How We Built Fuel
OpenStack Community

Challenges of Open Source Projects
Evgeniya Shumakher
How We Failed to Build Fuel OpenStack Community

Challenges of Open Source Projects
Evgeniya Shumakher
How this presentation is different from other talks?

This story does not have a happy ending.
**This story is like our life has its ups and downs, twists and turns.**

Mirantis is not a big enterprise company entering an open source world and adopting open source mindset.
**Mirantis is a startup with open source being a core of the business.**

I’m not going to talk about one specific type of community.
**I will talk about our experience with 3 kinds of communities:**
- Internal (intracompany) Community
- Mirantis Partner Community
- OpenStack Community

I’m not a Community Manager or an Open Source Contributor.
**I’m a Technology Partner Program Manager, who spent a good part of the last 3 years helping people to adopt Open Source mindset.**
About me

Evgeniya Shumakher
Senior Manager of Technology Partnerships,
Mirantis, Inc.

Email: eshumakher@mirantis.com
Linkedin: www.linkedin.com/in/eshumakher

Open Source Hero
About This Presentation

- About Mirantis
- About OpenStack
- About Fuel
- About Fuel Community(ies)
About Mirantis
Mirantis Snapshot

1
Singular Focus: Managed Open Clouds

#1
Major Contributor in Numerous Communities

$200M
Well funded

500+
Employees
Mirantis’ Mission

To be the world’s most effective vehicle for converting open source innovation into customer value
About OpenStack
OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed through a dashboard that gives administrators control while empowering their users to provision resources through a web interface.

https://www.openstack.org/software/
OpenStack Philosophy: Four Opens

- **Open Source**
  - Truly open source software that is usable and scalable. Truly open source software is not feature or performance limited and is not crippled. No “Enterprise Edition”.
  - Apache License, 2.0. OSI approved. GPLv3 compatible. DFSG compatible.

- **Open Design**
  - Every development cycle the OpenStack community holds face-to-face events to gather requirements and write specifications for the upcoming release. Those events are open to anyone.

- **Open Development**
  - OpenStack community maintains a publicly available source code repository through the entire development process, does public code reviews, has public roadmaps.

- **Open Community**
  - Decisions are made using a lazy consensus model. Processes are documented, open and transparent. The technical governance of the project is provided by the community, with contributors electing team leads and members of the TC. All project meetings are held in public IRC channels and recorded. Additional technical communication is through public ML’s and is archived.
OpenStack Diagram
OpenStack Diagram
OpenStack Diagram

OPENSTACK
Control Plane

COMMON NETWORK

APIs

YOUR APPLICATIONS

APP

VIRTUAL MACHINES

CONTAINERS

OBJECT STORAGE

FILE STORAGE

BLOCK STORAGE

Dashboard (GUI)

Monitoring & Tools
OpenStack Project Ecosystem

1533 repositories under git.openstack.org/openstack

- OpenStack is extremely popular
- OpenStack Community encourages diversity
- Struggle for existence and natural selection make OpenStack ecosystem healthier

https://github.com/openstack
Popular Project Set

- Keystone (Identity Service): 98%
- Nova (Compute): 98%
- Glance (Image Service): 97%
- Neutron (Networking): 95%
- Horizon (Dashboard): 89%
- Cinder (Block Storage): 89%
- Heat (Orchestration): 69%
- Telemetry (Ceilometer): 56%
- Swift (Object Storage): 51%
- Rally (Benchmark Service): 25%
- Ironic (Bare Metal): 23%
- Designate (DNS Service): 16%
- Manila (Shared File Systems): 15%

April 2017 OpenStack User Survey
Deployment Tools

Figure 5.2 n=408

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OpenStack ecosystem has several projects serving the same purpose and competing with each other not only for users but for contributors.
About Fuel
Fuel is an open-source software that simplifies the deployment of highly available OpenStack environments.
Fuel is Originated by Mirantis
Fuel Goal

Become one generic OpenStack installer that everyone wants
How to Achieve the Goal?

1. Win OpenStack Users
   a. OpenStack adopters choose Fuel as their deployment tool
   b. Fuel users contribute to Fuel
   c. Fuel users become Mirantis customers

2. Win OpenStack Contributors
   a. OpenStack developers contribute to Fuel
   b. Fuel leads in the competition with other deployment tools
   c. Fuel becomes an official OpenStack project
Fuel Community
Fuel Journey in OpenStack

- Partner Team Created: Apr 2014
- Fuel 4: Dec 2013
- Fuel 6: Dec 2014
- Fuel Plugin Framework: Jun 2015
- Fuel 7: Sep 2015
- Maintenance mode: Apr 2017
- Fuel 11: Mar 2017

- Unofficial 2013 - Jul 2015
- Proposed: Jul 2015 - Nov 2015
- Official OpenStack Project: Nov 2015 - Jun 2017
- Unofficial: Jan 2017 - Apr 2018

- Jan 2014
- Jan 2015
- Jan 2016
- Jan 2017
- Jan 2018
- Apr 2018
Phase #1: First Days

Timeline: 2H 2013 - 1H 2014 / Fuel 3 (Grizzly) - Fuel 5 (Icehouse)

Where things were:
- Fuel was following the OpenStack Bible (code is in stackforge, Launchpad, ML, IRC, Design sessions at the summit)
- Mirantis is promoting Fuel as a part of Mirantis OpenStack

Results:
(+) Overall positive feedback from Mirantis customers
(+) OpenStack users did OpenStack self-deployments with Fuel
(-) Number of external contributions was close to none
(-) Number of Mirantis contributions other than Fuel core team’s were close to none
(-) Professional Services team wasn’t that happy
Stackalytics: Icehouse/Fuel 5

- 90% Mirantis
- 10% *Independent
- Symantec
- Comcast

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| 2 | *Independent
  Institute of Computing Technology of the Chinese Academy of Sciences | 58  |
| 2 | Institute of Computing Technology of the Chinese Academy of Sciences | 1  |

http://stackalytics.com/
Organizational Setup

Product Engineering

● Produce Mirantis product based on OpenStack, Fuel and other open source technologies
● Open Source Developers
● Key Members of the OpenStack Community
● Understand and follow OpenStack Guiding Principles

Professional Services

● Use the product to deliver customer projects
● OpenStack ninjas - know how to make OpenStack work to meet customer needs
● Not OpenStack contributors
● Don’t understand or have time to follow Open Source development rules
Main Complaints from Professional Services

- The contribution process is too complicated, deployment engineers don’t have time to do everything Fuel team asks to do.
- Though Fuel allows to build highly available OpenStack environments, customers often ask about additional features (e.g., replace OVS with OpenContrail).
● Fuel lives by OpenStack community rules, that means Professional Services team need to follow them.
● Anyone can propose a new feature via Launchpad Blueprint mechanism and even implement it. Fuel core team has a roadmap they need to stick to.
Companies that have chosen to make open source community projects a core of their business often face a dilemma: community vs customer.
Solution: We need a mediator!

Create a special team with a mission to

- **Lead by example**
  - Contribute to Fuel from outside the Fuel core team
- **Partner**
  - Attract infrastructure vendors to extend Fuel deployment options by contributing to the project (e.g., add EMC ScaleIO as a Cinder backend, etc.)
- **Enable**
  - Support Fuel users/contributors in IRC, ML, etc.
  - Review code, Launchpad bugs, BP’s
  - Provide insight about Fuel users/contributors to the core team
Phase #2: a New Team is Born

Timeline: 2H 2014 - 1H 2015/ Fuel 5 (Icehouse) - Fuel 6 (Juno)

Where things were:

- Partner Enablement team was formed
- The team was implementing several features in Juno/Fuel 6
- Technology Partner Program is introduced

Results:

(+) Partner team delivered features in Fuel
(+) Professional Services team was filing and even fixing bugs
(+ )A few vendors joined partner program and started contributing into Fuel
(-) Partners with limited open source background were struggling to use open source communication tools
(-) Fuel Architecture was too monolithic, not designed for participation.
Stackalitics: Juno/Fuel 6

- **Company**: Mirantis (90%), *Independent (9%), Mellanox, BCX, Red Hat, inwinSTACK

- **Resolved Bugs**
  1. Mirantis: 1281
  2. *Independent: 225
  3. Mellanox: 9
  4. B1 Systems GmbH: 1
Solution: Redesign!

● Fuel Architecture Redesign
  ○ Refactor Fuel to introduce Pluggable Architecture
  ○ Produce extensive documentation, tools and tutorials to make Fuel ready for participation

● Partner Program Redesign
  ○ OpenStack Fuel Community <> Mirantis Partner Fuel Community
  ○Provide special treatment to Mirantis Fuel partners
    ■ A ML for Mirantis partners
    ■ Partner Management
    ■ 1-1 sessions with Fuel Engineers
    ■ Validation programs

● Same for Internal Fuel Community
Phase #3: a Path to Success

Timeline: 2H 2015 - 1H 2017 / Fuel 7 (Kilo) - Fuel 11 (Ocata)

Where things were:

- Fuel Plugin Framework was released + documentation
- Technology Partner program was elevated to help Mirantis Fuel partners do better

Results:

(+) 98 results for repositories matching fuel-plugin under git.openstack.org/openstack

(+) ~100 Mirantis Partners, at least half of them developed and validated their plugins

(+ ) Fuel became an official OpenStack project

(-) Not enough contributions to Fuel core
Stacklitics: Ocata/Fuel 11 with Plugins

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Here should have been a solution slide
Phase #4: Business Pivot

Timeline: H1 2017/ Fuel 11-
Where things are:
● Mirantis chooses a new business model and needs a product that meets a new goal

Results:
(+) Mirantis Cloud Platform has been released.
(+) Fuel users keep creating Fuel plugins and using it in self deployments
(-) Mirantis put Fuel in a maintenance mode. Fuel project lost its core team.
(-) Fuel moved from the official to the hosted project category. What’s next?
Founders need to champion their projects.
Stackalitics: Deployment tools

- **TripleO**: 75% (17% other)
  - Red Hat, HP, *independent*, HPE, IBM, Mirantis, flonatel, SUSE, NEC, others

- **Charms**: 97%
  - Canonical, *independent*, Inspur, IBM, Internap, Ericsson, NEC, Hitachi, Tesora, others

- **Fuel**: 91% (8% other)
  - Mirantis, *independent*, Ericsson, Red Hat, 99cloud, Mellanox, AT&T, HP, Inspur, Inspur, others
## Stackalitics: Murano

### Juno

- **Mirantis**: 72%
- **Independent**: 19%
- **HP**: 8%

### Ocata

- **Others**: 32%
- **Samsung**: 23%
- **ZTE Corporation**: 24%
- **AT&T**: 11%
- **Sberbank**: 3%
- **Oracle**: 1%
- **Fujitsu**: 3%
- **Inspur**: 3%
- **Mirantis**: 3%
- **Independent**: 3%

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Observation:

- OpenStack ecosystem has several projects serving the same purpose and competing with each other not only for users but for contributors.
- Companies that have chosen to make open source community projects a core of their business often face a dilemma: community vs customer.
- Founders need to champion their projects.

Lessons Learned:

- Everybody needs help. Not only the newbies, but the founders too.
- Understand the difference between the communities. Tune your processes to meet each community’s needs.
- Design for participation. Avoid monolithic architectures.
- Business comes first. If project doesn’t meet a company's goals, the company moves on.
Questions?