

HOW OPENSTACK MAKES PYTHON BETTER (and vice-versa)



Hello!

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Hello!

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1.

OPENSTACK

A community-led project

INDEPENDENT GOVERNANCE

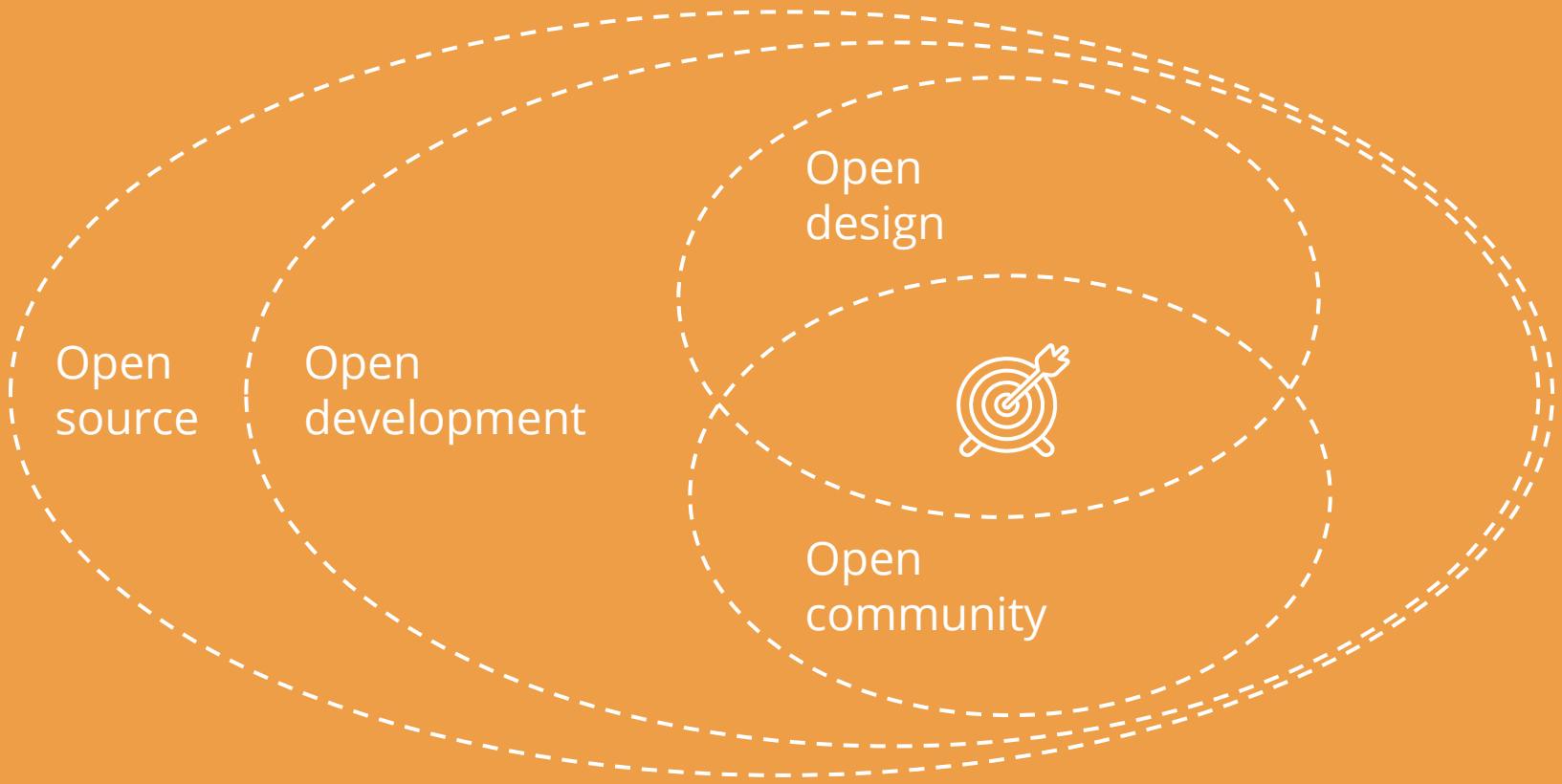
Elected team leadership

Project teams select their own leaders every release cycle.

Elected oversight board

Overall project leadership elected by the contributors every year.

OUR BASE **PRINCIPLES:** THE FOUR OPENS





THE **BIG** TENT



OpenStack is made of people

2.

WHAT PYTHON BRINGS TO OPENSTACK

Ease of Use & Inclusive Community

■ WHY OPENSTACK **CHOSE** PYTHON

- Distro integration
- Easy to read
- Easy to learn
- Easy to patch
- Ops familiarity

■ WHY OPENSTACK KEPT PYTHON

- Integration language
- PyPI ecosystem
- Easy to read
- Easy to learn
- Inclusive community

3.

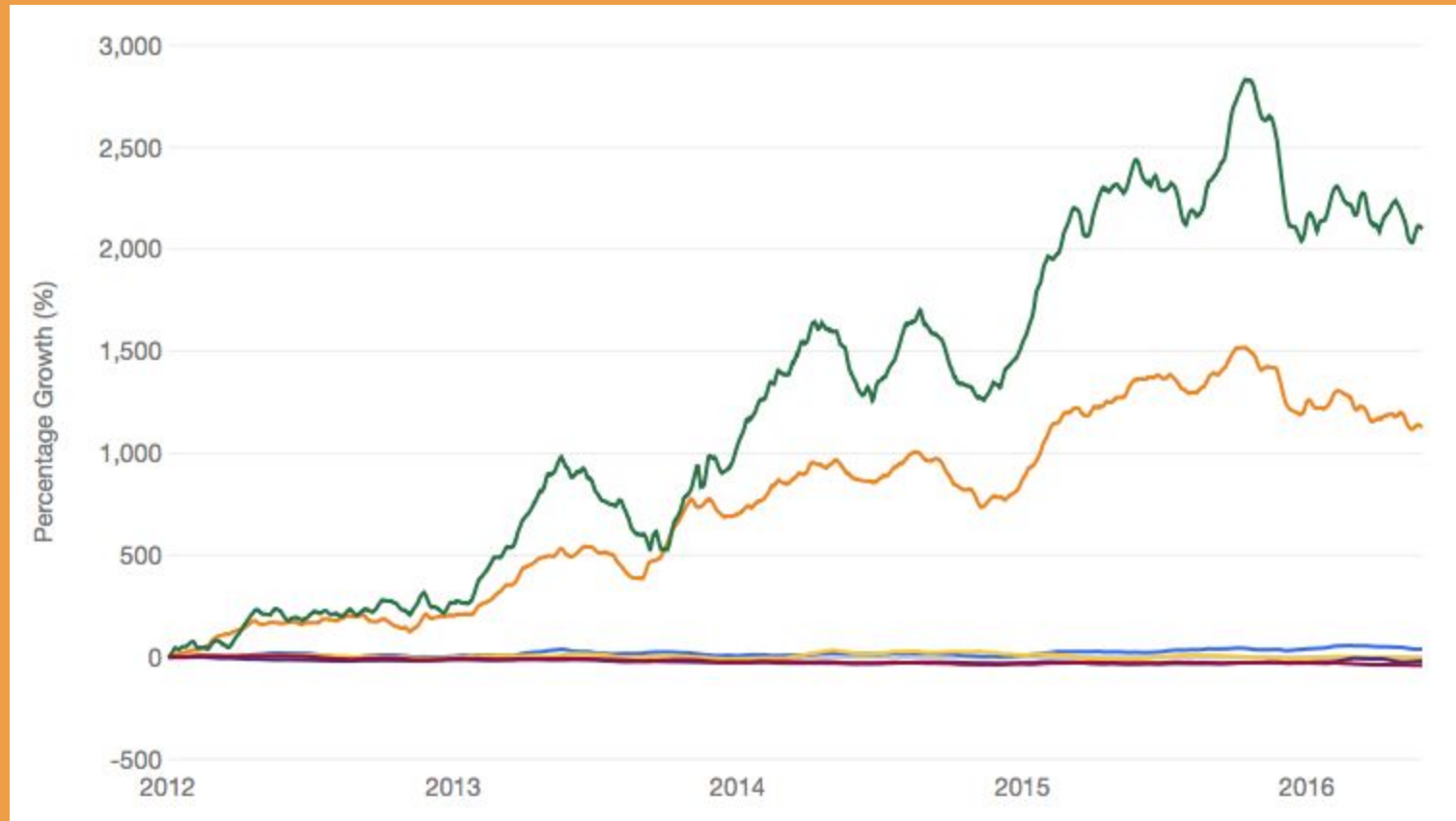
WHAT OPENSTACK BRINGS TO PYTHON

Funding, Contributors, & Quality

■ EXPERIENCE SOUGHT

- Cloud / sysadmin / devops
- Technologies like storage or networking
- Python

OPENSTACK & PYTHON JOBS



trends for jobs containing python, openstack, openstack python, storage, network, and virtualization from indeed.com

SUPPLY & DEMAND

Average openstack salaries for job postings nationwide are 17% higher than average python salaries for job postings nationwide.



trends of salary index for python and openstack jobs from indeed.com

■ EMPLOYER INDEPENDENCE

- Community Member
- Reputation-based Influence
- Job Mobility

■ INFLUX OF PYTHON DEVELOPERS

- Converted from “Enterprise” languages
- Growing excited about Open Source
- Joining the Python Community



QUALITY



Detecting regressions before anyone else

23 000



23 000

Number of test runs in OpenStack
on a typical work day

■ PYMEMCACHE 1.3.0

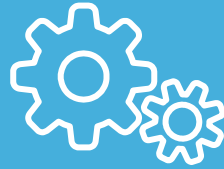
- Released (Friday) July 24, 2015
- Moved exceptions around in backward-incompatible ways
- Bug spotted and reported July 26, 2015
- Pymemcache 1.3.2 released July 26, 2015

■ KAZOO 2.1

- Released May 11, 2015
- Deadlock when acquiring a lock that is already acquired
- Bug reported May 12, 2015

■ NETADDR 0.7.16

- Released August 30, 2015
- Failing on validating a previously valid MAC address
- Bug reported August 31, 2015
- Netaddr 0.7.17 released August 31, 2015



CONTRIBUTIONS



Direct and indirect

LIBRARIES WE MADE

cliff

CLI framework

stevedore

plugin patterns

pbr

packaging automation

debtcollector

deprecation manager

futurist

additions to futures

automaton

state machine library

■ TOOLS WE MADE

jjb

Jenkins Job Builder

zuul

CI gate management

reno

release notes in git

bandit

security linter

gabbi

declarative HTTP tests

gerty

console-based gerrit UI

UPSTREAM CONTRIBUTIONS

Packaging

packaging, pip,
setuptools, wheel

Testing

fixtures, testtools,
testrepository, tox

Interpreters

CPython, PyPy, Jython

Web

Pecan, requests,
WebOb, Werkzeug

Database

Alembic, python-
memcache, Pandas,
redis-py, SQLAlchemy

Other

Dogpile, eventlet,
iso8601, Mako,
pykerberos, retrying,
six

ADOPTED LIBRARIES

- pylockfile
- mox3
- WSME
- sqlalchemy-migrate

4.

CONCLUSION

How do we improve the
symbiosis?

ADOPT GATING

Taste before you commit



FOLLOW SEMVER

Major.Minor.Patch



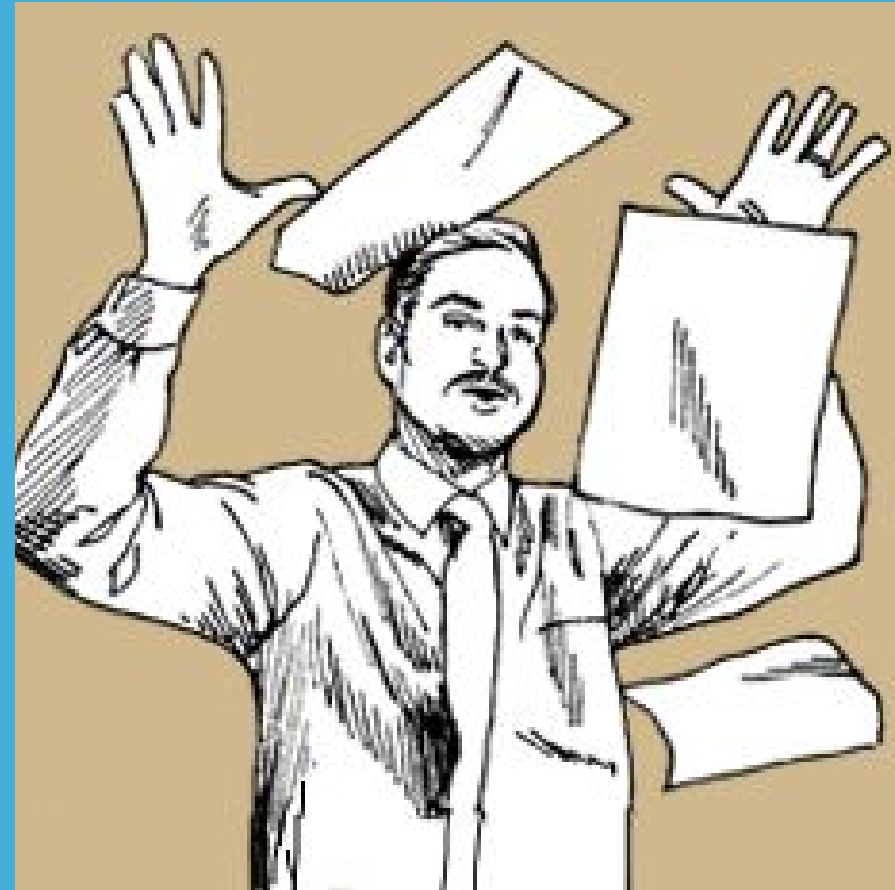
■ ONCE IT'S OUT,
IT'S **OUT**

Remember
eventlet 0.18.1



■ DON'T RELEASE ON A **FRIDAY**

You might interfere with
someone's idea of a
good week-end



CONTRIBUTE UPSTREAM

More fixes, more
features.



■ DECOMPOSE / REFACTOR

Make more reusable
components.



HIGHLIGHT **OUR WORK**

Write more
documentation for the
tools we've already built.



■ SHARE OUR EXPERIENCE

Talk about the patterns
we've adopted, and our
experience solving
complex problems.



Other OpenStack Community

Members at EuroPython 2016

- Victoria Martinez De La Cruz - *Build your first OpenStack application with OpenStack PythonSDK*
- Victor Stinner - *FAT Python: a new static optimizer for Python 3.6*
- David Flanders - *OpenStack Cloud Native Deployment for Application Developers*

THANKS!

Any questions?

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