



# Puppet Latest and Greatest

Dimitri Tischenko

Puppet Principal Sales Engineer



# Who is talking to you?



@timidri

Name: Dimitri Tischenko

Lives: The Hague, Netherlands

History: 22 years IT as company owner / free-lancer

Skills: Dev, Ops, Devops, Coach, Architect

Job: SE at Puppet since September 2017

Fun fact 1: Dances + teaches Argentine Tango

Fun fact 2: Originally from St Petersburg, Russia

Fun fact 3: Tries to speak German

# Agenda

Puppet Overview

Puppet Latest and Greatest

Demo

Q+A?

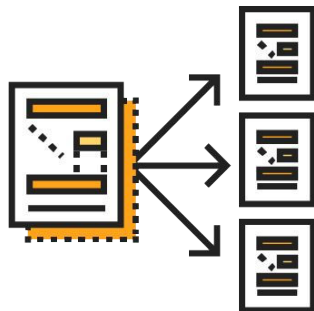
# What is Puppet?



# An automatic way to ...



Know what you  
have



Control it and  
enforce consistency



Secure it and  
keep it compliant



Modernize it

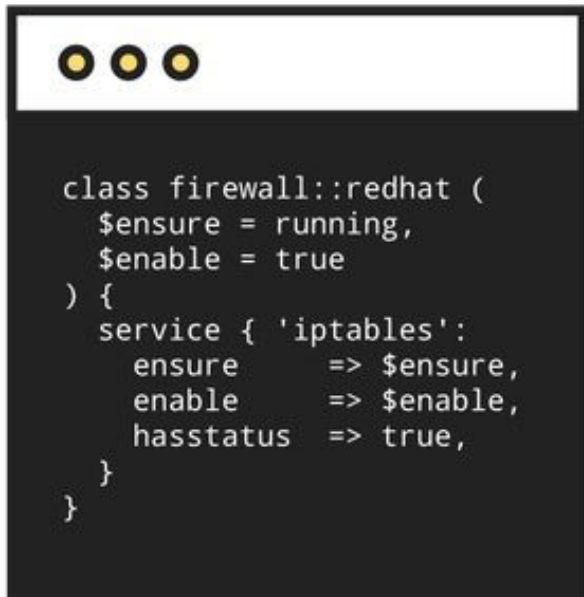
---

**Using a common language**

Across everything, no matter where it runs

# Using a common language

Get a standard way to deliver & operate all of your software

A terminal window with a dark background and a white title bar containing three yellow window control buttons. The terminal displays Puppet code for a class named 'firewall::redhat'.

```
class firewall::redhat (  
  $ensure = running,  
  $enable = true  
) {  
  service { 'iptables':  
    ensure      => $ensure,  
    enable      => $enable,  
    hasstatus   => true,  
  }  
}
```

- Define once with an easy-to-understand language & automate endlessly
- Improve collaboration by unifying processes and tooling
- Get started quickly by choosing from thousands of free modules

# Infrastructure as Code

Describe the ideal environment with a simple, commonly understood language

```
building { 'home':  
  ensure      => 'clean',  
  front_door  => 'closed',  
  keys        => 'key_hook',  
  jacket     => 'closet',  
  floor       => 'vacuumed',  
  litter_box  => 'empty',  
  remote     => 'coffee_table',  
}
```



# Infrastructure as Code

```
file { '/tmp/hello.txt':  
  content => 'Hello World!',  
  owner   => 'root',  
  mode    => '0644',  
}  
  
package { 'httpd':  
  ensure => installed,  
}  
  
service { 'httpd':  
  ensure => running,  
}
```

# Infrastructure as Code

```
class profile::app::sample_website::linux (
  String $doc_root = '/var/www/html',
  Integer $webserver_port = 80,
  String $website_source_dir = 'puppet:///modules/profile/app/sample_website'
) {


  class {'::profile::app::webserver::apache':
    default_vhost => false,
  }

  # configure apache
  apache::vhost { $::fqdn:
    port      => $webserver_port,
    docroot   => $doc_root,
    require   => File[$doc_root],
  }

  # ...
}
```

# Puppet Forge: 5000+ modules

Home PuppetConf Forge Docs Learn Support & Services Contact Us

 Search from 5,208 modules Supported  Approved  With Tasks  Find

Found 46 modules using filters Latest release | Most Downloads

**Filters** [clear](#)

Operating System  
- Any -

Puppet Version  
- Any -

Puppet Enterprise Version  
- Any -

Supported or Approved  
Supported







Only modules with Tasks

Include deleted modules

[Apply Filters](#)

**Note:** Modules that do not have information about compatibility in their metadata will not appear in filtered results.

**Authors:** [Learn how to add compatibility to your modules.](#)

	<b>puppetlabs/stdlib</b> Standard library of resources for Puppet modules. Version 4.20.0 • Sep 11, 2017 • 6,557,600 downloads 37,401,239   5.0	SUPPORTED
	<b>puppetlabs/concat</b> Construct files from multiple fragments. Version 4.0.1 • Jun 14, 2017 • 18,124,019 downloads 26,888,003   4.6	SUPPORTED
	<b>puppetlabs/ntp</b> Installs, configures, and manages the NTP service. Version 6.3.0 • Oct 4, 2017 • 2,379 downloads 24,396,391   4.8	SUPPORTED
	<b>puppetlabs/powershell</b> Adds a new exec provider for executing PowerShell commands. Version 2.1.2 • Jul 27, 2017 • 77,688 downloads 13,665,747   5.0	SUPPORTED
	<b>puppetlabs/apt</b> Provides an interface for managing Apt source, key, and definitions with Puppet Tasks: <code>init</code> Version 4.3.0 • Oct 11, 2017 • 4,211 downloads 11,579,189   4.7	TASKS SUPPORTED
	<b>puppetlabs/vcsrepo</b> Puppet module providing a type to manage repositories from various version control systems Version 2.0.0 • Jun 30, 2017 • 67,806 downloads 9,120,214   4.5	SUPPORTED

# How Puppet Works

1. Define your desired state

```
service { 'w32time':  
  ensure => running,  
  enable => true,  
  subscribe => Registry_value[$key],  
}
```

2. Simulate configuration



3. Enforce configuration



4. Report



 puppet

# Overview: Puppet Enterprise

## Integrations



vmware



Packaging + out-of-the-box scalability

Supported modules

### User interface

### Supported platform

Role-based  
access control

Visualization  
& reporting

Orchestration

Service

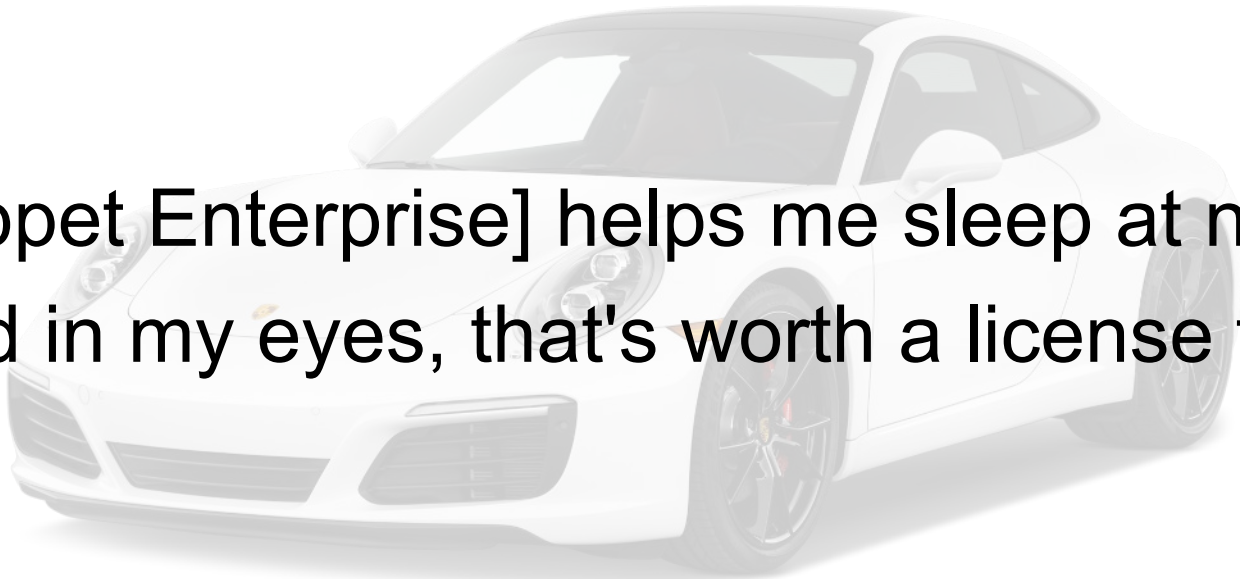
Training

Support

Open source Puppet

## Thorsten Biel, Porsche PuppetConf 2017

[Puppet Enterprise] helps me sleep at night.  
And in my eyes, that's worth a license fee.



# DEMO

Puppet Enterprise

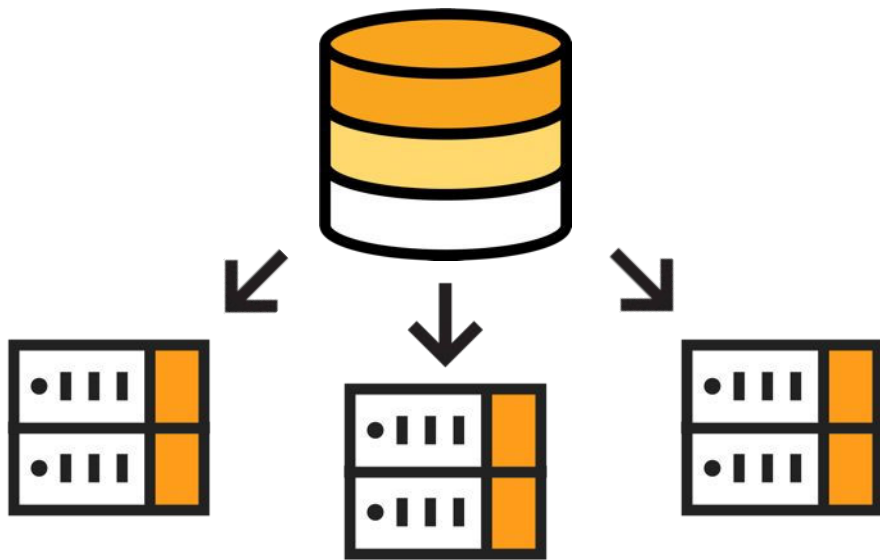


# Puppet Tasks

Latest and Greatest

# Puppet excels at modern automation

Model-driven approach helps scale your automation footprint across your organization



- Model your desired state
- Continually monitor and enforce desired configurations
- Automatically remediate any unexpected changes or drift

# But sometimes you just need to make point in time changes

Quickly troubleshooting systems & devices

Deploying one-off changes to individual systems

Executing sequenced actions as part of a deployment workflow

Stopping and restarting services where there may be multiple changes in state

Migrating databases

# Introducing Puppet Tasks.

Easily automate ad hoc tasks.  
Eliminate manual work.

# Puppet Tasks comes in two flavors

## Puppet Bolt

Automate tasks across smaller infrastructures with a simple, agentless, extensible open source task runner

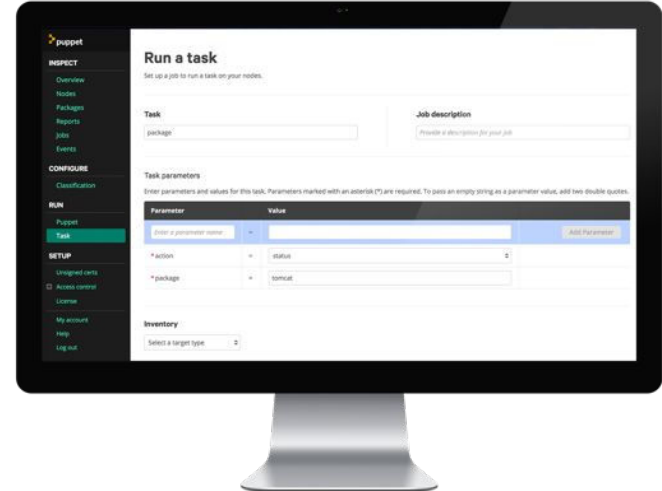
```
[root@enterprise-next ~]# bolt --help
Usage: bolt <subcommand> <action> [options]

Available subcommands:
  bolt command run <command>      Run a command remotely
  bolt script run <script>         Upload a local script and run it remotely
  bolt task run <task> [params]    Run a Puppet Task
  bolt plan run <plan> [params]    Run a plan
  bolt file upload <src> <dest>    Upload a local file

where [options] are:
  -n, --nodes x,y,z              Nodes to connect to
  -u, --user USER                User to authenticate as (Optional)
  -p, --password PASSWORD        Password to authenticate as (Optional)
  --modules MODULES              Path to modules directory
  --params PARAMETERS            Parameters to a task or plan
  --[no-]tty                     Request a pseudo TTY on nodes that support it
  -h, --help                     Display help
  --verbose                      Display verbose logging
  --debug                        Display debug logging
  --version                      Display the version
```

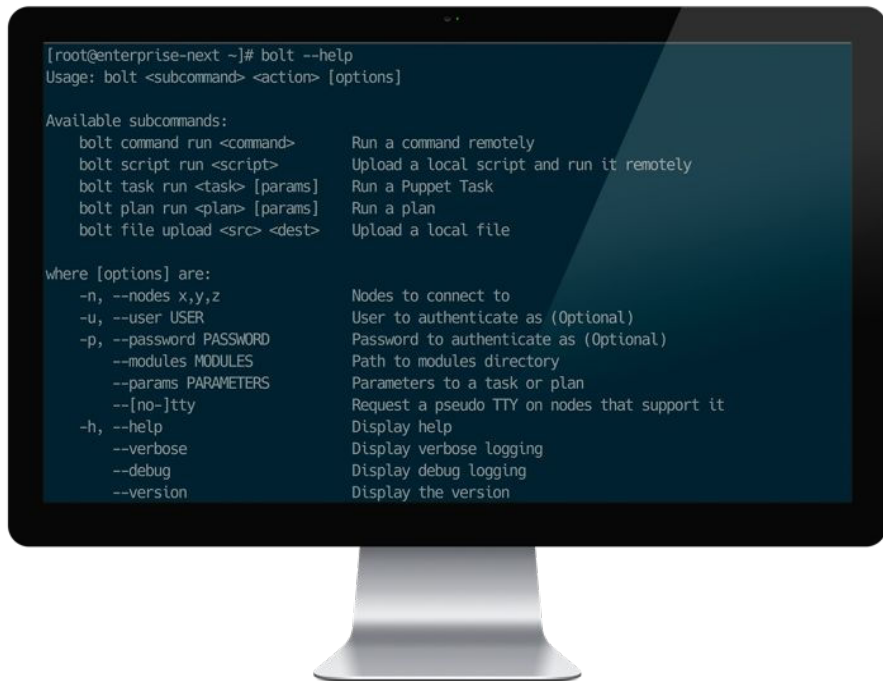
## Puppet Enterprise Task Management

Get scale, governance and flexibility for larger organizations & infrastructures



# Puppet Bolt

Open source, agentless task runner to automate ad hoc work



```
[root@enterprise-next ~]# bolt --help
Usage: bolt <subcommand> <action> [options]

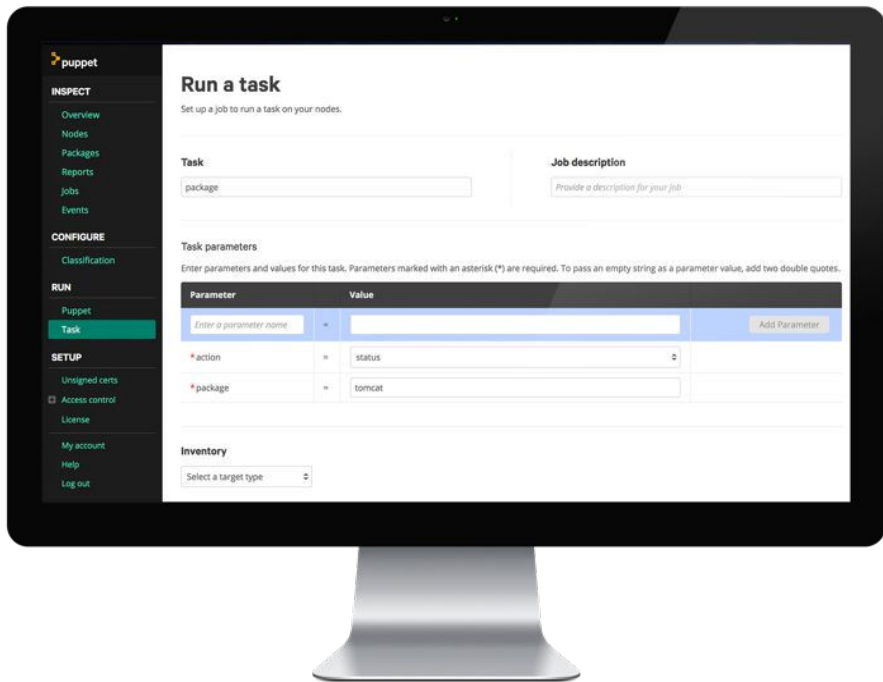
Available subcommands:
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  bolt plan run <plan> [params]    Run a plan
  bolt file upload <src> <dest>    Upload a local file

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  -h, --help                     Display help
  --verbose                      Display verbose logging
  --debug                        Display debug logging
  --version                      Display the version
```

- **Simple**
  - Quickly get started automating manual, repetitive work
- **Agentless**
  - Simply connect to devices remotely and execute scripts written in any framework
- **Extensible**
  - Start automating simple tasks and simplify adoption of Puppet Enterprise

# Puppet Enterprise Task Management

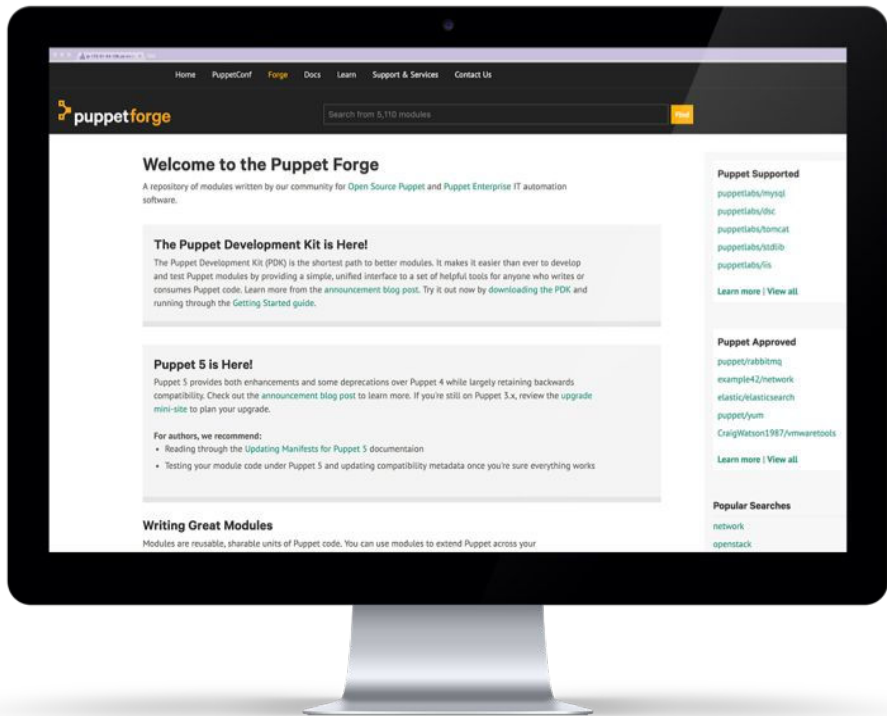
Powerful ad hoc task automation and visibility for larger infrastructures and teams



- **Scale**
  - Instantly run tasks across tens of thousands of nodes
- **Governance**
  - Control who runs which tasks
  - View audit histories of every action taken
- **Flexibility**
  - Run tasks from web UI, API or CLI
  - Filter and target infrastructure for task runs

# Get started faster with modules that enable tasks

Pre-written modules on Puppet Forge enable you to quickly begin automating



- Learn about Puppet Tasks
- Find modules with pre-built tasks
- Read in-line documentation about tasks
- Learn how to write tasks
- Contribute tasks as Puppet modules

# Tasks Summary

- An API for execution of scripts written in any language
- Tasks live in modules

<b>bolt</b>	<b>Puppet Enterprise Task Manager</b>
Does not need puppet server or agent	Needs Puppet Enterprise
Uses ssh or winrm	Works with the Puppet Orchestrator
Limited by machine running bolt	Scales to 100K nodes

# DEMO

## Puppet Tasks



# Puppet Discovery

Latest and Greatest

# The World is made up of Resources

## Resources

### Operating System



RHEL



Windows



Ubuntu



Solaris



AIX

...

### Cloud Infrastructure



AWS



Azure



VMWare



OpenStack



Nutanix

...

### Distributed Infrastructure



Kubernetes



Docker DataCenter



Mesos / DCOS



Splunk Enterprise



MySQL

...

### Delivery Toolchain



Jenkins



Travis



GitHub Enterprise



Bitbucket Enterprise



Gitlab

...

3<sup>rd</sup>  
Party  
Resources

...

# Discovery leads to Insights leads to Action



## Discovery

Quickly identify all of the *things* that are running across your hybrid landscape

Discover Traditional Resources



Discover Cloud and Virtual Resources




Discover Containers and Cloud Native Resources



## Insights

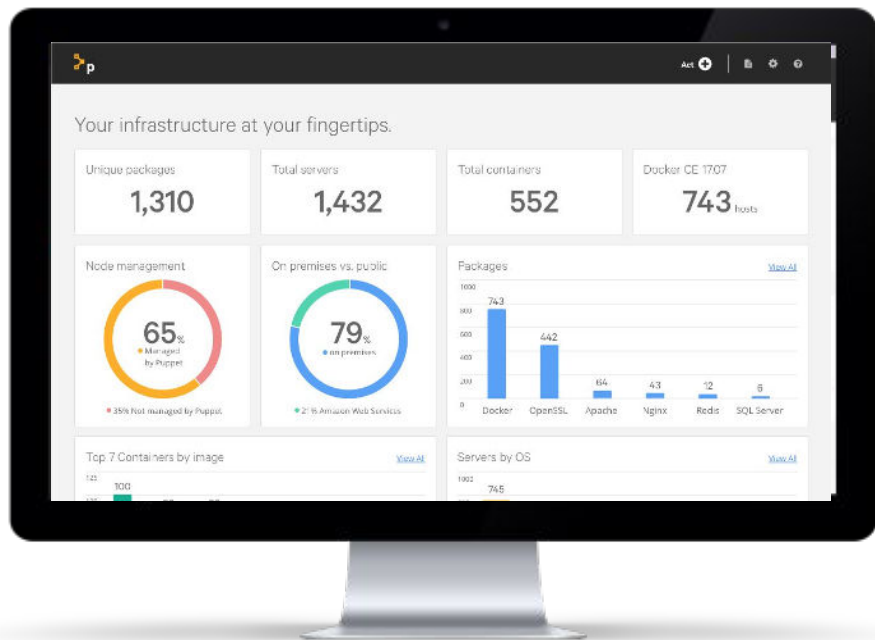


## Action

Once you know what you have, manage it with  puppet

# Puppet Discovery

Discover what's running on your on-premises and cloud infrastructure



<http://puppet.com/products/puppet-discovery>

## Know your infrastructure.

Total servers

244

Unique packages

1,310

Docker hosts

80

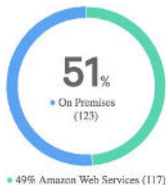
Total containers

552

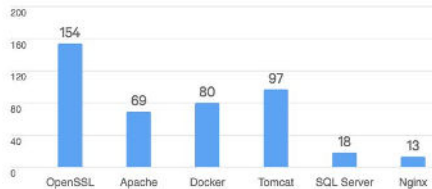
Managed by Puppet



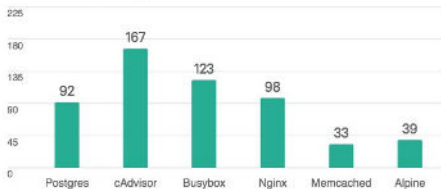
On-premises vs. public



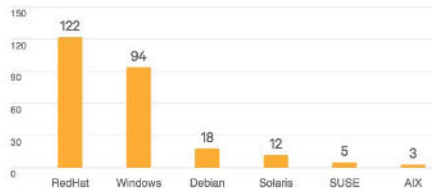
Common packages



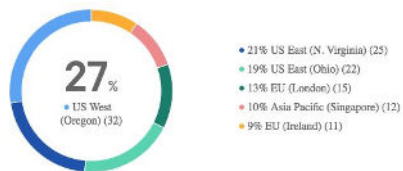
Containers by image



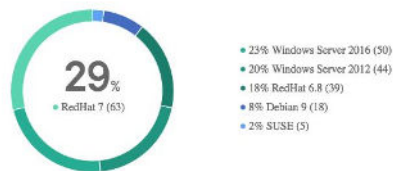
Servers by OS



EC2 instances



Linux vs. Windows



Hallo <name>,

ich möchte mich gerne auf  
für die DACH Region bei Puppet.

diese etwas unpersönliche Weise  
In dieser Rolle werde ich Ihr techn

Ich hoffe Sie bald zu treffen und freue mich

Mit freundlichen Grüßen,

Dimitri Tischeko

# DEMO

## Puppet Discovery

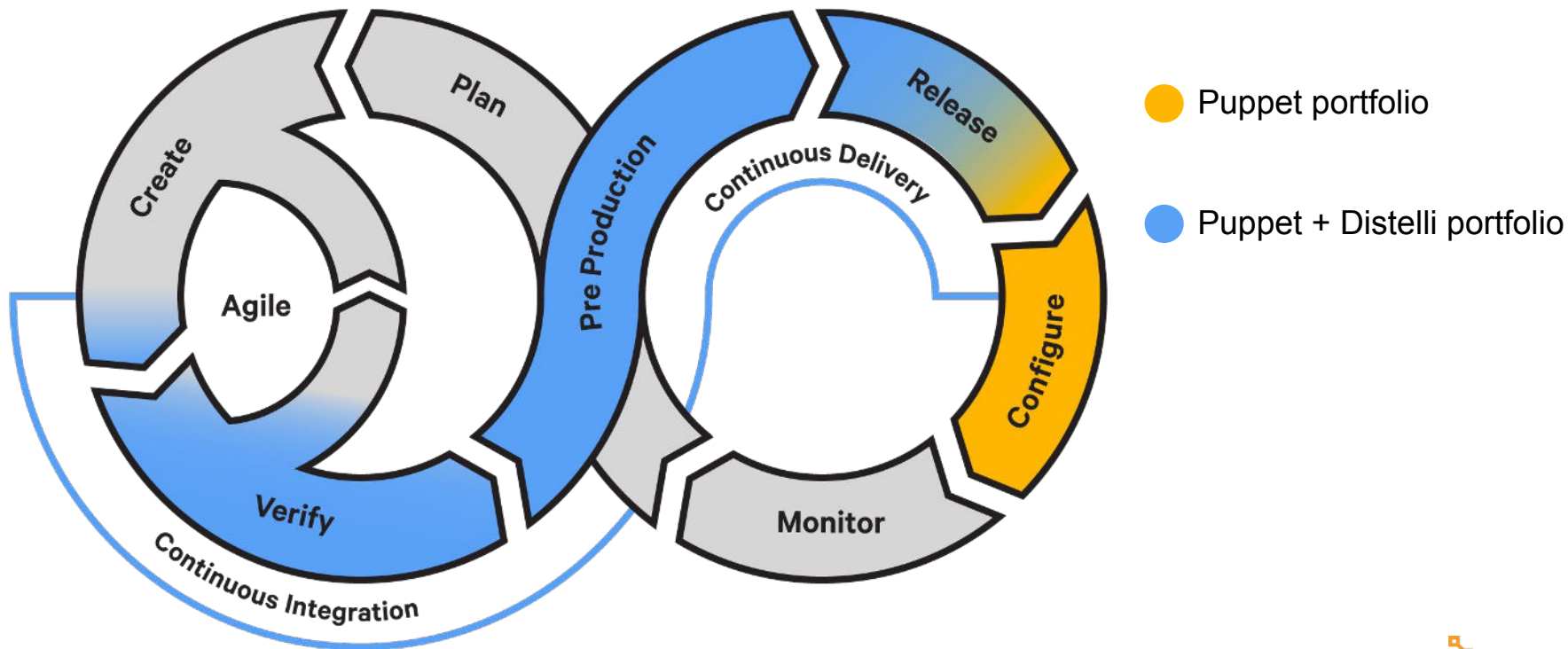


# Puppet Pipelines

Latest and Greatest

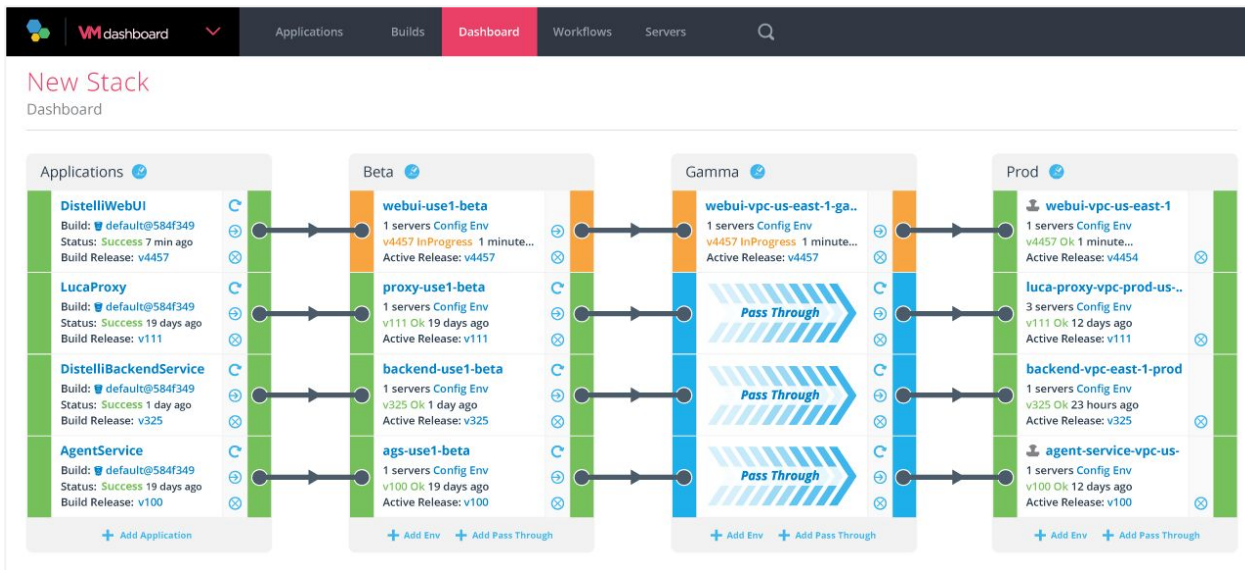
# Puppet and Distelli

Orchestrating and automating the entire software delivery lifecycle



# Puppet Pipelines for Applications

Build and deploy containers to virtual machines on any cloud



access controls and audit trails • automate deployments and pipelines with gates  
dashboards for complete visibility • integrated build system • cloud server management and provisioning • notifications to Slack, Hipchat and email • on cloud and on-premises

# Puppet Pipelines for Containers

## Build containers and deploy to Kubernetes on any cloud

The screenshot displays the Google Cloud Platform Kubernetes console. On the left, a sidebar titled 'Clusters' shows three clusters: 'distelli-test-cluster' (aws, us-east-1, 2 Nodes), 'distelli-beta-cluster' (gke, us-east-1, 3 Nodes), and another 'distelli-beta-cluster' (gke, us-east-1, 3 Nodes). The main area shows a 'Healthy' cluster with the following details:

- Platform: gke
- Project: distelli-alpha
- us-west-1-a: 3 nodes
- Machine: n1-standard-1
- Disk Size (GB): 100
- Address Range: 10.0.0.0/14
- Master Version: 1.5.7
- Endpoint: 104.154.183.93
- Namespaces: bmcgehee, custom-bmtest, default, europa, europa-ce, europa-ee, europa-pe, europa1, kida-beta, kida-prod, kube-system, kubernetesclient-test, 14 more...

The 'Pod Sets' section shows 15 sets:

- heapster-v1.2.0.1** | 1 Pod  
Pod: heapster-v1.2.0.1-1382115970-x1sr9 (Start Time: 3:56PM Apr 17, 2017)  
Container(s): heapster - gcr.io/google\_containers/heapster:v1.2.0, heapster-nanny - gcr.io/google\_containers/addon-resizer:1.7
- kube-dns** | 2 Pods  
Pod: kube-dns-2185667875-xjn9pv3 (Start Time: 3:56PM Apr 17, 2017)  
Container(s): kubedns - gcr.io/google\_containers/kubedns-amd64:1.9, dnsmasq - gcr.io/google\_containers/kube-dnsmasq-amd64:1.4.1 (2 more...)
- kube-dns** | 2 Pods  
Pod: kube-dns-2185667875-xjn9p (Start Time: 11:41AM May 7, 2017)  
Container(s): kubedns - gcr.io/google\_containers/kubedns-amd64:1.9, dnsmasq - gcr.io/google\_containers/kube-dnsmasq-amd64:1.4.1 (2 more...)
- kube-dns-autoscaler** | 1 Pod  
Pod: kube-dns-autoscaler-395097547-11vs1 (Start Time: 3:56PM Apr 17, 2017)  
Container(s): autoscaler - gcr.io/google\_containers/cluster-proportional-autoscaler-amd64:1.1.0-r2

The 'Deployments' section shows two deployments for 'k8s-mysql':

- Namespace: bmtest  
Available Replicas: 1  
Observed Generation: 2  
Desired Replicas: 1  
Updated Replicas: 1
- Namespace: default  
Available Replicas: 1  
Observed Generation: 2  
Desired Replicas: 1  
Updated Replicas: 1

create and manage Kubernetes clusters anywhere • deploy to Kubernetes • build Docker images • automate pipelines to Kubernetes clusters • track every event on your apps

# Puppet Container Registry

A Docker registry for the modern world

The screenshot displays the Puppet Container Registry interface. At the top, there's a navigation bar with 'europa' logo, 'Repositories' (active), and 'Pipelines'. The user is logged in as 'Acme Corp'. The main content area shows the repository 'distelli-alpha/node-kubernetes' under the 'Europa local registry'. A dropdown menu is open, showing a list of pull events:

- gcloud docker pull gcr.io/distelli-alpha/client-service@sha256:b9b13491695c456e63eb69d50cef42f199b1737345e18fec21b0364ae655763
- docker pull 168.93.12.1/node-app:123
- docker pull 168.93.12.1/node-app:124
- docker pull 168.93.12.1/node-app:125
- docker pull 168.93.12.1/node-app:126

Below the dropdown, there's a table of images with columns for 'Overview', 'Tags', and 'Events'. The table shows several images with their IDs and update buttons (UPDATE15, UPDATE14, UPDATE13, UPDATE12). The image '5b961254685e...' is highlighted, showing its size as 2.3M and pushed 2 day(s) ago.

local and remote repositories • audit trails • automated push pipelines  
access control • image locality • teams • single sign-on

# DEMO?

Puppet Pipelines



# Puppet 5

Latest and Greatest

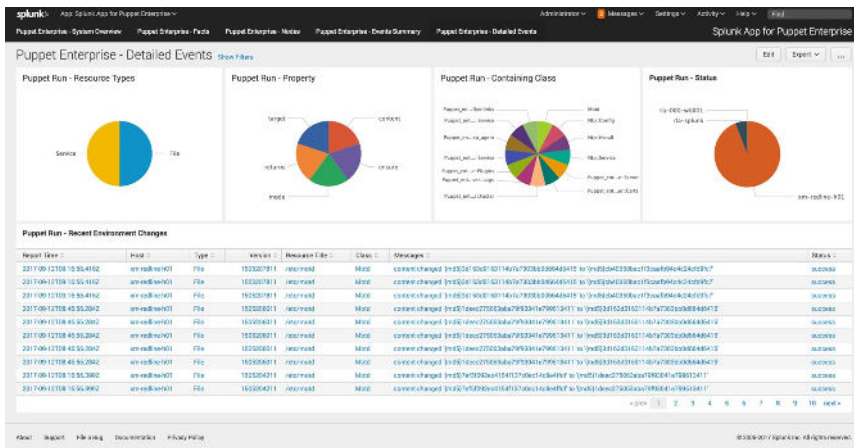
# Platform 5

Download, implement and upgrade your Puppet platform more easily

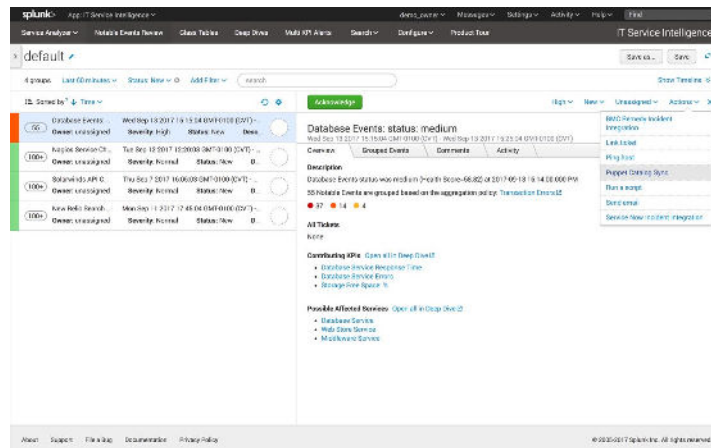
```
23 system, 'Whether this apt key should be present or absent',
24 },
25 default: 'present',
26 id:
27 type: {
28   'Variant[Pattern[/\A(?:[0-9a-fA-F]{0}\Z/), Pattern[/\A(?:[0-9a-fA-F]{16}\Z/), Pattern[/\A(?:[0-9a-fA-F]{40}\Z/)]',
29   desc: 'The fingerprint of the key you want to manage.',
30   behaviour: :namevar,
31 },
32 content: {
33   type: 'Optional[String]',
34   desc: 'The content of, or string representing, a GPG key.',
35   behaviour: :parameter,
36 },
37 source: {
38   type: 'Variant[Stdlib::AbsolutePath, Pattern[/\A(?:https|ftp)://.*/]',
39   desc: 'Location of a GPG key file, /path/to/file, ftp://, https://,
40 https://',
41 },
42 },
43 server: {
44   type: 'Pattern[/\A(?:http|https)://[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}(:[0-9]{1,5})?\/?$/]',
45   desc: 'The key server to fetch the key from. The default is keyserver.ubuntu.com',
46 },
47 }
```

# Splunk Partnership

## Splunk and Puppet drive enterprise DevOps transformation with new integration and updated app



Splunk App and Add-On for Puppet Enterprise



Splunk ITSI Module for Puppet

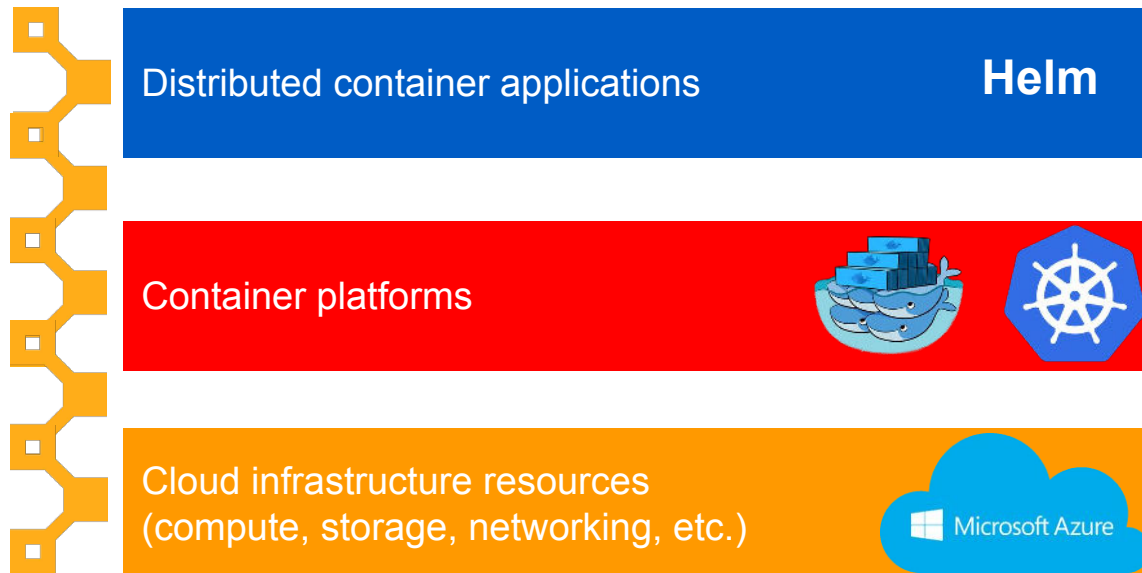


# Cloud & Containers

Latest and Greatest

# What we're delivering for customers

## End-to-end management



# AWS CloudFormation Template

Faster deployments of Puppet Enterprise



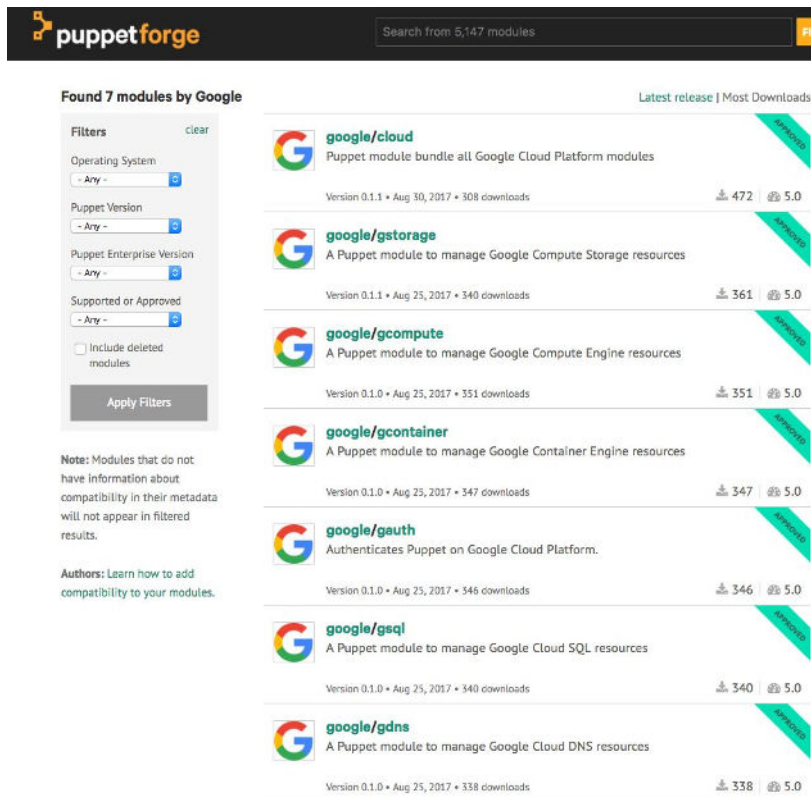
# Azure Marketplace image and module

Updated to Puppet Enterprise 2017.3 and supported in both Azure and AzureStack



# Google Cloud Platform

## Updates and new additions to Google Cloud modules on Puppet Forge

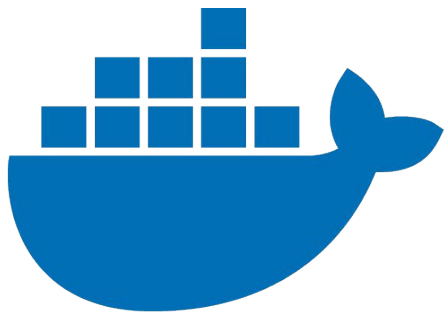


The screenshot shows the Puppet Forge search interface. At the top, the Puppet Forge logo is on the left, and a search bar contains the text "Search from 5,147 modules". Below the search bar, the results are titled "Found 7 modules by Google". On the left side, there is a "Filters" sidebar with options for "Operating System", "Puppet Version", "Puppet Enterprise Version", and "Supported or Approved", each with a dropdown menu set to "Any". There is also a checkbox for "Include deleted modules" and an "Apply Filters" button. Below the filters, a note states: "Note: Modules that do not have information about compatibility in their metadata will not appear in filtered results." and a link for "Authors: Learn how to add compatibility to your modules." The main content area displays a list of seven modules, each with a Google Cloud logo icon, a title, a description, version information, download count, and a version number. Each module entry also has a green "Approved" badge in the top right corner.


Module Name	Description	Version	Downloads	Version Number
google/cloud	Puppet module bundle all Google Cloud Platform modules	Version 0.1.1 • Aug 30, 2017 • 308 downloads	472	5.0
google/gstorage	A Puppet module to manage Google Compute Storage resources	Version 0.1.1 • Aug 25, 2017 • 340 downloads	361	5.0
google/gcompute	A Puppet module to manage Google Compute Engine resources	Version 0.1.0 • Aug 25, 2017 • 351 downloads	351	5.0
google/gcontainer	A Puppet module to manage Google Container Engine resources	Version 0.1.0 • Aug 25, 2017 • 347 downloads	347	5.0
google/gauth	Authenticates Puppet on Google Cloud Platform.	Version 0.1.0 • Aug 25, 2017 • 546 downloads	346	5.0
google/gsql	A Puppet module to manage Google Cloud SQL resources	Version 0.1.0 • Aug 25, 2017 • 340 downloads	340	5.0
google/gdns	A Puppet module to manage Google Cloud DNS resources	Version 0.1.0 • Aug 25, 2017 • 338 downloads	338	5.0

# Docker module

The official Puppet | Docker module. Now supports Code Manager!



# docker

**puppetlabs/docker** by: [Puppet](#) [Project URL](#) [Report issues](#) [RSS Feed](#)  
Module for installing and managing docker

**Latest version is compatible with:**

- Puppet Enterprise 2017.2.x, 2017.1.x, 2016.5.x, 2016.4.x, 2016.2.x, 2016.1.x, 2015.3.x, 2015.2.x, 3.8.x, 3.7.x, 3.3.x, 3.2.x
- Puppet >= 3.4.0
- [RedHat](#), [Ubuntu](#), [Debian](#), [CentOS](#), [Archlinux](#), [Gentoo](#), [Fedora](#)

# Kubernetes and Helm modules

Deploy and manage Kubernetes. End-to-end support.



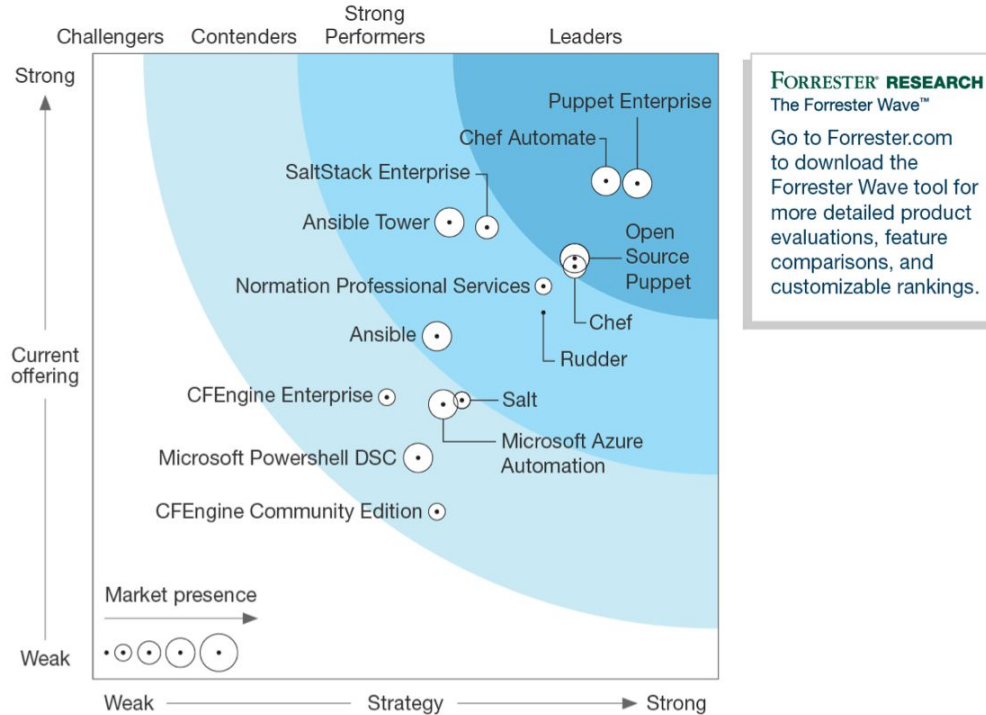


# Cloud & Containers

Latest and Greatest

# Last but not least

FIGURE 4 Configuration Management Software For Infrastructure Automation, Q4 '17



**FORRESTER RESEARCH**  
The Forrester Wave™

Go to [Forrester.com](http://Forrester.com) to download the Forrester Wave tool for more detailed product evaluations, feature comparisons, and customizable rankings.



**puppet**

**The shortest path  
to better software.**