Puppet

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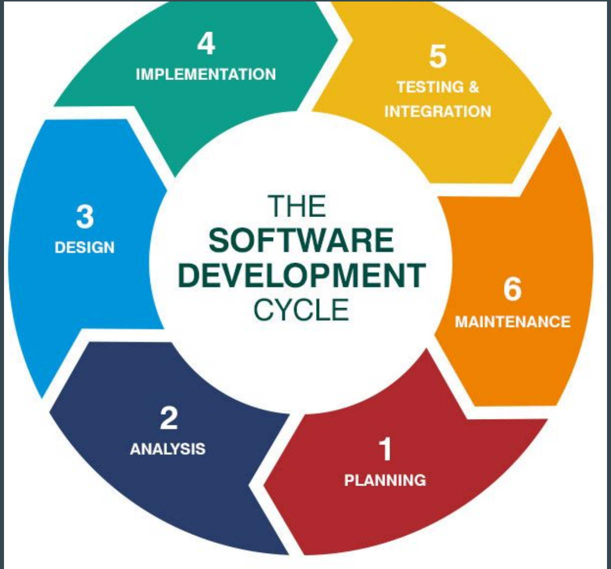
Introduction / Overview

puppet

Automatically deliver and operate all of your software across its entire lifecycle.



THE SOFTWARE DEVELOPMENT CYCLE

1 PLANNING

2 ANALYSIS

3 DESIGN

4 IMPLEMENTATION

5 TESTING & INTEGRATION

6 MAINTENANCE

Top 5 DevOps automation tools 2018:
Docker vs Puppet vs Kubernetes vs Ansible vs Chef.
kubernetes
ANSIBLE
docker
CHEF
puppet
WIRE19

Introduction / Overview

Before puppet

Manual installation

Login and perform inst/config change

Not scalable

Everyone solve same problem with their own way

With puppet

Mature tool

Offer automated way to inspect, deliver, operate

Scalable

Version controlled

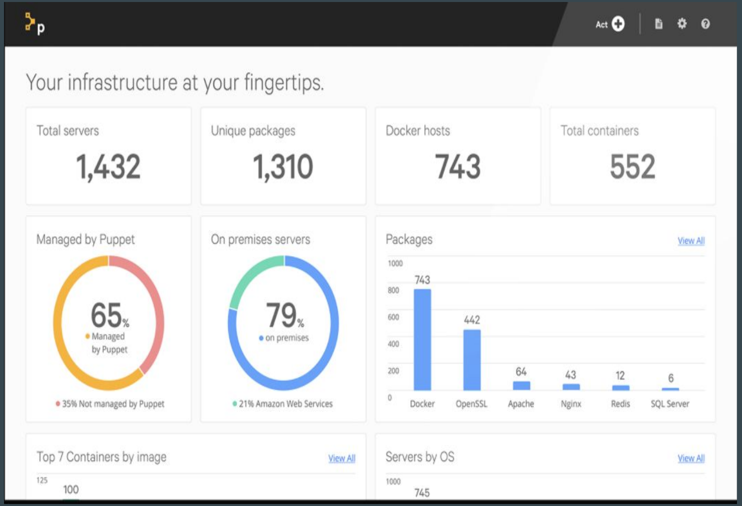
Products

- Puppet Discovery
- Puppet Enterprise
- Puppet Pipeline
- Open Source Puppet

Puppet Discovery

Discover what's running in your hybrid infrastructure.

- What's the distribution of operating systems in your on-premises environment?
- In which regions are your AWS EC2 instances running?
- What files have changed in your containers since you deployed them?



Your infrastructure at your fingertips.

Total servers 1,432

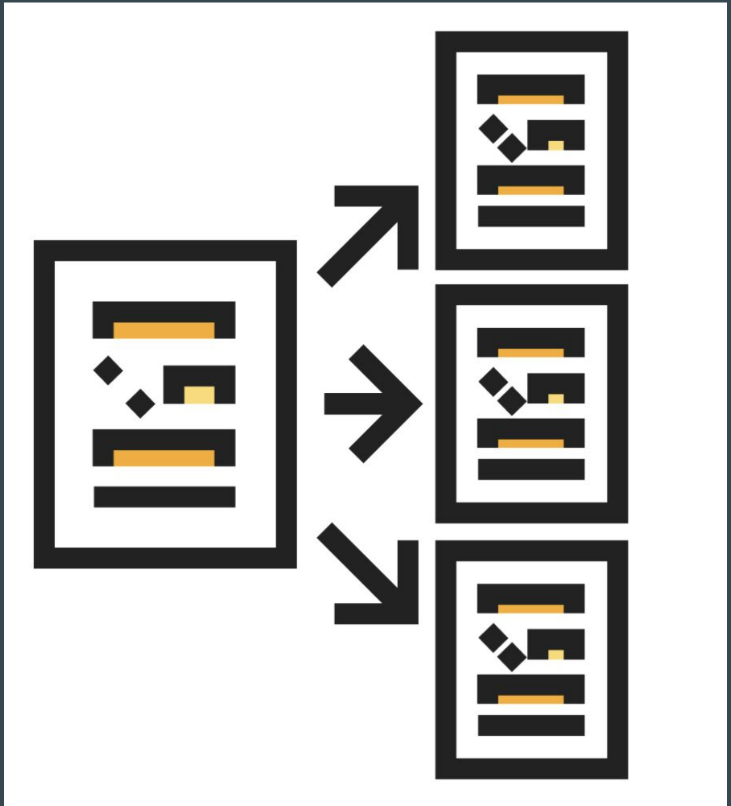
Unique packages 1,310

Docker hosts 743

Total containers 552

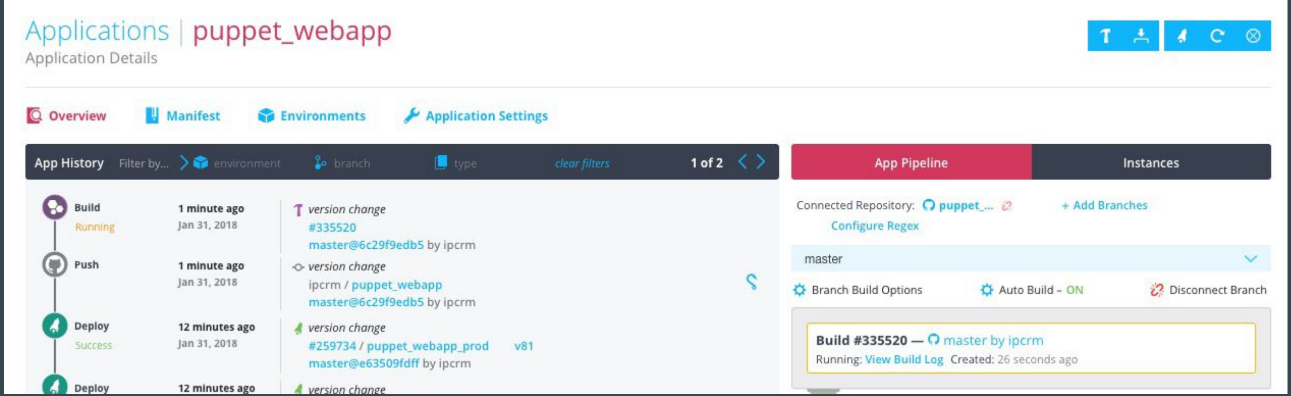
Puppet Enterprise

Puppet Enterprise provides you with the common language that all teams in an IT organization can use to successfully adopt DevOps practices such as version control, code review, automated testing, continuous integration and automated deployment.



Puppet Pipeline

Puppet Pipelines simplifies software delivery and unifies automation silos across your Dev and Ops teams. It automates the build and deployment of your applications — whether they're traditionally packaged or container-based apps running in Kubernetes — and gives you deep visibility and audit trails for every action taken.



Build
Running
1 minute ago
Jan 31, 2018
version change
#335520
master@6c29f9edb5 by ipcrm

Push
1 minute ago
Jan 31, 2018
version change
ipcrm / puppet_webapp
master@6c29f9edb5 by ipcrm

Deploy
Success
12 minutes ago
Jan 31, 2018
version change
#259734 / puppet_webapp_prod v81
master@e63509fdff by ipcrm

Deploy
12 minutes ago
version change

Connected Repository: puppet_... + Add Branches
Configure Regex

master

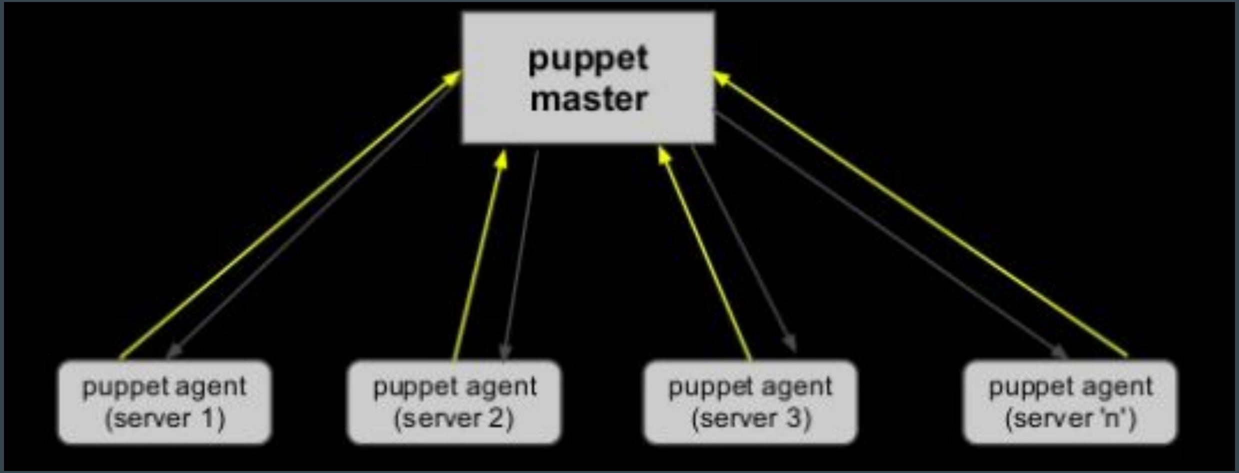
Branch Build Options
Auto Build - ON
Disconnect Branch

Build #335520 — master by ipcrm
Running: View Build Log Created: 26 seconds ago

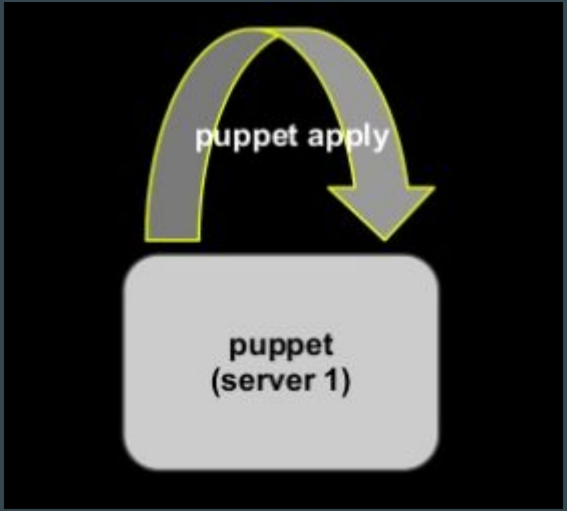
How Puppet Works?

- Architecture
  - Agent/Master
  - Stand-alone
- Lifecycle of a Puppet Run
- Configuration language

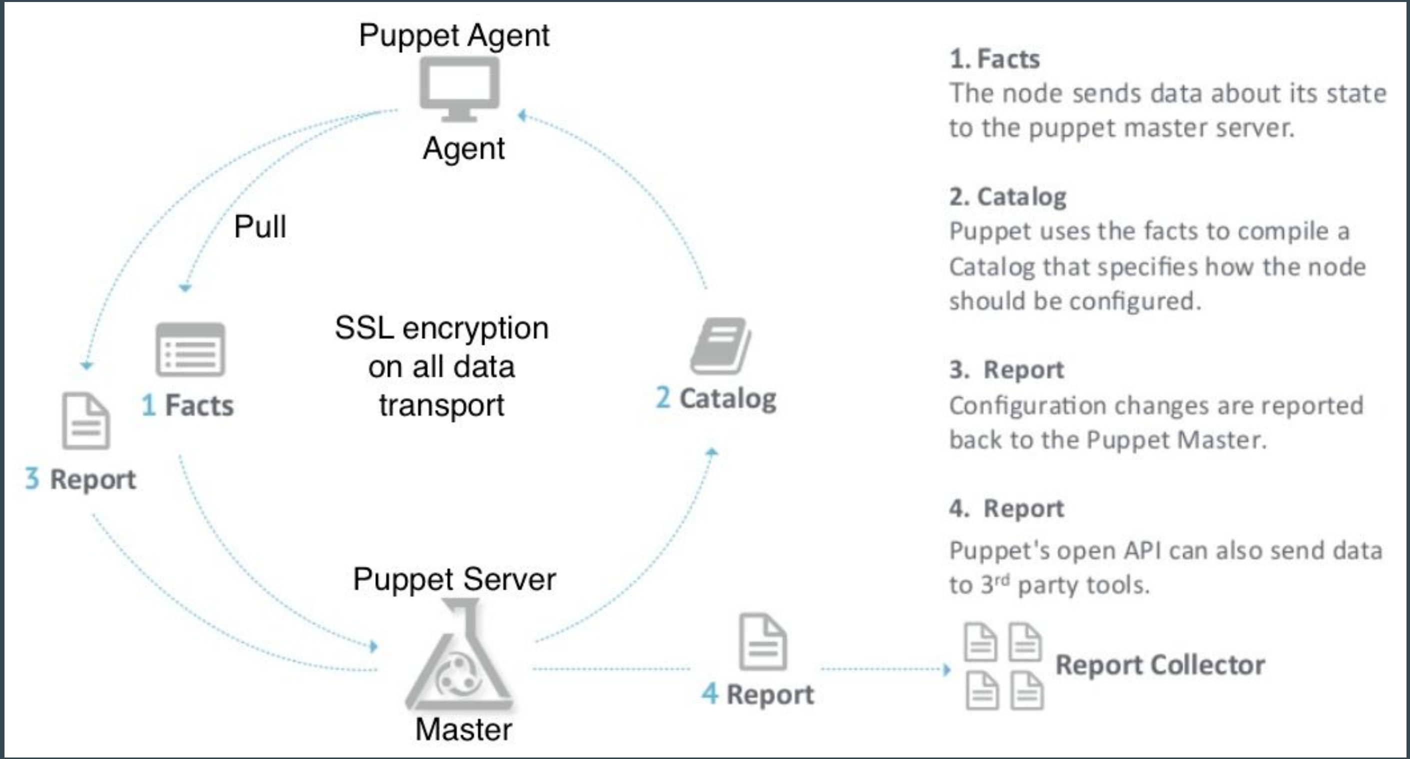
Agent/Master Architecture



Stand-alone Architecture



Lifecycle of a Puppet Run (Agent/Master architecture)



1. Facts
The node sends data about its state to the puppet master server.

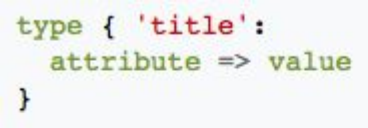
2. Catalog
Puppet uses the facts to compile a Catalog that specifies how the node should be configured.

3. Report
Configuration changes are reported back to the Puppet Master.

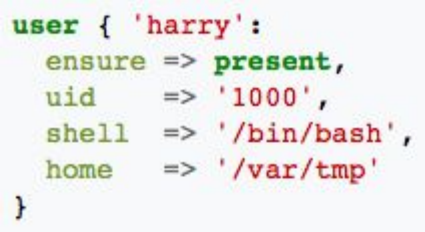
4. Report
Puppet's open API can also send data to 3rd party tools.

Configuration language

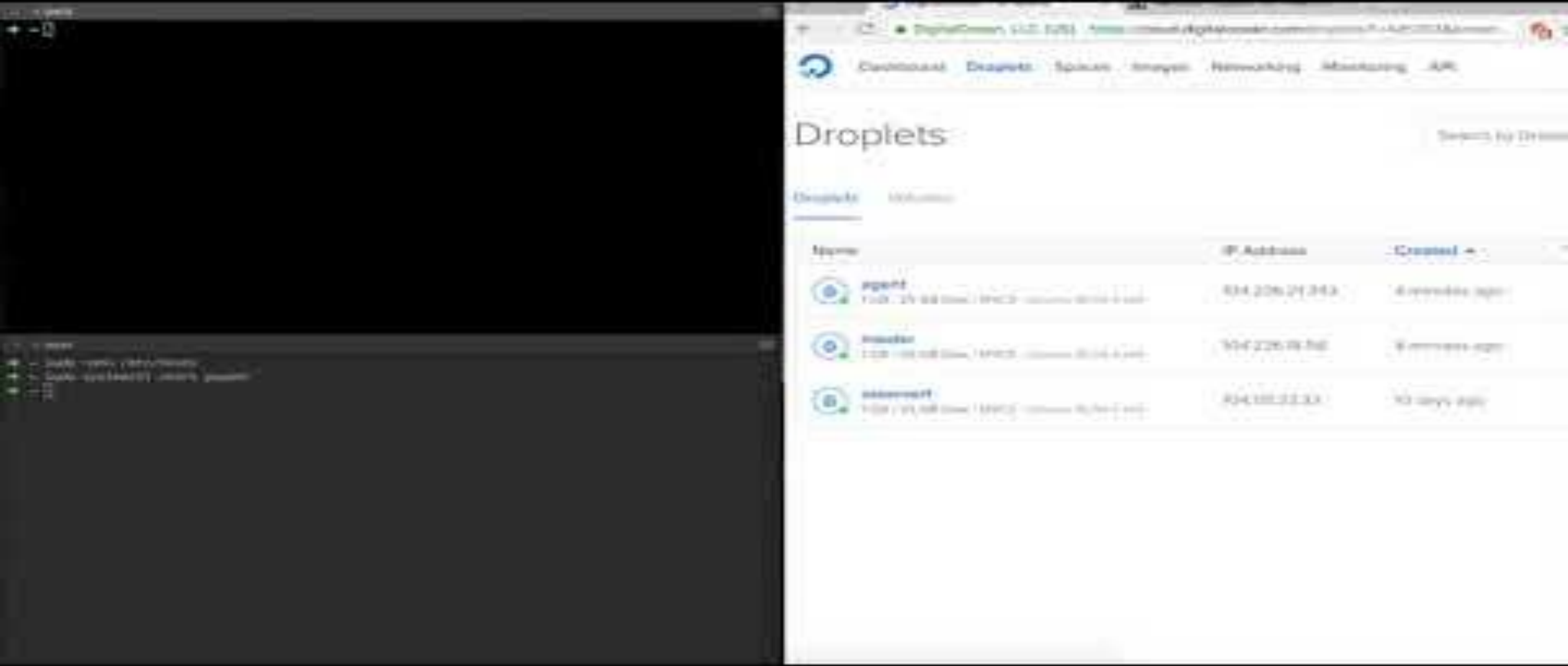
- Puppet's declarative language / Ruby DSL



```
type { 'title':
  attribute => value
}
```



```
user { 'harry':
  ensure => present,
  uid    => '1000',
  shell  => '/bin/bash',
  home   => '/var/tmp'
}
```



Droplets

Name	IP Address	Created
agent [illegible]	[illegible]	[illegible]
master [illegible]	[illegible]	[illegible]
[illegible] [illegible]	[illegible]	[illegible]

Pros

- Mature and stable interface; runs on all major OS
- Simple installation and setup
- Web UI with strong management and reporting tools
- Well-established and active support community

Cons

- Puppet DSL (hard to learn, understand and implement advanced tasks)
- Code base becomes more and more complicated while scaling up
- Pull model; follows a specified schedule for tasks

Related Applications / Products

Ansible:

- SSH-based; does not require installing agents on nodes
- Written in Python; script commands in YAML
- Uses push model

Chef:

- Similar architecture but an additional workstation to control configurations
- Uses ruby scripts for a more code driven approach

THANK YOU!

References

- https://www.slideshare.net/joshbeard/puppet-overview-28908346
- https://en.wikipedia.org/wiki/Puppet_(software)
- https://puppet.com/docs/puppet/5.5/architecture.html#
- https://www.slideshare.net/pk.habi/introduction-to-puppet-16586463?next_slideshow=1
- https://blog.takipi.com/deployment-management-tools-chef-vs-puppet-vs-ansible-vs-saltstack-vs-fabric/