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

Open source
Open development
Open design
Open community
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
ORPHANED & PYTHON JOBS

trends for jobs containing python, openstack, openstack python, storage, network, and virtualization from indeed.com
Average openstack salaries for job postings nationwide are 17% higher than average python salaries for job postings nationwide.

**National Salary Trend from Indeed.com**

- **Salary Index**
  - Python
  - Openstack

- **X-axis:** Jul '12 to Apr '14
- **Y-axis:** 0.88 to 1.24

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
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
<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>jjb</td>
<td>Jenkins Job Builder</td>
</tr>
<tr>
<td>zuul</td>
<td>CI gate management</td>
</tr>
<tr>
<td>reno</td>
<td>release notes in git</td>
</tr>
<tr>
<td>bandit</td>
<td>security linter</td>
</tr>
<tr>
<td>gabbi</td>
<td>declarative HTTP tests</td>
</tr>
<tr>
<td>gertty</td>
<td>console-based gerrit UI</td>
</tr>
</tbody>
</table>
UPSTREAM CONTRIBUTIONS

Packaging
packaging, pip, setuptools, wheel

Web
Pecan, requests, WebOb, Werkzeug

Testing
fixtures, testtools, testrepository, tox

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

Interpreters
CPython, PyPy, Jython

Other
Dogpile, eventlet, iso8601, Mako, pykerberos, retrying, six
ADOPTED LIBRARIES

- pylockfile
- mox3
- WSME
- sqlachemy-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.
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 Python SDK*
- 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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