# Introduction to OpenStack

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# Elizabeth K. Joseph

- Senior Automation & Tools Engineer at HPE
- Joined the OpenStack Infrastructure Team in 2013, core and root member
- Author of Common OpenStack Deployments, published by Prentice Hall, September 2016

# OpenStack

- Founded in 2010
- Open Source cloud, written in Python
- Vast marketplace of supportive companies in the ecosystem: https://www.openstack.org/marketplace/

# OpenStack Deployments

- Familiar with various types of production OpenStack clouds
- OpenStack Infrastructure infra-cloud project
- Distilled and presented OpenStack basics using Puppet

OpenStack can build clouds that:

Offer compute power
Handle storage (object, block)
Orchestrate bare metal systems
…
And more each release

# Who and how

The following are examples of what kind of organizations are using different types of OpenStack deployments and how they're using them

# Who and how

## Private Compute Cloud

# Who and how

## Public Compute Cloud

# Who and how

## Block Storage Cloud

# Who and how

## Object Storage Cloud

# Who and how

Bare metal “Cloud”

# Who and how

## OpenStack with Containers

# Vendor Support and Hybrid Clouds

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# 30 minute Demonstration with DevStack



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# Prerequisites for Building a Cloud

# Configuration Management

Installing OpenStack was hard.

But today you don't need get bogged down with basic configuration, you can leverage existing configuration management tooling!

And it's no longer proprietary and vendor-specific!

# The Usual Suspects

- Puppet: puppet-nova
- Chef: cookbook-openstack-compute
- Ansible: openstack-ansible-os_nova
- Juju: charm-nova-compute

And more available at
https://git.openstack.org/cgit/openstack

I'll be honest.

Installing OpenStack is still kind of hard.

# Team Expertise

- Strong Linux Systems Engineers
- Network Engineers
- Strong relationship with data center technicians
- Python Developers to assist with patches and relationship with upstream

# What should your cloud to do?

Just like any other cloud or virtualization environment, determine what you need and have preliminary plans for how you'll scale over time.

- Compute power?
- Block storage?
- Object storage?
- Do you need speed? Reliability?

# Networking

- Network planning is essential, and difficult to change later
- OpenStack networking with Neutron is very flexible
- Local and public address planning and allocation

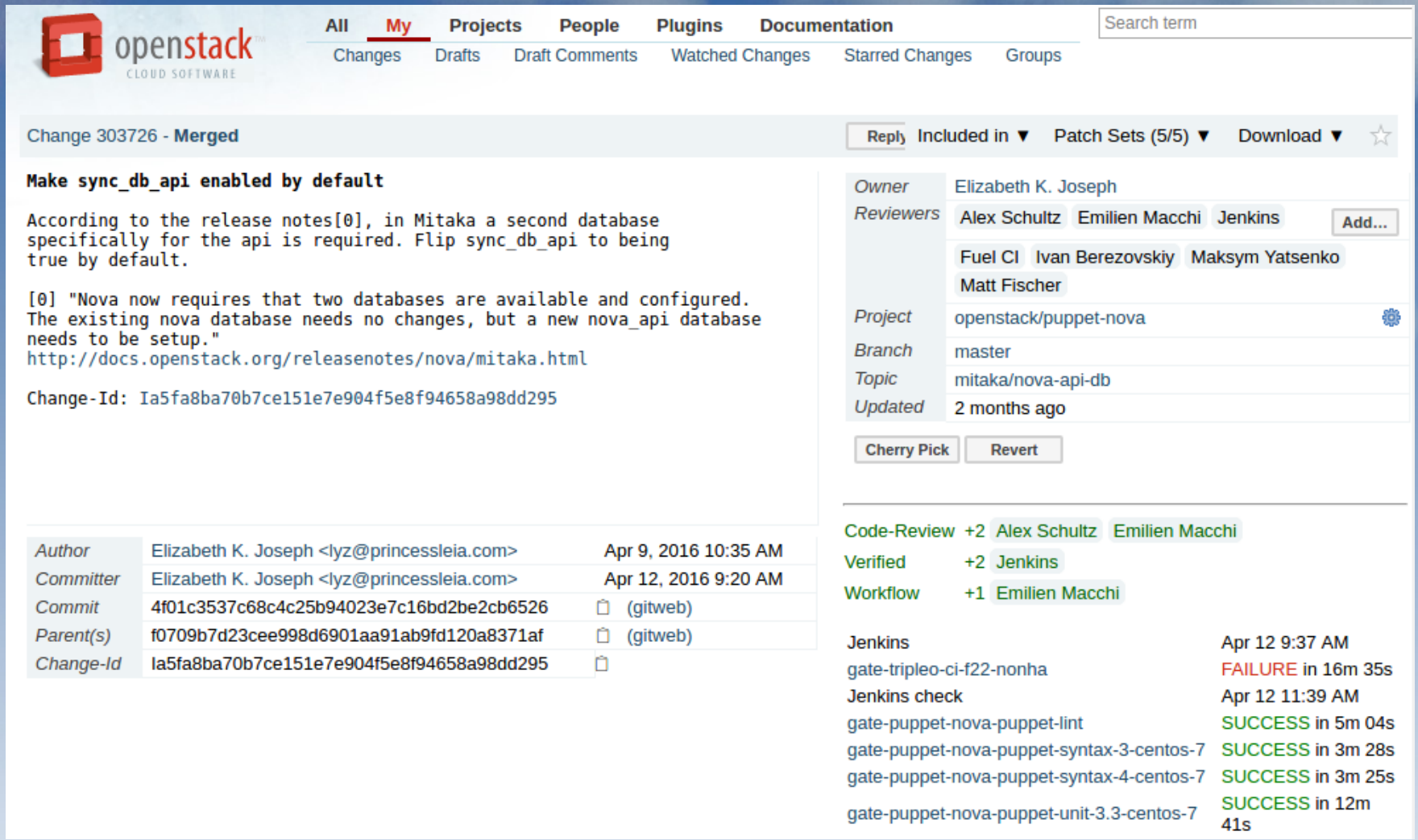
# Backups, Recovery

- Backup strategy
  - What to back up
  - Location of back ups (on/off-site)
- Fail-over
  - “Regions” across racks? Data centers?
  - Automatic/manual

# Doing more with Open Source

Sure, you could build customizations internally, but...

- The OpenStack project runs an open source infrastructure with a CI system and a large community for development of common solutions
- Developer's Guide: http://docs.openstack.org/infra/manual/developers.html




# OpenStack Project Code Review and Continuous Integration, ref: https://review.openstack.org/#/c/303726/

Questions?

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