

# OpenStack After Five Years

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**My third year presenting here...**

# 2013

- ~~The cloud is going to solve all of your problems forever!~~
- Have you heard of this cool Object Storage Thing?!
  - Oh you have... and Dr. Rosenthal told you all about it...
  - Oh you have... and Henry Newman told you all of the downsides...
  - Oh you have... and Jeff Barr from AWS is here too?!
- ...but this one is OpenSource!
- ...and there's this cool block-attached storage project
- ...and also there's Ceph!

# 2014

- What is Object Storage?
- OpenStack's growth is a challenge...
- The OpenStack object storage dev team didn't want my fixity-audit patch (sorry)
- Storage changes in the near-future:
  - Cross location replication
  - Policy based tiering
  - New object storage appliances from Seagate and others...

# 2015

- OpenStack is now 5 years old
  - Foundation focus shifting to enterprise use-cases
    - 2015 Foundation Goal
    - Ecosystem focus shifting to larger organizations as startups are acquired
  - Developer focus shifting to wider project proliferation:
    - More than fifty tracked projects
    - More storage projects: Object, Block, Filesystem
    - More storage choices: RAID, Ceph, NetApp...
  - Changes are happening rapidly...
- The OpenStack object storage dev team **STILL** doesn't want my fixity-audit patch (sorry)

# What hasn't changed?

- Major releases every six months...
  - Kilo released in May
  - Liberty expected next month
- Conferences and summits every six months also...
  - Tokyo from October 27<sup>th</sup> through the 30<sup>th</sup>.
  - **Austin in April 25<sup>th</sup> through the 29<sup>th</sup> 2016**
- No visibility into archival use-cases and requirements
- Development focus still on features than stability

# What has changed?

# New Storage Project!

- **swift**
    - provides object storage
  - **cinder**
    - provides remotely attached virtualized block devices to VMs
- and now*
- **manila**
    - provisions and provides virtual file shares\*

# New Storage Features!

- Swift now supports:
  - Erasure-Coding
  - Cross-Region Replication
    - For replicated and EC objects
- Features in development:
  - Symbolically linked Objects
    - To support migrating objects from replicated to EC based on usage
  - Webhook notifications
  - At-Rest Encryption...

# DefCore

# DefCore?

Defcore is the joint process between the OpenStack Foundation Board and Technical Committee by which they establish base requirements which all OpenStack products and services must meet. This includes defining a series of must-pass tests for capabilities provided by a project and designated sections of code which must be included.

# What?

# DefCore...

- Interoperability Requirements
- Restricts commercial trademark license
  - Defining tests that must be passed to call a product or service “OpenStack Powered”
  - Require that one uses OpenStack code, not merely the interfaces
- Refstack
  - Website and API (<http://refstack.net>)
  - Vendor score cards to prove compliance with given defined capabilities
  - Provide an audit trail by which you can validate the interoperability of disparate OpenStack clouds or products

# Thank you!

# Just one last thing...

**When I first came to this  
summit...**



А Б В Г Д Е Ж З И Й К Л М Н О П  
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1

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
VOLA T 566  
L. ... S. ...





## 5 actors with different desires

- Consumer
- Developer
- Operator
- Provider
- Auditor



NULL-TIER





# Fixity

I first learned the term\* in 2013

**Spent the next two years trying  
to get it into OpenStack**

I haven't succeed...

... but ...

# You can download it on github

<https://github.com/ChristopherMacGown/fixity-auditor>

**Thank you!**  
**(any questions?)**