

OPEN



Source: <http://www.flickr.com/photos/opensourceway/6956020057>

Doron Fediuck
oVirt co-maintainer

Alissa Bonas
OpenDaylight contributor
oVirt contributor

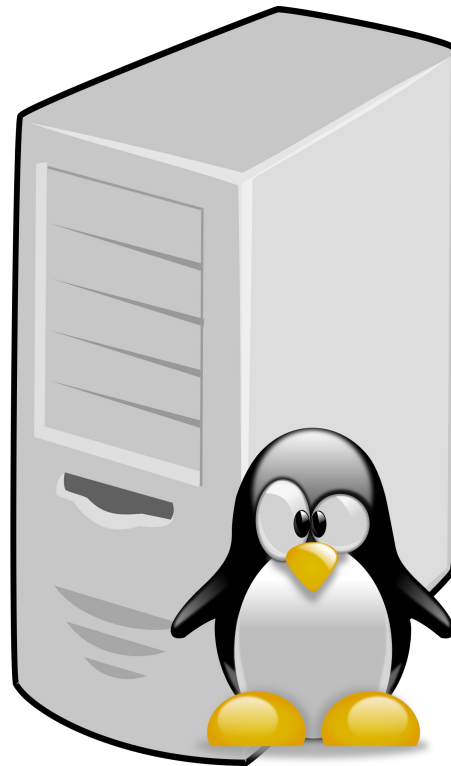
February 2014



Part 1:

Open source overview

Open source is all around



Famous examples

- Linux
- Mozilla- Firefox, Thunderbird, ...
- Jenkins
- Eclipse
- Git
- PostgreSQL
- Apache- Hadoop, Tomcat, Commons, ...

A bit of history...

- Richard Stallman
 - 1977 – Added a feature to Xerox printer software
 - 1980 – Unable to change Xerox printer source
- 1983 – GNU / Free software foundation



Definition

- Open source software grants the rights to:
 - Modify source code (study/view...)
 - Copy
 - Redistribute – as long as license terms are kept
 - Original version
 - Modified copies
- Open-source software is very often developed in a public, collaborative manner.

Why is it good?

- Fix bugs – no need to wait for others
- Enhance it (add features)
- Reuse it - not to “invent the wheel”
- Transparency - know your application
- More people involved
 - better tested
 - better code quality
 - less bugs



How does it work?

- Usually done in communities
 - Very global in nature
- Communities
 - Formed around a common purpose.
 - Sharing ideas and work
 - Meritocracy = best ideas win
 - Transparency – wiki/mailing list/irc



Who can participate?

- Anyone!
- Classic model - Individuals



Who can participate?

- Recent trend – Companies
 - Integration with companies' products
 - Charge for consulting/customer support
 - Reuse open source products – must follow license terms
 - Report bugs/send patches
- Examples
 - <https://www.openstack.org/foundation/companies/>
 - <http://www.opendaylight.org/project/board-members>

Benefits for contributors

- Write code that is used by more people
- Get personal credit
- Great way to learn a new language/framework
- Global collaboration



The downside

- No merge rights
- Longer review cycle / feature design
- Might be different/strict code policies
- Sometimes consensus is impossible and projects fork.

Part 2: Open source under the hood



Source: <https://www.flickr.com/photos/briannaorg/481587329>

oVirt

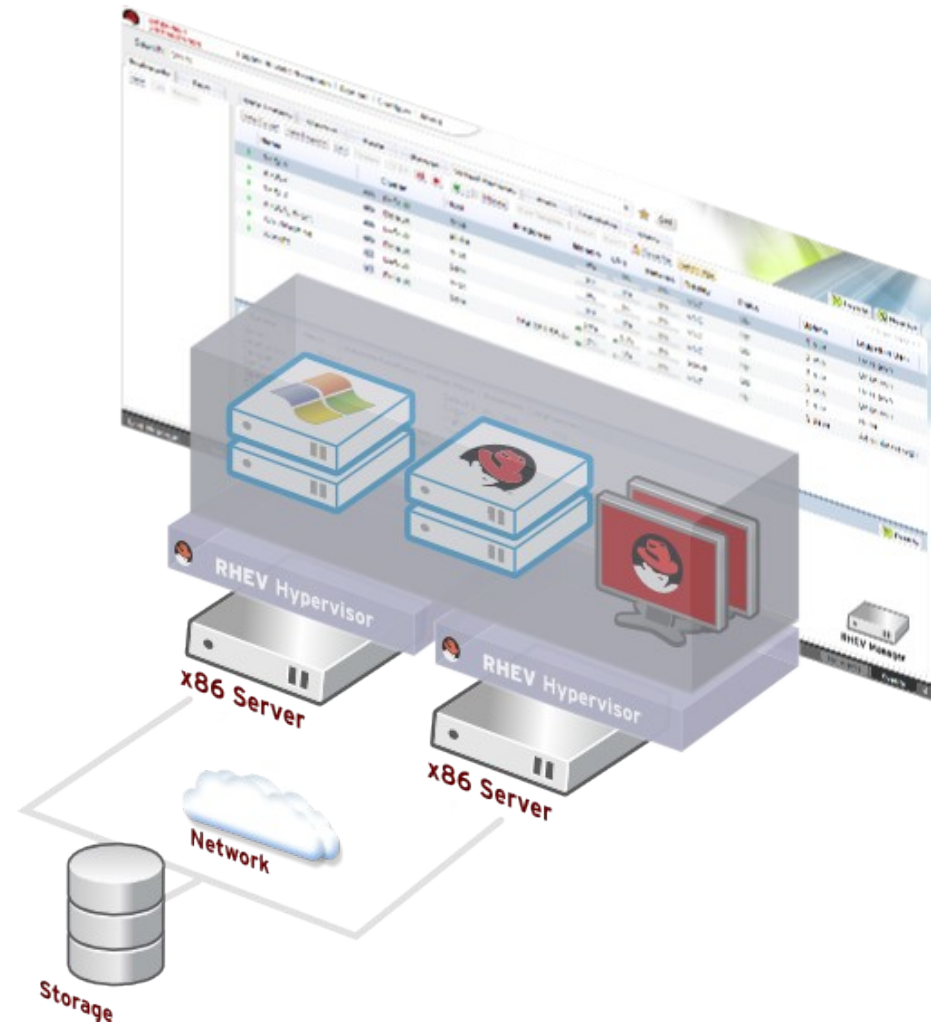
Large scale, centralized management for server and desktop virtualization

Based on leading performance, scalability and security infrastructure technologies

Provide an open source alternative to vCenter/vSphere

Focus on KVM for best integration/performance

Focus on ease of use/deployment



Open source project structure



Source: <https://www.flickr.com/photos/mckln/3549181208>

- Board: ecosystem leadership
- Sub-projects: each may have different communities, policies and standards
- Roles: Maintainer, committer, reviewers, bug wranglers, contributors.

oVirt board members

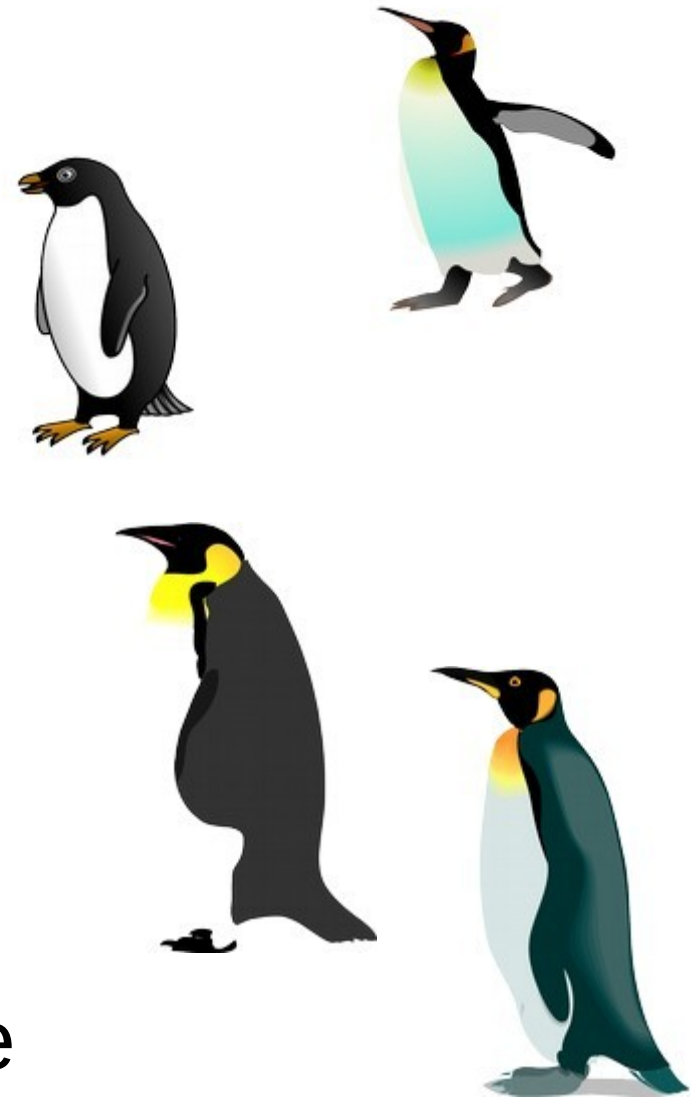


See: http://www.ovirt.org/OVirt_Board

Contributors

Anyone can contribute

- Asking a question
- Giving an answer
- Asking for a feature
- Sharing an idea
- Reporting a bug
- Adding documentation
- Sending a bug fix
- Sending code for a new feature



Reviewers

- Reviewers (code)
 - Review code contributions
 - Provide feedback (ack / nack / score if possible)
 - It is highly recommended to set a review policy



Bug Wranglers and Committers

- Some projects define Wranglers
 - Scrub new bugs
 - Look for bugs in known places (public reports)



- Committers
 - Have the power to commit code changes
 - In most cases technical only
 - May be done automatically (Gerrit)



Maintainer

- Different projects - different models!
 - Single vs. multiple maintainers
- Well acquainted with the project/code
- Understands the project architecture
- Commit patches
- Build source code into a binary package for distribution
 - Build a release package for the project



Becoming a (maintainer / reviewer /...)

- Contributor- Just do it!
- Bug wranglers- Simply volunteer
- Reviewers- git clone, register if needed
- Committer- Merit based, vote may be needed
- Maintainer- Merit based, vote needed



Defining a Healthy Community

- Many contributors and users
- Diversity!
- Users help other users
- Active participation (discussions, conferences)

All of these will push your project forward

- More contributions
- More installations



Work flow



Development cycle & Patches

- Different projects – different tools – different contribution process
- The basic concepts are the same
 - Anyone can send a patch
 - Patches that introduce new feature or new concepts are usually discussed on a mailing list
 - Patch submission, should adhere to the project policies
 - Code review process
 - Ack/Nack

Feature design

- Create a draft of the feature
 - Wiki feature page
 - Blueprint
 - eMail
- Notify the mailing list, ask for opinions
- Have a discussion
 - Consensus may be needed
 - Start sending patches



Feature Page in oVirt

[HOME](#)[DOWNLOAD](#)[DOCUMENTATION](#)[COMMUNITY](#)[DEVELOP](#)

(Redirected from [Features/FeatureTemplate](#))

Feature template

The actual name of your feature page should look something like: "Your feature name". Use natural language to **name the pages**.

Contents

[hide](#)

1 Your Feature Name

- 1.1 Summary
- 1.2 Owner
- 1.3 Current status
- 1.4 Detailed Description
- 1.5 Benefit to oVirt
- 1.6 Dependencies / Related Features
- 1.7 Documentation / External references
- 1.8 Comments and Discussion

Your Feature Name

Summary

A sentence or two summarizing what this feature is and what it will do. This information is used for the overall feature summary page for each release.

Owner

This should link to your home wiki page so we know who you are

- Name: **My User**

Include you email address that you can be reached should people want to contact you about helping with your feature, status is requested, or technical issues need to be resolved

- Email: <my@email>

Openstack Blueprint



OpenStack Compute (Nova)

Overview Code Bugs **Blueprints** Translations Answers

Register a new blueprint

OpenStack Compute (nova) » Blueprints » Register a blueprint in Launchpad

Name:

May contain lower-case letters, numbers, and dashes. It will be used in the specification url.
Examples: mozilla-type-ahead-find, postgres-smart-serial.

Title:

Describe the feature as clearly as possible in up to 70 characters. This title is displayed in every feature list or report.

Specification URL: (Optional)

The URL of the specification. This is usually a wiki page.

Summary:

A single-paragraph description of the feature. This will also be displayed in most feature listings.

Assignee: (Optional)

 (Find...)

The person responsible for implementing the feature.

Drafter: (Optional)

 (Find...)

The person responsible for drafting the specification.

Approver: (Optional)

 (Find...)

The person responsible for approving the specification, and for reviewing the code when it's ready to be landed.

Definition Status:

The current status of the process to define the feature and get approval for the implementation plan.

Propose for sprint:

The sprint to which agenda this blueprint is being suggested.

[Register Blueprint](#) or [Cancel](#)

oVirt – Tools

- **Git** - an open source distributed version control



- **Gerrit** - an open source, web based, code review system

- **Jenkins** - an open source, continuous integration server

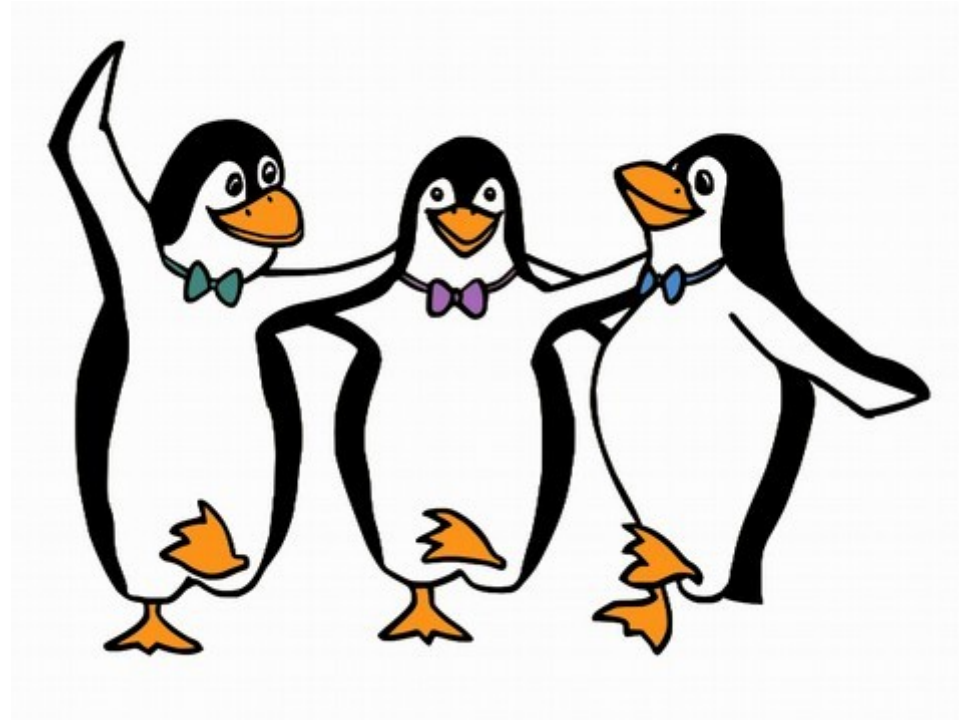


oVirt - patch submission process

- Anyone can send a patch
- A patch submission triggers a set of CI Jobs which verify if the patch meets a basic set of requirements:
 - Compiles
 - Does not break tests
 - Adheres to the project policies (coding style, etc)

oVirt - patch submission process

- Anyone can review and give comments on a patch
- Anyone can rate a patch: +1 / 0 / -1, only *maintainers* can give +2
- Only *Maintainers* can accept and commit a patch to the source control



Code Review

[All](#) [Projects](#) [Documentation](#)

[Open](#) [Merged](#) [Abandoned](#)

status:open

Search

[Register](#) | [Sign In](#)

Search for status:open

Subject	Status	Owner	Project	Branch	Updated	CR	V
aaa: Expose only Directory name via DirectoryEntry		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:30 PM		
reports: br1 reports - added comments to queries		Shirly Radco	ovirt-reports	master	1:28 PM		
vm: snapshot transient disk check should be per disk		Federico Simoncelli	vdsmd	master	1:25 PM	✓	✓
vdsmd-reg: collect vdsmd-config.log		Dan Kenigsberg	vdsmd	master	1:24 PM	+1	
aaa: Introducing Extension manager		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:24 PM		
aaa: introducing profile name of authenticator classes.		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:23 PM	+1	
aaa: Moving Directory from common to aaa		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:22 PM	+1	
packaging: setup: database: support get vdc option's versions		Alon Bar-Lev	ovirt-engine	master (packaging/setup)	1:21 PM	+1	✓
aaa: renaming "authentication" to "aaa".		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:20 PM	+1	
aaa: creating extension-manager module		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:19 PM	+1	
aaa: Introducing AuthenticationProfileRepository		Yair Zaslavsky	ovirt-engine	master (extension-manager)	1:16 PM		
webadmin: Edit vNIC Profile- disable pm if the profile is used by a vm		Alona Kaplan	ovirt-engine	master	1:15 PM		
engine: Provide defaultRoute property for management network		Moti Asayag	ovirt-engine	ovirt-engine-3.4	1:12 PM	✓	
Add generic code to check repoclosure		Kiril Nesenko	jenkins	master	1:10 PM		
core+setup: adding the public glance repository		Oved Ourfall	ovirt-engine	master	1:08 PM		
core: SyncLunsInfo when activating FC storage domain		Daniel Erez	ovirt-engine	ovirt-engine-3.3	1:02 PM		✗
UI: set correct SSH trust target path in tooltip.		Eli Mesika	ovirt-engine	master	1:01 PM		✓
aaa: Cleaning up common from authentication code.		Yair Zaslavsky	ovirt-engine	master (extension-manager)	12:57 PM	+1	
core: normalize capitalization of lun_id column		Daniel Erez	ovirt-engine	master	12:42 PM		✓
core: fix cpu info for AMD Opteron Processor G5		Arik Hadas	ovirt-engine	master	12:36 PM	+1	✓
add Scientific Linux support		Sandro Bonazzola	ovirt-release	master (packaging/spec)	12:32 PM		
engine: Block cluster change if network labels not supported		Moti Asayag	ovirt-engine	ovirt-engine-3.4	12:21 PM	✓	✓
webadmin: Manage network dialog- replace VM network checkbox with icon		Alona Kaplan	ovirt-engine	master	12:15 PM		
engine: Simplify host network statistics processing		Moti Asayag	ovirt-engine	master	12:05 PM	✓	
core: introduce RunVmCommand#RunVmFlow		Arik Hadas	ovirt-engine	master	12:05 PM		

Code Review, anyone can do it

Code review interface showing a diff between two versions of `BackendApplication.java`. The interface includes tabs for `All`, `My`, `Differences` (selected), `Projects`, `People`, and `Documentation`. A search bar is present with the text "Change #, SHA-1, tr.id or owner:email" and a "Search" button. The file path is `backend/manager/modules/restapi/jaxrs/src/main/java/org/ovirt/engine/api/restapi/BackendApplication.java`.

The diff shows changes in the `BackendApplication.java` file. The left side shows the original code, and the right side shows the proposed changes. The changes include:

- Imports: `import javax.inject.Inject;` (added).
- Class field: `private BackendLocal backend;` (added).
- Comments: `// The reference to the backend bean:` (added).
- Method: `lookupBackendBean()` (added).
- Exception handling: `catch (Exception exception) { logger.error("Can't find reference to backend bean.", exception); }` (added).

The diff is reviewed by **Juan Hernandez** (Jan 28 14:05) and **Roy Golan** (Jan 28 17:43). The review comments are:

- Juan Hernandez:** "Can't you import the lass and use it without the package name?" (Note: "lass" is a typo for "class").
- Roy Golan:** "Done"
- Juan Hernandez:** "Indent this correctly."
- Roy Golan:** "Done"

The diff is highlighted with a red circle, indicating the changes made by the reviewer.

Code Review, score

AllMyProjectsPeopleDocumentation

ChangesDraftsDraft CommentsWatched ChangesStarred Changes

Change #, SHA-1, tr:id or owner:email

SearchDoron Fediuck

Change I1018ade2 - Patch Set 2: Publish Comments

Change-Id: I1018ade28f442e58f96fcdcd0f819650ff5d7bd1

Owner Jiří Moskovčák

Project ovirt-engine

Branch master

Topic

Uploaded Feb 21, 2014 14:52

Updated Feb 23, 2014 09:03

Submit Type Rebase if Necessary

Status Review in Progress

Commit MessagePermalink

engine: keep the HA flag when exporting/importing VM template

Change-Id: I1018ade28f442e58f96fcdcd0f819650ff5d7bd1

Bug-Url: <https://bugzilla.redhat.com/1066406>

Signed-off-by: Jiri Moskovcak <jmoskovc@redhat.com>

Reviewer	Code-Review	Verified
Jiří Moskovčák	⊗	✓
Martin Sivák	⊗	
oVirt Jenkins CI Server	⊗	
Doron Fediuck	⊗	
gerrit-hooks	⊗	
Gilad Chaplik	⊗+1	
Kobi Ianko	⊗+1	

• Need Verified

• Need Code-Review

Name or Email or Group

Add Reviewer

Verified:

☐ +1 Verified

☒ 0 No score

☐ -1 Fails

Code-Review:

☐ +2 Looks good to me, approved

☐ +1 Looks good to me, but someone else must approve

☒ 0 No score

☐ -1 I would prefer that you didn't submit this

☐ -2 Do not submit

Cover Message:

Publish Comments

Publish and Submit

Cancel

Continuous Integration

Reviewer	Verified	Code-Review
oVirt Jenkins CI Server	✗	
Ayal Baron		

- Need Code-Review

▼ Dependencies

ID	Subject	Owner	Project	Branch	Updated
Depends On					
☆ I74070ebb	misc: rename safelease to clusterlock	Federico Simoncelli	vdsm	master	Dec 20
Needed By					
☆ I106618a9	clusterlock: add the local locking implementation	Federico Simoncelli	vdsm	master	Dec 20

Old Version History:

▼ Patch Set 1

c2fb1254e51e225d2f36654f0cb1cf61feb995e0 [\(gitweb\)](#)

Author	Federico Simoncelli <fsimonce@redhat.com> Dec 20, 2012 1:12 PM
Committer	Federico Simoncelli <fsimonce@redhat.com> Dec 20, 2012 3:53 PM
Parent(s)	638fae277d5e476607051d635a71ac9e73934fc9 misc: rename safelease to clusterlock
Download	checkout pull cherry-pick patch Anonymous Git git fetch git://gerrit.ovirt.org/vdsm refs/changes/81/10281/1 && git cherry-pick FETCH_HEAD 

	File Path	Comments	Size	Diff	Reviewed
►	Commit Message			Side-by-Side Unified	
M	vdsm/storage/imageRepository/formatConverter.py		+7, -6	Side-by-Side Unified	
M	vdsm/storage/sd.py		+32, -20	Side-by-Side Unified	
			+39, -26		

Comments

[Expand Recent](#) | [Expand All](#) | [Collapse All](#)

oVirt Jenkins CI Server	Patch Set 1: Build Started ...	Dec 20
oVirt Jenkins CI Server	Patch Set 1: Build Started ...	Dec 20
oVirt Jenkins CI Server	Patch Set 1: Fails	Dec 20
	Build Failed	
	http://jenkins.ovirt.org/job/vdsm_pep8_gerrit/470/ : SUCCESS	
	http://jenkins.ovirt.org/job/vdsm_unit_tests_manual_gerrit/505/ : FAILURE	

Project policies



Signed-off

- Provides a way for a contributor to allow use of his / her code
- AKA “Developer's Certificate of Origin 1.1”
- Taken from linux-2.6 Documentation/SubmittingPatches^[1] and is covered by the GPLv2

Signed-off-by: Doron Fediuck <doron@redhat.com>

[1] <http://git.kernel.org/?p=linux/kernel/git/torvalds/linux-2.6.git;a=blob;f=Documentation/SubmittingPatches;hb=4e8a2372f9255a1464ef488ed925455f53fbdaa1>

Code standards

- Formatting
- Code-specifics
- Documentation
- Unit tests
- Patch expiration date?

Patch size

A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/signature/DSASignature.java	35 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/signature/RSAPrivateKey.java	79 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/signature/RSAPublicKey.java	35 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/signature/RSASHA1Verify.java	287 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/signature/RSASignature.java	30 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/ClientKexManager.java	339 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/ClientServerHello.java	125 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/KexManager.java	345 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/KexParameters.java	28 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/KexState.java	39 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/MessageHandler.java	18 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/NegotiateException.java	16 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/NegotiatedParameters.java	26 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/ServerKexManager.java	227 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/TransportConnection.java	286 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/transport/TransportManager.java	980 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/util/StringEncoder.java	40 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/util/TimeoutService.java	155 lines	Side-by-Side	Unified
A	third-party/ganymed-ssh/src/main/java/ch/ethz/ssh2/util/Tokenizer.java	54 lines	Side-by-Side	Unified
▶		+24114, -1	All Side-by-Side	All Unified

Patch size, the right way

All <u>My</u> Projects People Documentation		
Changes	Drafts	Draft Comments
Watched Changes		
Starred Changes		
Search for status:merged project:ovirt-engine branch:master topic:template_versions		
Subject	Status	Owner
► ☆ restapi: add template versions support	Merged	Omer Frenkel
☆ frontend: minor refactoring in make template code	Merged	Arik Hadas
☆ frontend: Add version column to templates main tab	Merged	Arik Hadas
☆ frontend: template versions in popup dialogs	Merged	Arik Hadas
☆ frontend: support for making sub-templates	Merged	Arik Hadas
☆ core: automatically update vms on new version	Merged	Omer Frenkel
☆ core: use template version on add vm/pool	Merged	Omer Frenkel
☆ core: import/export from template version	Merged	Omer Frenkel
☆ core: add template version related fields to vm and template	Merged	Omer Frenkel
☆ core: support adding template version	Merged	Omer Frenkel

- Break a change into a series of patches
- Each patch should be as small as possible!
- Each patch handles a part of the change
 - DB / BL / UI / API
- Each patch should keep the code working

Project code of conduct

- Defines
 - Behaviour
 - Acceptable behaviour
 - Unacceptable behaviour
 - Consequences
 - Handle conflicts in general and conflict of interests
- Good examples:
 - <https://fedoraproject.org/code-of-conduct>
 - http://wiki.gentoo.org/wiki/Project:Council/Code_of_conduct
 - <http://www.ubuntu.com/about/about-ubuntu/conduct>

The art of contribution review



Contribution review

- Professional and Ethical
- Not personal
- Encouraging
- Be Proactive!
- Provide positive feedback

Code Review, sometimes it's good

Code review interface showing a patch set for `src/ovirtsdk/infrastructure/common.py`.

Navigation: All | My | **Differences** | Projects | People | Documentation

Search: Change #, SHA-1, tr: id or owner: email | Search | Doron Fediuck ▼

src/ovirtsdk/infrastructure/common.py | Reviewed & next →

Commit Message | Up to change

Patch Set	Base	1	2	3
<div>43 raise ImmutableError(name)</div> <div>44 else:</div> <div>45 super(Base, self).__setattr__(name, value)</div>				
<div>+10 ⬆ ... skipped 42 common lines ... +10 ⬆</div> <div>raise ImmutableError(name)</div> <div>else:</div> <div>super(Base, self).__setattr__(name, value)</div> <div>def export(self, outfile, level, namespace='', name='', namespacedef='', pretty_print=True):</div> <div># This empty method is necessary in order to avoid exceptions when the</div> <div># infrastructure tries to invoke it on a collection decorator that is</div> <div># used as a parameter.</div> <div>pass</div>				
<div>Michael Pasternak Feb 5 22:16</div> <div>Juan,</div> <div>well done!, but it's only a partial fix, you need to intercept setters with params.py.__setattr__, you can do that in params-codegen,</div> <div>please see explanations in commit.message</div> <div>thanks</div> <div>Reply ... Reply 'Done'</div>				

Commit Message | Up to change

Reviewed & next →

Code Review, sometimes it's bad


Reviewer	Verified	Code-Review
Bala.FA		
Saggi Mizrahi		✗
oVirt Jenkins CI Server	✓	
Ayal Baron		
Adam Litke		
Timothy Asir		
Shireesh Anjal		
Yaniv Bronhaim		
Federico Simoncelli		
Dan Kenigsberg		

► Dependencies

Old Version History:

► Patch Set 1 828579c96c2c04683c5b8f2aec71e0294cf5400f [\(gitweb\)](#)

▼ Patch Set 2 2adb9105234738adac60924889cb8c51fe50bac8 [\(gitweb\)](#)

Author	Bala.FA <barumuga@redhat.com> Oct 29, 2012 3:07 PM
Committer	Bala.FA <barumuga@redhat.com> Nov 14, 2012 12:19 PM
Parent(s)	09ddf89337abda2b774ac9227745d714b5494b9e xmlrpcTests: narrow the expected exception when using retry
	checkout pull cherry-pick patch Anonymous Git
Download	git fetch git://gerrit.ovirt.org/vdsm refs/changes/99/8899/2 && git cherry-pick FETCH_HEAD 

	File Path	Comments	Size	Diff	Reviewed
►	Commit Message			Side-by-Side Unified	
M	vdsm/storage/task.py		+27, -5	Side-by-Side Unified	
			+27, -5		

Comments

[Expand Recent](#) | [Expand All](#) | [Collapse All](#)

Saggi Mizrahi

Oct 30

Patch Set 1: Do not submit

I don't understand why this feature is even necessary and in any case this is the most convoluted way to accomplish it.

Code Review

Comments

[Expand Recent](#) | [Expand All](#) | [Collapse All](#)

Better Saggi

Sep 17 1:55 PM

Patch Set 1:

One of Saggi's automated scripts discovered that you are changing a file he deeply cares about. Please don't merge until you made sure he gave his blessing.

Files in question:

doc/mom-balloon+ksm.conf

doc/mom-balloon.conf

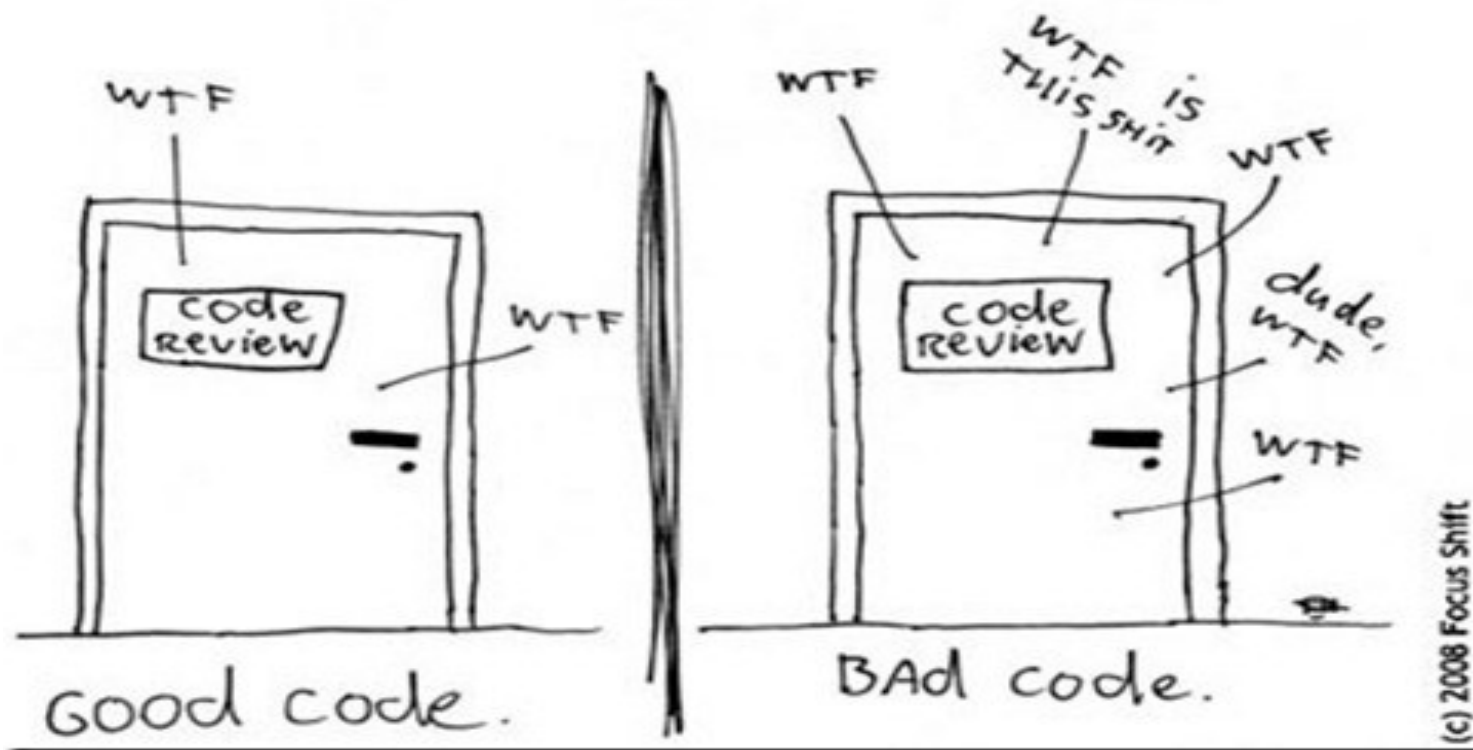
Mei Liu

Sep 21 5:08 AM

Abandoned

Code review

The ONLY VALID MEASUREMENT
OF CODE QUALITY: WTFs/MINUTE



Why Use Open Source

- Low Cost
- Security
- Quality
- Transparent
- Customizability
- Freedom and Flexibility



Reality Check

**How do I get paid if I
give everything for
free?**



Source: <https://www.flickr.com/photos/thevlue/4838445181>

OPEN



Source: <http://www.flickr.com/photos/opensourceway/6956020057>

Questions?

Resources

- <http://www.opensource.org/>
- <http://speakerdeck.com/u/jacobsingh/>
- www.ovirt.org
- http://www.linux-kvm.org/page/Main_Page
- www.opensource.com
- http://en.wikipedia.org/wiki/Open_source
- <http://www.theopensourceway.org/book/>
- <http://git-scm.com/>
- <http://jenkins-ci.org/>
- <http://code.google.com/p/gerrit/>