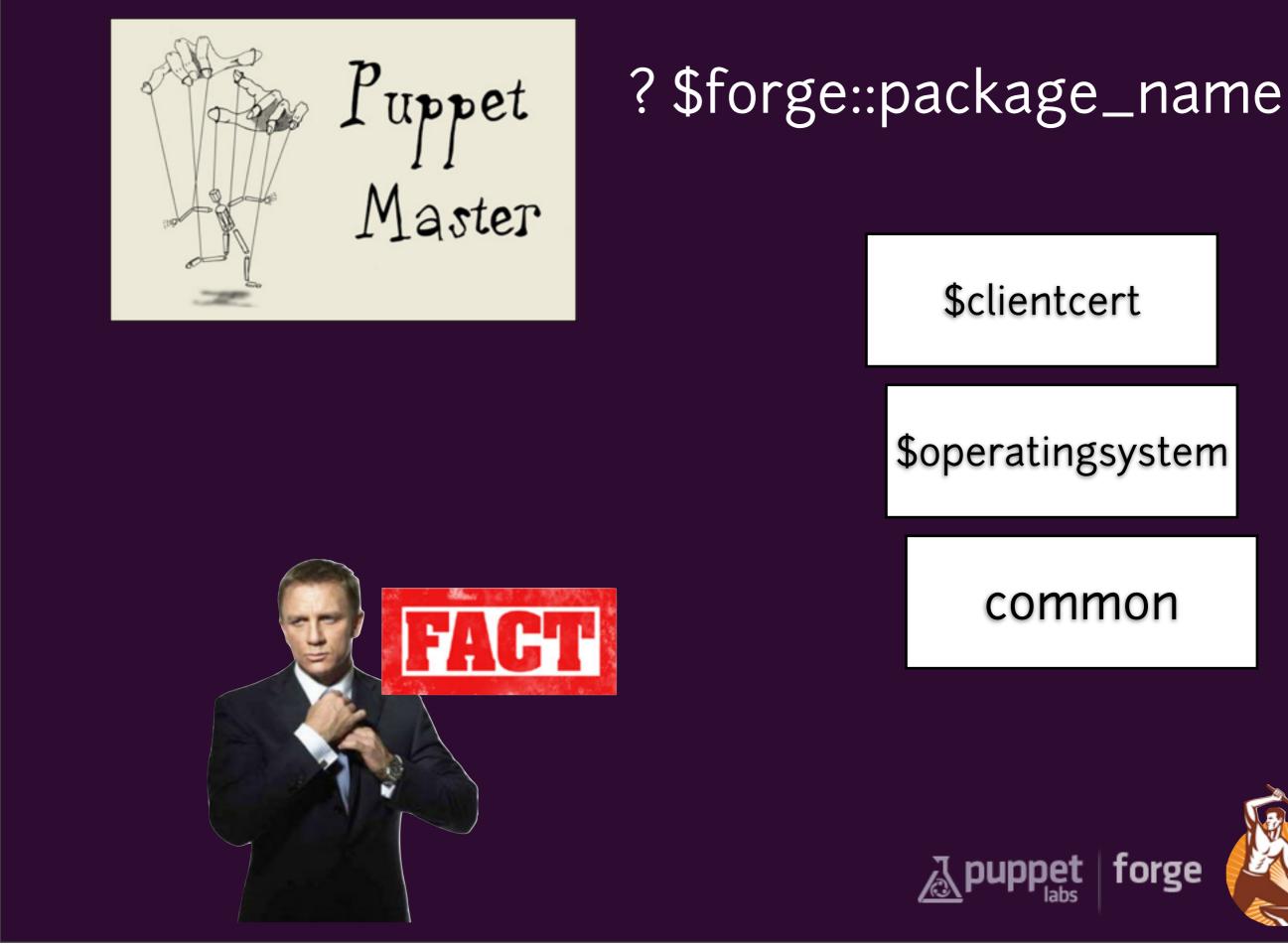
You then establish a hierarchy of lookup, however you like, usually based on facts.

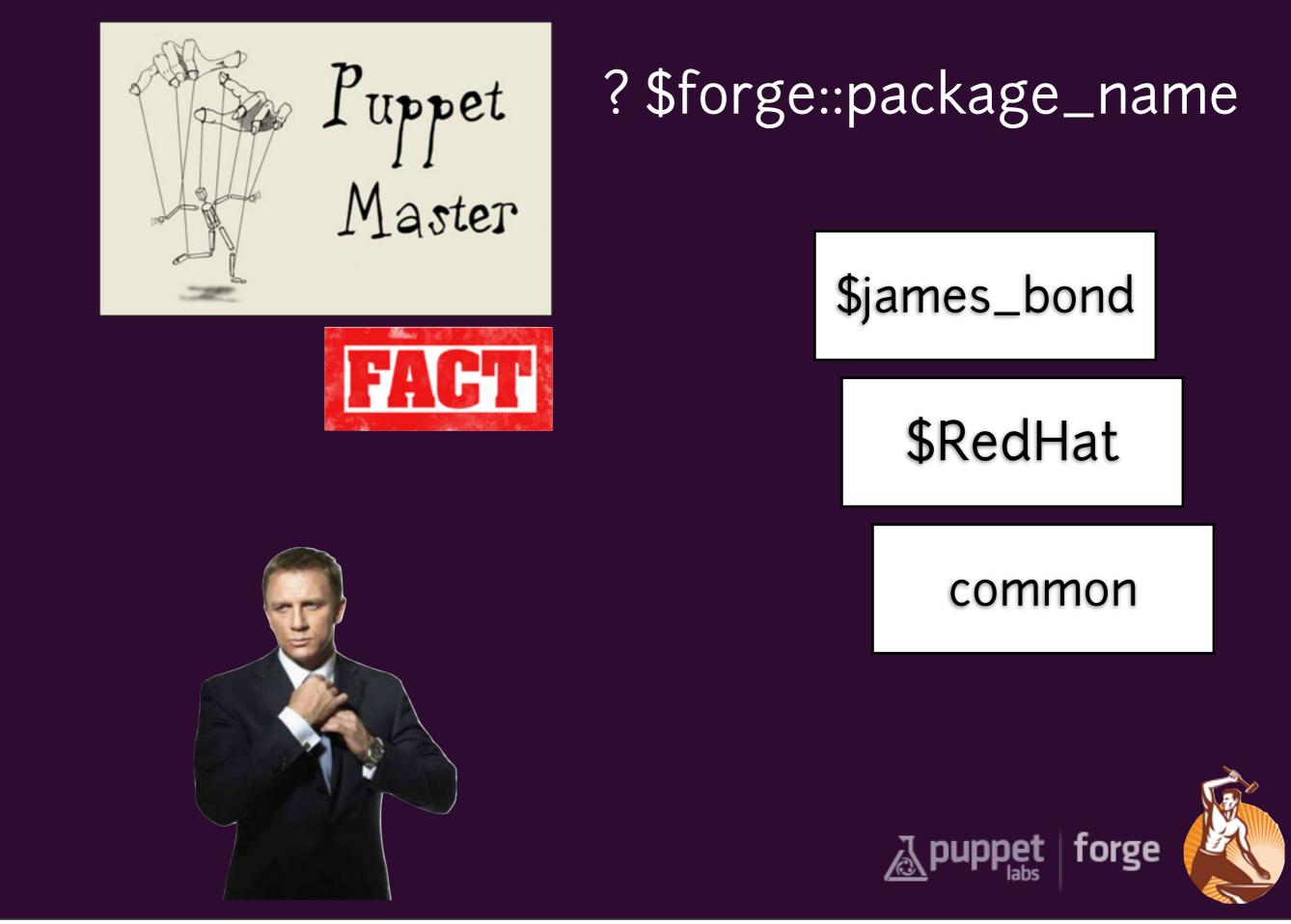
I need the value for \$forge::package_name.

How should I conduct my search?



Tuesday, February 26, 13 Consider your hierarchy the lookup order.





Tuesday, February 26, 13 Facts can be used for a dynamic hierarchy.

? \$forge::package_name

\$j	ames_bond	<pre>image james_bond.yaml region: 'us'</pre>	YAML	0	\diamond
	\$RedHat	RedHat.yaml 1 puppetdb::database: 'embedded'	YAML	ඉ	\diamond
	common	<pre>common.yaml 1 forge::package: 'screen'</pre>	YAML	ര	\diamond
				5	
		Duppet for	ge		

Tuesday, February 26, 13

Hiera will simply consult the structured data, looking for variable names, expecting files named after your entry in hiera.yaml

? \$forge::package_name

\$james_bond	<pre>image james_bond.yaml region: 'us'</pre>	YAML	ര ↔
\$RedHat	RedHat.yaml 1 puppetdb::database: 'embedded' 2 forge::package: 'tmux'	YAML	ର୍ଭ ()
common	<pre>common.yaml 1 forge::package: 'screen'</pre>	YAML	∞ ↔
	값 puppet forg	ge (
verden. February 00, 40			

Tuesday, February 26, 13 Hierarchy matters. The package name is now tmux.

Ok, so how do I implement it?





Tuesday, February 26, 13 Thankfully, Puppet 3 has made implementing Hiera really simple.

<>	common.yaml	YAML	ര
1	forge::package: 'screen'		
_			
\odot	init.pp	Puppet	ര
1	class forge {		
2			
3	<pre>\$package_name = hiera('forge::package')</pre>		
4	<pre>package { \$package_name:</pre>		
6	ensure => present,		
7	}		
8			
9	}		
	}		
	}		
9			
9) site.pp	Puppet	ര
9	site.pp	Puppet	ര
9		Puppet	0
9	site.pp	Puppet	ര
9	site.pp	Puppet	ര
9	site.pp	Puppet	0
9	site.pp	Puppet	ල
9	site.pp	Puppet	ର
9	site.pp	Puppet	ର
9	site.pp	Puppet	ର
9	site.pp	Puppet	ର
9	site.pp	Puppet	

Tuesday, February 26, 13 Please don't use the hiera() function. Consider it legacy.

	common.yaml YAML	ര	\diamond
1	forge::package: 'screen'		
Ø	init.pp Puppet	ര	\diamond
1 2 3 4) {		
5 6 7 8	<pre>ensure => present, }</pre>		
9	}		
$\overline{\diamond}$	site.pp Puppet	ര	\diamond
1 2 3	<pre>class { 'forge': package_name => 'ssh', }</pre>		
	J puppet	fo	rge
day, February 26, 13			

This is better, as the user can override this default parameter value.

With this, you're locked into hiera.

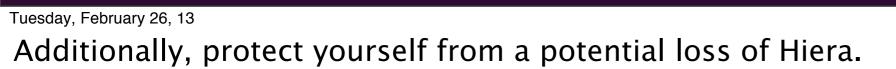
	common.yaml YAML	ര	\diamond
1	forge::package: 'screen'		
\bigcirc	init.pp Puppet	ര	\diamond
1	class forge(
2	<pre>\$package_name = 'ssh') {</pre>		
4	<pre>package { \$package_name:</pre>		
6	ensure => present,		
7	}		
9	}		
<>	site.pp	ര	\diamond
1	<pre>class { 'forge': } # OR # include forge</pre>		
		l to	rge
	A pupper		. 2-
	Duppet		

But really, just get yourself onto Puppet 3 and take advantage of automatic Hiera!

Data Bindings

don't lock yourself in





Data Lookup Order

- Use explicit class declaration values
- Query Data Binding
- Use the default value from class.
- Fail compilation with an error if no value can be found.



Built into Puppet 3

Indirection Reference — Documentation — Puppet Labs

A docs.puppetlabs.com/references/latest/indirection.html#databinding

data_binding

Where to find external data bindings.

Terminus Setting: data_binding_terminus

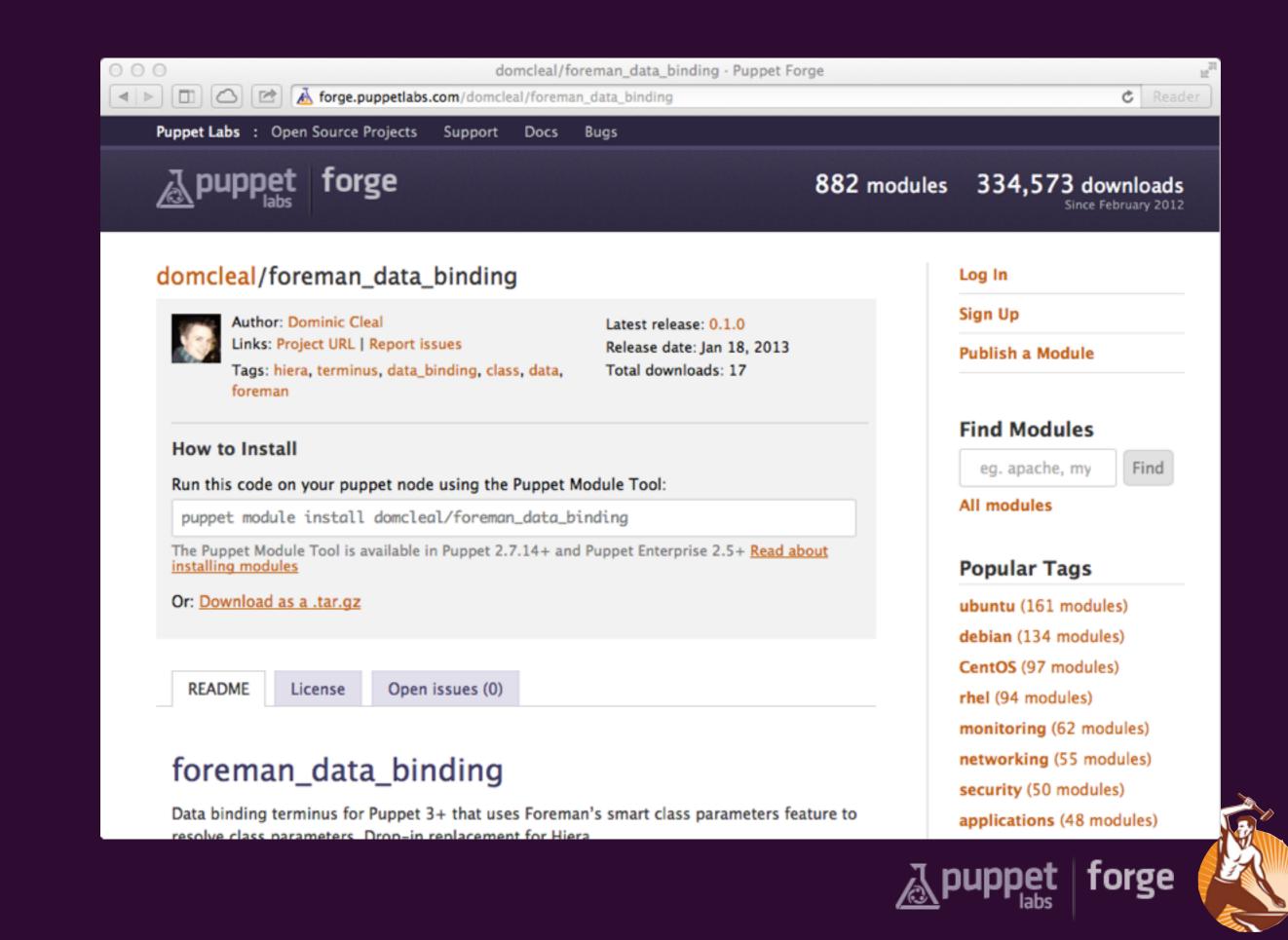
hiera

Retrieve data using Hiera.

none

A Dummy terminus that always returns nil for data lookups.





	common.yaml YAML	ര	\diamond
1	forge::package: 'screen'		
\bigcirc	init.pp Puppet	ര	\diamond
1	class forge(
2	<pre>\$package_name = 'ssh') {</pre>		
4	<pre>package { \$package_name:</pre>		
6	ensure => present,		
7	}		
9	}		
<>	site.pp	ര	\diamond
1	<pre>class { 'forge': } # OR # include forge</pre>		
		l to	rge
	A pupper		. 2-
	Duppet		

But really, just get yourself onto Puppet 3 and take advantage of automatic Hiera!

Best Practices

- Confirm to the Style Guide
- Use Parameterized Classes
- Don't use hiera() directly



Tuesday, February 26, 13 **Re-cap.**

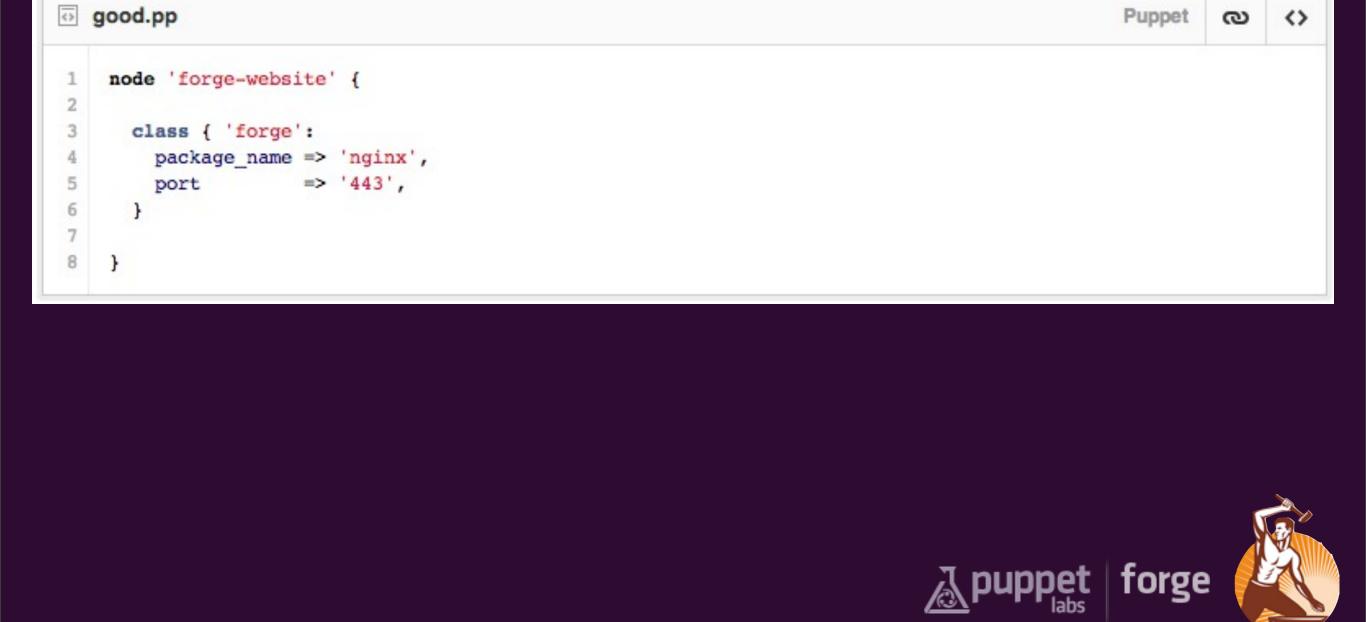






```
o bad.pp
                                                                                            Puppet
                                                                                                          0
                                                                                                    ര
    node 'forge-website' {
1
2
3
     class { 'forge::package':
        package_name => 'nginx',
 4
5
      }
6
7
      class { 'forge::service':
        service_name => 'unicorn',
8
        port
                    => '443',
9
10
      }
11
12
    }
```





```
o good.pp
                                                                                                Puppet
                                                                                                              <>
                                                                                                         ര
    node 'forge-website' {
 1
 2
      class { 'forge':
 3
        package_name => 'nginx',
 4
 5
        port
                      => '443',
 6
        manage nginx => false,
 7
      }
 8
 9
    }
10
11
    # somewhere else
12
    class forge {
13
      . . .
14
15
      if $forge::manage_nginx {
16
17
        include nginx
       nginx::vhost { 'forge':
18
          vhostroot => '/var/www/forge',
19
20
          port
                    => 443,
21
       }
22
      }
23
24
    }
25
26
27
    }
28
```

Apuppet forge



The Team



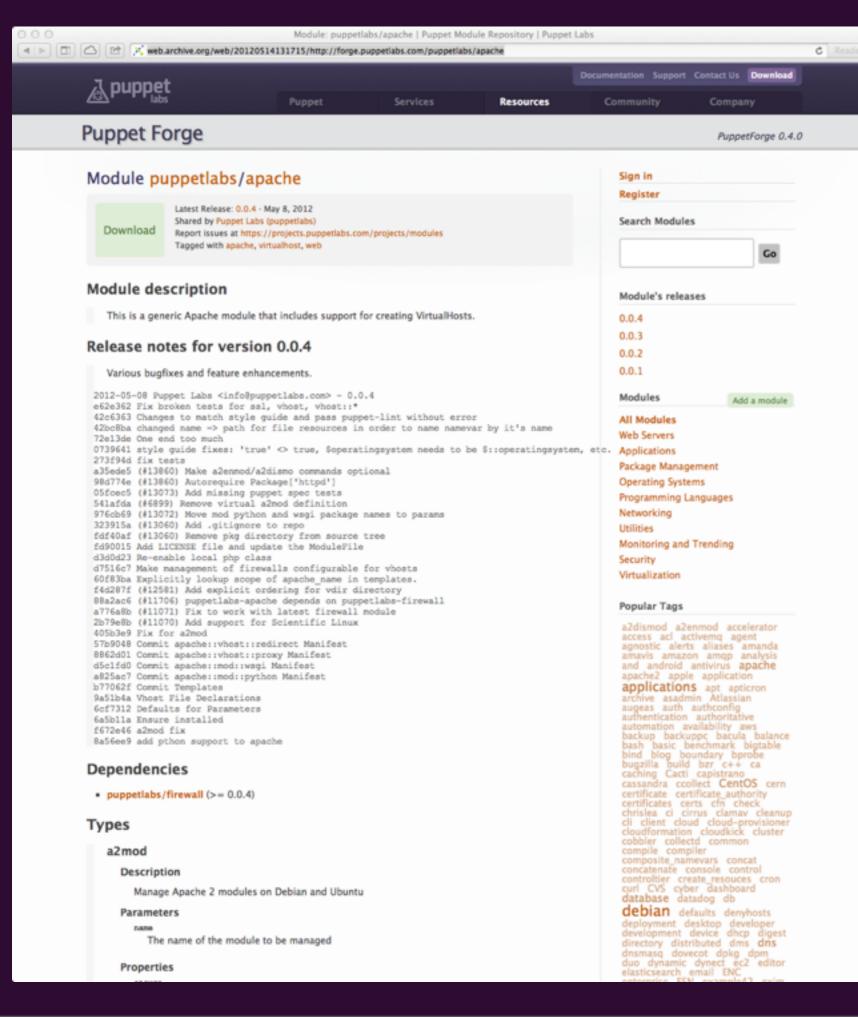


What have we been up to?

Re-launch and Re-design

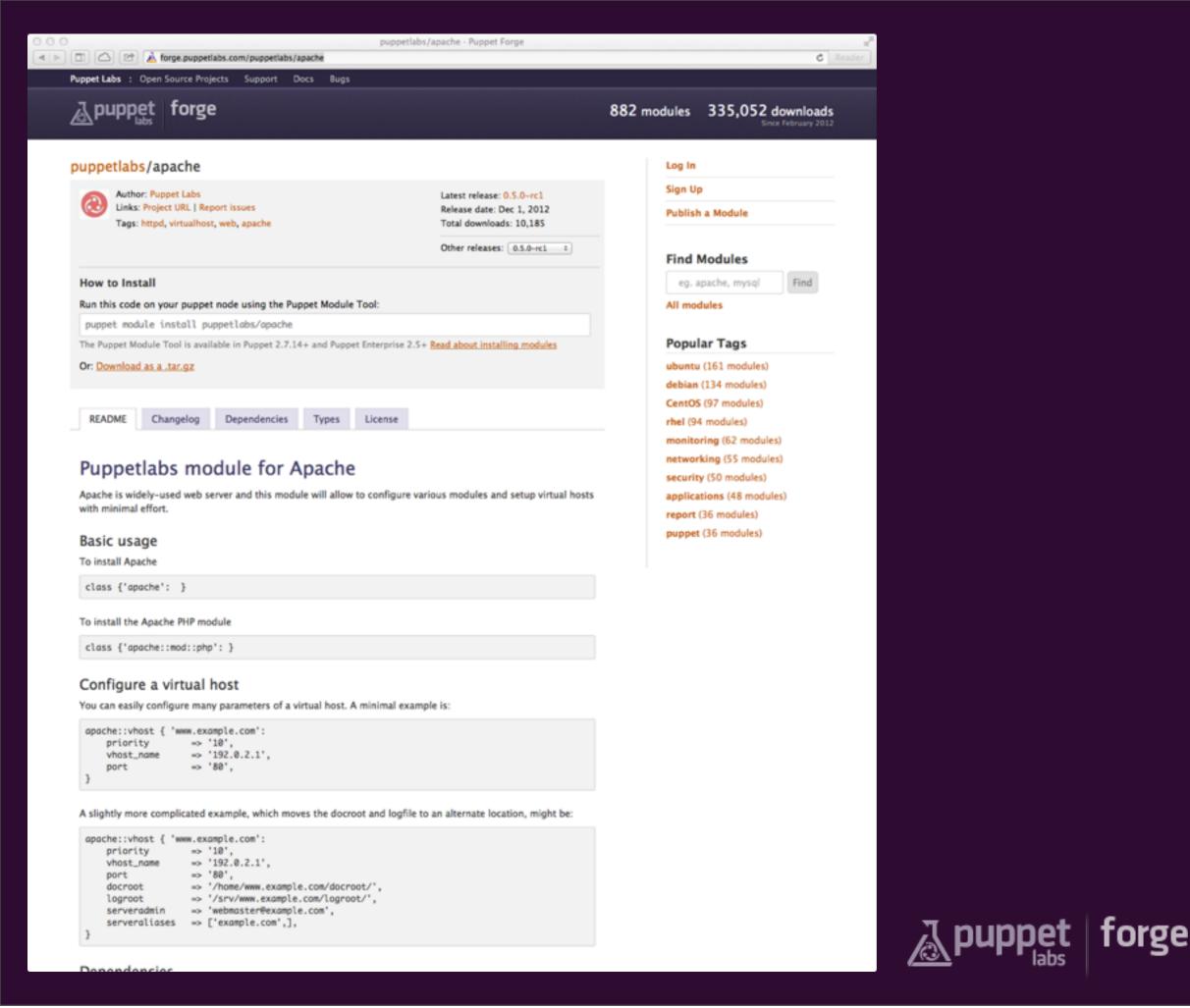


Tuesday, February 26, 13 Though we're small, we've been really busy!



Apuppet forge





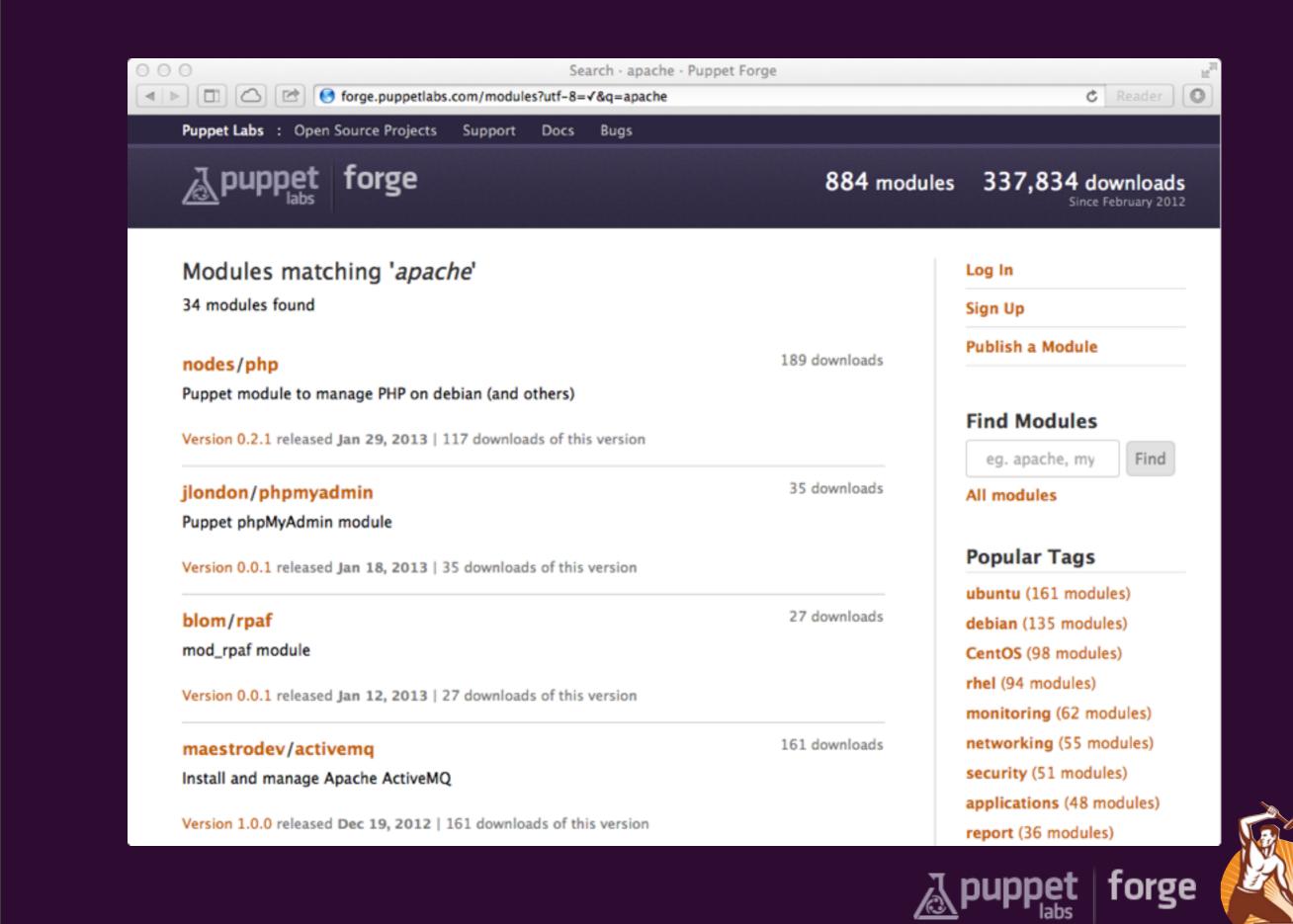


Lots of little features add up to a substantially nicer to use Forge.

What have we been up to?

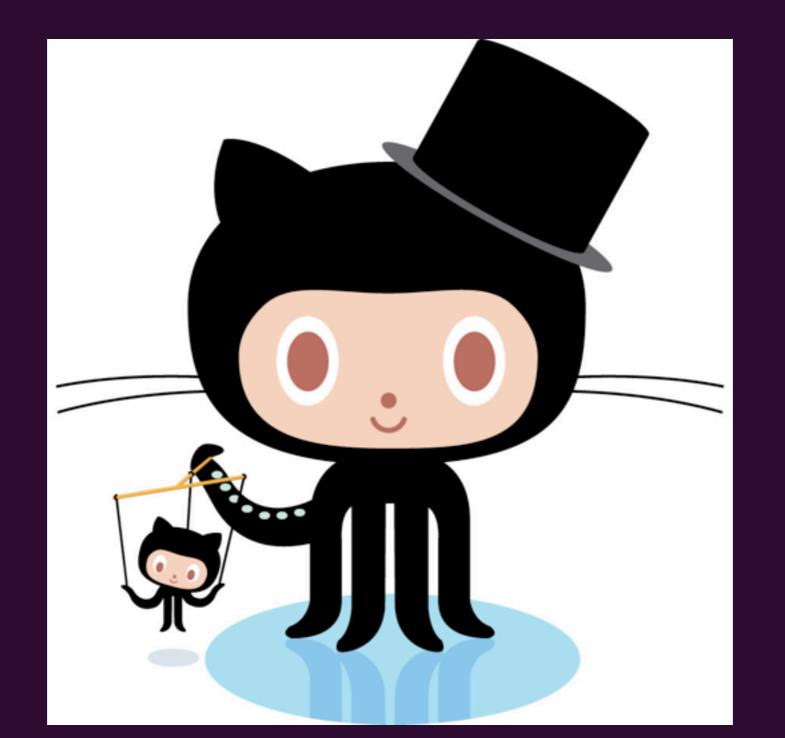
- Re-launch and Re-design
- PMT Fixes (prep for publish)
- Download Counts





Tuesday, February 26, 13 Download counts, now in your search results!

What's Next?



GitHub Publish





Edit your Modulefile, push your commit and we'll do the publishing! Coming soon to a repository near you.

What's Next?

Puppet Forge API documentation

Version v2 email files modules oauth2 password releases statistics tags user users version Version v1 files modules releases users

A Full & Public API





Tuesday, February 26, 13

Also coming soon, an actual API for doing all sorts of things with the Forge.

What's Next?

Find

Puppet Labs : Open Source Projects Support Docs Bugs

apache

入puppet forge

Find modules

276,938 downloads Since February 2012 829 modules

Log In	
Sign Up	

Publish a Module Sort Showing 39 modules for 'Apache' Most recent brightbox/ \$8 downloads \$8 downloads \$6 ratings Most downloads apache This module installs and manages apache Highest rating version 2.0.0 released 2 days ago Filter example42/ 400 downloads 🛉 🛉 🚖 🚖 137 ratings Modules (36) apache This module installs and manages apache Authors (2) Modules of the Week (4) version 1.0.1 released 1 week ago Puppet Labs modules (3) saltycowdog/ ♣ 178 downloads ★★★★★ 89 ratings Puppet supported (1) apache This module installs and manages apache apache (34 modules) author name version 2.0.1 released Feb 3, 2012 content type V ghoneycutt/ ↓ 570 downloads ★★★★★ 111 ratings apache Manages apache servers, remote restarts, and mod_ssl, mod_php, mod_python, mod_perl version 2.0.1 released Feb 3, 2012

Popular Tags ubuntu (155 modules) debian (131 modules) rhel (89 modules) CentOS (89 modules) monitoring (55 modules) security (50 modules) networking (50 modules) applications (48 modules) report (36 modules)

Tuesday, February 26, 13

Just an experimental mock-up of search results. Actual feature will absolutely look and behave differently.



Tuesday, February 26, 13 Private Forge has been a common request.

PulpProject.org





Tuesday, February 26, 13

RedHat's Pulp Project is repository management software that recently added support for Puppet Modules.

Manage Modules on-premise

- Mirror Public Forge
- BUT, please work with me on this
 - Email me or comment on #5033

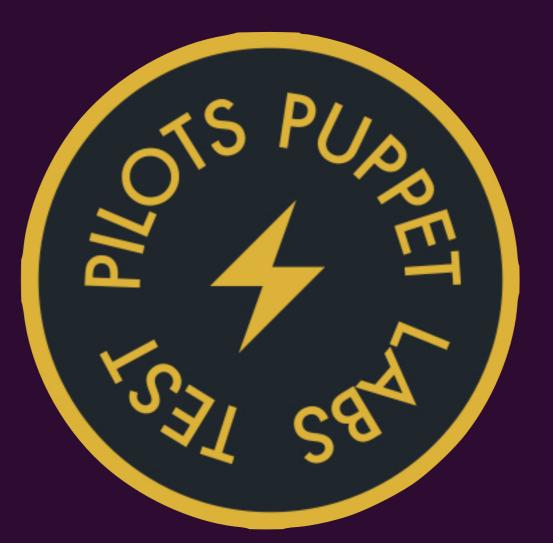


Tuesday, February 26, 13

If you're interested in this, email <u>ryan@puppetlabs.com</u> or add your thoughts to <u>https://</u> projects.puppetlabs.com/issues/5033.

We're going to do something in this space, but want to hear more from you on what you need.

Want to help?





Tuesday, February 26, 13

If you want to add your influence to our products, join the Puppet Labs Test Pilots program!

https://puppetlabs.com/community/puppet-test-pilots-program/



• Sharpen your skills

- Get Certified
- Online learning on the way
- puppetlabs.com/education



Tuesday, February 26, 13

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Gary Larizza has a great blog post on Boxen.

http://garylarizza.com/blog/2013/02/15/puppet-plus-github-equals-laptop-love/

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