



OpenStack CI: flow, tools and more

November 21, 2015

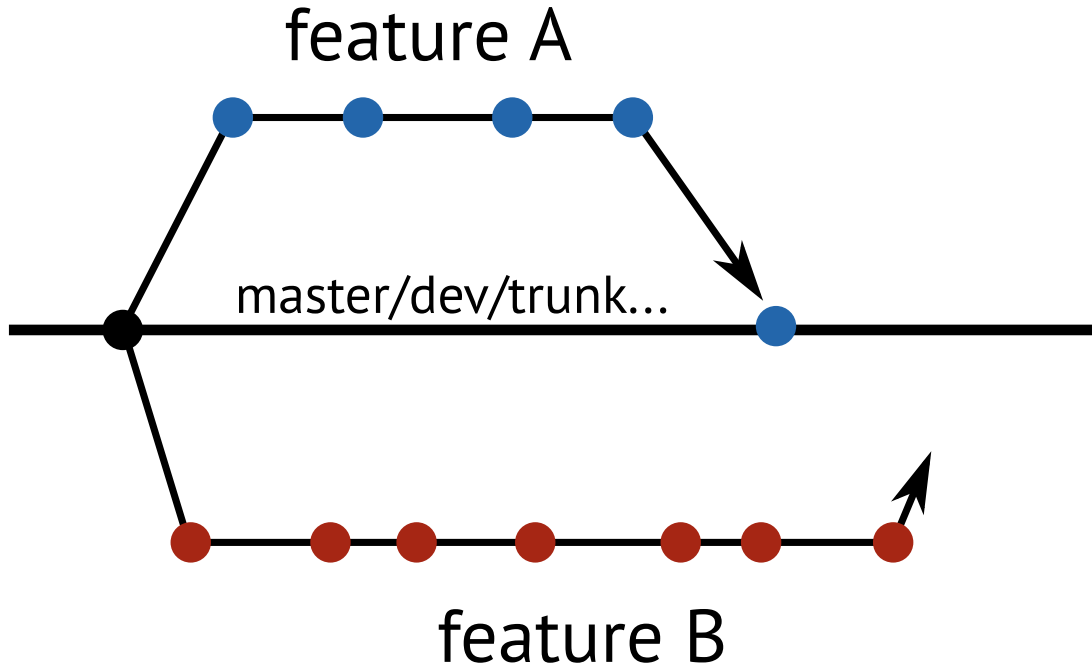
Aleksandra Fedorova, CI Team Lead

www.mirantis.com

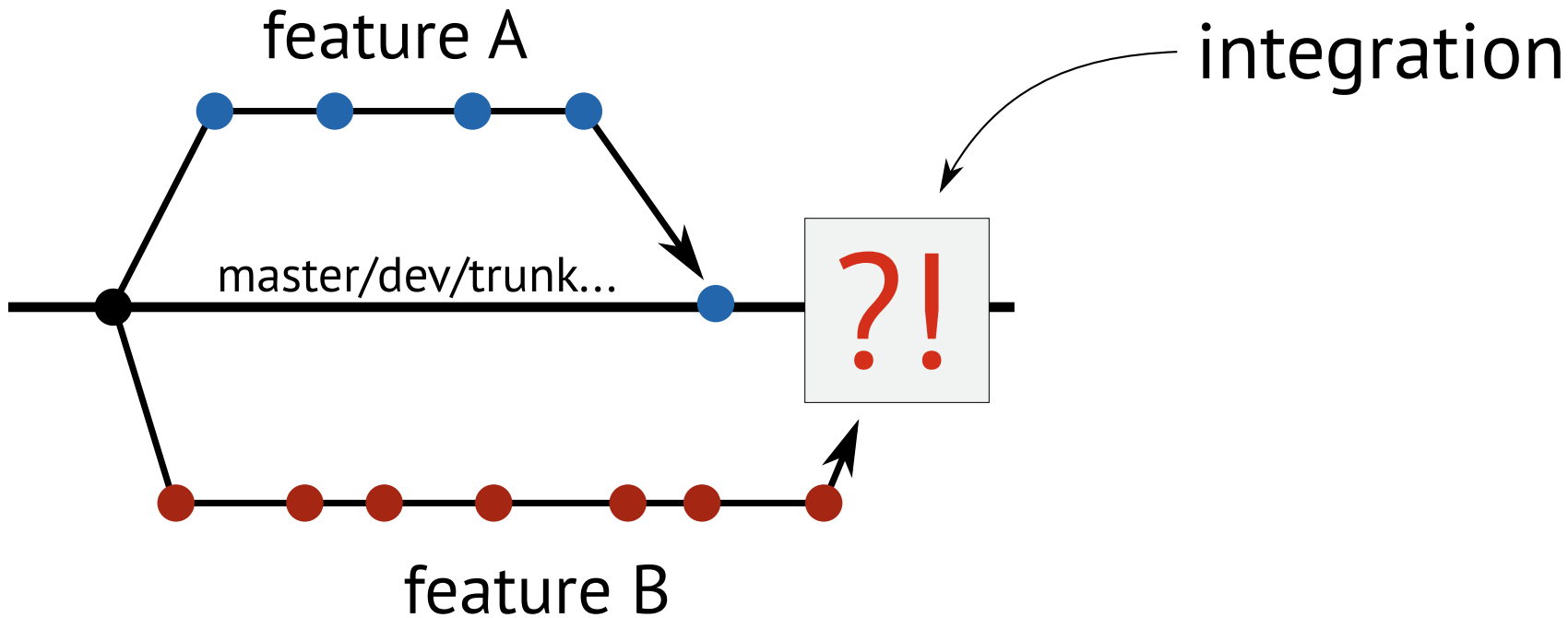
- What is Continuous Integration
- What is OpenStack
- Continuous integration of OpenStack:
challenges and solutions
- The downstream story

Continuous Integration

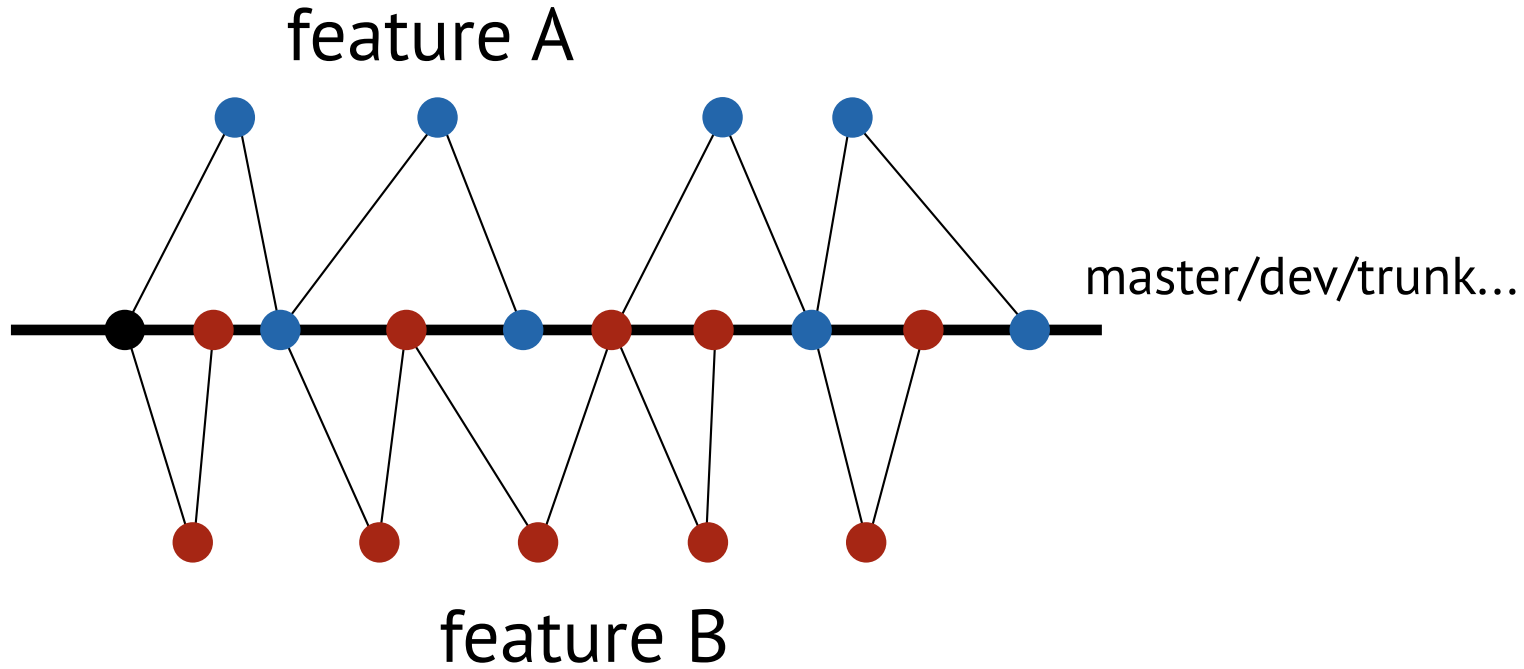
Feature branches



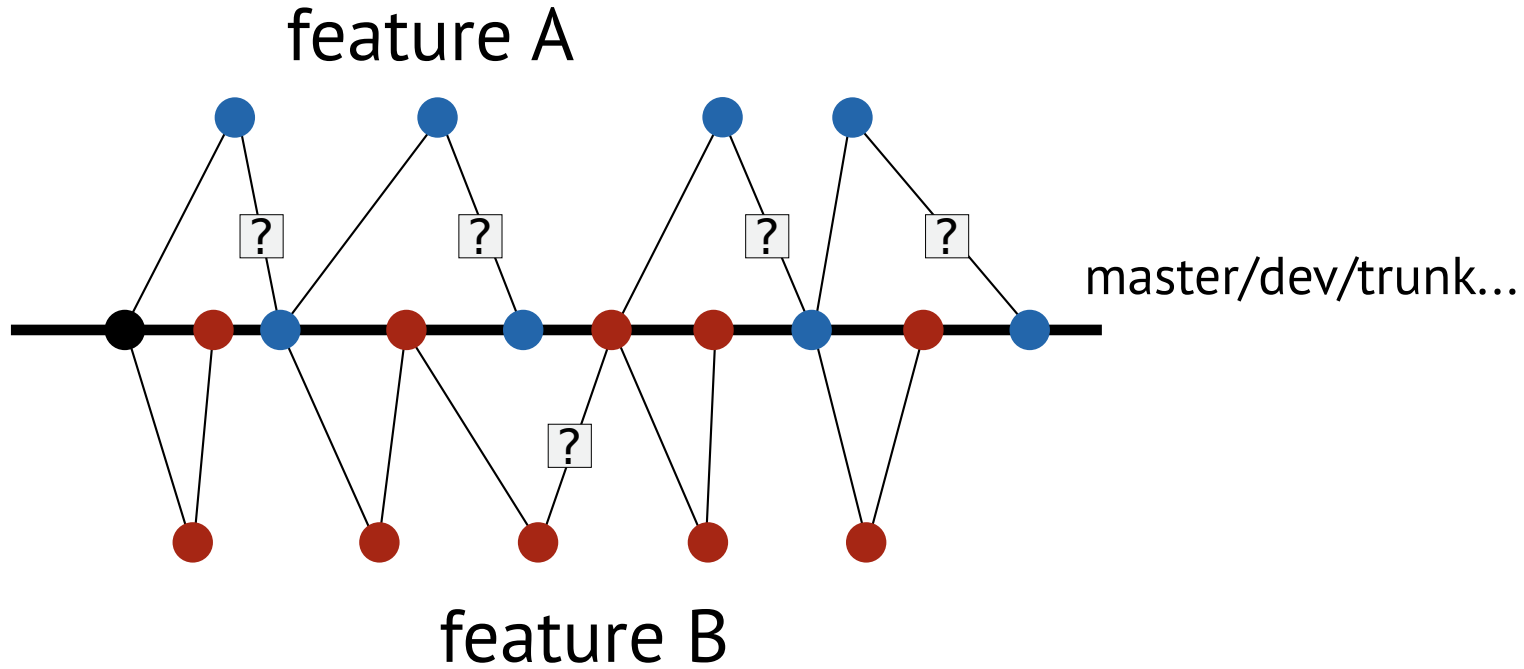
Feature branches



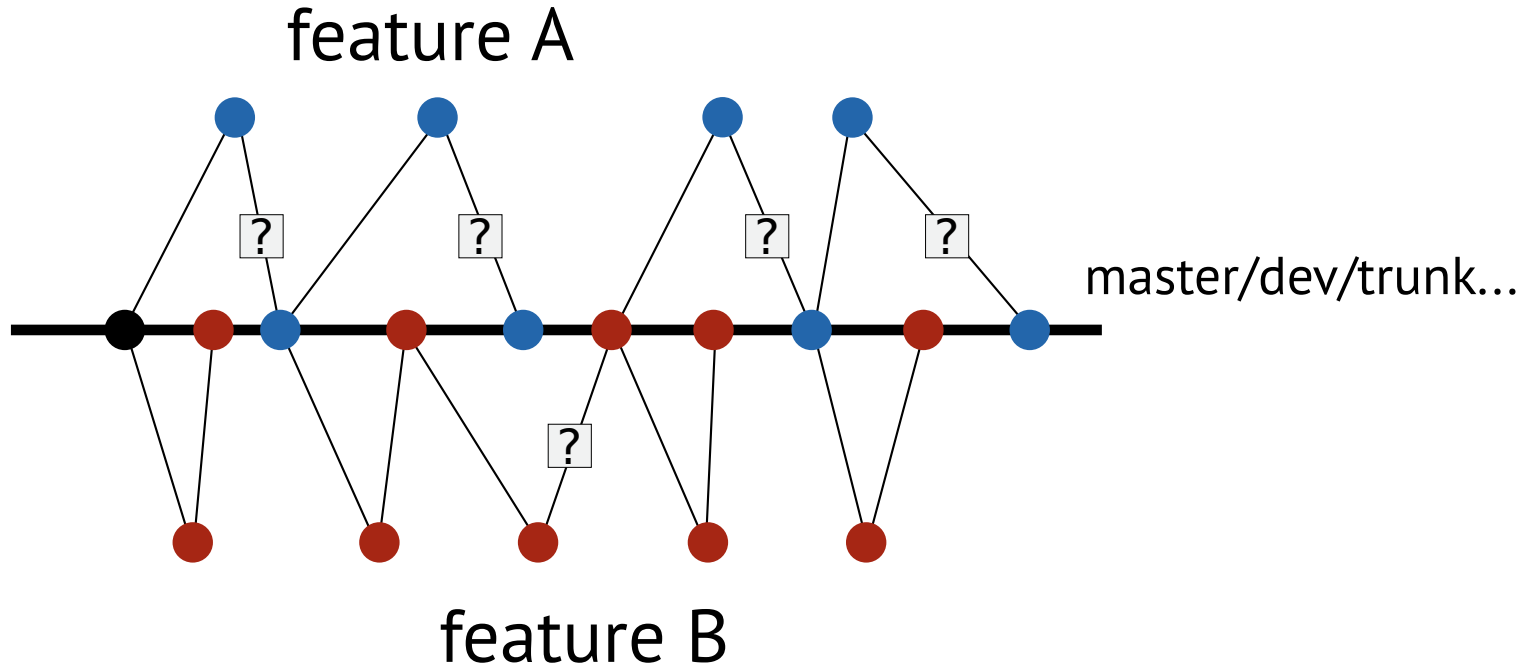
Continuous Integration



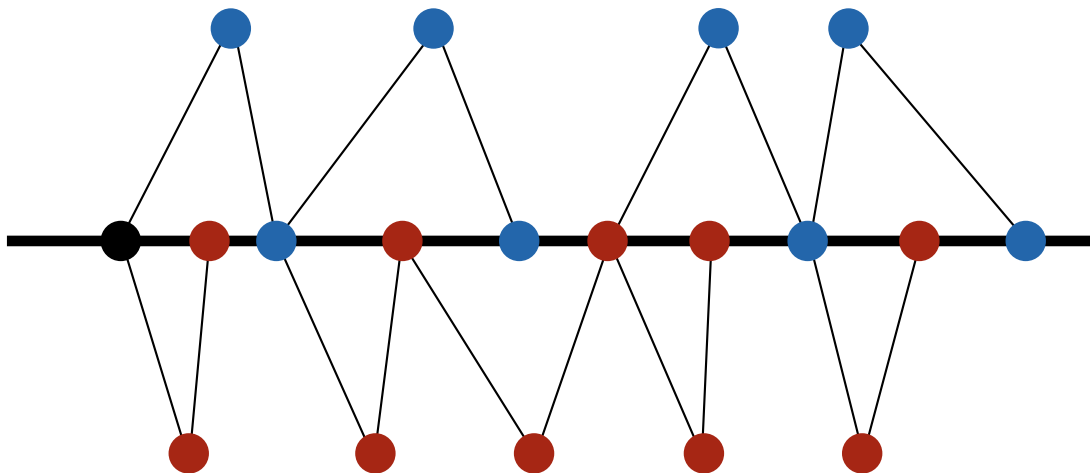
Continuous Integration



Continuous Integration



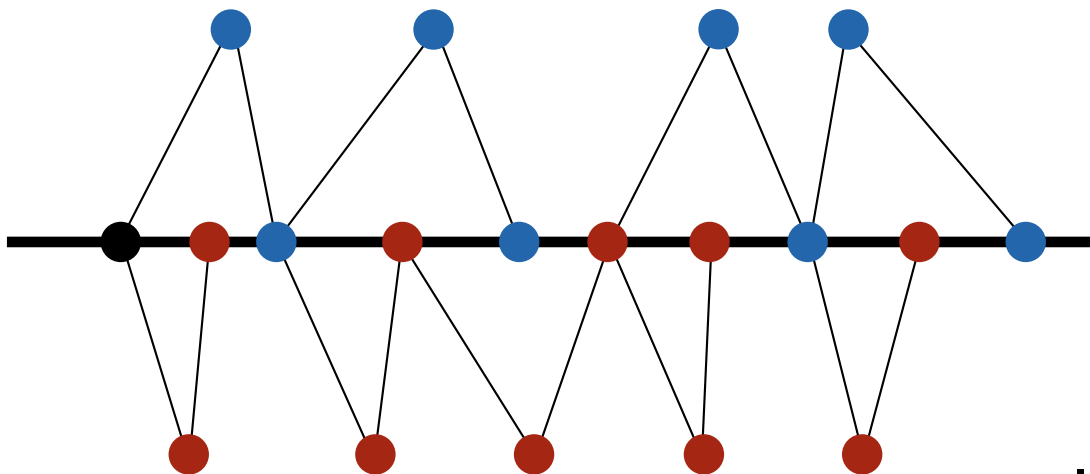
~~continuous~~ quantum integration



Every point on
this diagram
is
a working
state

It can be tested!

CI purpose



Every point on
this diagram
is
a working
state

It needs to be tested

Monitoring:
Health

OpenStack

OpenStack



Cloud, cloud, cloud...

Cloud, cloud, cloud...

- Many components
- Every component is a framework
- Any combination is possible

and it is just huge

OpenStack Activity



Liberty release ▾

organization

Project Overview

31,308 commits

2,076 developers

18,417 tickets

23,070 mail messages

Code Developers

2,076

Core Regular Casual

295 547 1,117

Commits



Last 365 days: 75,322

⬆️ +5%

Last 30 days: 5,482

⬇️ -31%

Last 7 days: 1,319

⬇️ -18%

Authors



Last 365 days: 2,787

⬆️ +25%

Last 30 days: 795

⬇️ -10%

Last 7 days: 326

⬇️ -22%

Code Submitters

2,454

Accepted Contributions

31,937

Reviews merged



Last 365 days: 61,124

⬆️ +37%

Last 30 days: 3,558

⬇️ -32%

Last 7 days: 700

⬆️ +16%

Submitters



Last 365 days: 3,091

Last 30 days: 1,034

Last 7 days: 531

<http://activity.openstack.org>

Gerrit Workflow (visualized by GitHub)



openstack / neutron

Watch

237

Star

623

Fork

878

Contributors

Commits

Code frequency

Punch card

Network

Members



"Preventing craziness:
a deep dive into OpenStack testing automation"

by Thierry Carrez

https://archive.fosdem.org/2014/schedule/event/openstack_testing_automation/

Everything is a code

- Puppet, Ansible, Chef...

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- list of Gerrit repositories?

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We have a YAML for that !

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- Meetings schedule?

We have a YAML for that !

and a code review too

- Jenkins Job Builder

<http://docs.openstack.org/infra/jenkins-job-builder/>

- Jeepyb aka Gerrit Project Bulder

<http://docs.openstack.org/infra/system-config/jeepyb.html>

- Grafyaml

<http://docs.openstack.org/infra/grafyaml/>

- Zuul: the CI scheduler

<http://docs.openstack.org/infra/zuul/>

- nodepool: CI nodes provider

<http://docs.openstack.org/infra/system-config/nodepool.html>

Multi-master Jenkins setup via Zuul,
unified dynamic nodes pool via nodepool

<http://docs.openstack.org/infra/elastic-recheck/>

Developer dream
and Infra pain

ing:
alth

Downstream story

Upstream vs. Downstream project

Community

Product

Upstream vs. Downstream project

Community

Product

test coverage

Upstream vs. Downstream project

Community

Product

test coverage

deadlines

Upstream vs. Downstream project

Community

Product

test coverage

deadlines

SLA

Upstream vs. Downstream CI

Community

Product

Upstream vs. Downstream CI

Community

DevStack test environments:
bash + screen

Product

Upstream vs. Downstream CI

Community

DevStack test environments:
bash + screen

Product

2 HA deployment test
on each commit

Upstream vs. Downstream CI

Community

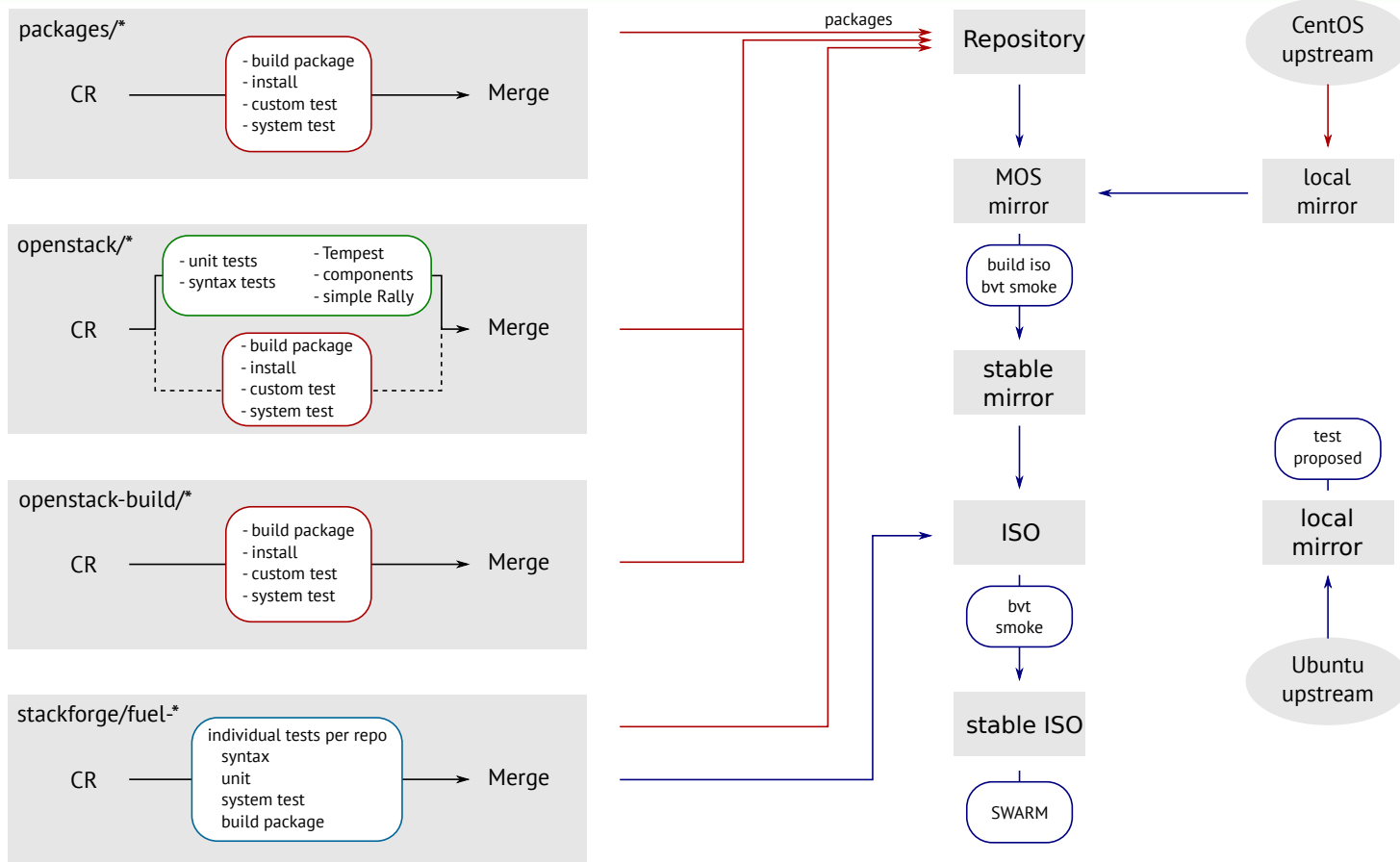
DevStack test environments:
bash + screen

Product

2 HA deployment test
on each commit

68 multinode HA
deployment scenarios
tested nightly

More CI



- OpenStack Infra

<http://docs.openstack.org/infra/>

- Fuel project

<https://wiki.openstack.org/wiki/Fuel>

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<https://www.mirantis.com/career/ci-engineer/>