OpenStack Community Activity Report
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Executive Summary

Contents

Chapter 1

Overview of the Project

1.1 General Activity

A more detailed information about the community activity ...

Data source	Activity 365 days	Change (wrt to prev. 365 days)
Gits	47960 commits	26%
Tickets	10897 closed tickets	37%
Mailing Lists	40986 sent emails	28%
Gerrit	53841 submitted reviews	31%
Askbot	4094 posted questions	25%
IRC	1866172 messages	130%

Table 1.1: Activity during the last 365 days and its evolution

Focusing on the development activity,

Integrated Project	Commits
neutron	304
sahara	120
ceilometer	111
horizon	194
heat	228
nova	480
trove	47
swift	60
glance	98
cinder	182
keystone	124
ironic	110

Table 1.2: Last quarter integrated projects number of commits

1.2 Development and Conversations

Regarding to the community, developers are divided into three main sets, core, regular and occasional[1].

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[1]Contributing developers are characterized as core, regular and occasional depending on their activity in the git repositories. The classification is built by sorting contributors by their total number of commits; we sum the total commits per each individual contributors: the individuals whose commits sum up to 80% of the total number of commits in the quarter are the core contributors in that quarter. The regular contributors are those whose commits sum up to 95% of the total. The others are the occasional contributors.
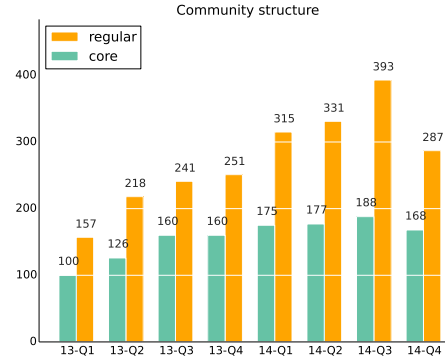
Figure 1.1: Evolution of the last 8 quarters of the core, regular and occasional developers (Git activity)

Period	Core	Regular	Occasional
13-Q1	100	157	236
13-Q2	126	218	277
13-Q3	160	241	384
13-Q4	160	251	360
14-Q1	175	315	477
14-Q2	177	331	429
14-Q3	188	393	559
14-Q4	168	287	317

Table 1.3: Characterization of developers by their total contribution to the OpenStack projects

The mean number of developers per month

Developers per month

Figure 1.2: Number of developers per month in mean for each quarter

The main organizations[2] participating in the development are listed in the table below, per project[3].

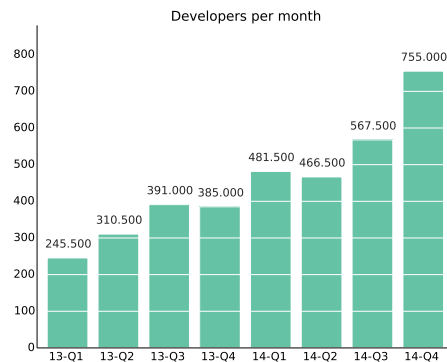| Integrated project	Top 1 (commits)	Top 2 (commits)
neutron	Red Hat (71)	Bit Switch Networks (41)
sahara	Mirantis (63)	Red Hat (20)
ceilometer	IBM (27)	Mirantis (19)
horizon	IBM (36)	Red Hat (34)
heat	Red Hat (96)	Mirantis (35)
nova	IBM (168)	Red Hat (58)
trove	Rackspace (12)	Tesora (10)
swift	SwiftStack (14)	Rackspace (11)
glance	HP (30)	NTT (13)
cinder	IBM (18)	Red Hat (16)
keystone	IBM (63)	Red Hat (16)
ironic	HP (18)	Mirantis (13)

Table 1.4: Organizations leading the development integrated projects during the last quarter

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[2]The details about affiliation between individual contributors and employer is derived from: information provided by the individuals in their Foundation membership data, guessed from corporate email addresses and from manual corrections.

[3]Integrated projects consist of the projects identified as integrated by the Programs yaml file available at http://git.openstack.org/cgit/openstack/governance/tree/reference/programs.yaml at the moment of this analysis

The most active developers for each of the integrated projects are listed in the following table.

Integrated project	Top Contributor	Commits
neutron	Kevin Benton	41
sahara	Sergey Reshetnyak	25
ceilometer	Gordon Chung	20
horizon	Akihiro MOTOKI	26
heat	Steven Hardy	37
nova	garyk	43
trove	Craig Vyvial	8
swift	Samuel Merritt	10
glance	Stuart McLaren	15
cinder	John Griffith	14
keystone	Steve Martinelli	21
ironic	Lucas Alvares Gomes	15

Table 1.5: Top developers in commits per integrated project during the last quarter

The most popular email threads

1.3 Efficiency

Two metrics have been identified to measure efficiency: the review efficiency index (REI) and the Time to Merge. REI is measured as the number of closed (merged or abandoned) changesets out of the submitted changesets in a given period. Time to Merge is measured as the time since a review is submitted until this is closed. Typical BMI values in the OpenStack Integrated projects rounds a 0.75, what indicates that for 100 opened changesets in a period, the community closes 75. Besides, the median Time to Merge is of 7.82, having an increase from the previous period.

Integrated project	Reviews Efficiency	Time to Merge (median)
neutron	0.67	6.56 days
sahara	0.78	1.87 days
ceilometer	0.75	2.73 days
horizon	0.61	2.98 days
heat	0.71	3.7 days
nova	0.54	9.13 days
trove	0.65	10.95 days
swift	0.67	2.8 days
glance	0.6	10.53 days
cinder	0.8	3.22 days
keystone	0.54	5.75 days
ironic	0.8	1.7 days

Table 1.6: Closed changesets out of opened changesets and median Time to Merge in Gerrit

Chapter 2

Per Project break down

This chapter aims at providing a detailed report on the activity of the Open-Stack Foundation projects. This is mainly focused on the activity per project as defined, stressing the point on the 'integrated' projects.

Each of the projects is divided into three sections and provides information from the last eight quarters.:

- activity: centered in the following metrics: commits from git activity, submitted, merge and abandoned reviews from the review system and opened and closed tickets from the issue tracking system.

- community: active core reviewers in gerrit, active authors in Git and top ten developers and top ten organizations contributing to the development in the last quarter. of each project.

- process: efficiency closing changesets, Time to Merge (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

2.1 Overall OpenStack Programs

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: OpenStack Software
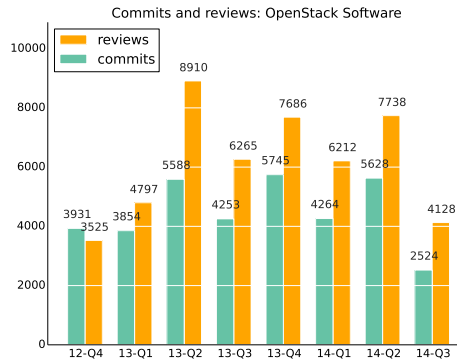
Period	Commits	Reviews
12-Q4	3931	3525
13-Q1	3854	4797
13-Q2	5588	8910
13-Q3	4253	6265
13-Q4	5745	7686
14-Q1	4264	6212
14-Q2	5628	7738
14-Q3	2524	4128

Opened and closed tickets: OpenStack Software
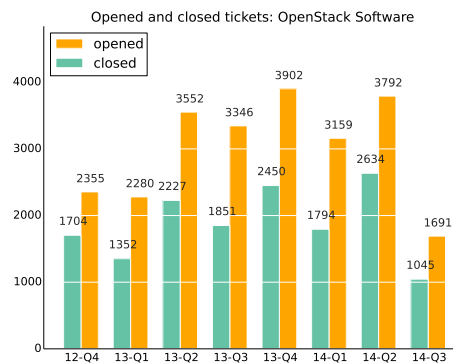
Period	Closed	Opened
12-Q4	1704	2355
13-Q1	1352	2280
13-Q2	2227	3552
13-Q3	1851	3346
13-Q4	2450	3902
14-Q1	1794	3159
14-Q2	2634	3792
14-Q3	1045	1691

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Merged and abandoned reviews: OpenStack Software

Period	Merged	Abandoned
12-Q4	3488	629
13-Q1	3442	727
13-Q2	4766	1131
13-Q3	3702	1185
13-Q4	4520	1704
14-Q1	3487	875
14-Q2	4783	1014
14-Q3	2258	440

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: OpenStack Software
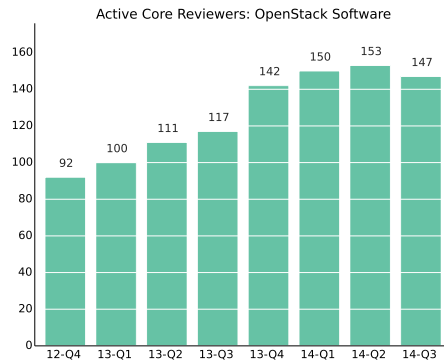
Period	Active Core
12-Q4	92
13-Q1	100
13-Q2	111
13-Q3	117
13-Q4	142
14-Q1	150
14-Q2	153
14-Q3	147

Authors OpenStack Software
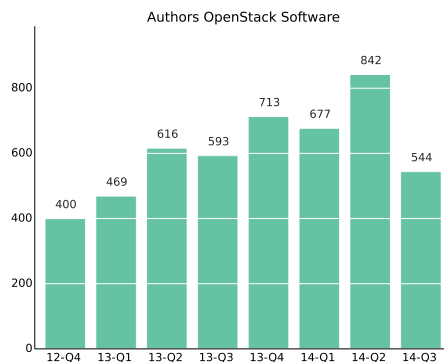
Period	Authors
12-Q4	400
13-Q1	469
13-Q2	616
13-Q3	593
13-Q4	713
14-Q1	677
14-Q2	842
14-Q3	544

Commit (s)	Author	Commit (s)	Organizations
52	garyk	478	Red Hat
42	Russell Bryant	376	IBM
41	Kevin Benton	266	Mirantis
38	Steven Hardy	199	HP
33	Brant Knudson	139	Rackspace
32	Ana Krivokapic	72	VMware
32	Sergey Reshetnyak	67	NEC
31	Akihiro MOTOKI	52	Huawei
30	Angus Salkeld	52	Radware
30	Flavio Percoco	46	Cisco Systems

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: OpenStack Software

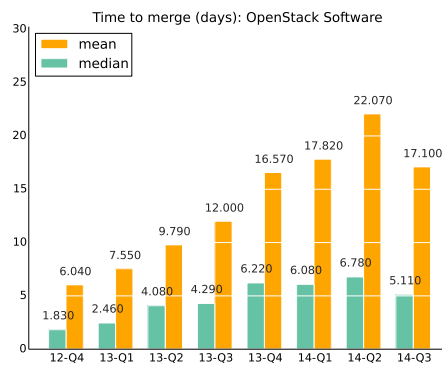| Period	Closed/Opened
12-Q4	0.72
13-Q1	0.59
13-Q2	0.63
13-Q3	0.55
13-Q4	0.63
14-Q1	0.57
14-Q2	0.69
14-Q3	0.62

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Changesets efficiency: OpenStack Software
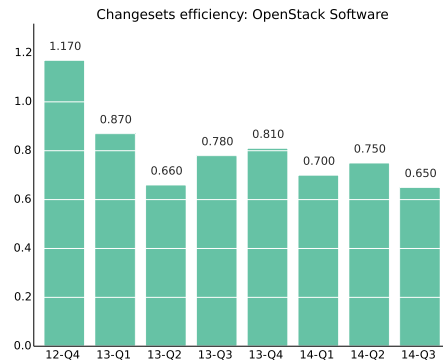
Period	Closed/Opened
12-Q4	1.17
13-Q1	0.87
13-Q2	0.66
13-Q3	0.78
13-Q4	0.81
14-Q1	0.7
14-Q2	0.75
14-Q3	0.65

Time to merge (days): OpenStack Software

Period	Median	Mean
12-Q4	1.83	6.04
13-Q1	2.46	7.55
13-Q2	4.08	9.79
13-Q3	4.29	12.0
13-Q4	6.22	16.57
14-Q1	6.08	17.82
14-Q2	6.78	22.07
14-Q3	5.11	17.1

Patchsets per Changeset: OpenStack Software
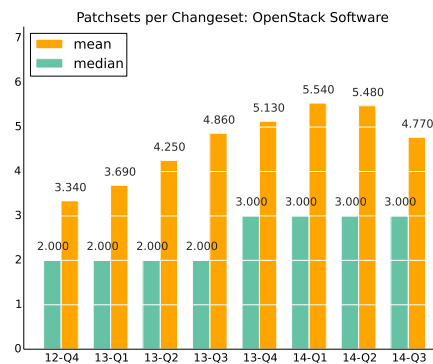
Period	Median	Mean
12-Q4	2.0	3.34
13-Q1	2.0	3.69
13-Q2	2.0	4.25
13-Q3	2.0	4.86
13-Q4	3.0	5.13
14-Q1	3.0	5.54
14-Q2	3.0	5.48
14-Q3	3.0	4.77

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Time waiting for the reviewer: OpenStack Software
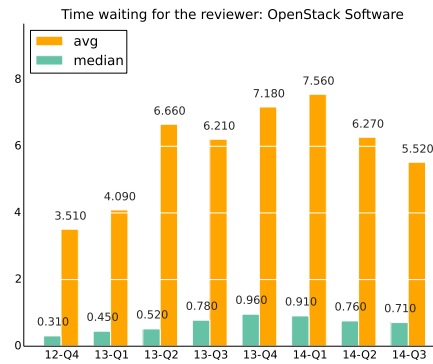
Period	Median	Mean
12-Q4	0.31	3.51
13-Q1	0.45	4.09
13-Q2	0.52	6.66
13-Q3	0.78	6.21
13-Q4	0.96	7.18
14-Q1	0.91	7.56
14-Q2	0.76	6.27
14-Q3	0.71	5.52

Time waiting for the submitter: OpenStack Software
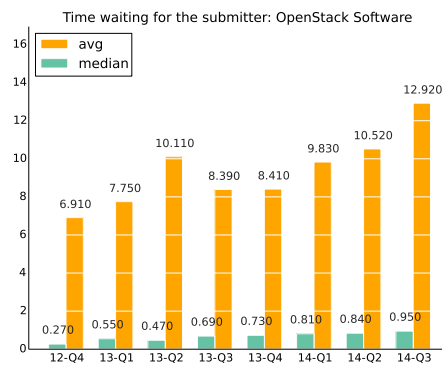
Period	Median	Mean
12-Q4	0.27	6.91
13-Q1	0.55	7.75
13-Q2	0.47	10.11
13-Q3	0.69	8.39
13-Q4	0.73	8.41
14-Q1	0.81	9.83
14-Q2	0.84	10.52
14-Q3	0.95	12.92

2.1.1 OpenStack Integrated Programs

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: integrated
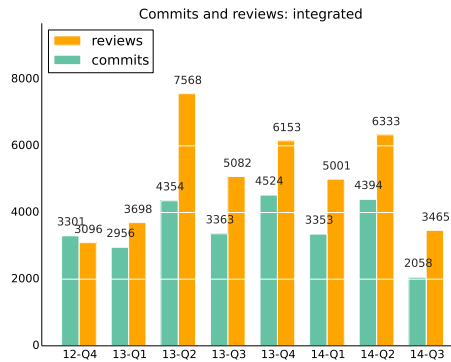
Period	Commits	Reviews
12-Q4	3301	3096
13-Q1	2956	3698
13-Q2	4354	7568
13-Q3	3363	5082
13-Q4	4524	6153
14-Q1	3353	5001
14-Q2	4394	6333
14-Q3	2058	3465

Opened and closed tickets: integrated
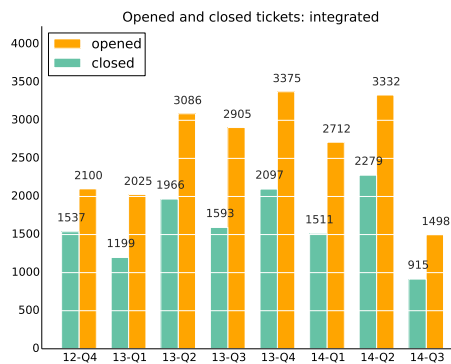
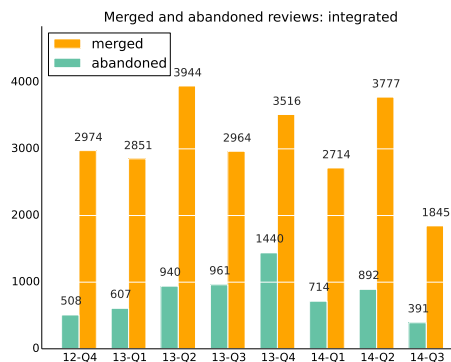| Period	Closed	Opened
12-Q4	1537	2100
13-Q1	1199	2025
13-Q2	1966	3086
13-Q3	1593	2905
13-Q4	2097	3375
14-Q1	1511	2712
14-Q2	2279	3332
14-Q3	915	1498

Merged and abandoned reviews: integrated

Period	Merged	Abandoned
12-Q4	2974	508
13-Q1	2851	607
13-Q2	3944	940
13-Q3	2964	961
13-Q4	3516	1440
14-Q1	2714	714
14-Q2	3777	892
14-Q3	1845	391

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: integrated
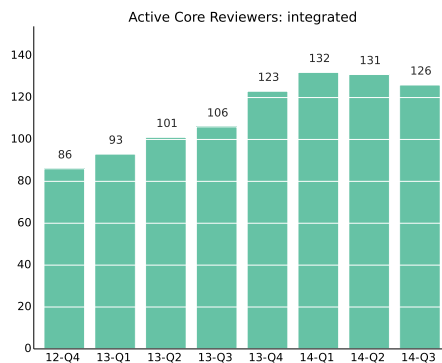
Period	Active Core
12-Q4	86
13-Q1	93
13-Q2	101
13-Q3	106
13-Q4	123
14-Q1	132
14-Q2	131
14-Q3	126

Authors integrated
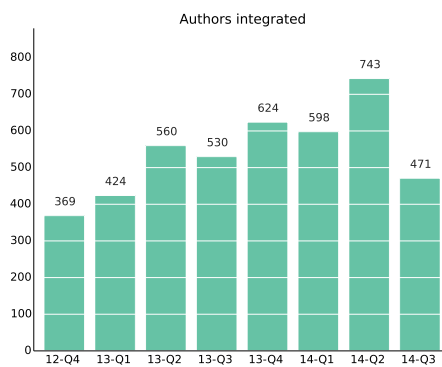
Period	Authors
12-Q4	369
13-Q1	424
13-Q2	560
13-Q3	530
13-Q4	624
14-Q1	598
14-Q2	743
14-Q3	471

Commit (s)	Author	Commit (s)	Organizations
52	garyk	359	IBM
41	Kevin Benton	349	Red Hat
41	Russell Bryant	192	Mirantis
37	Steven Hardy	152	HP
30	jaypipes	102	Rackspace
29	Angus Salkeld	71	VMware
27	Akihiro MOTOKI	58	NEC
27	Matt Riedemann	52	Radware
26	Dan Smith	48	Huawei
25	Sergey Reshetnyak	44	Cisco Systems

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: integrated

Period	Closed/Opened
12-Q4	0.73
13-Q1	0.59
13-Q2	0.64
13-Q3	0.55
13-Q4	0.62
14-Q1	0.56
14-Q2	0.68
14-Q3	0.61

Changesets efficiency: integrated
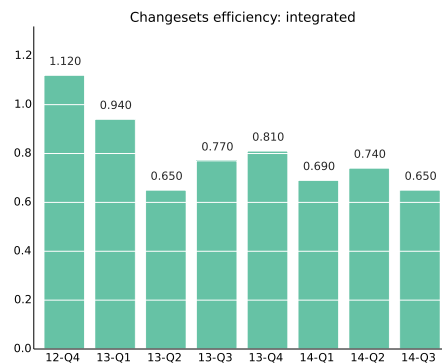
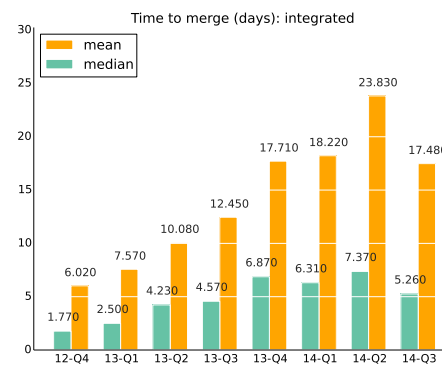| Period	Closed/Opened
12-Q4	1.12
13-Q1	0.94
13-Q2	0.65
13-Q3	0.77
13-Q4	0.81
14-Q1	0.69
14-Q2	0.74
14-Q3	0.65

Time to merge (days): integrated

Period	Median	Mean
12-Q4	1.77	6.02
13-Q1	2.5	7.57
13-Q2	4.23	10.08
13-Q3	4.57	12.45
13-Q4	6.87	17.71
14-Q1	6.31	18.22
14-Q2	7.37	23.83
14-Q3	5.26	17.48

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Patchsets per Changeset: integrated
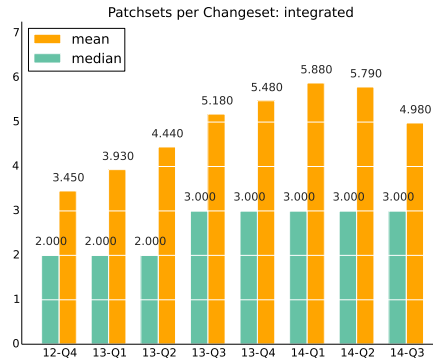
Period	Median	Mean
12-Q4	2.0	3.45
13-Q1	2.0	3.93
13-Q2	2.0	4.44
13-Q3	3.0	5.18
13-Q4	3.0	5.48
14-Q1	3.0	5.88
14-Q2	3.0	5.79
14-Q3	3.0	4.98

Time waiting for the reviewer: integrated
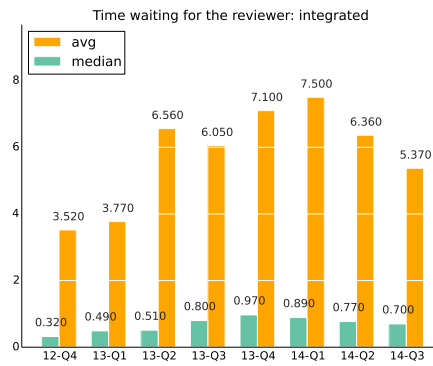
Period	Median	Mean
12-Q4	0.32	3.52
13-Q1	0.49	3.77
13-Q2	0.51	6.56
13-Q3	0.8	6.05
13-Q4	0.97	7.1
14-Q1	0.89	7.5
14-Q2	0.77	6.36
14-Q3	0.7	5.37

Time waiting for the submitter: integrated
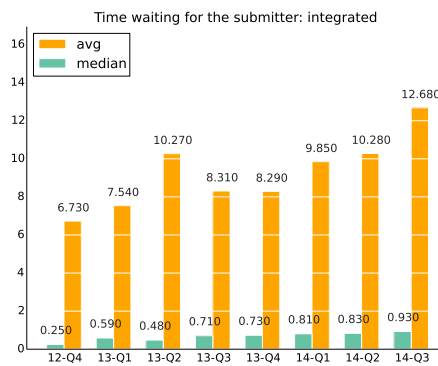
Period	Median	Mean
12-Q4	0.25	6.73
13-Q1	0.59	7.54
13-Q2	0.48	10.27
13-Q3	0.71	8.31
13-Q4	0.73	8.29
14-Q1	0.81	9.85
14-Q2	0.83	10.28
14-Q3	0.93	12.68

2.1.1.1 Ceilometer

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: ceilometer
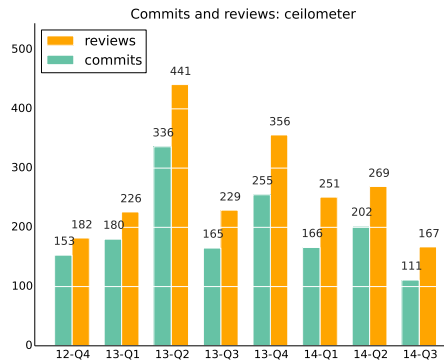
Period	Commits	Reviews
12-Q4	153	182
13-Q1	180	226
13-Q2	336	441
13-Q3	165	229
13-Q4	255	356
14-Q1	166	251
14-Q2	202	269
14-Q3	111	167

Opened and closed tickets: ceilometer
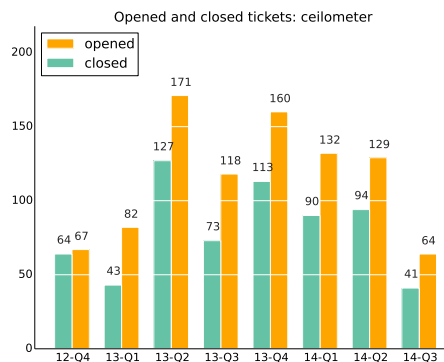
Period	Closed	Opened
12-Q4	64	67
13-Q1	43	82
13-Q2	127	171
13-Q3	73	118
13-Q4	113	160
14-Q1	90	132
14-Q2	94	129
14-Q3	41	64

Merged and abandoned reviews: ceilometer
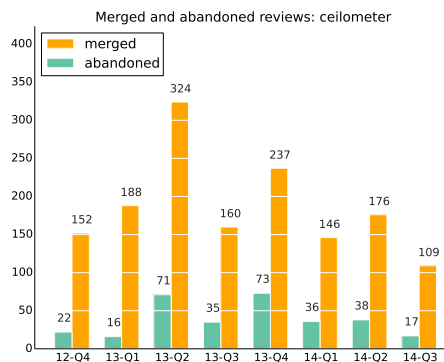
Period	Merged	Abandoned
12-Q4	152	22
13-Q1	188	16
13-Q2	324	71
13-Q3	160	35
13-Q4	237	73
14-Q1	146	36
14-Q2	176	38
14-Q3	109	17

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: ceilometer
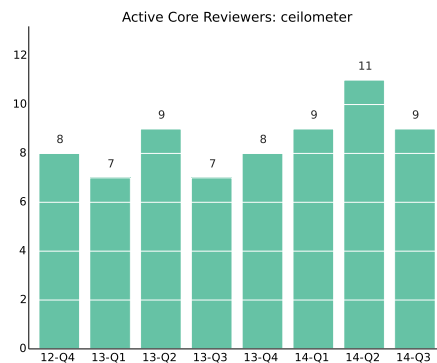
Period	Active Core
12-Q4	8
13-Q1	7
13-Q2	9
13-Q3	7
13-Q4	8
14-Q1	9
14-Q2	11
14-Q3	9

Authors ceilometer
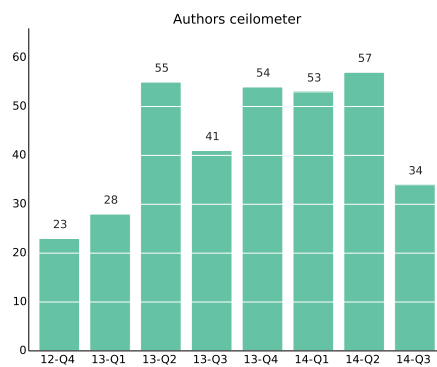
Period	Authors
12-Q4	23
13-Q1	28
13-Q2	55
13-Q3	41
13-Q4	54
14-Q1	53
14-Q2	57
14-Q3	34

Commit (s)	Author	Commit (s)	Organizations
20	Gordon Chung	27	IBM
12	ZhiQiang Fan	19	Mirantis
7	Chris Dent	18	Red Hat
6	Igor Degtiarov	17	Huawei
6	nellysmitt	3	Cisco Systems
5	Dina Belova	3	Ericsson
5	Ilya Tyaptin	2	Canonical
5	Julien Danjou	2	Cloudbase Solutions
4	Joe H. Rahme	2	HP
4	liu-sheng	2	OpenStack Foundation

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: ceilometer

Period	Closed/Opened
12-Q4	0.96
13-Q1	0.52
13-Q2	0.74
13-Q3	0.62
13-Q4	0.71
14-Q1	0.68
14-Q2	0.73
14-Q3	0.64

Changesets efficiency: ceilometer
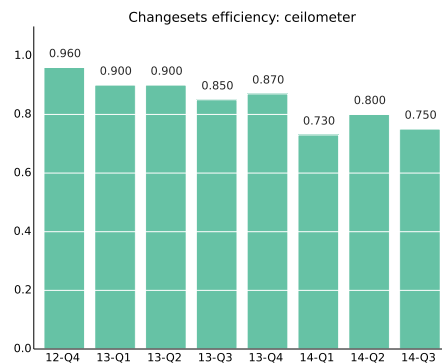
Period	Closed/Opened
12-Q4	0.96
13-Q1	0.9
13-Q2	0.9
13-Q3	0.85
13-Q4	0.87
14-Q1	0.73
14-Q2	0.8
14-Q3	0.75

Time to merge (days): ceilometer
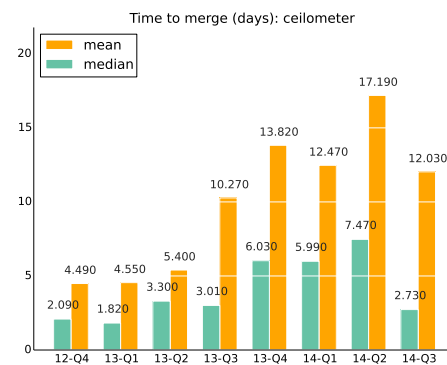
Period	Median	Mean
12-Q4	2.09	4.49
13-Q1	1.82	4.55
13-Q2	3.3	5.4
13-Q3	3.01	10.27
13-Q4	6.03	13.82
14-Q1	5.99	12.47
14-Q2	7.47	17.19
14-Q3	2.73	12.03

Patchsets per Changeset: ceilometer
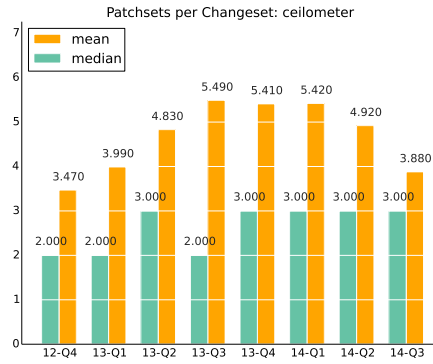
Period	Median	Mean
12-Q4	2.0	3.47
13-Q1	2.0	3.99
13-Q2	3.0	4.83
13-Q3	2.0	5.49
13-Q4	3.0	5.41
14-Q1	3.0	5.42
14-Q2	3.0	4.92
14-Q3	3.0	3.88

Time waiting for the reviewer: ceilometer
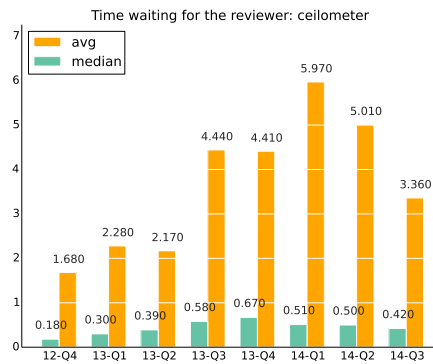
Period	Median	Mean
12-Q4	0.18	1.68
13-Q1	0.3	2.28
13-Q2	0.39	2.17
13-Q3	0.58	4.44
13-Q4	0.67	4.41
14-Q1	0.51	5.97
14-Q2	0.5	5.01
14-Q3	0.42	3.36

Time waiting for the submitter: ceilometer
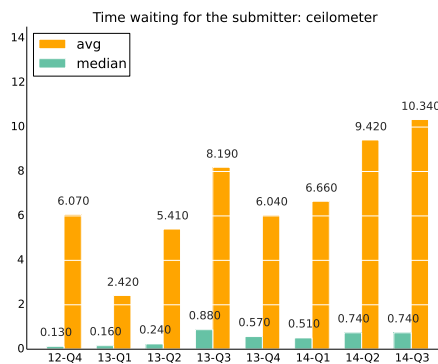
Period	Median	Mean
12-Q4	0.13	6.07
13-Q1	0.16	2.42
13-Q2	0.24	5.41
13-Q3	0.88	8.19
13-Q4	0.57	6.04
14-Q1	0.51	6.66
14-Q2	0.74	9.42
14-Q3	0.74	10.34

2.1.1.2 Cinder

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: cinder
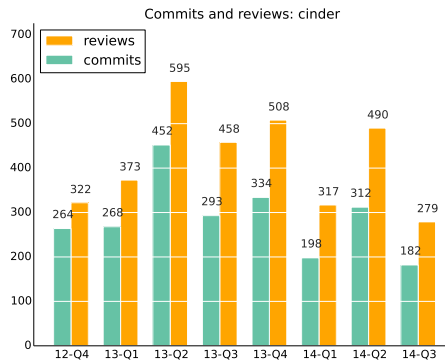
Period	Commits	Reviews
12-Q4	264	322
13-Q1	268	373
13-Q2	452	595
13-Q3	293	458
13-Q4	334	508
14-Q1	198	317
14-Q2	312	490
14-Q3	182	279

Opened and closed tickets: cinder
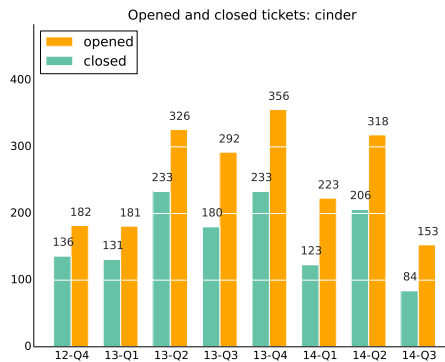
Period	Closed	Opened
12-Q4	136	182
13-Q1	131	181
13-Q2	233	326
13-Q3	180	292
13-Q4	233	356
14-Q1	123	223
14-Q2	206	318
14-Q3	84	153

Merged and abandoned reviews: cinder
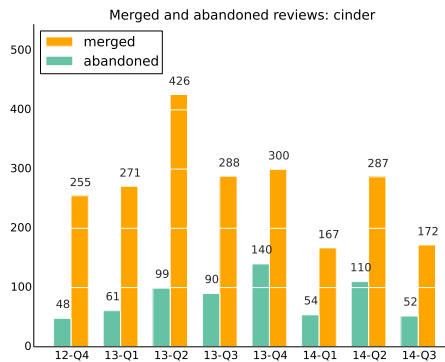
Period	Merged	Abandoned
12-Q4	255	48
13-Q1	271	61
13-Q2	426	99
13-Q3	288	90
13-Q4	300	140
14-Q1	167	54
14-Q2	287	110
14-Q3	172	52

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: cinder
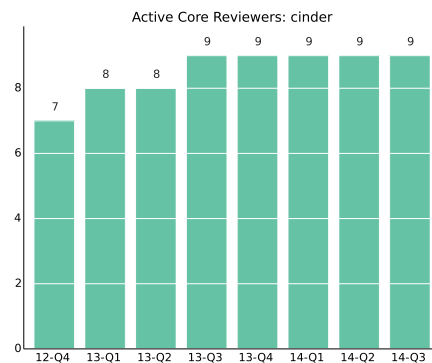
Period	Active Core
12-Q4	7
13-Q1	8
13-Q2	8
13-Q3	9
13-Q4	9
14-Q1	9
14-Q2	9
14-Q3	9

Authors cinder
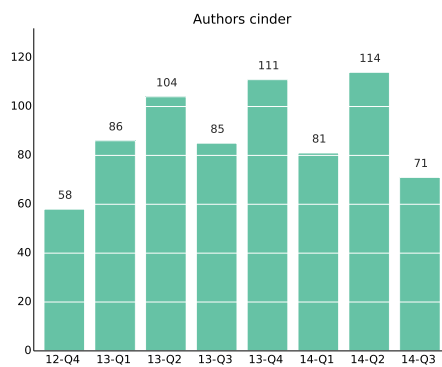
Period	Authors
12-Q4	58
13-Q1	86
13-Q2	104
13-Q3	85
13-Q4	111
14-Q1	81
14-Q2	114
14-Q3	71

Commit (s)	Author	Commit (s)	Organizations
14	John Griffith	18	IBM
9	ChangBo Guo(gcb)	16	Red Hat
9	Eric Harney	15	NetApp
9	git-harry	14	SolidFire
8	Vipin Balachandran	11	HP
6	Mike Mason	9	EasyStack
6	Navneet Singh	8	VMware
6	Sean McGinnis	7	Hitachi Data Systems
5	Jay Bryant	6	Dell
5	Patrick East	5	Intel

Process: Efficiency closing changesets and tickets, time to review (mean

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and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: cinder
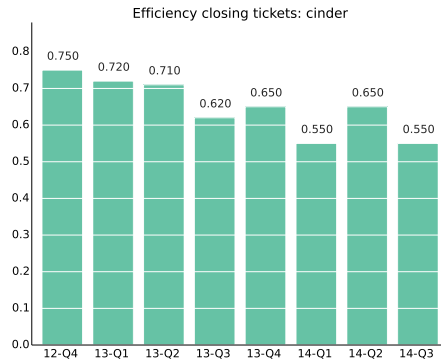
Period	Closed/Opened
12-Q4	0.75
13-Q1	0.72
13-Q2	0.71
13-Q3	0.62
13-Q4	0.65
14-Q1	0.55
14-Q2	0.65
14-Q3	0.55

Changesets efficiency: cinder
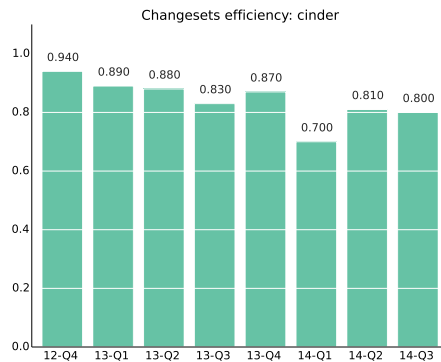
Period	Closed/Opened
12-Q4	0.94
13-Q1	0.89
13-Q2	0.88
13-Q3	0.83
13-Q4	0.87
14-Q1	0.7
14-Q2	0.81
14-Q3	0.8

Time to merge (days): cinder
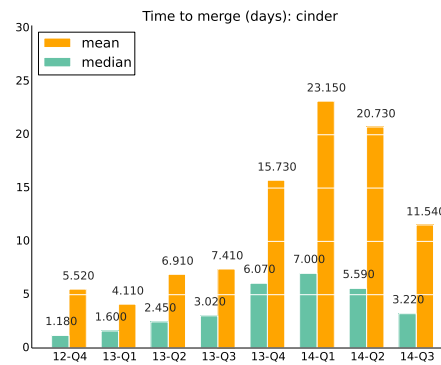
Period	Median	Mean
12-Q4	1.18	5.52
13-Q1	1.6	4.11
13-Q2	2.45	6.91
13-Q3	3.02	7.41
13-Q4	6.07	15.73
14-Q1	7.0	23.15
14-Q2	5.59	20.73
14-Q3	3.22	11.54

Patchsets per Changeset: cinder
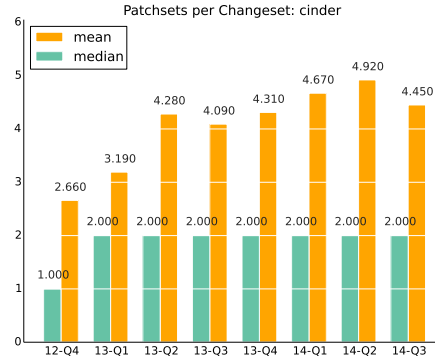
Period	Median	Mean
12-Q4	1.0	2.66
13-Q1	2.0	3.19
13-Q2	2.0	4.28
13-Q3	2.0	4.09
13-Q4	2.0	4.31
14-Q1	2.0	4.67
14-Q2	2.0	4.92
14-Q3	2.0	4.45

Time waiting for the reviewer: cinder
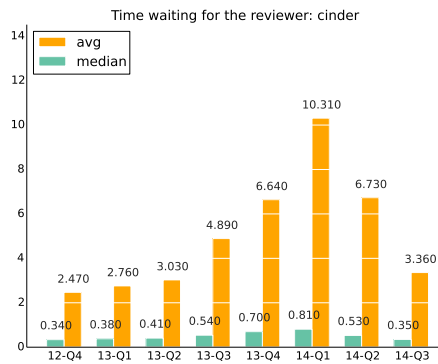
Period	Median	Mean
12-Q4	0.34	2.47
13-Q1	0.38	2.76
13-Q2	0.41	3.03
13-Q3	0.54	4.89
13-Q4	0.7	6.64
14-Q1	0.81	10.31
14-Q2	0.53	6.73
14-Q3	0.35	3.36

Time waiting for the submitter: cinder
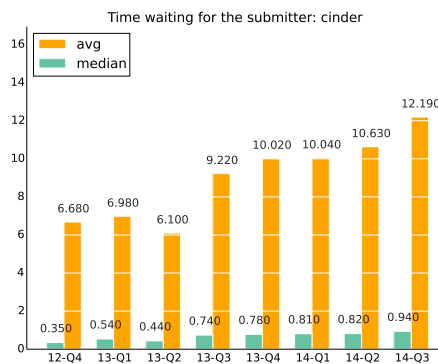
Period	Median	Mean
12-Q4	0.35	6.68
13-Q1	0.54	6.98
13-Q2	0.44	6.1
13-Q3	0.74	9.22
13-Q4	0.78	10.02
14-Q1	0.81	10.04
14-Q2	0.82	10.63
14-Q3	0.94	12.19

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2.1.1.3   Glance

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: glance
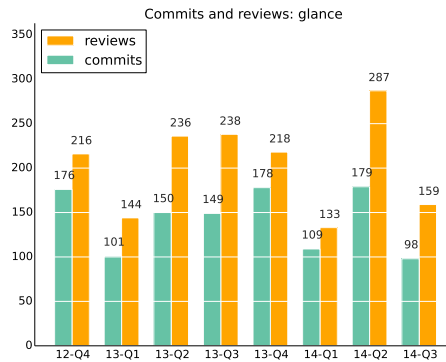
Period	Commits	Reviews
12-Q4	176	216
13-Q1	101	144
13-Q2	150	236
13-Q3	149	238
13-Q4	178	218
14-Q1	109	133
14-Q2	179	287
14-Q3	98	159

Opened and closed tickets: glance
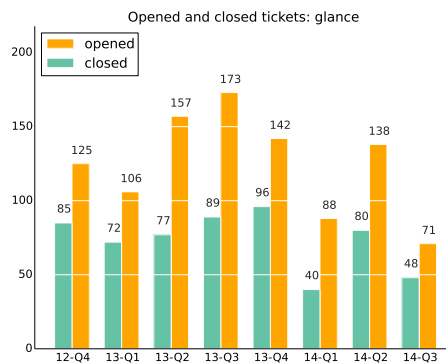
Period	Closed	Opened
12-Q4	85	125
13-Q1	72	106
13-Q2	77	157
13-Q3	89	173
13-Q4	96	142
14-Q1	40	88
14-Q2	80	138
14-Q3	48	71

Merged and abandoned reviews: glance
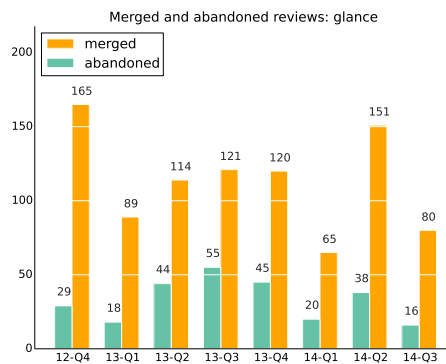
Period	Merged	Abandoned
12-Q4	165	29
13-Q1	89	18
13-Q2	114	44
13-Q3	121	55
13-Q4	120	45
14-Q1	65	20
14-Q2	151	38
14-Q3	80	16

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
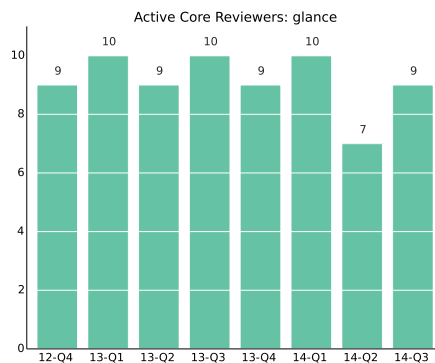
Period	Active Core
12-Q4	9
13-Q1	10
13-Q2	9
13-Q3	10
13-Q4	9
14-Q1	10
14-Q2	7
14-Q3	9
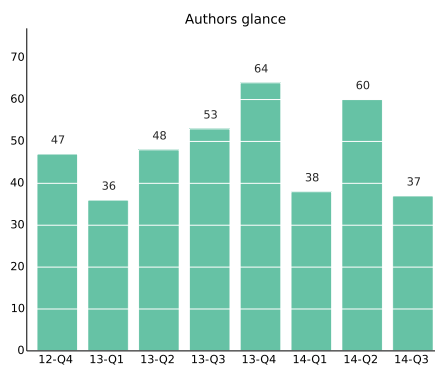
Period	Authors
12-Q4	47
13-Q1	36
13-Q2	48
13-Q3	53
13-Q4	64
14-Q1	38
14-Q2	60
14-Q3	37

Commit (s)	Author		Commit (s)	Organizations
15	Stuart McLaren		30	HP
7	Julien Danjou		13	NTT
7	Travis Tripp		12	Red Hat
7	Ubuntu		8	Rackspace
6	Wayne Okuma		7	Intel
4	Bartosz Fic		6	IBM
4	Mike Fedosin		4	Mirantis
4	Zhi Yan Liu		3	Canonical
3	abhishekkekane		2	VMware
3	Flavio Percoco		1	Nebula

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: glance
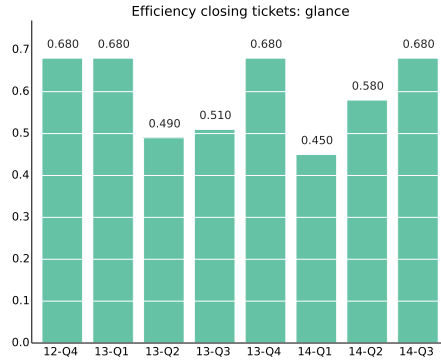
Period	Closed/Opened
12-Q4	0.68
13-Q1	0.68
13-Q2	0.49
13-Q3	0.51
13-Q4	0.68
14-Q1	0.45
14-Q2	0.58
14-Q3	0.68

Changesets efficiency: glance
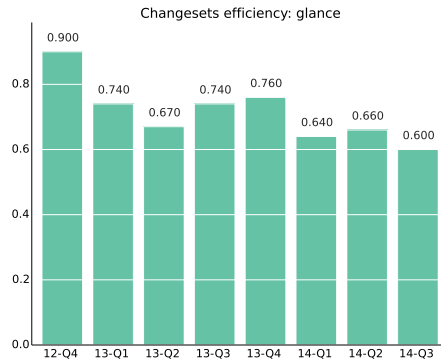
Period	Closed/Opened
12-Q4	0.9
13-Q1	0.74
13-Q2	0.67
13-Q3	0.74
13-Q4	0.76
14-Q1	0.64
14-Q2	0.66
14-Q3	0.6

Time to merge (days): glance
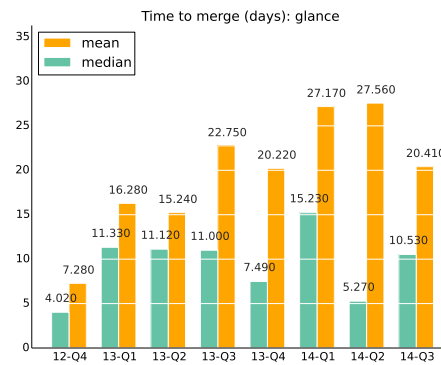
Period	Median	Mean
12-Q4	4.02	7.28
13-Q1	11.33	16.28
13-Q2	11.12	15.24
13-Q3	11.0	22.75
13-Q4	7.49	20.22
14-Q1	15.23	27.17
14-Q2	5.27	27.56
14-Q3	10.53	20.41

Patchsets per Changeset: glance
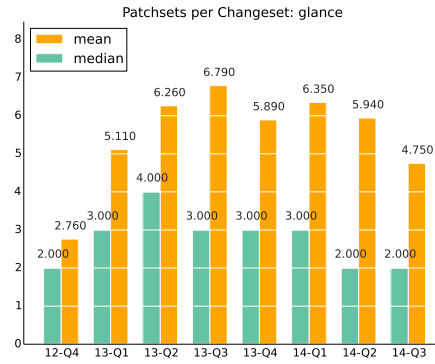
Period	Median	Mean
12-Q4	2.0	2.76
13-Q1	3.0	5.11
13-Q2	4.0	6.26
13-Q3	3.0	6.79
13-Q4	3.0	5.89
14-Q1	3.0	6.35
14-Q2	2.0	5.94
14-Q3	2.0	4.75

Time waiting for the reviewer: glance
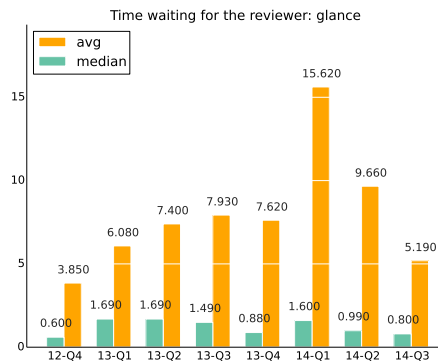
Period	Median	Mean
12-Q4	0.6	3.85
13-Q1	1.69	6.08
13-Q2	1.69	7.4
13-Q3	1.49	7.93
13-Q4	0.88	7.62
14-Q1	1.6	15.62
14-Q2	0.99	9.66
14-Q3	0.8	5.19

Time waiting for the submitter: glance
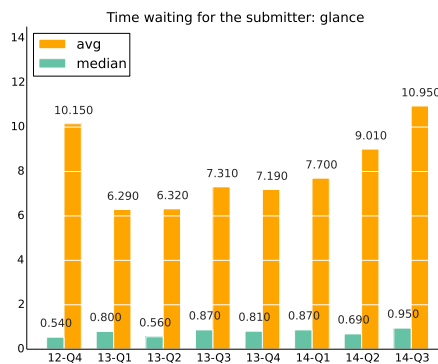
Period	Median	Mean
12-Q4	0.54	10.15
13-Q1	0.8	6.29
13-Q2	0.56	6.32
13-Q3	0.87	7.31
13-Q4	0.81	7.19
14-Q1	0.87	7.7
14-Q2	0.69	9.01
14-Q3	0.95	10.95

2.1.1.4 Heat

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: heat
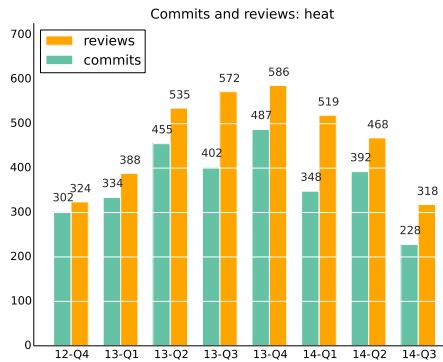
Period	Commits	Reviews
12-Q4	302	324
13-Q1	334	388
13-Q2	455	535
13-Q3	402	572
13-Q4	487	586
14-Q1	348	519
14-Q2	392	468
14-Q3	228	318

Opened and closed tickets: heat
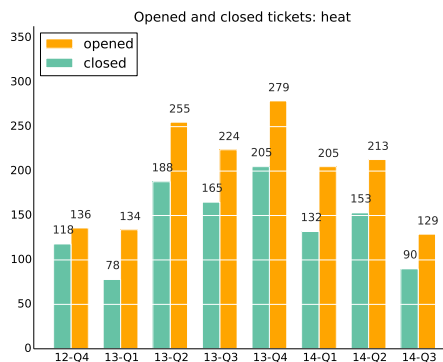
Period	Closed	Opened
12-Q4	118	136
13-Q1	78	134
13-Q2	188	255
13-Q3	165	224
13-Q4	205	279
14-Q1	132	205
14-Q2	153	213
14-Q3	90	129

Merged and abandoned reviews: heat
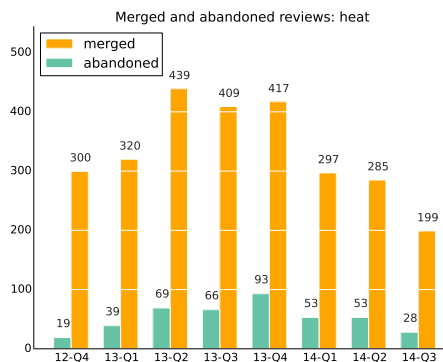
Period	Merged	Abandoned
12-Q4	300	19
13-Q1	320	39
13-Q2	439	69
13-Q3	409	66
13-Q4	417	93
14-Q1	297	53
14-Q2	285	53
14-Q3	199	28

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: heat
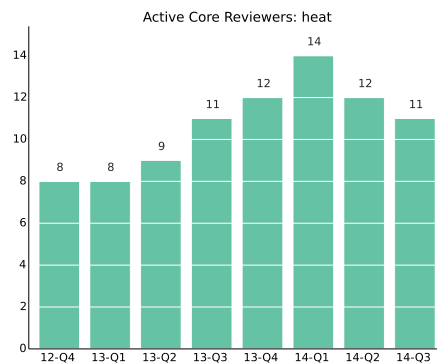
Period	Active Core
12-Q4	8
13-Q1	8
13-Q2	9
13-Q3	11
13-Q4	12
14-Q1	14
14-Q2	12
14-Q3	11

Authors heat
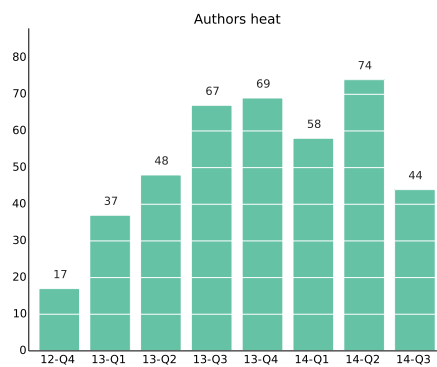
Period	Authors
12-Q4	17
13-Q1	37
13-Q2	48
13-Q3	67
13-Q4	69
14-Q1	58
14-Q2	74
14-Q3	44

Commit (s)	Author	Commit (s)	Organizations
37	Steven Hardy	96	Red Hat
29	Angus Salkeld	35	Mirantis
17	Peter Razumovsky	28	IBM
15	Steve Baker	28	Rackspace
15	Tianhua Huang	19	Huawei
12	Zane Bitter	5	Centrin
11	Anderson Mesquita	4	HP
10	Ethan Lynn	2	EasyStack
10	Sergey Kraynev	2	Numergy
8	Jason Dunsmore	2	Objectif-libre

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: heat
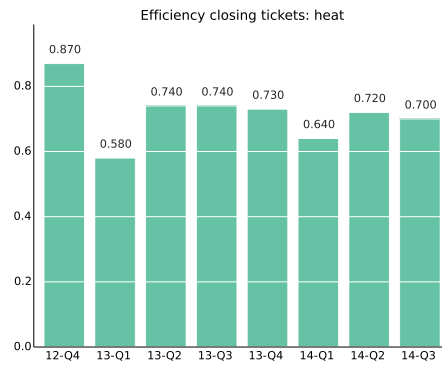
Period	Closed/Opened
12-Q4	0.87
13-Q1	0.58
13-Q2	0.74
13-Q3	0.74
13-Q4	0.73
14-Q1	0.64
14-Q2	0.72
14-Q3	0.7

Changesets efficiency: heat
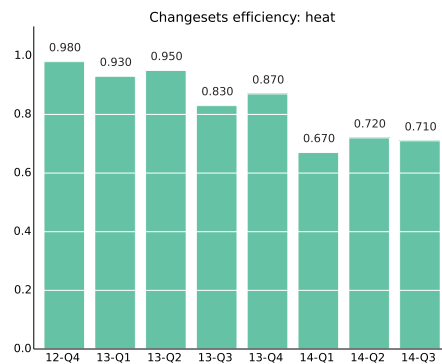
Period	Closed/Opened
12-Q4	0.98
13-Q1	0.93
13-Q2	0.95
13-Q3	0.83
13-Q4	0.87
14-Q1	0.67
14-Q2	0.72
14-Q3	0.71

Time to merge (days): heat
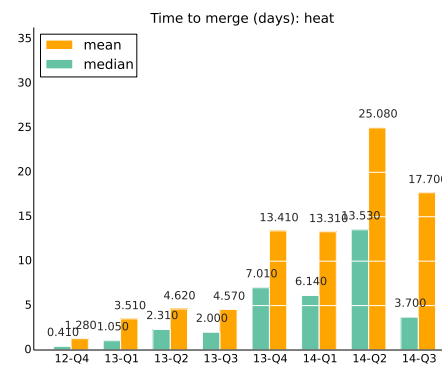
Period	Median	Mean
12-Q4	0.41	1.28
13-Q1	1.05	3.51
13-Q2	2.31	4.62
13-Q3	2.0	4.57
13-Q4	7.01	13.41
14-Q1	6.14	13.31
14-Q2	13.53	25.08
14-Q3	3.7	17.7

Biltergia

Patchsets per Changeset: heat
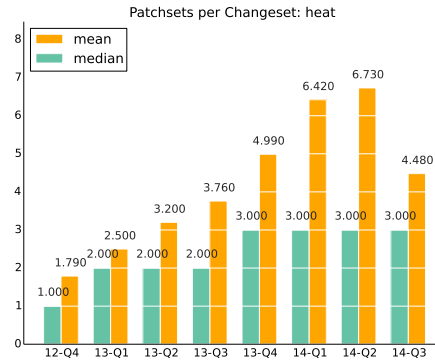
Period	Median	Mean
12-Q4	1.0	1.79
13-Q1	2.0	2.5
13-Q2	2.0	3.2
13-Q3	2.0	3.76
13-Q4	3.0	4.99
14-Q1	3.0	6.42
14-Q2	3.0	6.73
14-Q3	3.0	4.48

Time waiting for the reviewer: heat
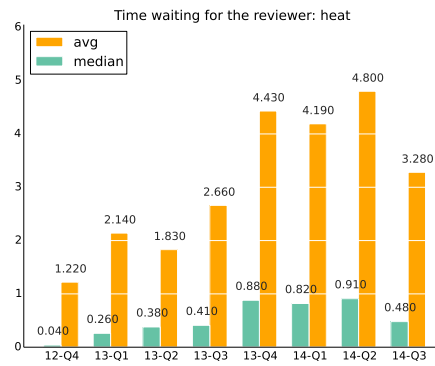
Period	Median	Mean
12-Q4	0.04	1.22
13-Q1	0.26	2.14
13-Q2	0.38	1.83
13-Q3	0.41	2.66
13-Q4	0.88	4.43
14-Q1	0.82	4.19
14-Q2	0.91	4.8
14-Q3	0.48	3.28

Time waiting for the submitter: heat
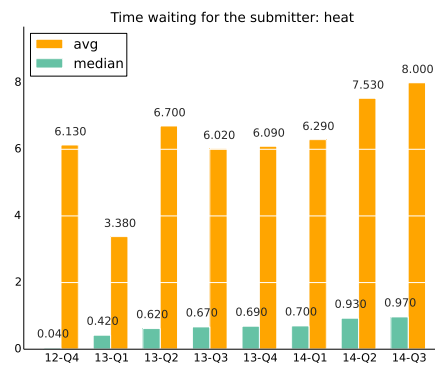
Period	Median	Mean
12-Q4	0.04	6.13
13-Q1	0.42	3.38
13-Q2	0.62	6.7
13-Q3	0.67	6.02
13-Q4	0.69	6.09
14-Q1	0.7	6.29
14-Q2	0.93	7.53
14-Q3	0.97	8.0

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2.1.1.5   Horizon

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: horizon
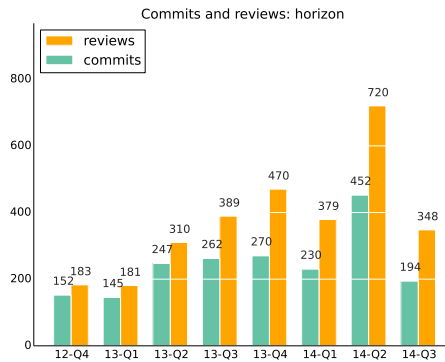
Period	Commits	Reviews
12-Q4	152	183
13-Q1	145	181
13-Q2	247	310
13-Q3	262	389
13-Q4	270	470
14-Q1	230	379
14-Q2	452	720
14-Q3	194	348

Opened and closed tickets: horizon
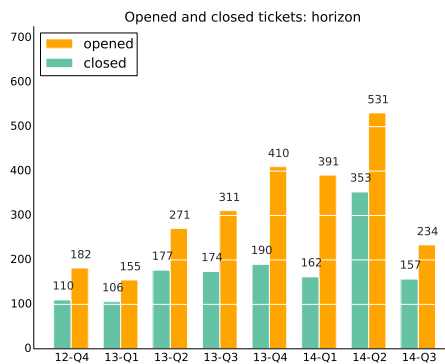
Period	Closed	Opened
12-Q4	110	182
13-Q1	106	155
13-Q2	177	271
13-Q3	174	311
13-Q4	190	410
14-Q1	162	391
14-Q2	353	531
14-Q3	157	234

Merged and abandoned reviews: horizon
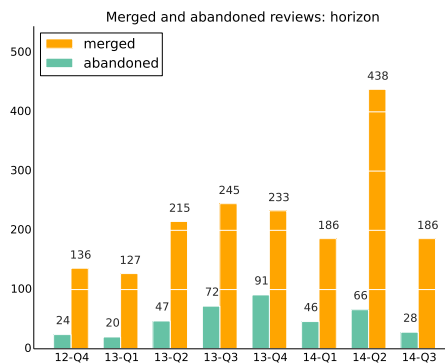
Period	Merged	Abandoned
12-Q4	136	24
13-Q1	127	20
13-Q2	215	47
13-Q3	245	72
13-Q4	233	91
14-Q1	186	46
14-Q2	438	66
14-Q3	186	28

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
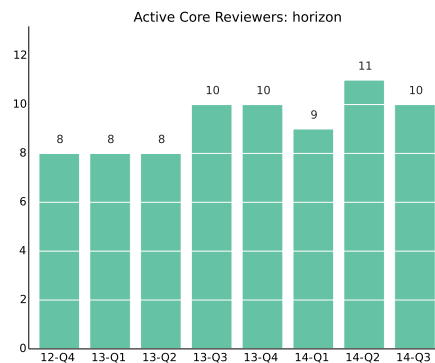
Period	Active Core
12-Q4	8
13-Q1	8
13-Q2	8
13-Q3	10
13-Q4	10
14-Q1	9
14-Q2	11
14-Q3	10
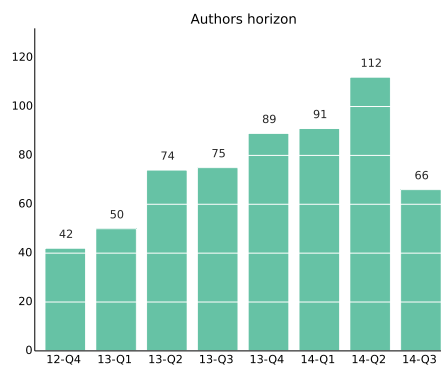
Period	Authors
12-Q4	42
13-Q1	50
13-Q2	74
13-Q3	75
13-Q4	89
14-Q1	91
14-Q2	112
14-Q3	66

Commit (s)	Author	Commit (s)	Organizations
26	Akihiro MOTOKI	36	IBM
12	Cindy Lu	34	Red Hat
10	Ana Krivokapic	26	HP
10	Doug Fish	26	NEC
10	Lin Hua Cheng	13	Cisco Systems
9	Sam Betts	7	Mirantis
8	Bradley Jones	3	Intel
8	Julie Pichon	3	Kylin OS Co.
7	David Lyle	2	eBay
5	Aaron Sahlin	2	LSD

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: horizon

Period	Closed/Opened
12-Q4	0.6
13-Q1	0.68
13-Q2	0.65
13-Q3	0.56
13-Q4	0.46
14-Q1	0.41
14-Q2	0.66
14-Q3	0.67

Changesets efficiency: horizon
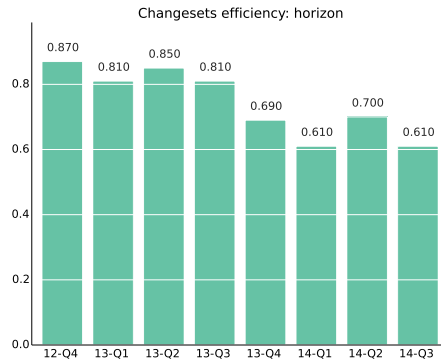
Period	Closed/Opened
12-Q4	0.87
13-Q1	0.81
13-Q2	0.85
13-Q3	0.81
13-Q4	0.69
14-Q1	0.61
14-Q2	0.7
14-Q3	0.61

Time to merge (days): horizon
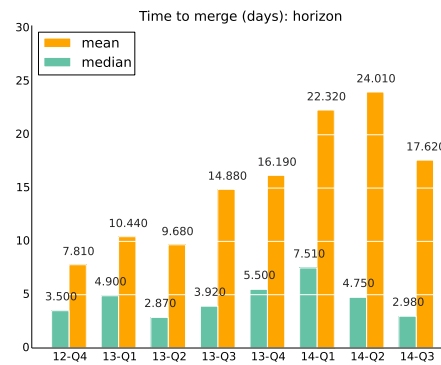
Period	Median	Mean
12-Q4	3.5	7.81
13-Q1	4.9	10.44
13-Q2	2.87	9.68
13-Q3	3.92	14.88
13-Q4	5.5	16.19
14-Q1	7.51	22.32
14-Q2	4.75	24.01
14-Q3	2.98	17.62

Patchsets per Changeset: horizon
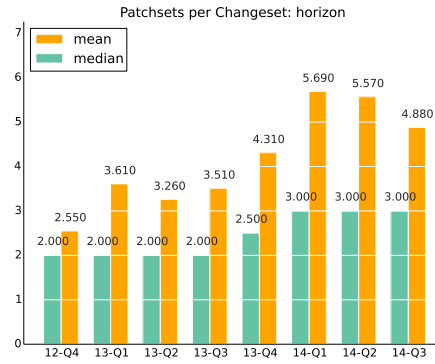
Period	Median	Mean
12-Q4	2.0	2.55
13-Q1	2.0	3.61
13-Q2	2.0	3.26
13-Q3	2.0	3.51
13-Q4	2.5	4.31
14-Q1	3.0	5.69
14-Q2	3.0	5.57
14-Q3	3.0	4.88

Time waiting for the reviewer: horizon
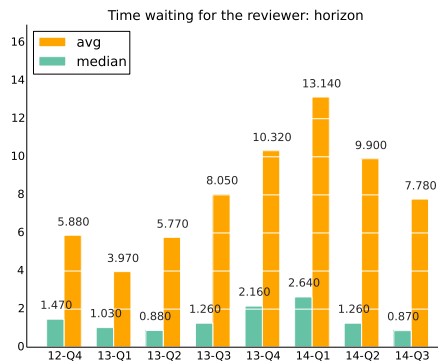
Period	Median	Mean
12-Q4	1.47	5.88
13-Q1	1.03	3.97
13-Q2	0.88	5.77
13-Q3	1.26	8.05
13-Q4	2.16	10.32
14-Q1	2.64	13.14
14-Q2	1.26	9.9
14-Q3	0.87	7.78

Time waiting for the submitter: horizon
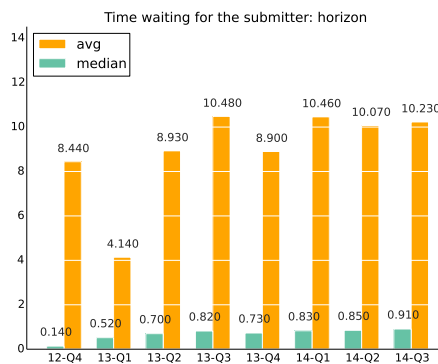
Period	Median	Mean
12-Q4	0.14	8.44
13-Q1	0.52	4.14
13-Q2	0.7	8.93
13-Q3	0.82	10.48
13-Q4	0.73	8.9
14-Q1	0.83	10.46
14-Q2	0.85	10.07
14-Q3	0.91	10.23

2.1.1.6 Keystone

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: keystone
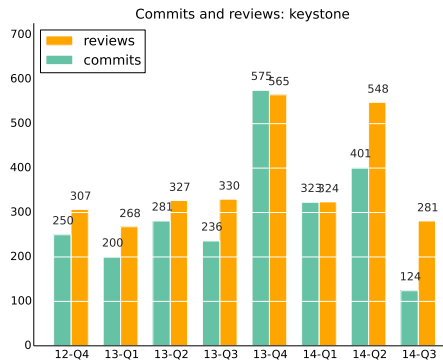
Period	Commits	Reviews
12-Q4	250	307
13-Q1	200	268
13-Q2	281	327
13-Q3	236	330
13-Q4	575	565
14-Q1	323	324
14-Q2	401	548
14-Q3	124	281

Opened and closed tickets: keystone
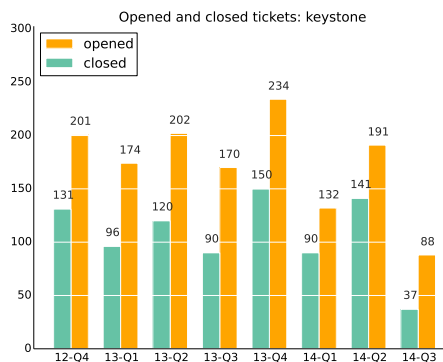
Period	Closed	Opened
12-Q4	131	201
13-Q1	96	174
13-Q2	120	202
13-Q3	90	170
13-Q4	150	234
14-Q1	90	132
14-Q2	141	191
14-Q3	37	88

Merged and abandoned reviews: keystone
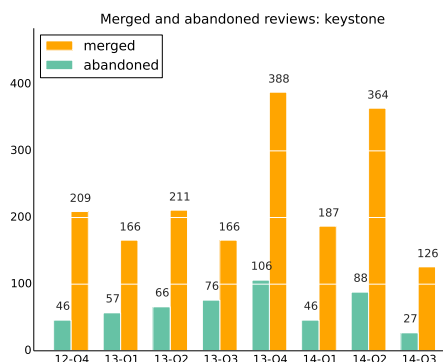
Period	Merged	Abandoned
12-Q4	209	46
13-Q1	166	57
13-Q2	211	66
13-Q3	166	76
13-Q4	388	106
14-Q1	187	46
14-Q2	364	88
14-Q3	126	27

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: keystone
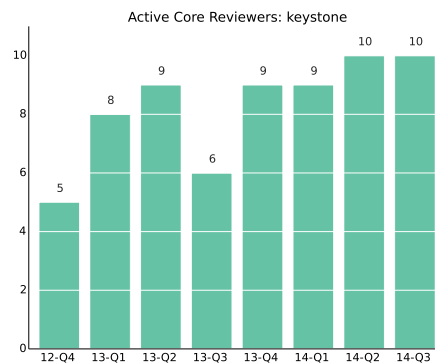
Period	Active Core
12-Q4	5
13-Q1	8
13-Q2	9
13-Q3	6
13-Q4	9
14-Q1	9
14-Q2	10
14-Q3	10

Authors keystone
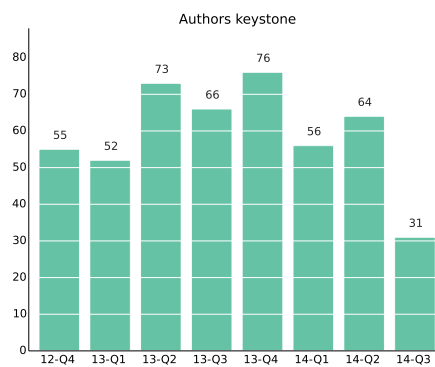
Period	Authors
12-Q4	55
13-Q1	52
13-Q2	73
13-Q3	66
13-Q4	76
14-Q1	56
14-Q2	64
14-Q3	31

Commit (s)	Author	Commit (s)	Organizations
21	Steve Martinelli	63	IBM
20	Brant Knudson	16	Red Hat
14	Rodrigo Duarte Sousa	15	LSD
10	Henry Nash	13	Rackspace
9	David Stanek	4	Huawei
7	Jamie Lennox	4	Metacloud
6	Lance Bragstad	2	CERN
5	Nathan Kinder	2	NTT
3	Dolph Mathews	1	Canonical
3	Morgan Fainberg	1	HP

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: keystone

Period	Closed/Opened
12-Q4	0.65
13-Q1	0.55
13-Q2	0.59
13-Q3	0.53
13-Q4	0.64
14-Q1	0.68
14-Q2	0.74
14-Q3	0.42

Changesets efficiency: keystone
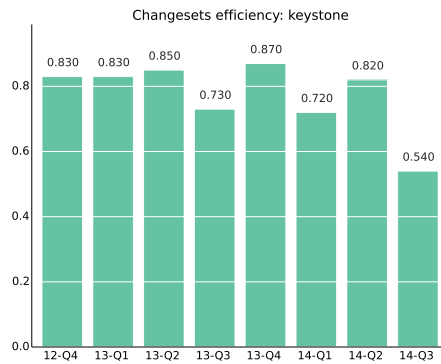
Period	Closed/Opened
12-Q4	0.83
13-Q1	0.83
13-Q2	0.85
13-Q3	0.73
13-Q4	0.87
14-Q1	0.72
14-Q2	0.82
14-Q3	0.54

Time to merge (days): keystone
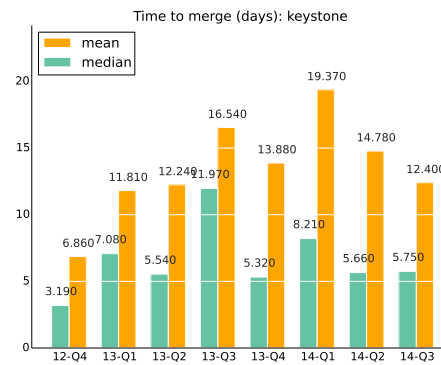
Period	Median	Mean
12-Q4	3.19	6.86
13-Q1	7.08	11.81
13-Q2	5.54	12.24
13-Q3	11.97	16.54
13-Q4	5.32	13.88
14-Q1	8.21	19.37
14-Q2	5.66	14.78
14-Q3	5.75	12.4

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Biтergia

Patchsets per Changeset: keystone
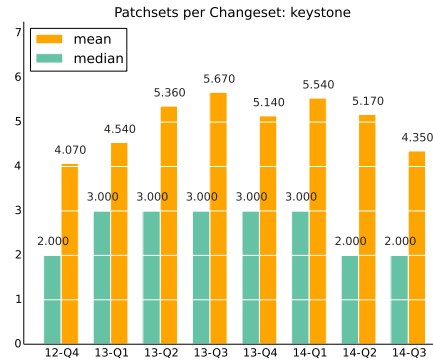
Period	Median	Mean
12-Q4	2.0	4.07
13-Q1	3.0	4.54
13-Q2	3.0	5.36
13-Q3	3.0	5.67
13-Q4	3.0	5.14
14-Q1	3.0	5.54
14-Q2	2.0	5.17
14-Q3	2.0	4.35

Time waiting for the reviewer: keystone
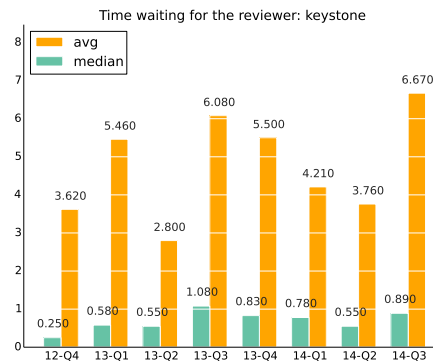
Period	Median	Mean
12-Q4	0.25	3.62
13-Q1	0.58	5.46
13-Q2	0.55	2.8
13-Q3	1.08	6.08
13-Q4	0.83	5.5
14-Q1	0.78	4.21
14-Q2	0.55	3.76
14-Q3	0.89	6.67

Time waiting for the submitter: keystone
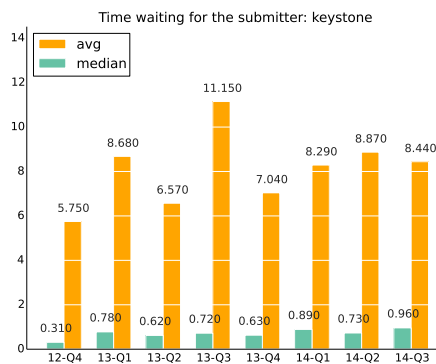
Period	Median	Mean
12-Q4	0.31	5.75
13-Q1	0.78	8.68
13-Q2	0.62	6.57
13-Q3	0.72	11.15
13-Q4	0.63	7.04
14-Q1	0.89	8.29
14-Q2	0.73	8.87
14-Q3	0.96	8.44

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2.1.1.7   Neutron

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: neutron
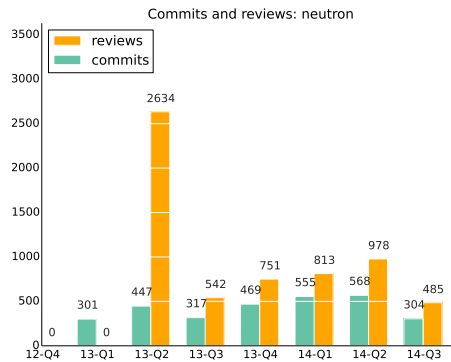
Period	Commits	Reviews
12-Q4	410	0
13-Q1	301	0
13-Q2	447	2634
13-Q3	317	542
13-Q4	469	751
14-Q1	555	813
14-Q2	568	978
14-Q3	304	485

Opened and closed tickets: neutron
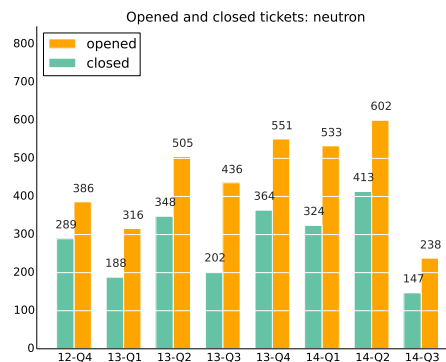
Period	Closed	Opened
12-Q4	289	386
13-Q1	188	316
13-Q2	348	505
13-Q3	202	436
13-Q4	364	551
14-Q1	324	533
14-Q2	413	602
14-Q3	147	238

Merged and abandoned reviews: neutron
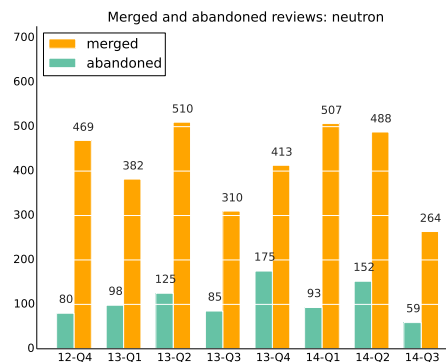
Period	Merged	Abandoned
12-Q4	469	80
13-Q1	382	98
13-Q2	510	125
13-Q3	310	85
13-Q4	413	175
14-Q1	507	93
14-Q2	488	152
14-Q3	264	59

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: neutron
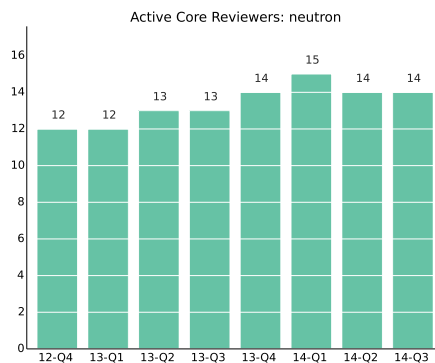
Period	Active Core
12-Q4	12
13-Q1	12
13-Q2	13
13-Q3	13
13-Q4	14
14-Q1	15
14-Q2	14
14-Q3	14

Authors neutron
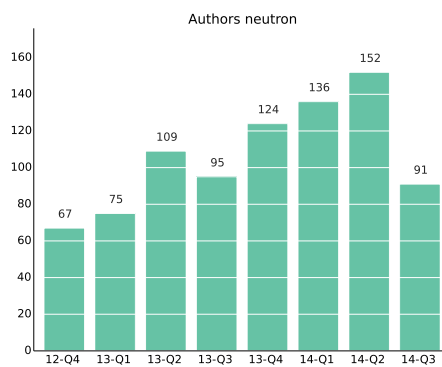
Period	Authors
12-Q4	67
13-Q1	75
13-Q2	109
13-Q3	95
13-Q4	124
14-Q1	136
14-Q2	152
14-Q3	91

Commit (s)	Author	Commit (s)	Organizations
41	Kevin Benton	71	Red Hat
30	Russell Bryant	41	Bit Switch Networks
14	Mark McClain	29	HP
12	Angus Lees	23	Cisco Systems
11	cedric.brandily	22	Mirantis
10	Carl Baldwin	15	Yahoo!
9	garyk	14	VMware
9	Ihar Hrachyshka	9	Radware
8	enikanorov	8	IBM
7	Ann Kamyshnikova	8	VA Linux

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: neutron
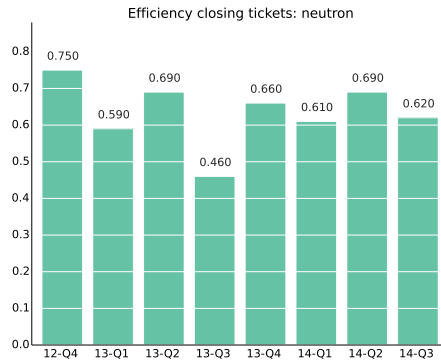
Period	Closed/Opened
12-Q4	0.75
13-Q1	0.59
13-Q2	0.69
13-Q3	0.46
13-Q4	0.66
14-Q1	0.61
14-Q2	0.69
14-Q3	0.62

Changesets efficiency: neutron
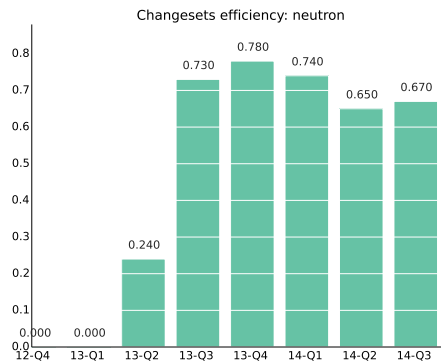
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.24
13-Q3	0.73
13-Q4	0.78
14-Q1	0.74
14-Q2	0.65
14-Q3	0.67

Time to merge (days): neutron
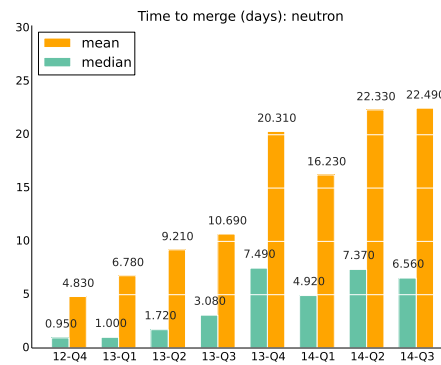
Period	Median	Mean
12-Q4	0.95	4.83
13-Q1	1.0	6.78
13-Q2	1.72	9.21
13-Q3	3.08	10.69
13-Q4	7.49	20.31
14-Q1	4.92	16.23
14-Q2	7.37	22.33
14-Q3	6.56	22.49

Patchsets per Changeset: neutron
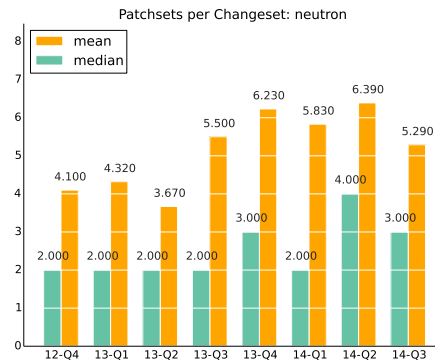
Period	Median	Mean
12-Q4	2.0	4.1
13-Q1	2.0	4.32
13-Q2	2.0	3.67
13-Q3	2.0	5.5
13-Q4	3.0	6.23
14-Q1	2.0	5.83
14-Q2	4.0	6.39
14-Q3	3.0	5.29

Time waiting for the reviewer: neutron
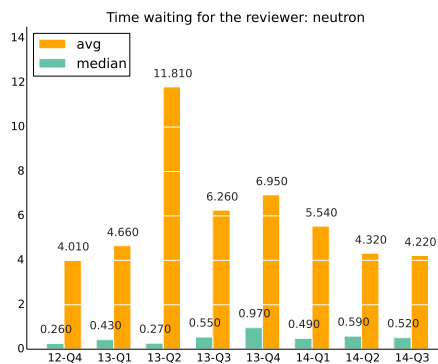
Period	Median	Mean
12-Q4	0.26	4.01
13-Q1	0.43	4.66
13-Q2	0.27	11.81
13-Q3	0.55	6.26
13-Q4	0.97	6.95
14-Q1	0.49	5.54
14-Q2	0.59	4.32
14-Q3	0.52	4.22

Time waiting for the submitter: neutron
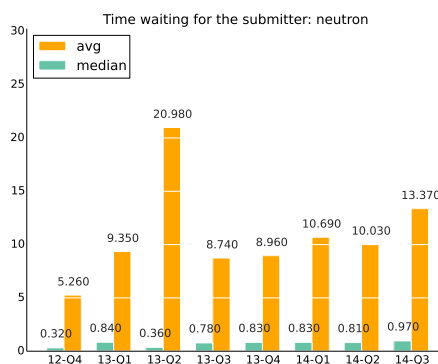
Period	Median	Mean
12-Q4	0.32	5.26
13-Q1	0.84	9.35
13-Q2	0.36	20.98
13-Q3	0.78	8.74
13-Q4	0.83	8.96
14-Q1	0.83	10.69
14-Q2	0.81	10.03
14-Q3	0.97	13.37

2.1.1.8 Nova

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: nova
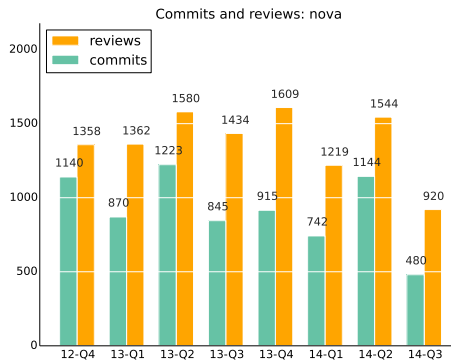
Period	Commits	Reviews
12-Q4	1140	1358
13-Q1	870	1362
13-Q2	1223	1580
13-Q3	845	1434
13-Q4	915	1609
14-Q1	742	1219
14-Q2	1144	1544
14-Q3	480	920

Opened and closed tickets: nova
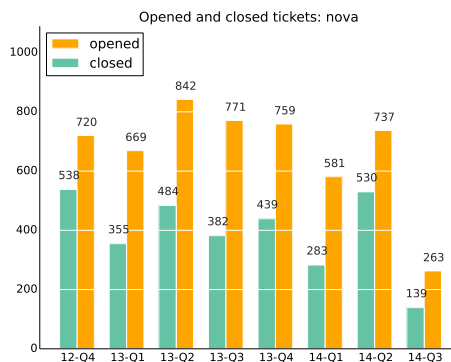
Period	Closed	Opened
12-Q4	538	720
13-Q1	355	669
13-Q2	484	842
13-Q3	382	771
13-Q4	439	759
14-Q1	283	581
14-Q2	530	737
14-Q3	139	263

Merged and abandoned reviews: nova
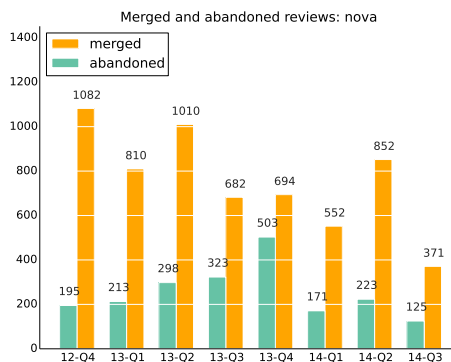
Period	Merged	Abandoned
12-Q4	1082	195
13-Q1	810	213
13-Q2	1010	298
13-Q3	682	323
13-Q4	694	503
14-Q1	552	171
14-Q2	852	223
14-Q3	371	125

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: nova
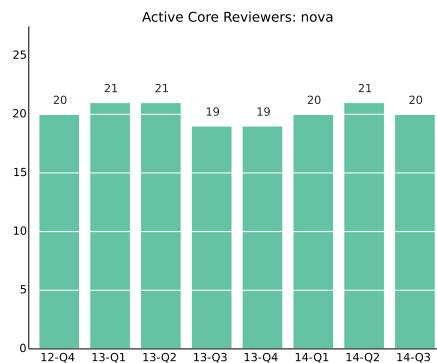
Period	Active Core
12-Q4	20
13-Q1	21
13-Q2	21
13-Q3	19
13-Q4	19
14-Q1	20
14-Q2	21
14-Q3	20

Authors nova
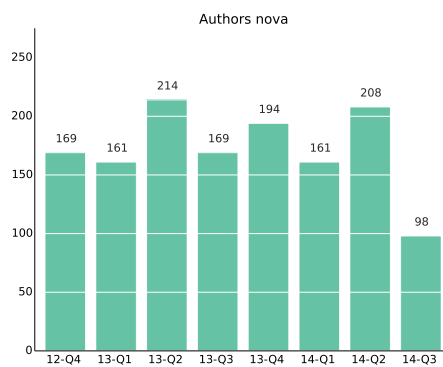
Period	Authors
12-Q4	169
13-Q1	161
13-Q2	214
13-Q3	169
13-Q4	194
14-Q1	161
14-Q2	208
14-Q3	98

Commit (s)	Author	Commit (s)	Organizations
43	garyk	168	IBM
30	jaypipes	58	Red Hat
26	Dan Smith	47	VMware
24	Matt Riedemann	43	Radware
23	Chris Yeoh	T	T ,,
23	Eli Qiao	27	HP
19	Daniel P. Berrange	27	NEC
19	jichen	22	Mirantis
16	He Jie Xu	20	Rackspace
15	Davanum Srinivas	12	Cloudwatt

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: nova
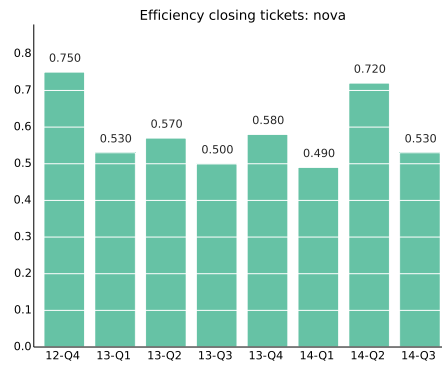
Period	Closed/Opened
12-Q4	0.75
13-Q1	0.53
13-Q2	0.57
13-Q3	0.5
13-Q4	0.58
14-Q1	0.49
14-Q2	0.72
14-Q3	0.53

Changesets efficiency: nova
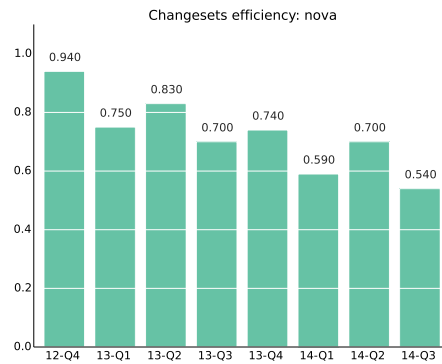
Period	Closed/Opened
12-Q4	0.94
13-Q1	0.75
13-Q2	0.83
13-Q3	0.7
13-Q4	0.74
14-Q1	0.59
14-Q2	0.7
14-Q3	0.54

Time to merge (days): nova
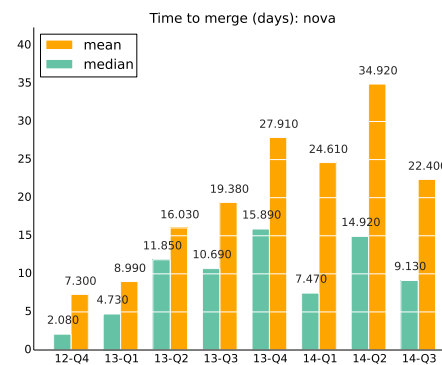
Period	Median	Mean
12-Q4	2.08	7.3
13-Q1	4.73	8.99
13-Q2	11.85	16.03
13-Q3	10.69	19.38
13-Q4	15.89	27.91
14-Q1	7.47	24.61
14-Q2	14.92	34.92
14-Q3	9.13	22.4

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Bitergia

Patchsets per Changeset: nova
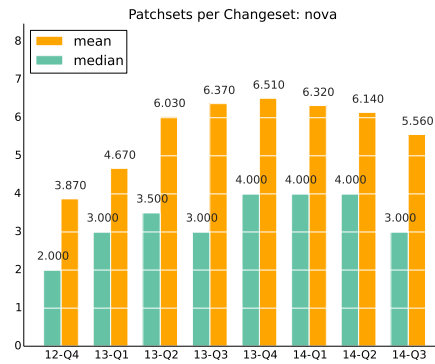
Period	Median	Mean
12-Q4	2.0	3.87
13-Q1	3.0	4.67
13-Q2	3.5	6.03
13-Q3	3.0	6.37
13-Q4	4.0	6.51
14-Q1	4.0	6.32
14-Q2	4.0	6.14
14-Q3	3.0	5.56

Time waiting for the reviewer: nova
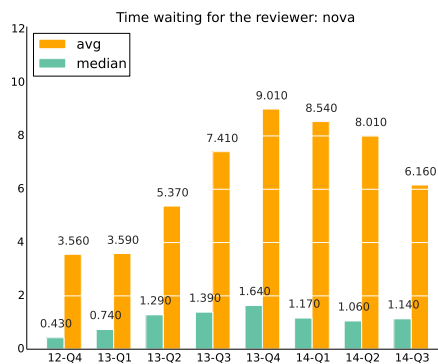
Period	Median	Mean
12-Q4	0.43	3.56
13-Q1	0.74	3.59
13-Q2	1.29	5.37
13-Q3	1.39	7.41
13-Q4	1.64	9.01
14-Q1	1.17	8.54
14-Q2	1.06	8.01
14-Q3	1.14	6.16

Time waiting for the submitter: nova
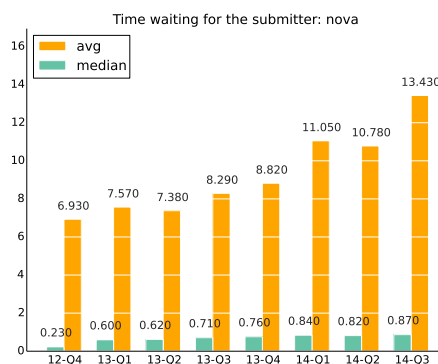
Period	Median	Mean
12-Q4	0.23	6.93
13-Q1	0.6	7.57
13-Q2	0.62	7.38
13-Q3	0.71	8.29
13-Q4	0.76	8.82
14-Q1	0.84	11.05
14-Q2	0.82	10.78
14-Q3	0.87	13.43

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2.1.1.9 Sahara

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: sahara
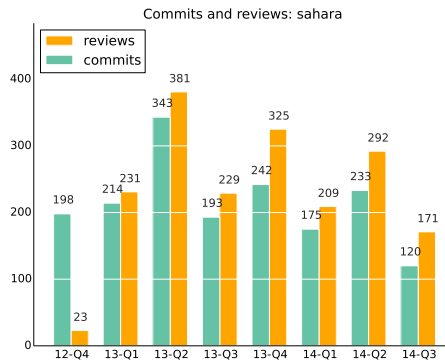
Period	Commits	Reviews
12-Q4	198	23
13-Q1	214	231
13-Q2	343	381
13-Q3	193	229
13-Q4	242	325
14-Q1	175	209
14-Q2	233	292
14-Q3	120	171

Opened and closed tickets: sahara
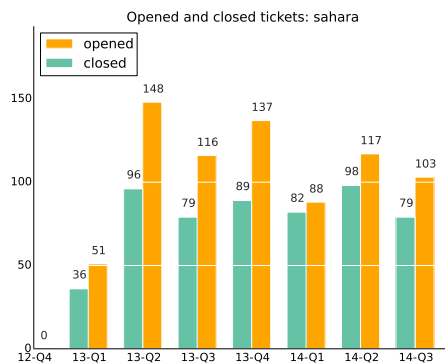
Period	Closed	Opened
12-Q4	0	0
13-Q1	36	51
13-Q2	96	148
13-Q3	79	116
13-Q4	89	137
14-Q1	82	88
14-Q2	98	117
14-Q3	79	103

Merged and abandoned reviews: sahara
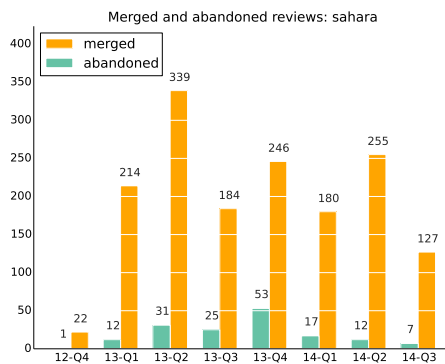
Period	Merged	Abandoned
12-Q4	22	1
13-Q1	214	12
13-Q2	339	31
13-Q3	184	25
13-Q4	246	53
14-Q1	180	17
14-Q2	255	12
14-Q3	127	7

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: sahara
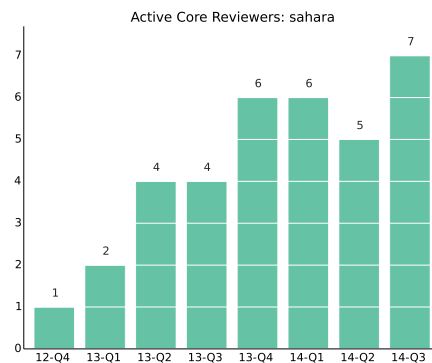
Period	Active Core
12-Q4	1
13-Q1	2
13-Q2	4
13-Q3	4
13-Q4	6
14-Q1	6
14-Q2	5
14-Q3	7

Authors sahara
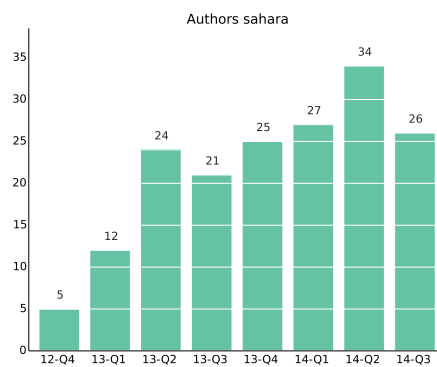
Period	Authors
12-Q4	5
13-Q1	12
13-Q2	24
13-Q3	21
13-Q4	25
14-Q1	27
14-Q2	34
14-Q3	26

Commit (s)	Author
25	Sergey Reshetnyak
19	Andrew Lazarev
15	Shilla Saebi
13	Trevor McKay
8	ERROR
6	Andrey Pavlov
5	Michael McCune
4	Vitaly Gridnev
3	Sergey Lukjanov
2	Alexander Ignatov

Commit (s)	Organizations
63	Mirantis
20	Red Hat
15	Comcast
8	Numergy
7	Cloudscaling
1	Canonical
1	Intel
1	OpenStack Foundation
1	UFCG

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: sahara
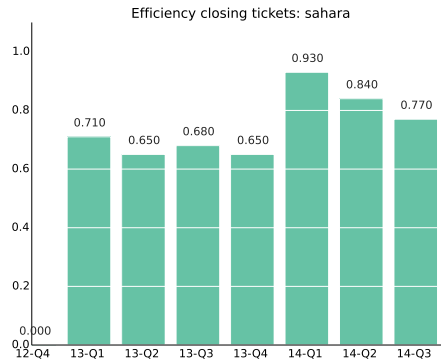
Period	Closed/Opened
12-Q4	0
13-Q1	0.71
13-Q2	0.65
13-Q3	0.68
13-Q4	0.65
14-Q1	0.93
14-Q2	0.84
14-Q3	0.77

Changesets efficiency: sahara
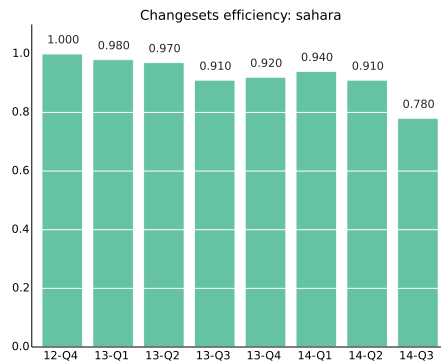
Period	Closed/Opened
12-Q4	1.0
13-Q1	0.98
13-Q2	0.97
13-Q3	0.91
13-Q4	0.92
14-Q1	0.94
14-Q2	0.91
14-Q3	0.78

Time to merge (days): sahara
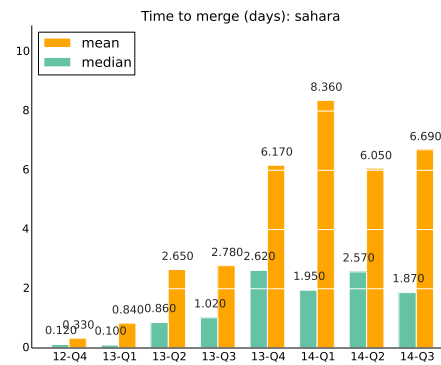
Period	Median	Mean
12-Q4	0.12	0.33
13-Q1	0.1	0.84
13-Q2	0.86	2.65
13-Q3	1.02	2.78
13-Q4	2.62	6.17
14-Q1	1.95	8.36
14-Q2	2.57	6.05
14-Q3	1.87	6.69

Bitergia

Patchsets per Changeset: sahara
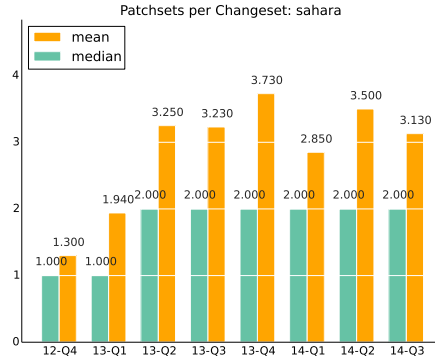
Period	Median	Mean
12-Q4	1.0	1.3
13-Q1	1.0	1.94
13-Q2	2.0	3.25
13-Q3	2.0	3.23
13-Q4	2.0	3.73
14-Q1	2.0	2.85
14-Q2	2.0	3.5
14-Q3	2.0	3.13

Time waiting for the reviewer: sahara
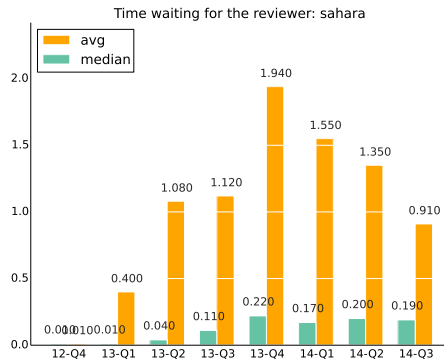
Period	Median	Mean
12-Q4	0.01	0.01
13-Q1	0.01	0.4
13-Q2	0.04	1.08
13-Q3	0.11	1.12
13-Q4	0.22	1.94
14-Q1	0.17	1.55
14-Q2	0.2	1.35
14-Q3	0.19	0.91

Time waiting for the submitter: sahara
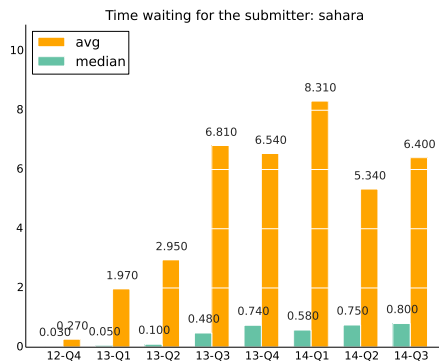
Period	Median	Mean
12-Q4	0.03	0.27
13-Q1	0.05	1.97
13-Q2	0.1	2.95
13-Q3	0.48	6.81
13-Q4	0.74	6.54
14-Q1	0.58	8.31
14-Q2	0.75	5.34
14-Q3	0.8	6.4

2.1.1.10 Swift

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: swift
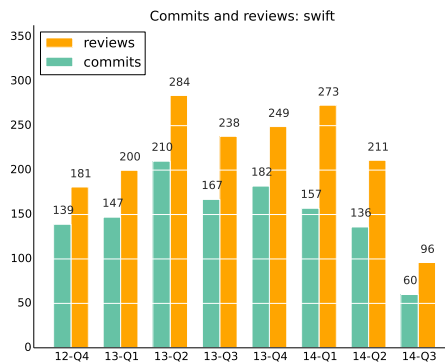
Period	Commits	Reviews
12-Q4	139	181
13-Q1	147	200
13-Q2	210	284
13-Q3	167	238
13-Q4	182	249
14-Q1	157	273
14-Q2	136	211
14-Q3	60	96

Opened and closed tickets: swift
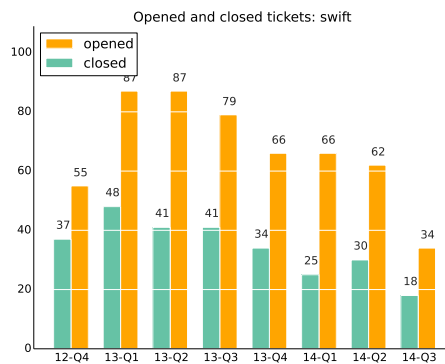
Period	Closed	Opened
12-Q4	37	55
13-Q1	48	87
13-Q2	41	87
13-Q3	41	79
13-Q4	34	66
14-Q1	25	66
14-Q2	30	62
14-Q3	18	34

Merged and abandoned reviews: swift
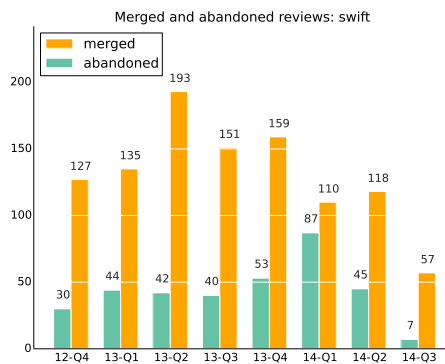
Period	Merged	Abandoned
12-Q4	127	30
13-Q1	135	44
13-Q2	193	42
13-Q3	151	40
13-Q4	159	53
14-Q1	110	87
14-Q2	118	45
14-Q3	57	7

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: swift
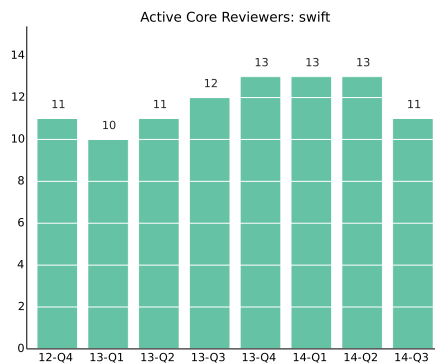
Period	Active Core
12-Q4	11
13-Q1	10
13-Q2	11
13-Q3	12
13-Q4	13
14-Q1	13
14-Q2	13
14-Q3	11

Authors swift
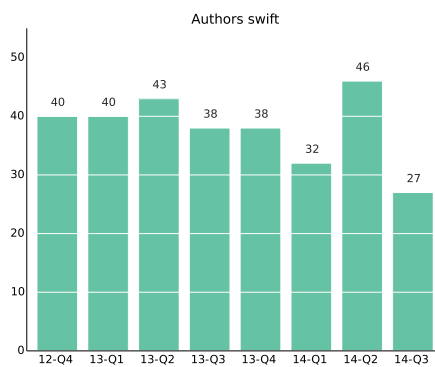
Period	Authors
12-Q4	40
13-Q1	40
13-Q2	43
13-Q3	38
13-Q4	38
14-Q1	32
14-Q2	46
14-Q3	27

Commit (s)	Author	Commit (s)	Organizations
10	Samuel Merritt	14	SwiftStack
5	Christian Schwede	11	Rackspace
5	Jay Bryant	5	DKRZ
5	Paul Luse	5	IBM
4	John Dickinson	5	Intel
3	Clay Gerrard	3	Comcast
3	Shilla Saebi	2	HP
2	Alistair Coles	2	NTT
2	David Goetz	2	OpenStack Foundation
2	Mike Barton	2	Red Hat

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process. : Efficiency closing issues and time to review: mean and median

Efficiency closing tickets: swift
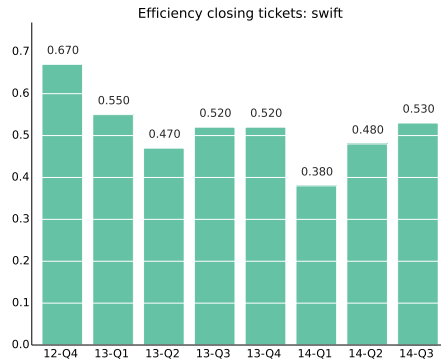
Period	Closed/Opened
12-Q4	0.67
13-Q1	0.55
13-Q2	0.47
13-Q3	0.52
13-Q4	0.52
14-Q1	0.38
14-Q2	0.48
14-Q3	0.53

Changesets efficiency: swift
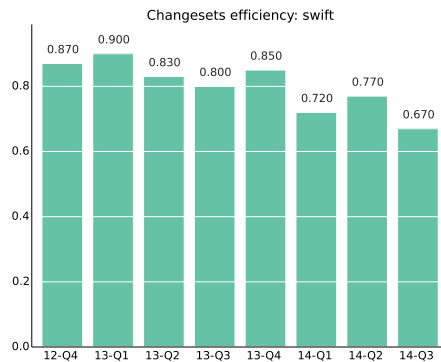
Period	Closed/Opened
12-Q4	0.87
13-Q1	0.9
13-Q2	0.83
13-Q3	0.8
13-Q4	0.85
14-Q1	0.72
14-Q2	0.77
14-Q3	0.67

Time to merge (days): swift
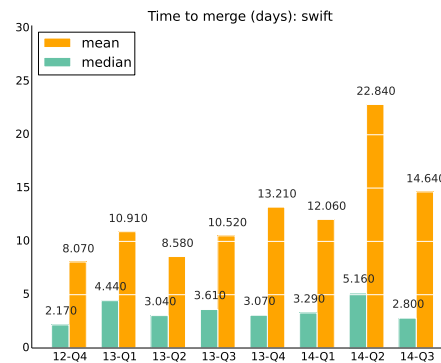
Period	Median	Mean
12-Q4	2.17	8.07
13-Q1	4.44	10.91
13-Q2	3.04	8.58
13-Q3	3.61	10.52
13-Q4	3.07	13.21
14-Q1	3.29	12.06
14-Q2	5.16	22.84
14-Q3	2.8	14.64

Bitergia

Patchsets per Changeset: swift
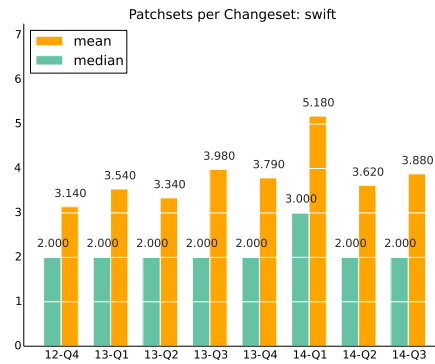
Period	Median	Mean
12-Q4	2.0	3.14
13-Q1	2.0	3.54
13-Q2	2.0	3.34
13-Q3	2.0	3.98
13-Q4	2.0	3.79
14-Q1	3.0	5.18
14-Q2	2.0	3.62
14-Q3	2.0	3.88

Time waiting for the reviewer: swift
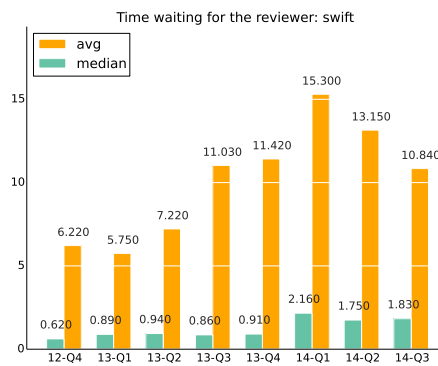
Period	Median	Mean
12-Q4	0.62	6.22
13-Q1	0.89	5.75
13-Q2	0.94	7.22
13-Q3	0.86	11.03
13-Q4	0.91	11.42
14-Q1	2.16	15.3
14-Q2	1.75	13.15
14-Q3	1.83	10.84

Time waiting for the submitter: swift
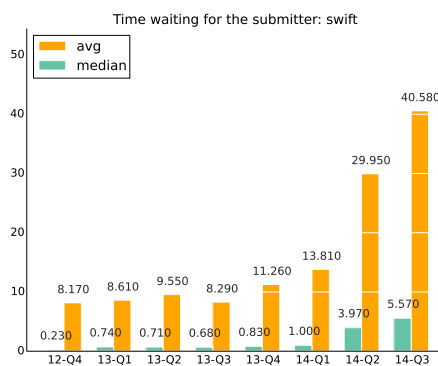
Period	Median	Mean
12-Q4	0.23	8.17
13-Q1	0.74	8.61
13-Q2	0.71	9.55
13-Q3	0.68	8.29
13-Q4	0.83	11.26
14-Q1	1.0	13.81
14-Q2	3.97	29.95
14-Q3	5.57	40.58

2.1.1.11 Trove

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: trove
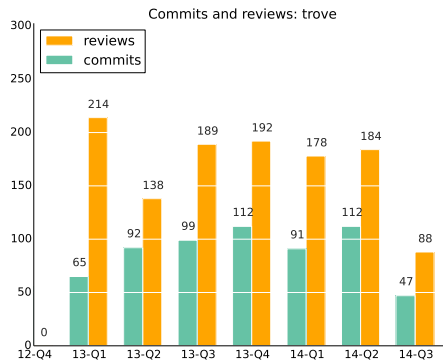
Period	Commits	Reviews
12-Q4	57	0
13-Q1	65	214
13-Q2	92	138
13-Q3	99	189
13-Q4	112	192
14-Q1	91	178
14-Q2	112	184
14-Q3	47	88

Opened and closed tickets: trove
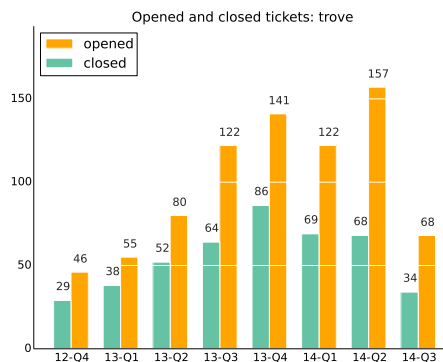
Period	Closed	Opened
12-Q4	29	46
13-Q1	38	55
13-Q2	52	80
13-Q3	64	122
13-Q4	86	141
14-Q1	69	122
14-Q2	68	157
14-Q3	34	68

Merged and abandoned reviews: trove
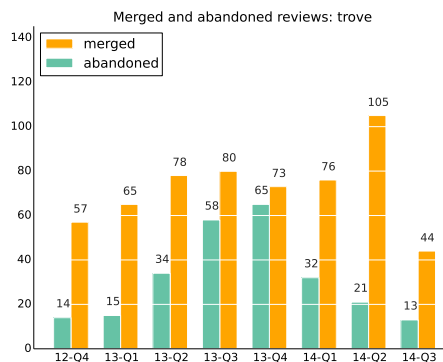
Period	Merged	Abandoned
12-Q4	57	14
13-Q1	65	15
13-Q2	78	34
13-Q3	80	58
13-Q4	73	65
14-Q1	76	32
14-Q2	105	21
14-Q3	44	13

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: trove
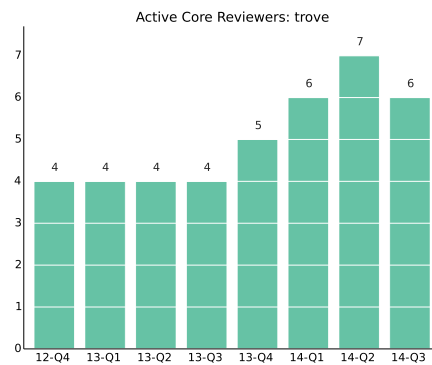
Period	Active Core
12-Q4	4
13-Q1	4
13-Q2	4
13-Q3	4
13-Q4	5
14-Q1	6
14-Q2	7
14-Q3	6

Authors trove
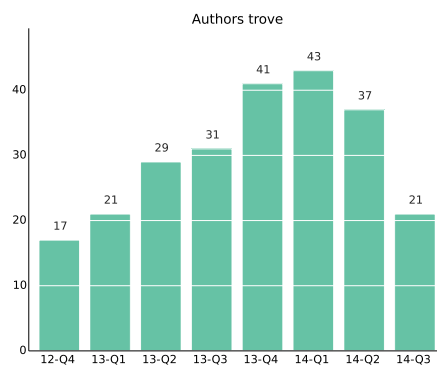
Period	Authors
12-Q4	17
13-Q1	21
13-Q2	29
13-Q3	31
13-Q4	41
14-Q1	43
14-Q2	37
14-Q3	21

Commit (s)	Author	Commit (s)	Organizations
8	Craig Vyvial	12	Rackspace
5	Amrith Kumar	10	Tesora
5	Auston McReynolds	6	eBay
4	Peter Stachowski	3	Red Hat
3	Sergey Gotliv	2	HP
2	Andreas Jaeger	2	Mirantis
2	Anna Philips	2	SUSE
2	Denis M	1	Canonical
2	iccha-sethi	1	OpenStack Foundation
2	Nikhil Manchanda	1	Stackinsider

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: trove
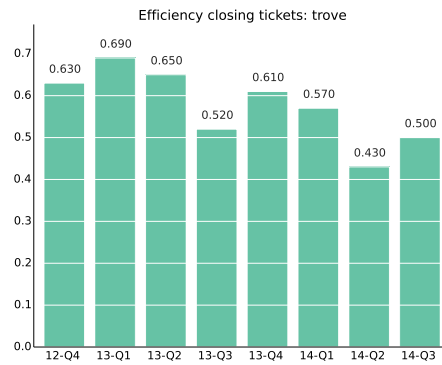
Period	Closed/Opened
12-Q4	0.63
13-Q1	0.69
13-Q2	0.65
13-Q3	0.52
13-Q4	0.61
14-Q1	0.57
14-Q2	0.43
14-Q3	0.5

Changesets efficiency: trove
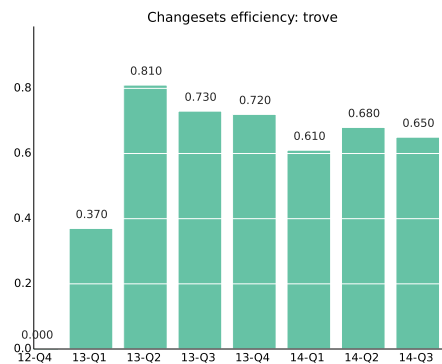
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.37
13-Q2	0.81
13-Q3	0.73
13-Q4	0.72
14-Q1	0.61
14-Q2	0.68
14-Q3	0.65

Time to merge (days): trove
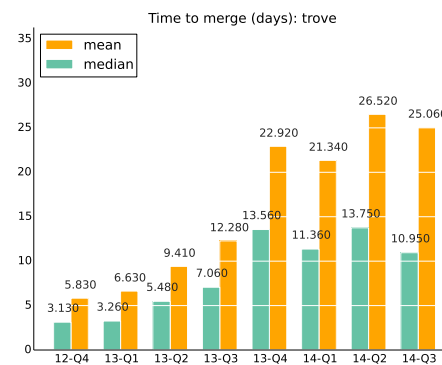
Period	Median	Mean
12-Q4	3.13	5.83
13-Q1	3.26	6.63
13-Q2	5.48	9.41
13-Q3	7.06	12.28
13-Q4	13.56	22.92
14-Q1	11.36	21.34
14-Q2	13.75	26.52
14-Q3	10.95	25.06
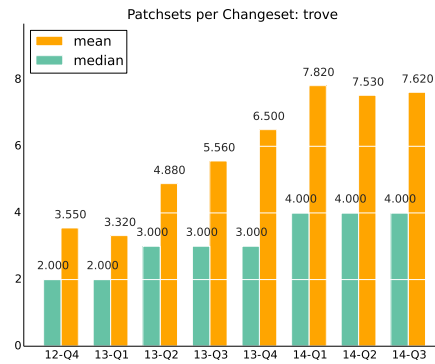
Period	Median	Mean
12-Q4	2.0	3.55
13-Q1	2.0	3.32
13-Q2	3.0	4.88
13-Q3	3.0	5.56
13-Q4	3.0	6.5
14-Q1	4.0	7.82
14-Q2	4.0	7.53
14-Q3	4.0	7.62
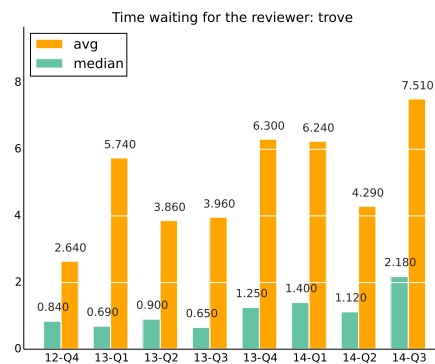
Period	Median	Mean
12-Q4	0.84	2.64
13-Q1	0.69	5.74
13-Q2	0.9	3.86
13-Q3	0.65	3.96
13-Q4	1.25	6.3
14-Q1	1.4	6.24
14-Q2	1.12	4.29
14-Q3	2.18	7.51
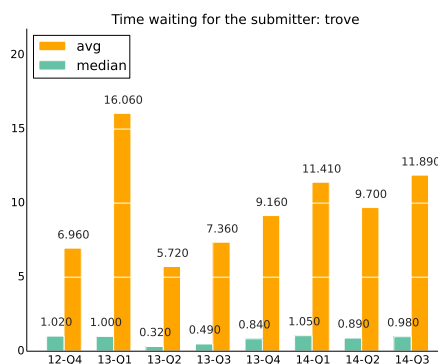
Period	Median	Mean
12-Q4	1.02	6.96
13-Q1	1.0	16.06
13-Q2	0.32	5.72
13-Q3	0.49	7.36
13-Q4	0.84	9.16
14-Q1	1.05	11.41
14-Q2	0.89	9.7
14-Q3	0.98	11.89

2.1.2 Incubated

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: incubated
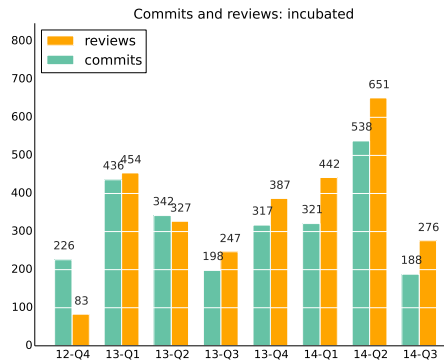
Period	Commits	Reviews
12-Q4	226	83
13-Q1	436	454
13-Q2	342	327
13-Q3	198	247
13-Q4	317	387
14-Q1	321	442
14-Q2	538	651
14-Q3	188	276

Opened and closed tickets: incubated
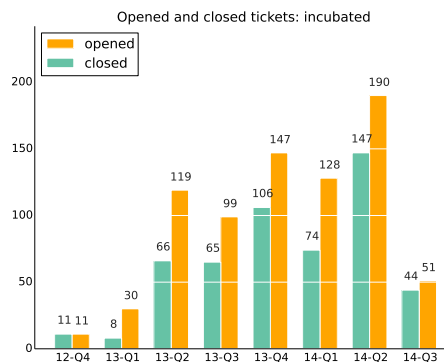
Period	Closed	Opened
12-Q4	11	11
13-Q1	8	30
13-Q2	66	119
13-Q3	65	99
13-Q4	106	147
14-Q1	74	128
14-Q2	147	190
14-Q3	44	51

Merged and abandoned reviews: incubated
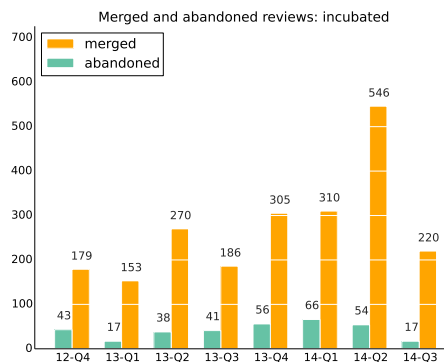
Period	Merged	Abandoned
12-Q4	179	43
13-Q1	153	17
13-Q2	270	38
13-Q3	186	41
13-Q4	305	56
14-Q1	310	66
14-Q2	546	54
14-Q3	220	17

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: incubated
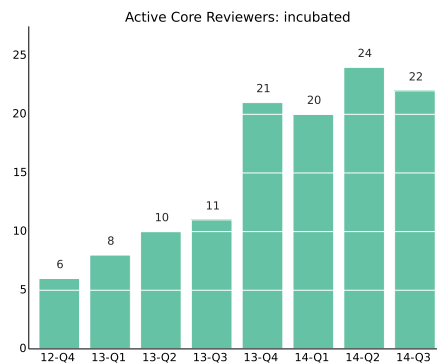
Period	Active Core
12-Q4	6
13-Q1	8
13-Q2	10
13-Q3	11
13-Q4	21
14-Q1	20
14-Q2	24
14-Q3	22

Authors incubated
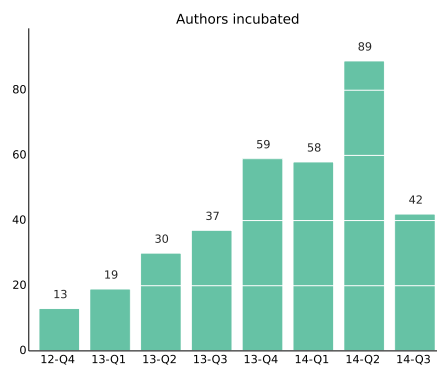
Period	Authors
12-Q4	13
13-Q1	19
13-Q2	30
13-Q3	37
13-Q4	59
14-Q1	58
14-Q2	89
14-Q3	42

Commit (s)	Author	Commit (s)	Organizations
22	Flavio Percoco	34	Rackspace
19	Andreas Jaeger	27	Mirantis
19	Kiall Mac Innes	25	HP
14	Lei Zhang	22	Red Hat
13	Valeriy Ponomaryov	19	SUSE
11	John Vrbanac	4	eBay
9	Thomas Dinkjian	4	OpenStack Foundation
7	Endre Karlson	3	B1 Systems
6	Boris Pavlovic	3	JPBerlin
5	jfwood	2	Ericsson

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Time to merge (days): incubated
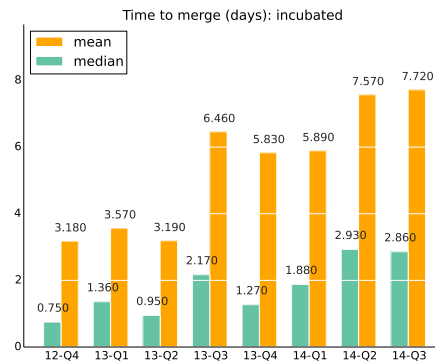
Period	Median	Mean
12-Q4	0.75	3.18
13-Q1	1.36	3.57
13-Q2	0.95	3.19
13-Q3	2.17	6.46
13-Q4	1.27	5.83
14-Q1	1.88	5.89
14-Q2	2.93	7.57
14-Q3	2.86	7.72

Efficiency closing tickets: incubated
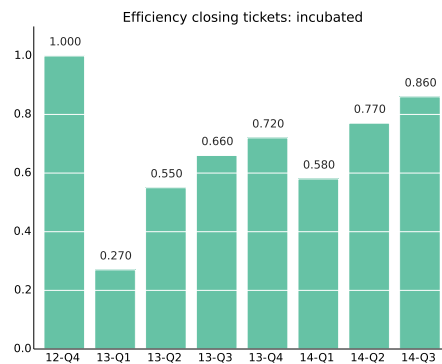
Period	Closed/Opened
12-Q4	1.0
13-Q1	0.27
13-Q2	0.55
13-Q3	0.66
13-Q4	0.72
14-Q1	0.58
14-Q2	0.77
14-Q3	0.86

Changesets efficiency: incubated
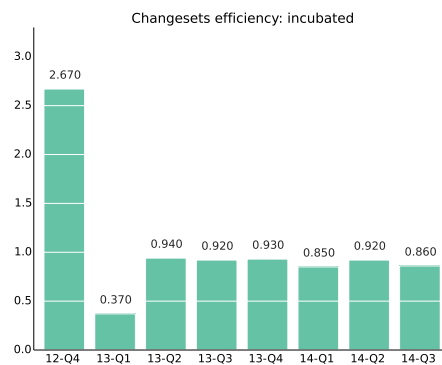
Period	Closed/Opened
12-Q4	2.67
13-Q1	0.37
13-Q2	0.94
13-Q3	0.92
13-Q4	0.93
14-Q1	0.85
14-Q2	0.92
14-Q3	0.86

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Bitergia

Patchsets per Changeset: incubated
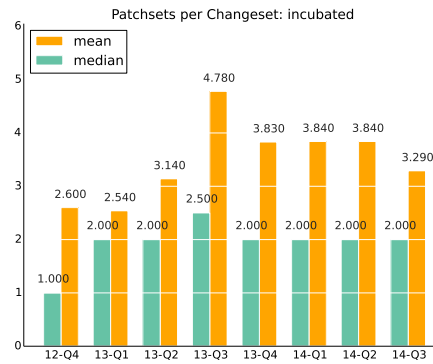
Period	Median	Mean
12-Q4	1.0	2.6
13-Q1	2.0	2.54
13-Q2	2.0	3.14
13-Q3	2.5	4.78
13-Q4	2.0	3.83
14-Q1	2.0	3.84
14-Q2	2.0	3.84
14-Q3	2.0	3.29

Time waiting for the reviewer: incubated
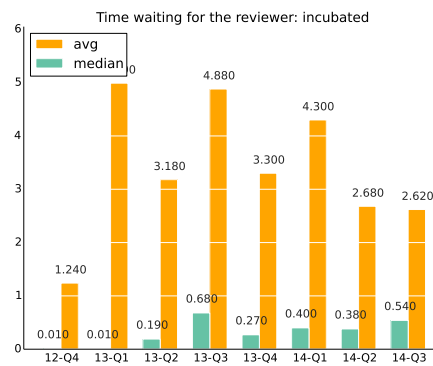
Period	Median	Mean
12-Q4	0.01	1.24
13-Q1	0.01	4.99
13-Q2	0.19	3.18
13-Q3	0.68	4.88
13-Q4	0.27	3.3
14-Q1	0.4	4.3
14-Q2	0.38	2.68
14-Q3	0.54	2.62

Time waiting for the submitter: incubated
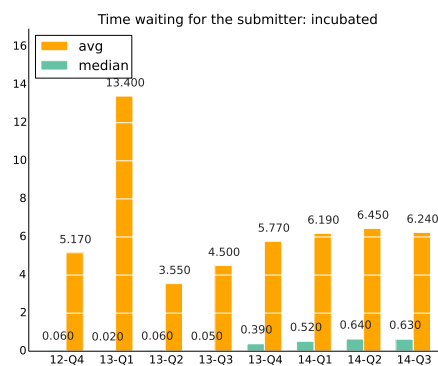
Period	Median	Mean
12-Q4	0.06	5.17
13-Q1	0.02	13.4
13-Q2	0.06	3.55
13-Q3	0.05	4.5
13-Q4	0.39	5.77
14-Q1	0.52	6.19
14-Q2	0.64	6.45
14-Q3	0.63	6.24

2.1.2.1   Barbican

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
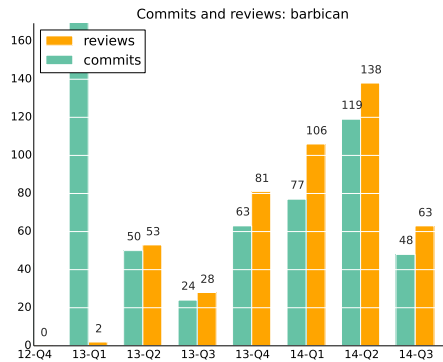
Period	Commits	Reviews
12-Q4	44	0
13-Q1	279	2
13-Q2	50	53
13-Q3	24	28
13-Q4	63	81
14-Q1	77	106
14-Q2	119	138
14-Q3	48	63
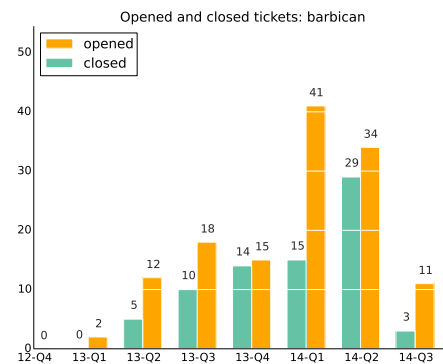
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	2
13-Q2	5	12
13-Q3	10	18
13-Q4	14	15
14-Q1	15	41
14-Q2	29	34
14-Q3	3	11
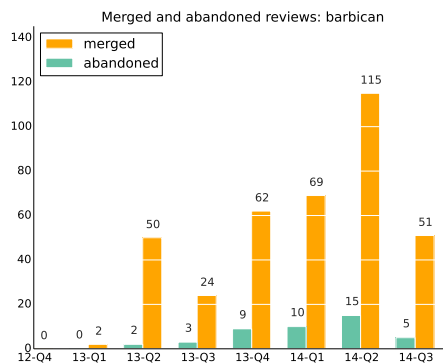
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	2	0
13-Q2	50	2
13-Q3	24	3
13-Q4	62	9
14-Q1	69	10
14-Q2	115	15
14-Q3	51	5

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: barbican
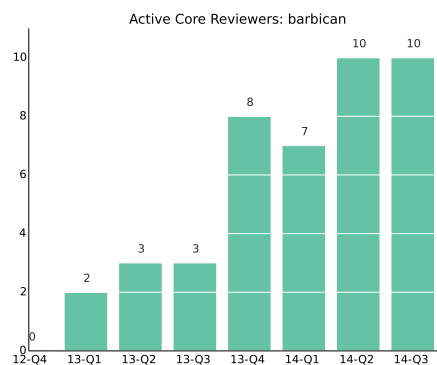
Period	Active Core
12-Q4	0
13-Q1	2
13-Q2	3
13-Q3	3
13-Q4	8
14-Q1	7
14-Q2	10
14-Q3	10

Authors barbican
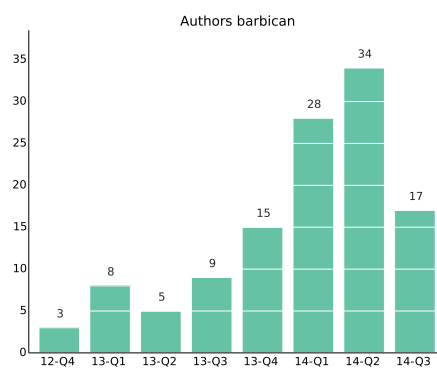
Period	Authors
12-Q4	3
13-Q1	8
13-Q2	5
13-Q3	9
13-Q4	15
14-Q1	28
14-Q2	34
14-Q3	17

Commit (s)	Author	Commit (s)	Organizations
11	John Vrbanac	24	Rackspace
9	Thomas Dinkjian	4	HP
5	jfwood	2	B1 Systems
4	Steve Heyman	2	Ericsson
2	Christian Berendt	2	OpenStack Foundation
2	Donald Stufft	1	JHU APL
2	Juan Antonio Osorio Robles	1	SUSE
2	Paul Kehrer		
2	Thierry Carrez		
2	Tim Kelsey		

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: barbican
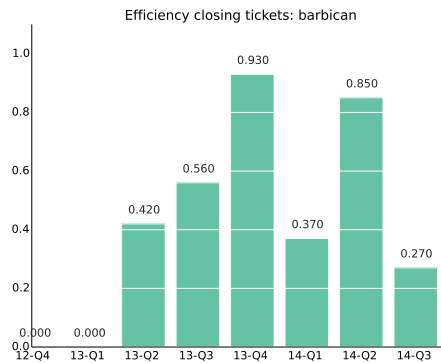
Period	Closed/Opened
12-Q4	0
13-Q1	0.0
13-Q2	0.42
13-Q3	0.56
13-Q4	0.93
14-Q1	0.37
14-Q2	0.85
14-Q3	0.27

Changesets efficiency: barbican
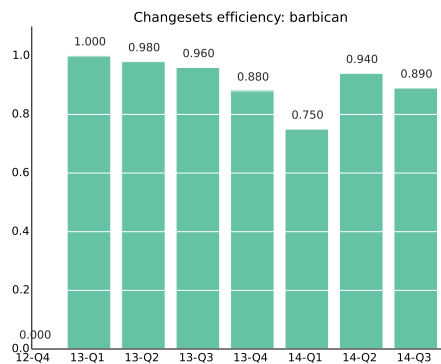
Period	Closed/Opened
12-Q4	0.0
13-Q1	1.0
13-Q2	0.98
13-Q3	0.96
13-Q4	0.88
14-Q1	0.75
14-Q2	0.94
14-Q3	0.89

Time to merge (days): barbican
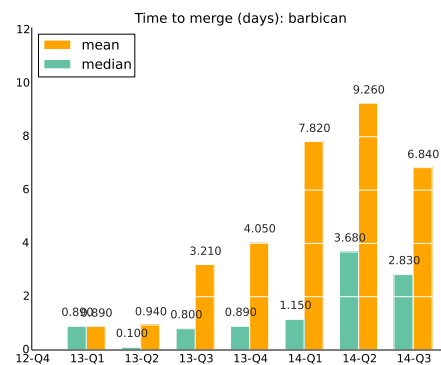
Period	Median	Mean
12-Q4	nan	nan
13-Q1	0.89	0.89
13-Q2	0.1	0.94
13-Q3	0.8	3.21
13-Q4	0.89	4.05
14-Q1	1.15	7.82
14-Q2	3.68	9.26
14-Q3	2.83	6.84

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Patchsets per Changeset: barbican
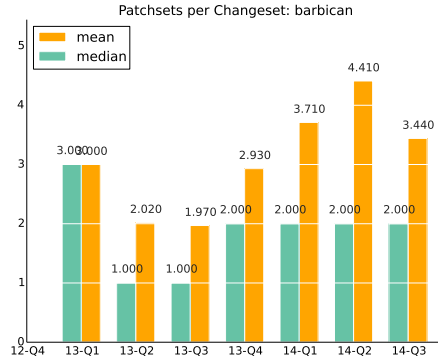
Period	Median	Mean
12-Q4	nan	nan
13-Q1	3.0	3.0
13-Q2	1.0	2.02
13-Q3	1.0	1.97
13-Q4	2.0	2.93
14-Q1	2.0	3.71
14-Q2	2.0	4.41
14-Q3	2.0	3.44

Time waiting for the reviewer: barbican
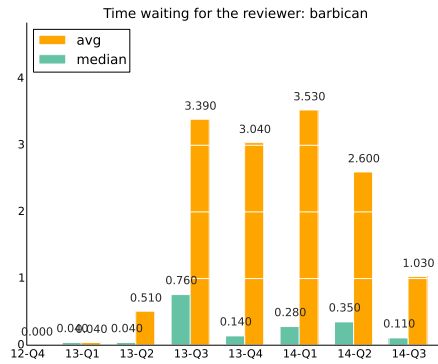
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.04	0.04
13-Q2	0.04	0.51
13-Q3	0.76	3.39
13-Q4	0.14	3.04
14-Q1	0.28	3.53
14-Q2	0.35	2.6
14-Q3	0.11	1.03

Time waiting for the submitter: barbican
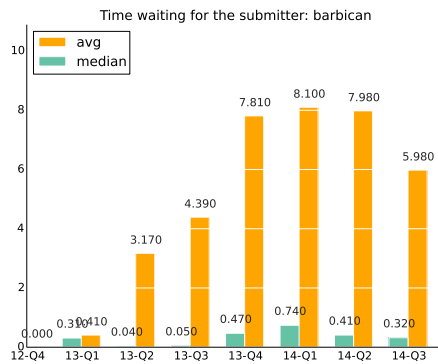
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.31	0.41
13-Q2	0.04	3.17
13-Q3	0.05	4.39
13-Q4	0.47	7.81
14-Q1	0.74	8.1
14-Q2	0.41	7.98
14-Q3	0.32	5.98

2.1.2.2 Designate

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: designate
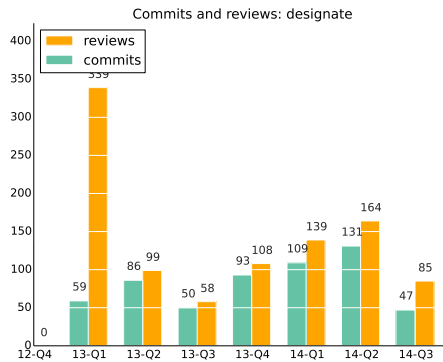
Period	Commits	Reviews
12-Q4	136	0
13-Q1	59	339
13-Q2	86	99
13-Q3	50	58
13-Q4	93	108
14-Q1	109	139
14-Q2	131	164
14-Q3	47	85

Opened and closed tickets: designate
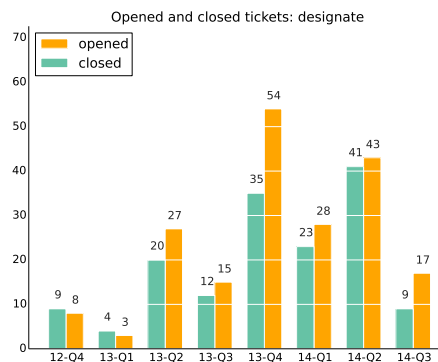
Period	Closed	Opened
12-Q4	9	8
13-Q1	4	3
13-Q2	20	27
13-Q3	12	15
13-Q4	35	54
14-Q1	23	28
14-Q2	41	43
14-Q3	9	17

Merged and abandoned reviews: designate
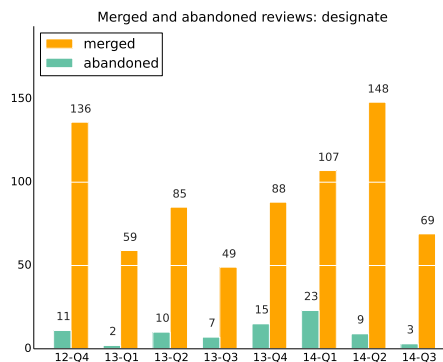
Period	Merged	Abandoned
12-Q4	136	11
13-Q1	59	2
13-Q2	85	10
13-Q3	49	7
13-Q4	88	15
14-Q1	107	23
14-Q2	148	9
14-Q3	69	3

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: designate
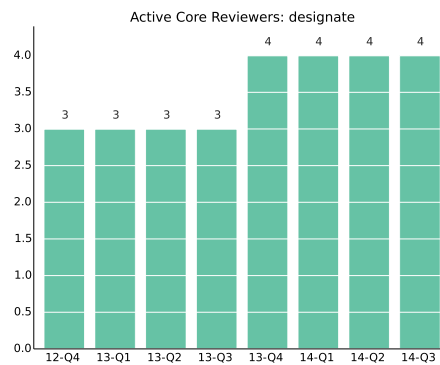
Period	Active Core
12-Q4	3
13-Q1	3
13-Q2	3
13-Q3	3
13-Q4	4
14-Q1	4
14-Q2	4
14-Q3	4

Authors designate
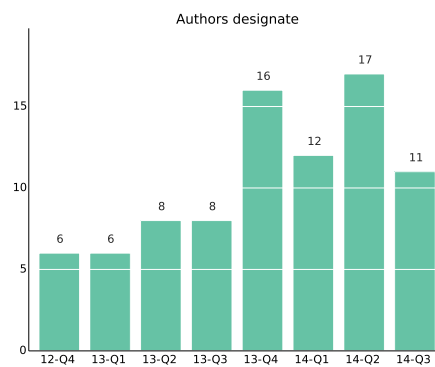
Period	Authors
12-Q4	6
13-Q1	6
13-Q2	8
13-Q3	8
13-Q4	16
14-Q1	12
14-Q2	17
14-Q3	11

Commit (s)	Author
19	Kiall Mac Innes
7	Endre Karlson
4	Betsy Luzader
4	Boris Pavlovic
4	rjrjr
2	Graham Hayes
2	Tim Simmons
2	Vinod Mangalpally
1	Joe McBride
1	Sergey Skripnick

Commit (s)	Organizations
21	HP
8	Rackspace
5	Mirantis
4	eBay
1	OpenStack Foundation

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: designate
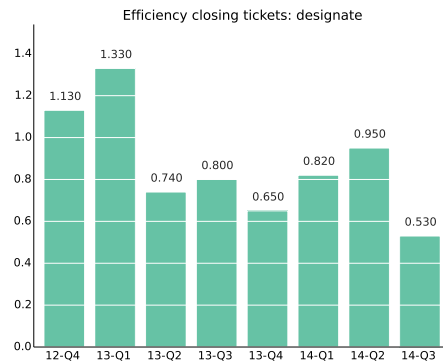
Period	Closed/Opened
12-Q4	1.13
13-Q1	1.33
13-Q2	0.74
13-Q3	0.8
13-Q4	0.65
14-Q1	0.82
14-Q2	0.95
14-Q3	0.53

Changesets efficiency: designate
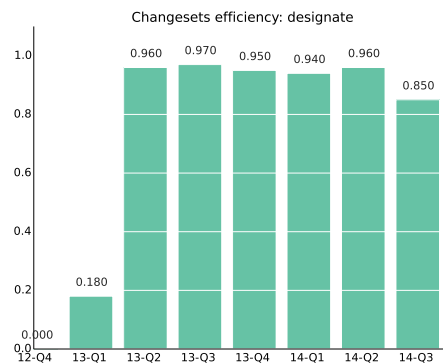
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.18
13-Q2	0.96
13-Q3	0.97
13-Q4	0.95
14-Q1	0.94
14-Q2	0.96
14-Q3	0.85

Time to merge (days): designate
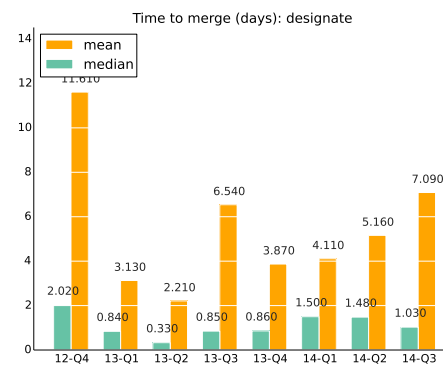
Period	Median	Mean
12-Q4	2.02	11.61
13-Q1	0.84	3.13
13-Q2	0.33	2.21
13-Q3	0.85	6.54
13-Q4	0.86	3.87
14-Q1	1.5	4.11
14-Q2	1.48	5.16
14-Q3	1.03	7.09

Patchsets per Changeset: designate
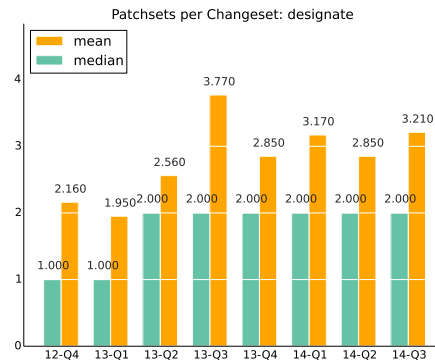
Period	Median	Mean
12-Q4	1.0	2.16
13-Q1	1.0	1.95
13-Q2	2.0	2.56
13-Q3	2.0	3.77
13-Q4	2.0	2.85
14-Q1	2.0	3.17
14-Q2	2.0	2.85
14-Q3	2.0	3.21

Time waiting for the reviewer: designate
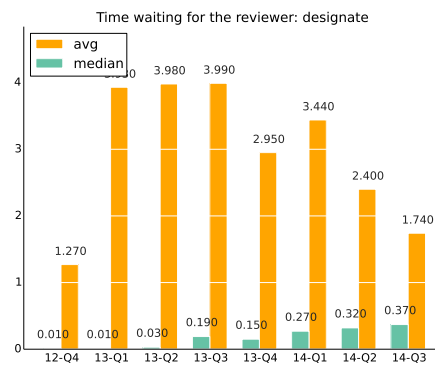
Period	Median	Mean
12-Q4	0.01	1.27
13-Q1	0.01	3.93
13-Q2	0.03	3.98
13-Q3	0.19	3.99
13-Q4	0.15	2.95
14-Q1	0.27	3.44
14-Q2	0.32	2.4
14-Q3	0.37	1.74

Time waiting for the submitter: designate
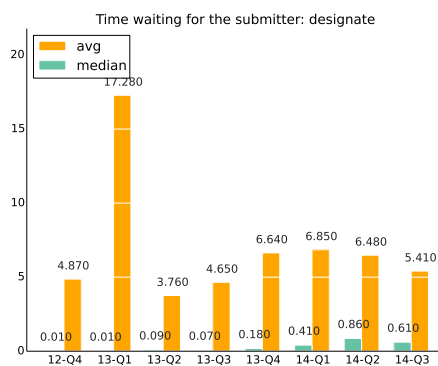
Period	Median	Mean
12-Q4	0.01	4.87
13-Q1	0.01	17.28
13-Q2	0.09	3.76
13-Q3	0.07	4.65
13-Q4	0.18	6.64
14-Q1	0.41	6.85
14-Q2	0.86	6.48
14-Q3	0.61	5.41

2.1.2.3 Ironic

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: ironic
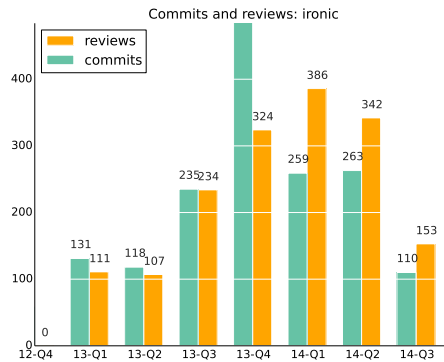
Period	Commits	Reviews
12-Q4	60	0
13-Q1	131	111
13-Q2	118	107
13-Q3	235	234
13-Q4	505	324
14-Q1	259	386
14-Q2	263	342
14-Q3	110	153

Opened and closed tickets: ironic
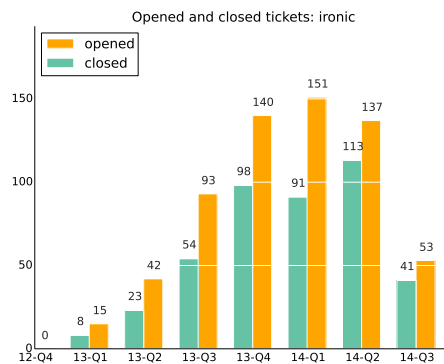
Period	Closed	Opened
12-Q4	0	0
13-Q1	8	15
13-Q2	23	42
13-Q3	54	93
13-Q4	98	140
14-Q1	91	151
14-Q2	113	137
14-Q3	41	53

Merged and abandoned reviews: ironic
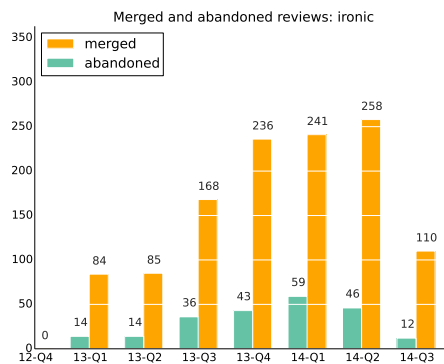
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	84	14
13-Q2	85	14
13-Q3	168	36
13-Q4	236	43
14-Q1	241	59
14-Q2	258	46
14-Q3	110	12

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: ironic
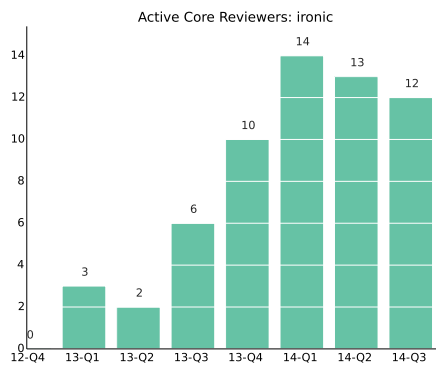
Period	Active Core
12-Q4	0
13-Q1	3
13-Q2	2
13-Q3	6
13-Q4	10
14-Q1	14
14-Q2	13
14-Q3	12

Authors ironic
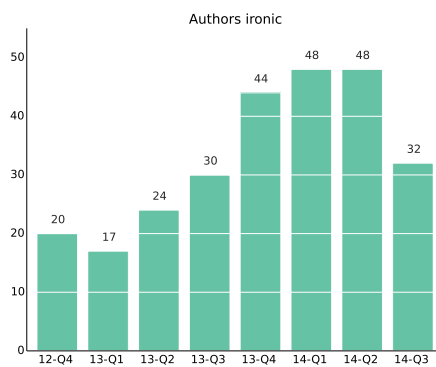
Period	Authors
12-Q4	20
13-Q1	17
13-Q2	24
13-Q3	30
13-Q4	44
14-Q1	48
14-Q2	48
14-Q3	32

Commit (s)	Author	Commit (s)	Organizations
15	Lucas Alvares Gomes	18	HP
14	Jim Rollenhagen	13	Mirantis
10	David Shrewsbury	9	Yahoo!
9	Ruby Loo	8	Rackspace
8	Vladyslav Drok	3	Red Hat
5	Devananda	2	Intel
5	Jay Faulkner	2	IzelTech
5	Yuriy Zveryanskyy	2	OpenStack Foundation
4	Tan Lin	1	Cisco Systems
3	Anusha Ramineni	1	iWeb Tech.

Process: Efficiency closing changesets and tickets, time to review (mean

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and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.
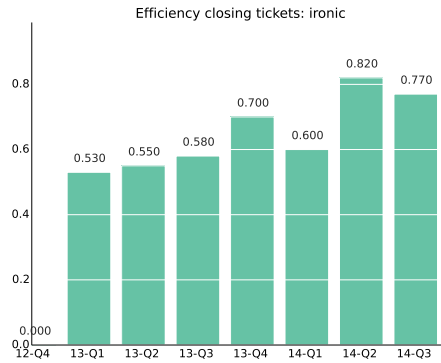
Period	Closed/Opened
12-Q4	0
13-Q1	0.53
13-Q2	0.55
13-Q3	0.58
13-Q4	0.7
14-Q1	0.6
14-Q2	0.82
14-Q3	0.77
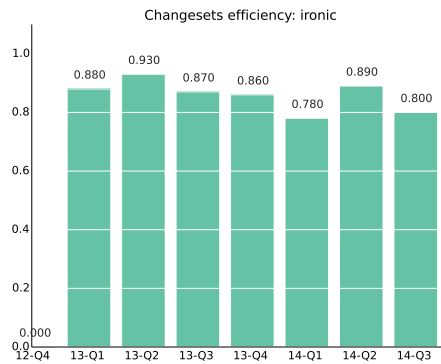
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.88
13-Q2	0.93
13-Q3	0.87
13-Q4	0.86
14-Q1	0.78
14-Q2	0.89
14-Q3	0.8
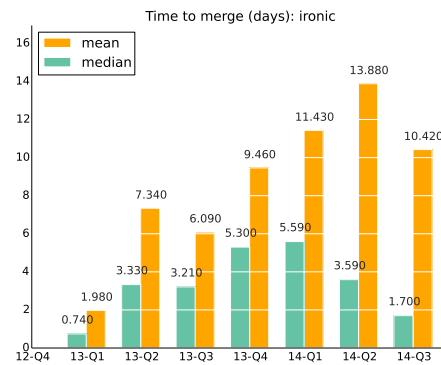
Period	Median	Mean
12-Q4	nan	nan
13-Q1	0.74	1.98
13-Q2	3.33	7.34
13-Q3	3.21	6.09
13-Q4	5.3	9.46
14-Q1	5.59	11.43
14-Q2	3.59	13.88
14-Q3	1.7	10.42

Patchsets per Changeset: ironic
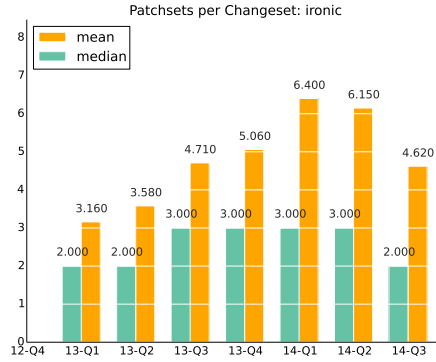
Period	Median	Mean
12-Q4	nan	nan
13-Q1	2.0	3.16
13-Q2	2.0	3.58
13-Q3	3.0	4.71
13-Q4	3.0	5.06
14-Q1	3.0	6.4
14-Q2	3.0	6.15
14-Q3	2.0	4.62

Time waiting for the reviewer: ironic
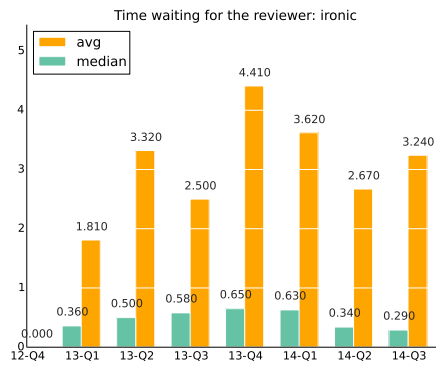
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.36	1.81
13-Q2	0.5	3.32
13-Q3	0.58	2.5
13-Q4	0.65	4.41
14-Q1	0.63	3.62
14-Q2	0.34	2.67
14-Q3	0.29	3.24

Time waiting for the submitter: ironic
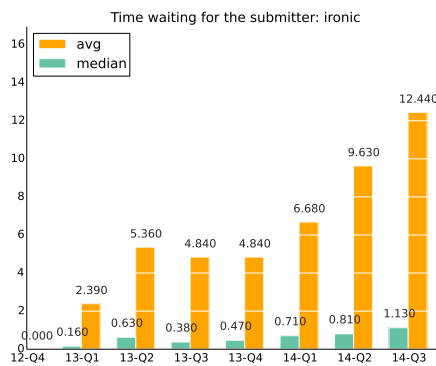
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.16	2.39
13-Q2	0.63	5.36
13-Q3	0.38	4.84
13-Q4	0.47	4.84
14-Q1	0.71	6.68
14-Q2	0.81	9.63
14-Q3	1.13	12.44

2.1.2.4 Manila

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: manila
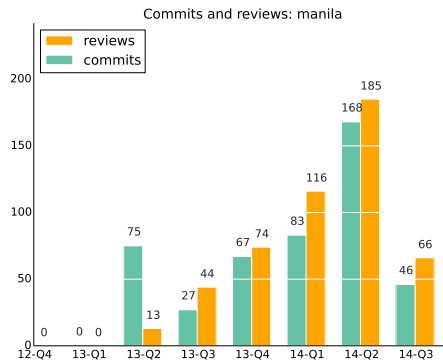
Period	Commits	Reviews
12-Q4	0	0
13-Q1	0	0
13-Q2	75	13
13-Q3	27	44
13-Q4	67	74
14-Q1	83	116
14-Q2	168	185
14-Q3	46	66

Opened and closed tickets: manila
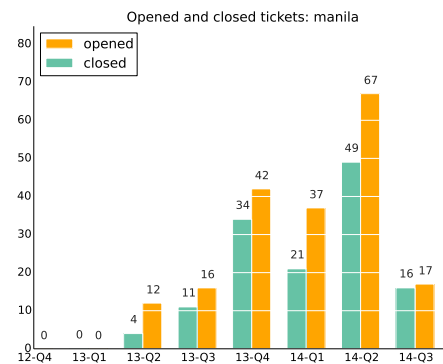
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	4	12
13-Q3	11	16
13-Q4	34	42
14-Q1	21	37
14-Q2	49	67
14-Q3	16	17

Merged and abandoned reviews: manila
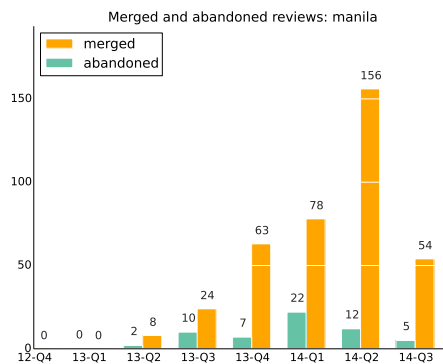
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	0	0
13-Q2	8	2
13-Q3	24	10
13-Q4	63	7
14-Q1	78	22
14-Q2	156	12
14-Q3	54	5

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
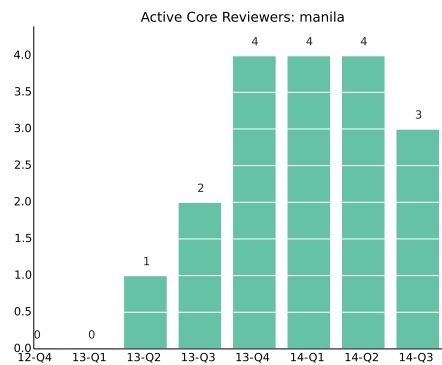
Period	Active Core
12-Q4	0
13-Q1	0
13-Q2	1
13-Q3	2
13-Q4	4
14-Q1	4
14-Q2	4
14-Q3	3
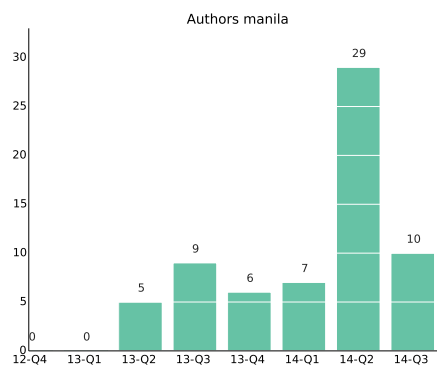
Period	Authors
12-Q4	0
13-Q1	0
13-Q2	5
13-Q3	9
13-Q4	6
14-Q1	7
14-Q2	29
14-Q3	10

Commit (s)	Author
17	Andreas Jaeger
13	Valeriy Ponomaryov
4	Vladimir Vechkanov
3	Julia Varlamova
3	Thomas Bechtold
2	Rushil Chugh
1	Christian Berendt
1	jason bishop
1	Marc Koderer
1	Nilesh Bhosale

Commit (s)	Organizations
20	Mirantis
17	SUSE
3	JPBerlin
2	NetApp
1	B1 Systems
1	Deutsche Telekom
1	IBM

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: manila
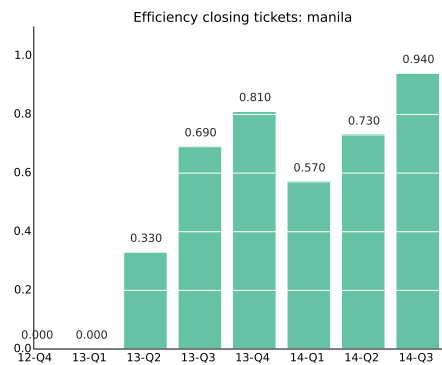
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0.33
13-Q3	0.69
13-Q4	0.81
14-Q1	0.57
14-Q2	0.73
14-Q3	0.94

Changesets efficiency: manila
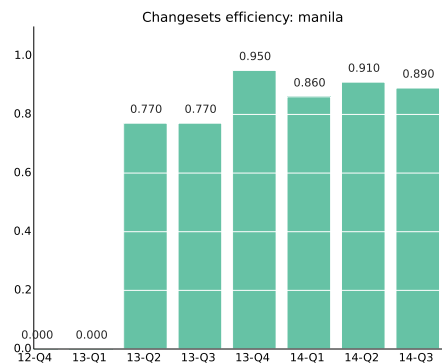
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.77
13-Q3	0.77
13-Q4	0.95
14-Q1	0.86
14-Q2	0.91
14-Q3	0.89

Time to merge (days): manila
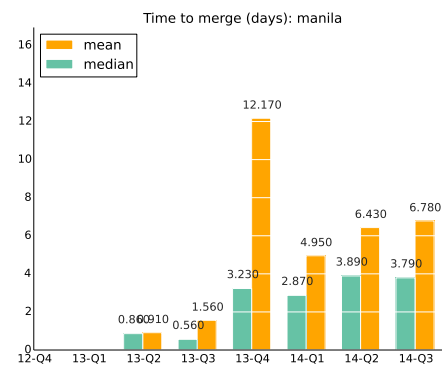
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	0.86	0.91
13-Q3	0.56	1.56
13-Q4	3.23	12.17
14-Q1	2.87	4.95
14-Q2	3.89	6.43
14-Q3	3.79	6.78

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Patchsets per Changeset: manila
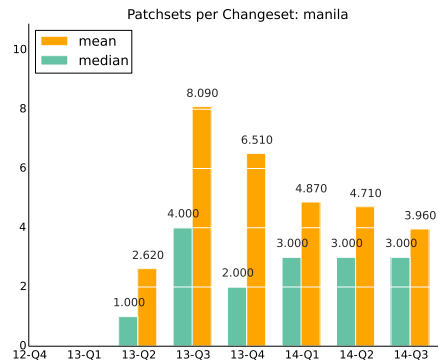
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	1.0	2.62
13-Q3	4.0	8.09
13-Q4	2.0	6.51
14-Q1	3.0	4.87
14-Q2	3.0	4.71
14-Q3	3.0	3.96

Time waiting for the reviewer: manila
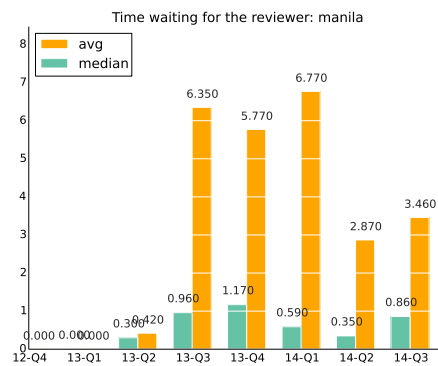
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.3	0.42
13-Q3	0.96	6.35
13-Q4	1.17	5.77
14-Q1	0.59	6.77
14-Q2	0.35	2.87
14-Q3	0.86	3.46

Time waiting for the submitter: manila
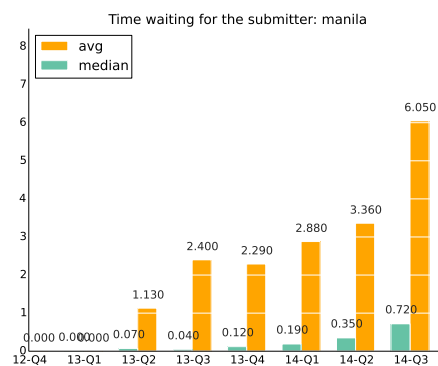
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.07	1.13
13-Q3	0.04	2.4
13-Q4	0.12	2.29
14-Q1	0.19	2.88
14-Q2	0.35	3.36
14-Q3	0.72	6.05

2.1.2.5 Zaqar

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: zaqar
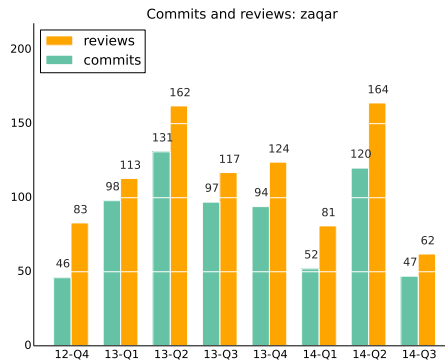
Period	Commits	Reviews
12-Q4	46	83
13-Q1	98	113
13-Q2	131	162
13-Q3	97	117
13-Q4	94	124
14-Q1	52	81
14-Q2	120	164
14-Q3	47	62

Opened and closed tickets: zaqar
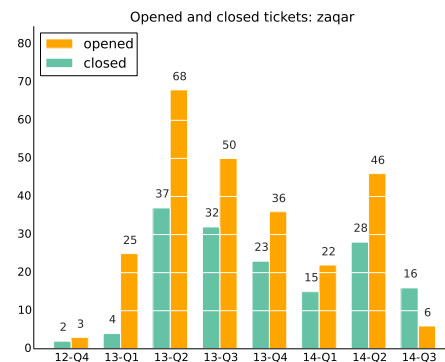
Period	Closed	Opened
12-Q4	2	3
13-Q1	4	25
13-Q2	37	68
13-Q3	32	50
13-Q4	23	36
14-Q1	15	22
14-Q2	28	46
14-Q3	16	6

Merged and abandoned reviews: zaqar
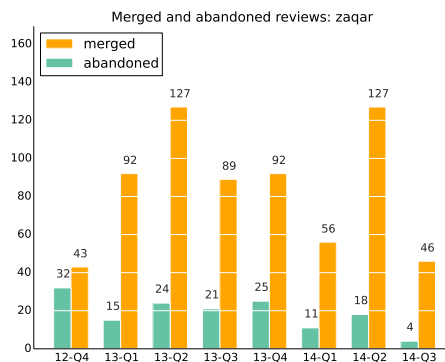
Period	Merged	Abandoned
12-Q4	43	32
13-Q1	92	15
13-Q2	127	24
13-Q3	89	21
13-Q4	92	25
14-Q1	56	11
14-Q2	127	18
14-Q3	46	4

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
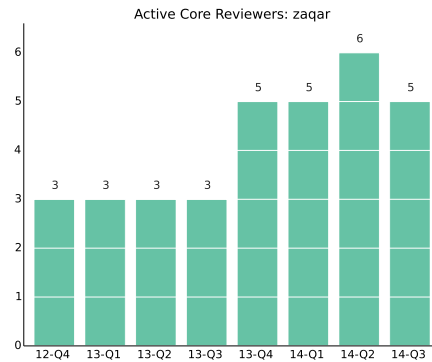
Period	Active Core
12-Q4	3
13-Q1	3
13-Q2	3
13-Q3	3
13-Q4	5
14-Q1	5
14-Q2	6
14-Q3	5
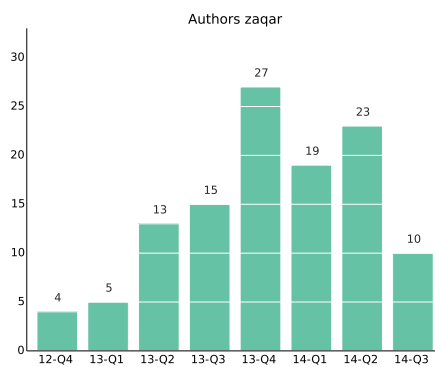
Period	Authors
12-Q4	4
13-Q1	5
13-Q2	13
13-Q3	15
13-Q4	27
14-Q1	19
14-Q2	23
14-Q3	10

Commit (s)	Author
22	Flavio Percoco
14	Lei Zhang
2	Boris Pavlovic
2	Kurt Griffiths
2	Prashanth Raghu
1	Abhishek Chanda
1	Andreas Jaeger
1	Louis Taylor
1	pengfei wang
1	Thierry Carrez

Commit (s)	Organizations
22	Red Hat
2	Mirantis
2	Rackspace
1	Cloudscaling
1	OpenStack Foundation
1	SUSE

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: zaqar
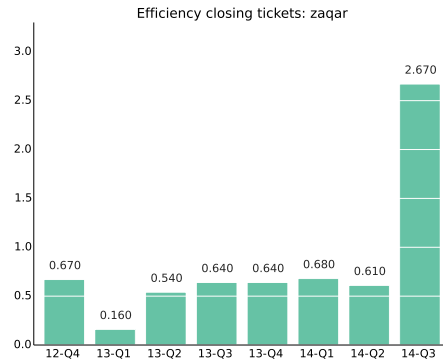
Period	Closed/Opened
12-Q4	0.67
13-Q1	0.16
13-Q2	0.54
13-Q3	0.64
13-Q4	0.64
14-Q1	0.68
14-Q2	0.61
14-Q3	2.67

Changesets efficiency: zaqar
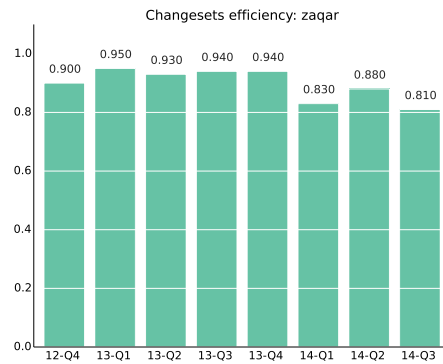
Period	Closed/Opened
12-Q4	0.9
13-Q1	0.95
13-Q2	0.93
13-Q3	0.94
13-Q4	0.94
14-Q1	0.83
14-Q2	0.88
14-Q3	0.81

Time to merge (days): zaqar
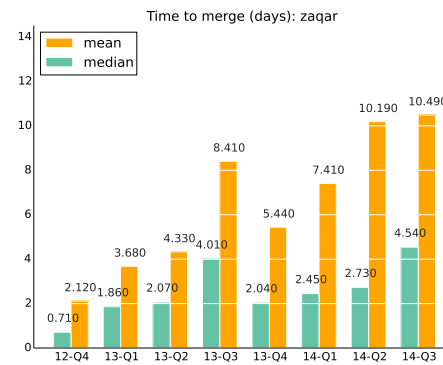
Period	Median	Mean
12-Q4	0.71	2.12
13-Q1	1.86	3.68
13-Q2	2.07	4.33
13-Q3	4.01	8.41
13-Q4	2.04	5.44
14-Q1	2.45	7.41
14-Q2	2.73	10.19
14-Q3	4.54	10.49

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Bitergia
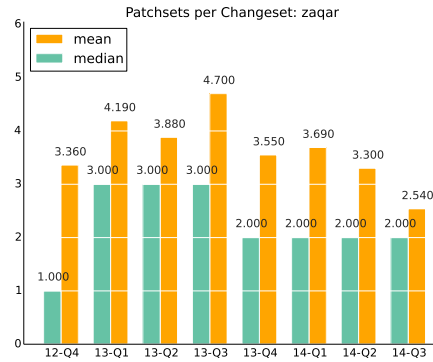
Period	Median	Mean
12-Q4	1.0	3.36
13-Q1	3.0	4.19
13-Q2	3.0	3.88
13-Q3	3.0	4.7
13-Q4	2.0	3.55
14-Q1	2.0	3.69
14-Q2	2.0	3.3
14-Q3	2.0	2.54
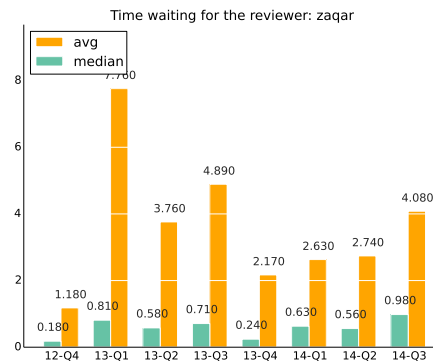
Period	Median	Mean
12-Q4	0.18	1.18
13-Q1	0.81	7.76
13-Q2	0.58	3.76
13-Q3	0.71	4.89
13-Q4	0.24	2.17
14-Q1	0.63	2.63
14-Q2	0.56	2.74
14-Q3	0.98	4.08
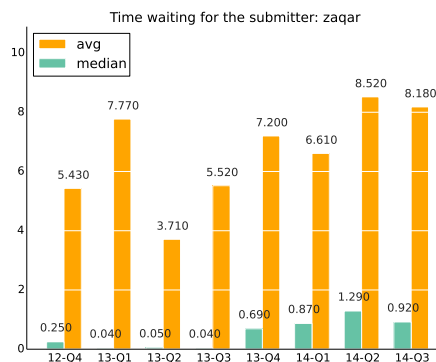
Period	Median	Mean
12-Q4	0.25	5.43
13-Q1	0.04	7.77
13-Q2	0.05	3.71
13-Q3	0.04	5.52
13-Q4	0.69	7.2
14-Q1	0.87	6.61
14-Q2	1.29	8.52
14-Q3	0.92	8.18

2.1.3 Clients

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
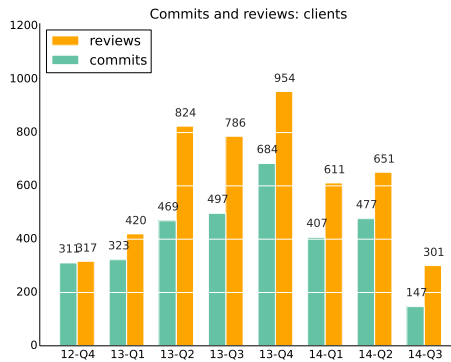
Period	Commits	Reviews
12-Q4	311	317
13-Q1	323	420
13-Q2	469	824
13-Q3	497	786
13-Q4	684	954
14-Q1	407	611
14-Q2	477	651
14-Q3	147	301
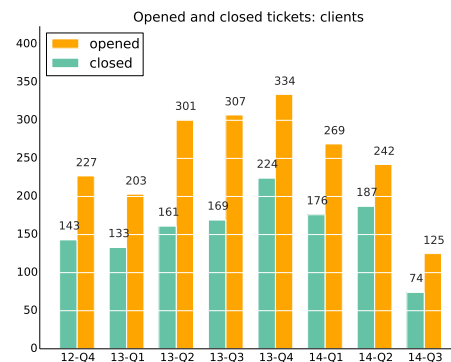
Period	Closed	Opened
12-Q4	143	227
13-Q1	133	203
13-Q2	161	301
13-Q3	169	307
13-Q4	224	334
14-Q1	176	269
14-Q2	187	242
14-Q3	74	125
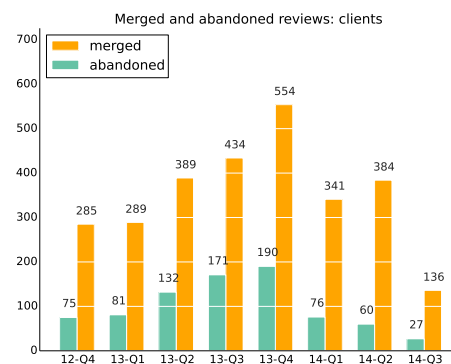
Period	Merged	Abandoned
12-Q4	285	75
13-Q1	289	81
13-Q2	389	132
13-Q3	434	171
13-Q4	554	190
14-Q1	341	76
14-Q2	384	60
14-Q3	136	27

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: clients
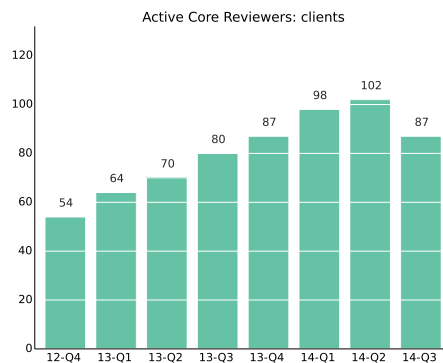
Period	Active Core
12-Q4	54
13-Q1	64
13-Q2	70
13-Q3	80
13-Q4	87
14-Q1	98
14-Q2	102
14-Q3	87

Authors clients

Period	Authors
12-Q4	120
13-Q1	114
13-Q2	167
13-Q3	151
13-Q4	192
14-Q1	136
14-Q2	179
14-Q3	87

Commit (s)	Author	Commit (s)	Organizations
10	Brant Knudson	24	Mirantis
7	Andrey Kurilin	19	Red Hat
5	Flavio Percoco	16	HP
4	Alistair Coles	16	IBM
4	Daniel Wakefield	7	NEC
4	Eugeniya Kudryashova	4	Huawei
4	Tetyana Lashchova	3	Rackspace
4	ZhiQiang Fan	3	StackOps
3	cedric.brandily	2	B1 Systems
3	Jaume Devesa	2	CERN

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: clients

He was an Austrian physicist famous for his founding contributions in the fields of statistical mechanics and statistical thermodynamics. He was one of the most important advocates for atomic theory at a time when that scientific model was still highly controversial.

Changesets efficiency: clients

Period	Closed/Opened
12-Q4	1.14
13-Q1	0.88
13-Q2	0.63
13-Q3	0.77
13-Q4	0.78
14-Q1	0.68
14-Q2	0.68
14-Q3	0.54

Time to merge (days): clients
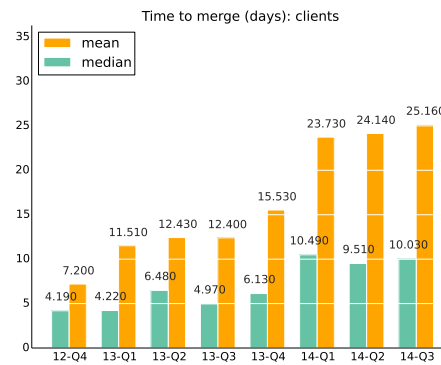
Period	Median	Mean
12-Q4	4.19	7.2
13-Q1	4.22	11.51
13-Q2	6.48	12.43
13-Q3	4.97	12.4
13-Q4	6.13	15.53
14-Q1	10.49	23.73
14-Q2	9.51	24.14
14-Q3	10.03	25.16

Patchsets per Changeset: clients
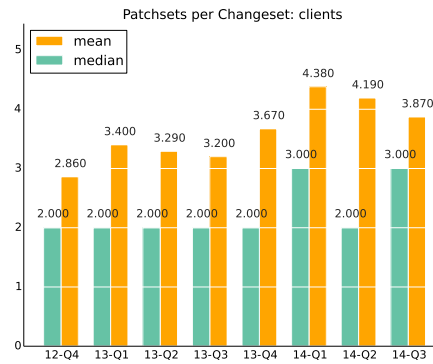
Period	Median	Mean
12-Q4	2.0	2.86
13-Q1	2.0	3.4
13-Q2	2.0	3.29
13-Q3	2.0	3.2
13-Q4	2.0	3.67
14-Q1	3.0	4.38
14-Q2	2.0	4.19
14-Q3	3.0	3.87

Time waiting for the reviewer: clients
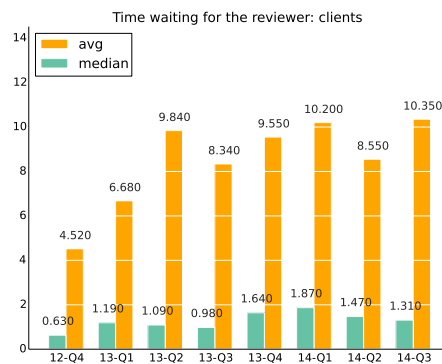
Period	Median	Mean
12-Q4	0.63	4.52
13-Q1	1.19	6.68
13-Q2	1.09	9.84
13-Q3	0.98	8.34
13-Q4	1.64	9.55
14-Q1	1.87	10.2
14-Q2	1.47	8.55
14-Q3	1.31	10.35

Time waiting for the submitter: clients
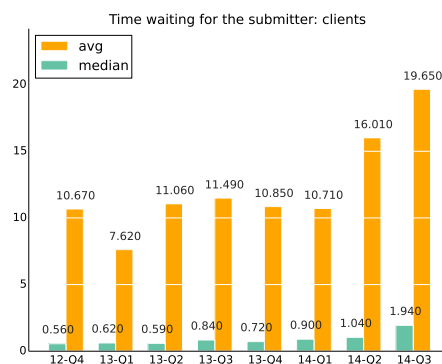
Period	Median	Mean
12-Q4	0.56	10.67
13-Q1	0.62	7.62
13-Q2	0.59	11.06
13-Q3	0.84	11.49
13-Q4	0.72	10.85
14-Q1	0.9	10.71
14-Q2	1.04	16.01
14-Q3	1.94	19.65

2.1.4 Others

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: others
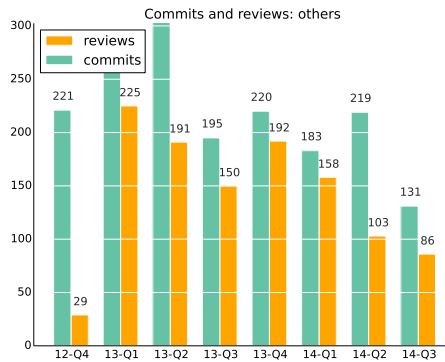
Period	Commits	Reviews
12-Q4	221	29
13-Q1	267	225
13-Q2	470	191
13-Q3	195	150
13-Q4	220	192
14-Q1	183	158
14-Q2	219	103
14-Q3	131	86

Opened and closed tickets: others
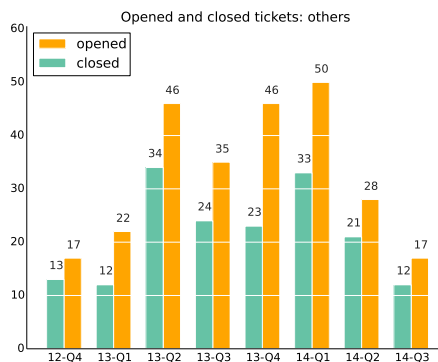
Period	Closed	Opened
12-Q4	13	17
13-Q1	12	22
13-Q2	34	46
13-Q3	24	35
13-Q4	23	46
14-Q1	33	50
14-Q2	21	28
14-Q3	12	17

Merged and abandoned reviews: others
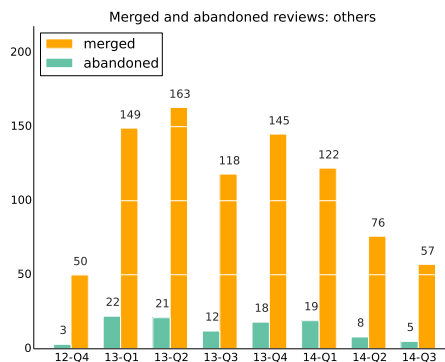
Period	Merged	Abandoned
12-Q4	50	3
13-Q1	149	22
13-Q2	163	21
13-Q3	118	12
13-Q4	145	18
14-Q1	122	19
14-Q2	76	8
14-Q3	57	5

Community: Authors per quarter and top authors and organizations in the last quarter

Active Core Reviewers: others
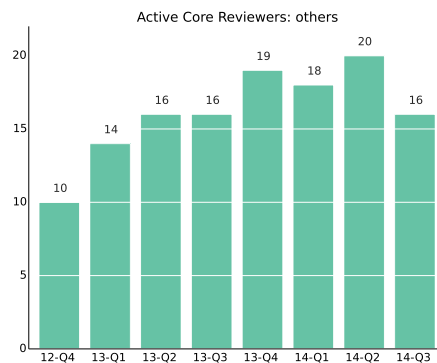
Period	Active Core
12-Q4	10
13-Q1	14
13-Q2	16
13-Q3	16
13-Q4	19
14-Q1	18
14-Q2	20
14-Q3	16

Authors others
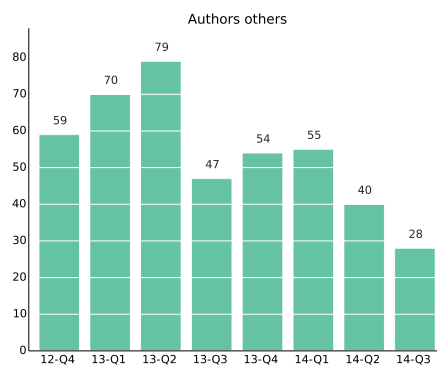
Period	Authors
12-Q4	59
13-Q1	70
13-Q2	79
13-Q3	47
13-Q4	54
14-Q1	55
14-Q2	40
14-Q3	28

Commit (s)	Author	Commit (s)	Organizations
22	Ana Krivokapic	88	Red Hat
20	Ladislav Smola	23	Mirantis
17	Radomir Dopieralski	6	HP
12	Tzu-Mainn Chen	3	eBay
7	Lennart Regebro	3	UFCG
7	Sergey Lukjanov	2	NEC
6	Jiri Tomasek	2	SwiftStack
6	Nikhil Manchanda	1	JPBerlin
6	Sergey Reshetnyak		
4	Vadim Rovachev		

Process: Efficiency closing issues and time to review: mean and median

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Efficiency closing tickets: others
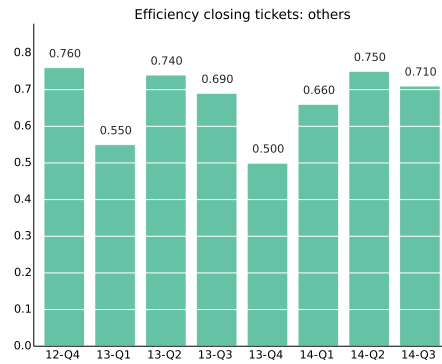
Period	Closed/Opened
12-Q4	0.76
13-Q1	0.55
13-Q2	0.74
13-Q3	0.69
13-Q4	0.5
14-Q1	0.66
14-Q2	0.75
14-Q3	0.71

Changesets efficiency: others
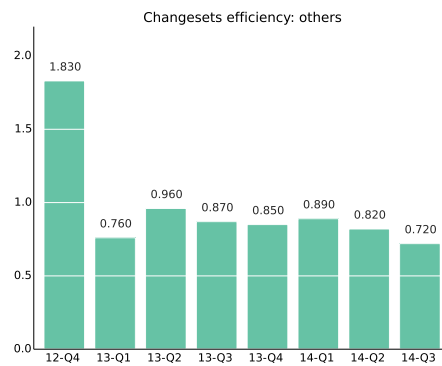
Period	Closed/Opened
12-Q4	1.83
13-Q1	0.76
13-Q2	0.96
13-Q3	0.87
13-Q4	0.85
14-Q1	0.89
14-Q2	0.82
14-Q3	0.72

Time to merge (days): others
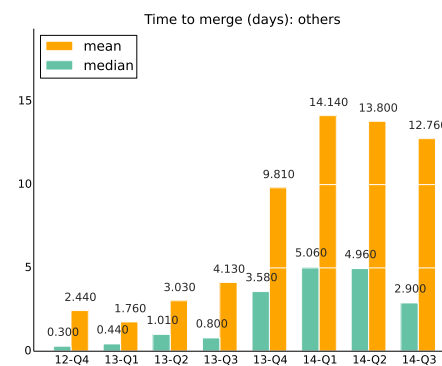
Period	Median	Mean
12-Q4	0.3	2.44
13-Q1	0.44	1.76
13-Q2	1.01	3.03
13-Q3	0.8	4.13
13-Q4	3.58	9.81
14-Q1	5.06	14.14
14-Q2	4.96	13.8
14-Q3	2.9	12.76

Bitergia

Patchsets per Changeset: others
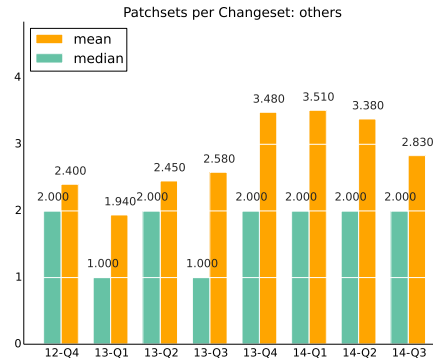
Period	Median	Mean
12-Q4	2.0	2.4
13-Q1	1.0	1.94
13-Q2	2.0	2.45
13-Q3	1.0	2.58
13-Q4	2.0	3.48
14-Q1	2.0	3.51
14-Q2	2.0	3.38
14-Q3	2.0	2.83

Time waiting for the reviewer: others
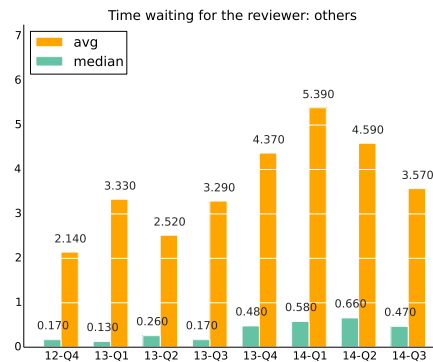
Period	Median	Mean
12-Q4	0.17	2.14
13-Q1	0.13	3.33
13-Q2	0.26	2.52
13-Q3	0.17	3.29
13-Q4	0.48	4.37
14-Q1	0.58	5.39
14-Q2	0.66	4.59
14-Q3	0.47	3.57

Time waiting for the submitter: others
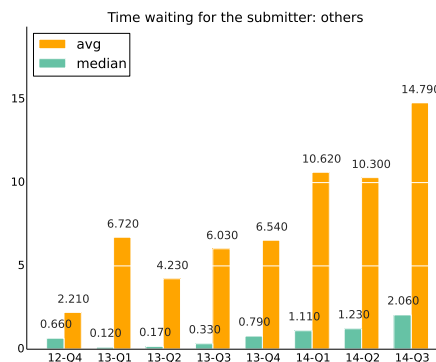
| Period	Median	Mean
12-Q4	0.66	2.21
13-Q1	0.12	6.72
13-Q2	0.17	4.23
13-Q3	0.33	6.03
13-Q4	0.79	6.54
14-Q1	1.11	10.62
14-Q2	1.23	10.3
14-Q3	2.06	14.79

2.2 Common Libraries

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: Common Libraries
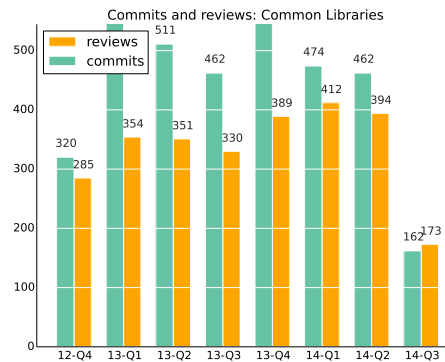
Period	Commits	Reviews
12-Q4	320	285
13-Q1	591	354
13-Q2	511	351
13-Q3	462	330
13-Q4	627	389
14-Q1	474	412
14-Q2	462	394
14-Q3	162	173

Opened and closed tickets: Common Libraries
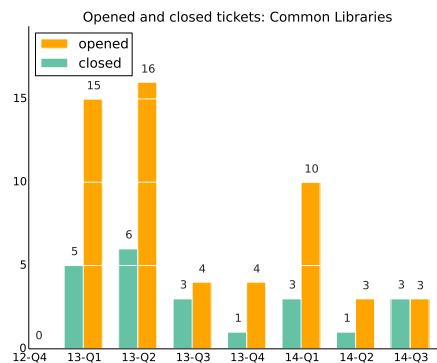
Period	Closed	Opened
12-Q4	0	0
13-Q1	5	15
13-Q2	6	16
13-Q3	3	4
13-Q4	1	4
14-Q1	3	10
14-Q2	1	3
14-Q3	3	3

Merged and abandoned reviews: Common Libraries
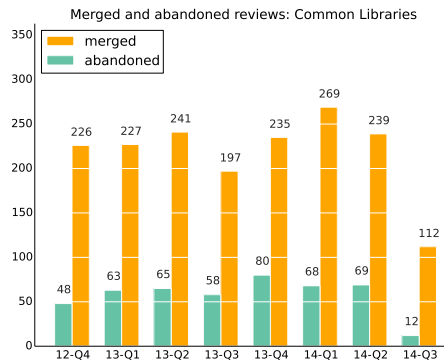
Period	Merged	Abandoned
12-Q4	226	48
13-Q1	227	63
13-Q2	241	65
13-Q3	197	58
13-Q4	235	80
14-Q1	269	68
14-Q2	239	69
14-Q3	112	12

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Common Libraries
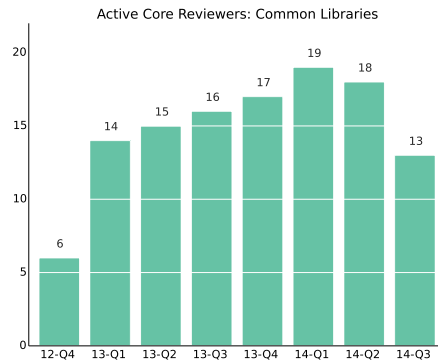
Period	Active Core
12-Q4	6
13-Q1	14
13-Q2	15
13-Q3	16
13-Q4	17
14-Q1	19
14-Q2	18
14-Q3	13

Authors Common Libraries
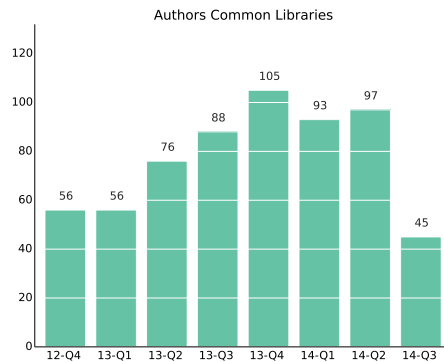
Period	Authors
12-Q4	56
13-Q1	56
13-Q2	76
13-Q3	88
13-Q4	105
14-Q1	93
14-Q2	97
14-Q3	45

Commit (s)	Author
29	Joshua Harlow
26	Doug Hellmann
14	Davanum Srinivas
8	Ihar Hrachyshka
7	James Carey
7	Mehdi Abaakouk
7	Steve Martinelli
6	Amaury Medeiros
5	Roman Podolyaka
4	Julien Danjou

Commit (s)	Organizations
33	Red Hat
30	IBM
29	Yahoo!
26	DreamHost
12	Mirantis
9	VMware
5	HP
3	B1 Systems
1	Canonical
1	Cloudscaling

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Common Libraries
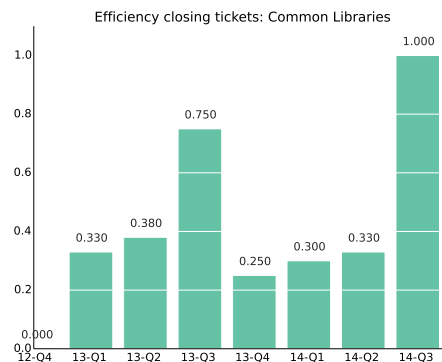
Period	Closed/Opened
12-Q4	0
13-Q1	0.33
13-Q2	0.38
13-Q3	0.75
13-Q4	0.25
14-Q1	0.3
14-Q2	0.33
14-Q3	1.0

Changesets efficiency: Common Libraries
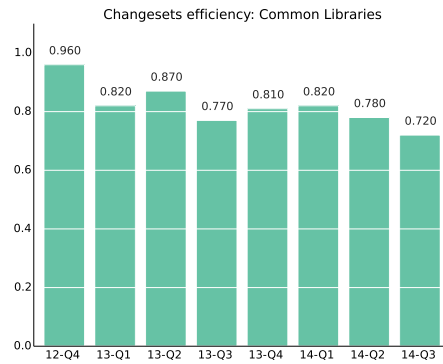
Period	Closed/Opened
12-Q4	0.96
13-Q1	0.82
13-Q2	0.87
13-Q3	0.77
13-Q4	0.81
14-Q1	0.82
14-Q2	0.78
14-Q3	0.72

Time to merge (days): Common Libraries
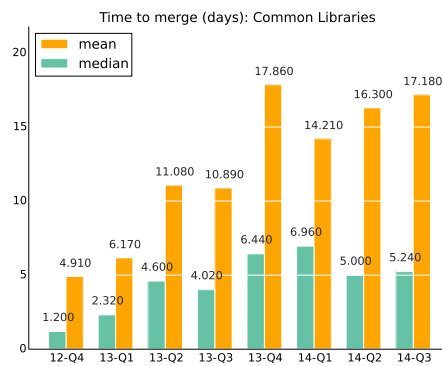
Period	Median	Mean
12-Q4	1.2	4.91
13-Q1	2.32	6.17
13-Q2	4.6	11.08
13-Q3	4.02	10.89
13-Q4	6.44	17.86
14-Q1	6.96	14.21
14-Q2	5.0	16.3
14-Q3	5.24	17.18

Patchsets per Changeset: Common Libraries
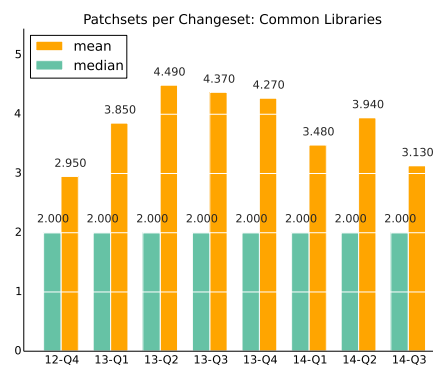
Period	Median	Mean
12-Q4	2.0	2.95
13-Q1	2.0	3.85
13-Q2	2.0	4.49
13-Q3	2.0	4.37
13-Q4	2.0	4.27
14-Q1	2.0	3.48
14-Q2	2.0	3.94
14-Q3	2.0	3.13

Time waiting for the reviewer: Common Libraries
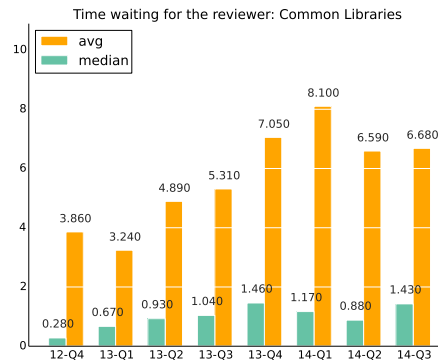
Period	Median	Mean
12-Q4	0.28	3.86
13-Q1	0.67	3.24
13-Q2	0.93	4.89
13-Q3	1.04	5.31
13-Q4	1.46	7.05
14-Q1	1.17	8.1
14-Q2	0.88	6.59
14-Q3	1.43	6.68

Time waiting for the submitter: Common Libraries
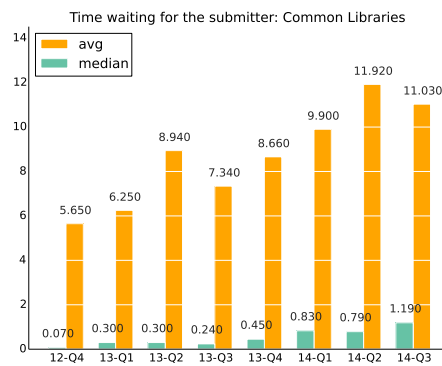
Period	Median	Mean
12-Q4	0.07	5.65
13-Q1	0.3	6.25
13-Q2	0.3	8.94
13-Q3	0.24	7.34
13-Q4	0.45	8.66
14-Q1	0.83	9.9
14-Q2	0.79	11.92
14-Q3	1.19	11.03

2.3 Deployment

Time to review activity is not available for this program.

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: Deployment
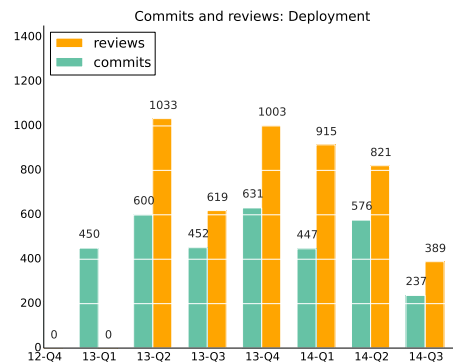
Period	Commits	Reviews
12-Q4	208	0
13-Q1	450	0
13-Q2	600	1033
13-Q3	452	619
13-Q4	631	1003
14-Q1	447	915
14-Q2	576	821
14-Q3	237	389

Opened and closed tickets: Deployment
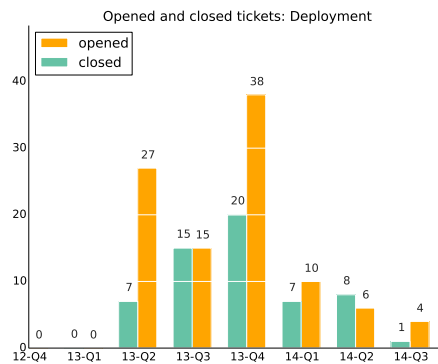
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	7	27
13-Q3	15	15
13-Q4	20	38
14-Q1	7	10
14-Q2	8	6
14-Q3	1	4

Merged and abandoned reviews: Deployment
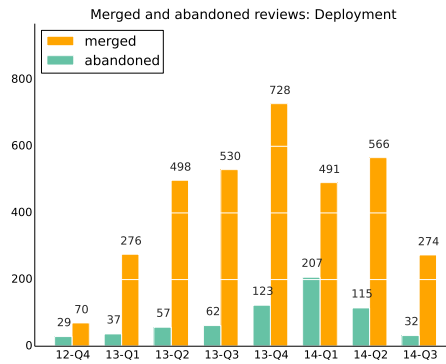
Period	Merged	Abandoned
12-Q4	70	29
13-Q1	276	37
13-Q2	498	57
13-Q3	530	62
13-Q4	728	123
14-Q1	491	207
14-Q2	566	115
14-Q3	274	32

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Deployment
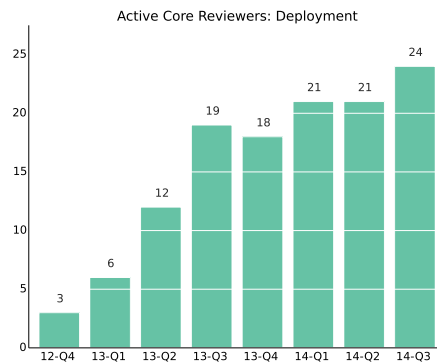
Period	Active Core
12-Q4	3
13-Q1	6
13-Q2	12
13-Q3	19
13-Q4	18
14-Q1	21
14-Q2	21
14-Q3	24

Authors Deployment
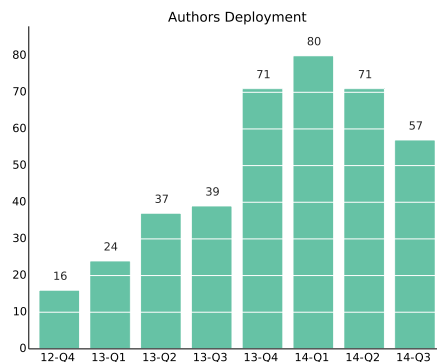
Period	Authors
12-Q4	16
13-Q1	24
13-Q2	37
13-Q3	39
13-Q4	71
14-Q1	80
14-Q2	71
14-Q3	57

Commit (s)	Author
25	Dan Prince
20	Dougal Matthews
20	Ryan Brady
15	Steve Kowalik
13	Gregory Haynes
10	Alexis Lee
10	James Polley
7	Derek Higgins
7	Richard Su
7	Therese McHale

Commit (s)	Organizations
121	Red Hat
67	HP
15	Canonical
1	Huawei
1	MIT
1	NEC
1	Reliance Jio Infocomm

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Deployment
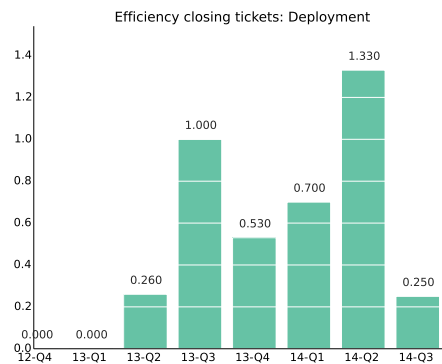
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0.26
13-Q3	1.0
13-Q4	0.53
14-Q1	0.7
14-Q2	1.33
14-Q3	0.25

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Changesets efficiency: Deployment
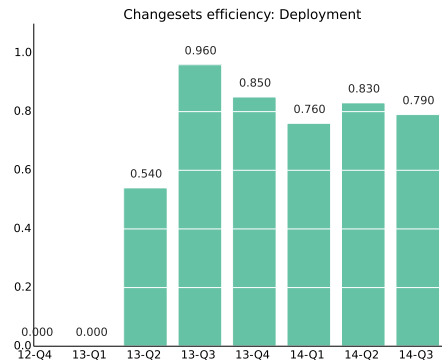
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.54
13-Q3	0.96
13-Q4	0.85
14-Q1	0.76
14-Q2	0.83
14-Q3	0.79

Patchsets per Changeset: Deployment
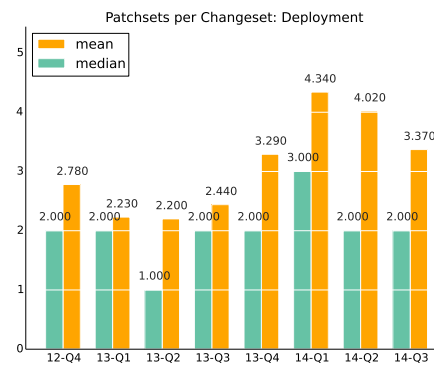
Period	Median	Mean
12-Q4	2.0	2.78
13-Q1	2.0	2.23
13-Q2	1.0	2.2
13-Q3	2.0	2.44
13-Q4	2.0	3.29
14-Q1	3.0	4.34
14-Q2	2.0	4.02
14-Q3	2.0	3.37

Time waiting for the reviewer: Deployment
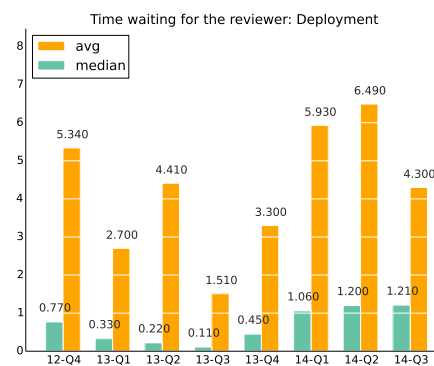
Period	Median	Mean
12-Q4	0.77	5.34
13-Q1	0.33	2.7
13-Q2	0.22	4.41
13-Q3	0.11	1.51
13-Q4	0.45	3.3
14-Q1	1.06	5.93
14-Q2	1.2	6.49
14-Q3	1.21	4.3

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Time waiting for the submitter: Deployment
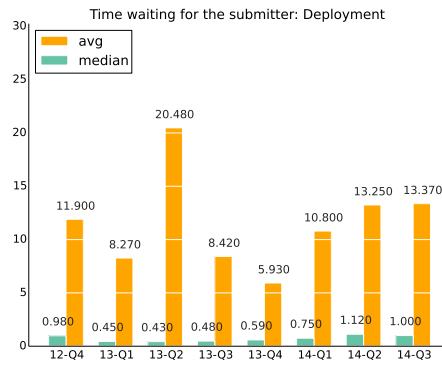
Period	Median	Mean
12-Q4	0.98	11.9
13-Q1	0.45	8.27
13-Q2	0.43	20.48
13-Q3	0.48	8.42
13-Q4	0.59	5.93
14-Q1	0.75	10.8
14-Q2	1.12	13.25
14-Q3	1.0	13.37

2.4 Devstack

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.


Commits and reviews: Devstack
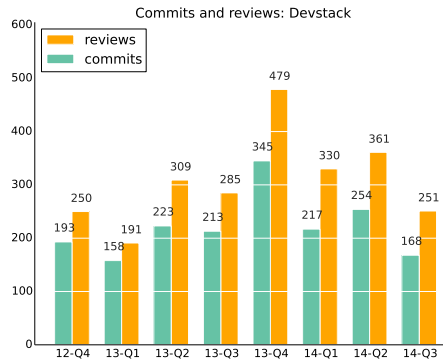
Period	Commits	Reviews
12-Q4	193	250
13-Q1	158	191
13-Q2	223	309
13-Q3	213	285
13-Q4	345	479
14-Q1	217	330
14-Q2	254	361
14-Q3	168	251

Opened and closed tickets: Devstack
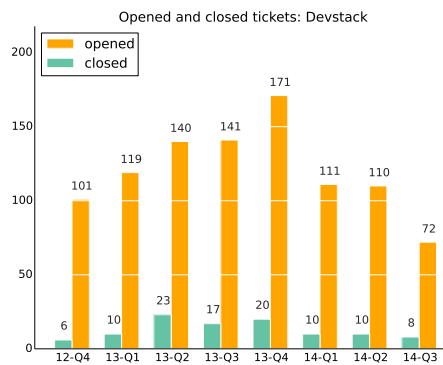
Period	Closed	Opened
12-Q4	6	101
13-Q1	10	119
13-Q2	23	140
13-Q3	17	141
13-Q4	20	171
14-Q1	10	111
14-Q2	10	110
14-Q3	8	72
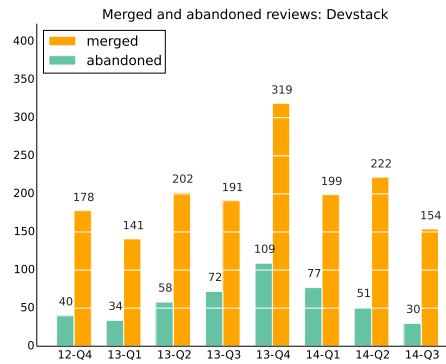
Period	Merged	Abandoned
12-Q4	178	40
13-Q1	141	34
13-Q2	202	58
13-Q3	191	72
13-Q4	319	109
14-Q1	199	77
14-Q2	222	51
14-Q3	154	30

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
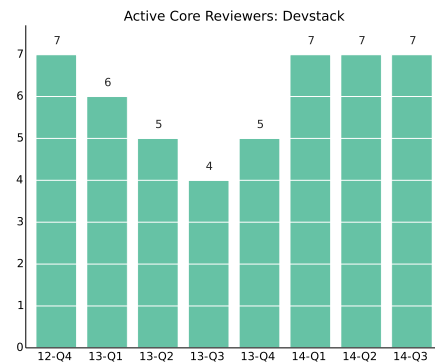
Period	Active Core
12-Q4	7
13-Q1	6
13-Q2	5
13-Q3	4
13-Q4	5
14-Q1	7
14-Q2	7
14-Q3	7
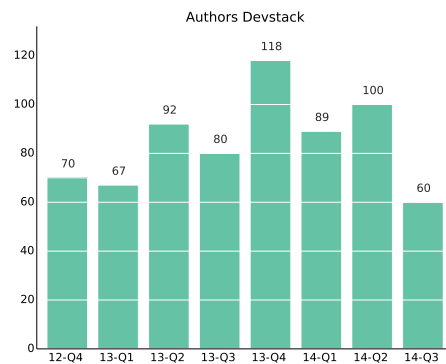
Period	Authors
12-Q4	70
13-Q1	67
13-Q2	92
13-Q3	80
13-Q4	118
14-Q1	89
14-Q2	100
14-Q3	60

Commit (s)	Author	Commit (s)	Organizations
20	Sean Dague	35	HP
13	Adam Gandelman	33	Red Hat
12	Dean Troyer	13	Canonical
8	Ian Wienand	12	IBM
8	YAMAMOTO Takashi	12	Nebula
7	Joe Gordon	8	VA Linux
7	Mate Lakat	7	Cisco Systems
6	Chris Dent	7	Citrix
4	Akihiro MOTOKI	5	NEC
4	Davanum Srinivas	4	Comcast

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.


Efficiency closing tickets: Devstack
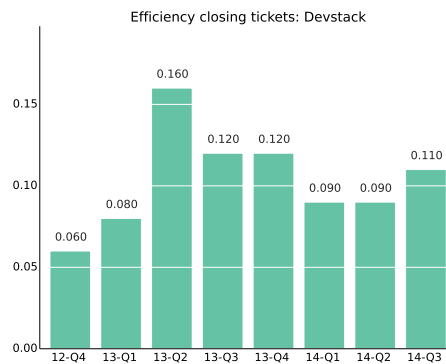
Period	Closed/Opened
12-Q4	0.06
13-Q1	0.08
13-Q2	0.16
13-Q3	0.12
13-Q4	0.12
14-Q1	0.09
14-Q2	0.09
14-Q3	0.11

Bitergia

Changesets efficiency: Devstack
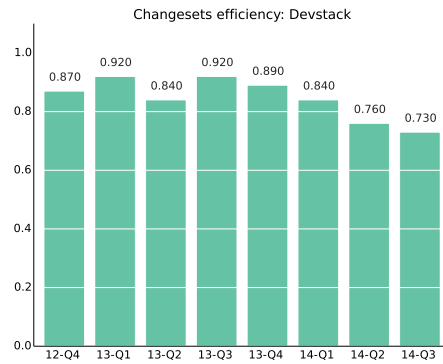
Period	Closed/Opened
12-Q4	0.87
13-Q1	0.92
13-Q2	0.84
13-Q3	0.92
13-Q4	0.89
14-Q1	0.84
14-Q2	0.76
14-Q3	0.73

Time to merge (days): Devstack
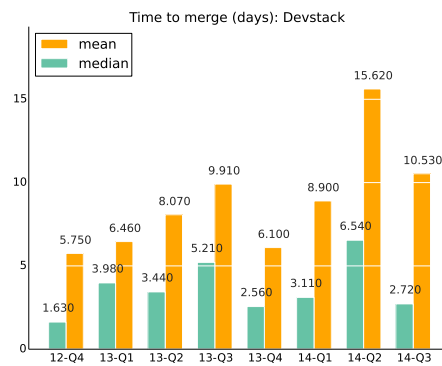
Period	Median	Mean
12-Q4	1.63	5.75
13-Q1	3.98	6.46
13-Q2	3.44	8.07
13-Q3	5.21	9.91
13-Q4	2.56	6.1
14-Q1	3.11	8.9
14-Q2	6.54	15.62
14-Q3	2.72	10.53

Patchsets per Changeset: Devstack
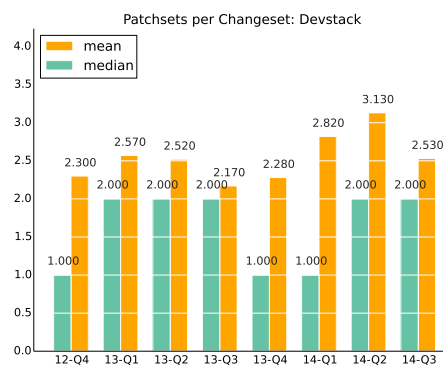
Period	Median	Mean
12-Q4	1.0	2.3
13-Q1	2.0	2.57
13-Q2	2.0	2.52
13-Q3	2.0	2.17
13-Q4	1.0	2.28
14-Q1	1.0	2.82
14-Q2	2.0	3.13
14-Q3	2.0	2.53

Time waiting for the reviewer: Devstack
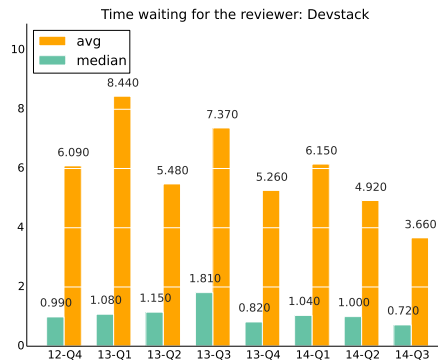
Period	Median	Mean
12-Q4	0.99	6.09
13-Q1	1.08	8.44
13-Q2	1.15	5.48
13-Q3	1.81	7.37
13-Q4	0.82	5.26
14-Q1	1.04	6.15
14-Q2	1.0	4.92
14-Q3	0.72	3.66

Time waiting for the submitter: Devstack
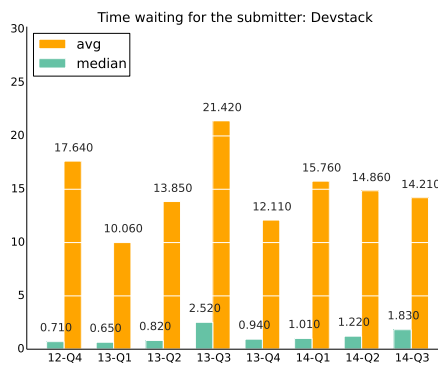
| Period	Median	Mean
12-Q4	0.71	17.64
13-Q1	0.65	10.06
13-Q2	0.82	13.85
13-Q3	2.52	21.42
13-Q4	0.94	12.11
14-Q1	1.01	15.76
14-Q2	1.22	14.86
14-Q3	1.83	14.21

2.5 Documentation

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
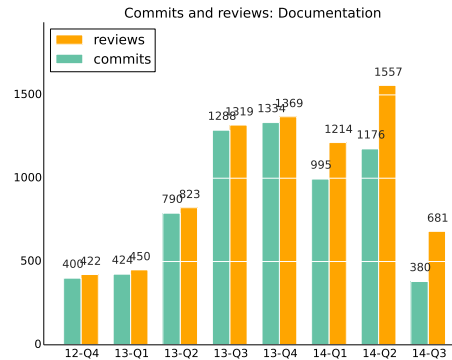
Period	Commits	Reviews
12-Q4	400	422
13-Q1	424	450
13-Q2	790	823
13-Q3	1288	1319
13-Q4	1334	1369
14-Q1	995	1214
14-Q2	1176	1557
14-Q3	380	681
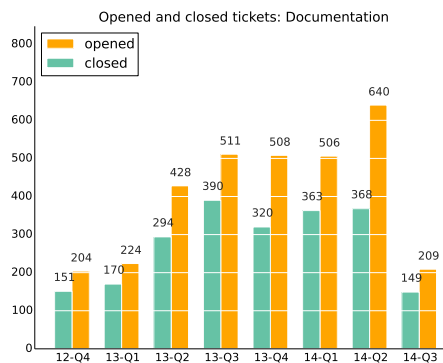
Period	Closed	Opened
12-Q4	151	204
13-Q1	170	224
13-Q2	294	428
13-Q3	390	511
13-Q4	320	508
14-Q1	363	506
14-Q2	368	640
14-Q3	149	209

Bitergia

Merged and abandoned reviews: Documentation
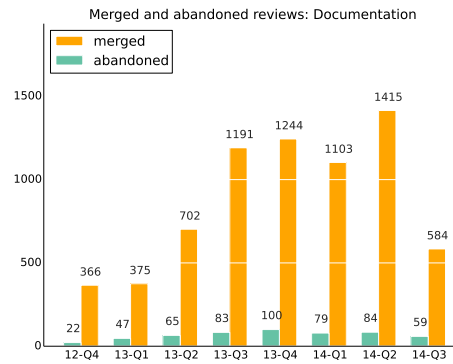
Period	Merged	Abandoned
12-Q4	366	22
13-Q1	375	47
13-Q2	702	65
13-Q3	1191	83
13-Q4	1244	100
14-Q1	1103	79
14-Q2	1415	84
14-Q3	584	59

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Documentation
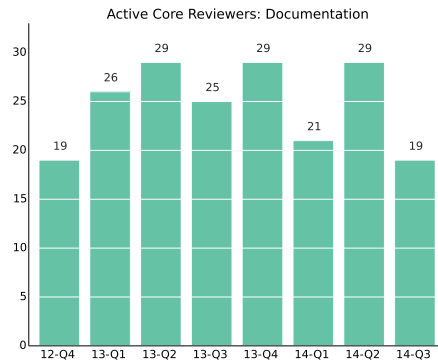
Period	Active Core
12-Q4	19
13-Q1	26
13-Q2	29
13-Q3	25
13-Q4	29
14-Q1	21
14-Q2	29
14-Q3	19

Authors Documentation
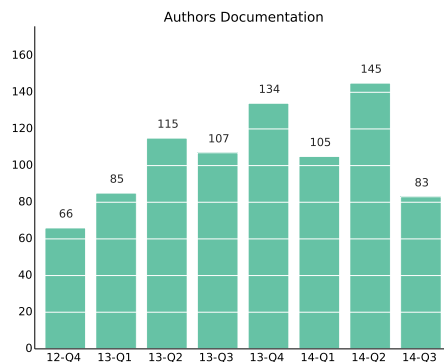
Period	Authors
12-Q4	66
13-Q1	85
13-Q2	115
13-Q3	107
13-Q4	134
14-Q1	105
14-Q2	145
14-Q3	83

Commit (s)	Author
51	Christian Berendt
37	Gauvain Pocentek
34	Matt Kassawara
30	Andreas Jaeger
27	Shilla Saebi
22	Roger Luethi
18	darrenchan
10	Tom Fifield
9	KATO Tomoyuki
9	Pranav Salunke

Commit (s)	Organizations
51	B1 Systems
37	Objectif-libre
30	SUSE
27	Comcast
27	Rackspace
16	Red Hat
11	OpenStack Foundation
10	Fujitsu
9	Aptira
6	Tesora

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Documentation
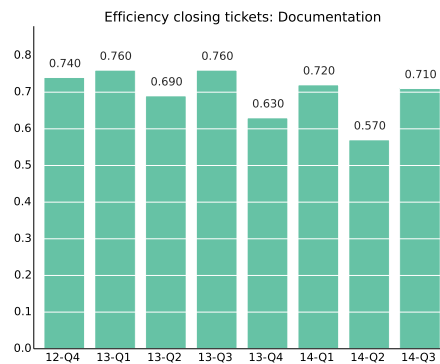
Period	Closed/Opened
12-Q4	0.74
13-Q1	0.76
13-Q2	0.69
13-Q3	0.76
13-Q4	0.63
14-Q1	0.72
14-Q2	0.57
14-Q3	0.71

Changesets efficiency: Documentation
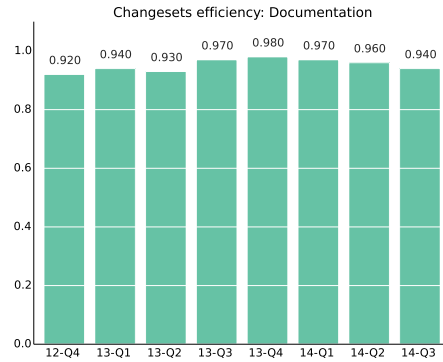
Period	Closed/Opened
12-Q4	0.92
13-Q1	0.94
13-Q2	0.93
13-Q3	0.97
13-Q4	0.98
14-Q1	0.97
14-Q2	0.96
14-Q3	0.94

Time to merge (days): Documentation
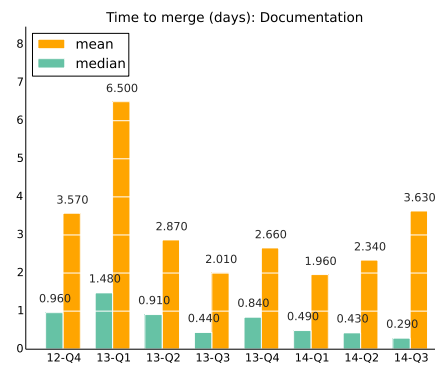
Period	Median	Mean
12-Q4	0.96	3.57
13-Q1	1.48	6.5
13-Q2	0.91	2.87
13-Q3	0.44	2.01
13-Q4	0.84	2.66
14-Q1	0.49	1.96
14-Q2	0.43	2.34
14-Q3	0.29	3.63

Patchsets per Changeset: Documentation
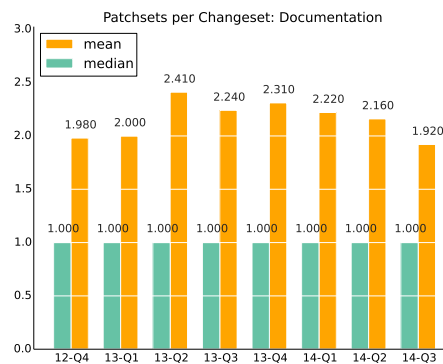
Period	Median	Mean
12-Q4	1.0	1.98
13-Q1	1.0	2.0
13-Q2	1.0	2.41
13-Q3	1.0	2.24
13-Q4	1.0	2.31
14-Q1	1.0	2.22
14-Q2	1.0	2.16
14-Q3	1.0	1.92

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Time waiting for the reviewer: Documentation
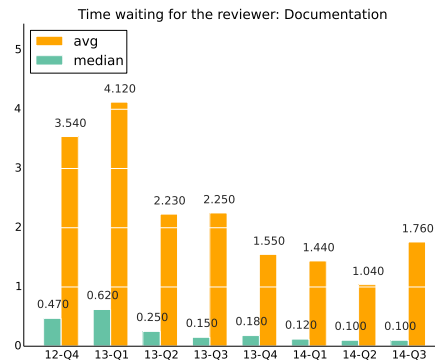
Period	Median	Mean
12-Q4	0.47	3.54
13-Q1	0.62	4.12
13-Q2	0.25	2.23
13-Q3	0.15	2.25
13-Q4	0.18	1.55
14-Q1	0.12	1.44
14-Q2	0.1	1.04
14-Q3	0.1	1.76

Time waiting for the submitter: Documentation
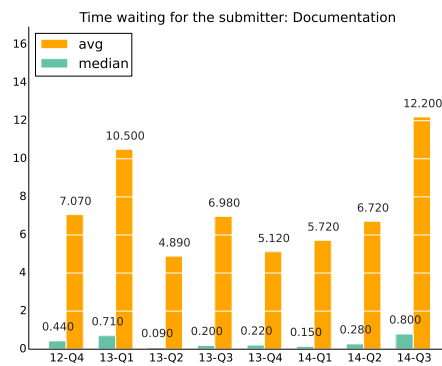
Period	Median	Mean
12-Q4	0.44	7.07
13-Q1	0.71	10.5
13-Q2	0.09	4.89
13-Q3	0.2	6.98
13-Q4	0.22	5.12
14-Q1	0.15	5.72
14-Q2	0.28	6.72
14-Q3	0.8	12.2

2.6 Infrastructure

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
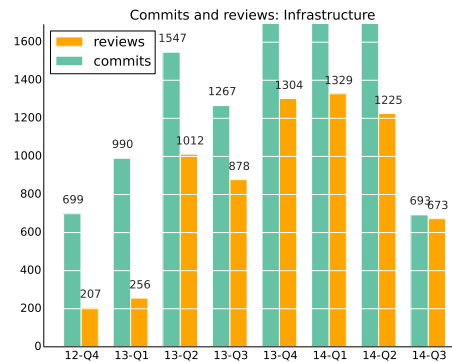

Period	Commits	Reviews
12-Q4	699	207
13-Q1	990	256
13-Q2	1547	1012
13-Q3	1267	878
13-Q4	1950	1304
14-Q1	1925	1329
14-Q2	1843	1225
14-Q3	693	673
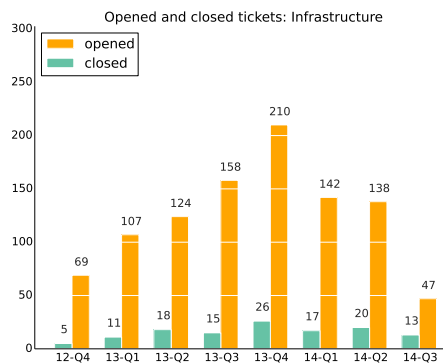
Period	Closed	Opened
12-Q4	5	69
13-Q1	11	107
13-Q2	18	124
13-Q3	15	158
13-Q4	26	210
14-Q1	17	142
14-Q2	20	138
14-Q3	13	47

Merged and abandoned reviews: Infrastructure
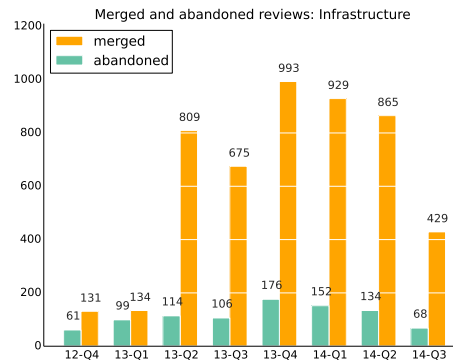
Period	Merged	Abandoned
12-Q4	131	61
13-Q1	134	99
13-Q2	809	114
13-Q3	675	106
13-Q4	993	176
14-Q1	929	152
14-Q2	865	134
14-Q3	429	68

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Infrastructure
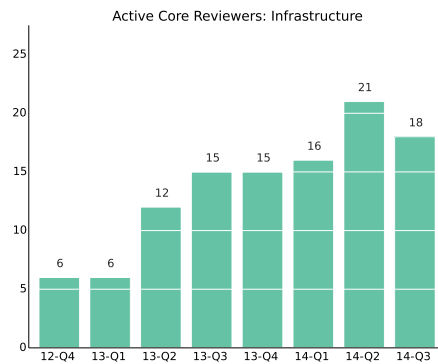
Period	Active Core
12-Q4	6
13-Q1	6
13-Q2	12
13-Q3	15
13-Q4	15
14-Q1	16
14-Q2	21
14-Q3	18

Authors Infrastructure
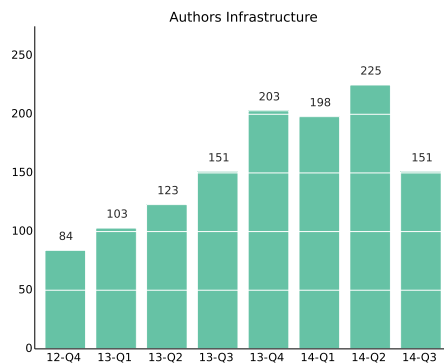
Period	Authors
12-Q4	84
13-Q1	103
13-Q2	123
13-Q3	151
13-Q4	203
14-Q1	198
14-Q2	225
14-Q3	151
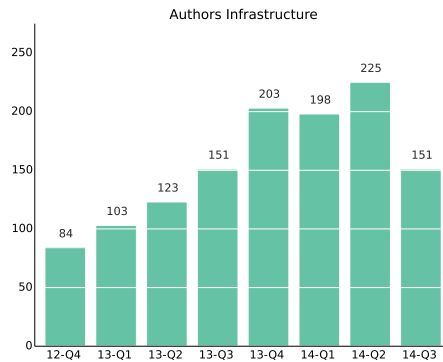
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Authors Infrastructure

He was an Austrian physicist famous for his founding contributions in the fields of statistical mechanics and statistical thermodynamics. He was one of the most important advocates for atomic theory at a time when that scientific model was still highly controversial.

Commit (s)	Author
53	Michael Krotscheck
45	Andreas Jaeger
40	Sean Dague
35	Matthew Treinish
33	Jeremy Stanley
31	Marton Kiss
23	Clark Boylan
22	Ian Wienand
21	Matt Riedemann
17	Khai Do

Commit (s)	Organizations
205	HP
95	Red Hat
49	IBM
46	SUSE
40	OpenStack Foundation
33	Mirantis
31	Xemeti Kft.
23	Rackspace
19	Canonical
11	Bitergia

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Infrastructure
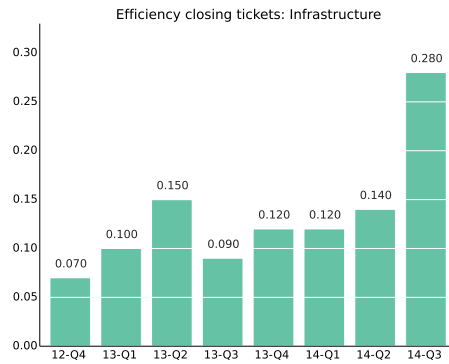
Period	Closed/Opened
12-Q4	0.07
13-Q1	0.1
13-Q2	0.15
13-Q3	0.09
13-Q4	0.12
14-Q1	0.12
14-Q2	0.14
14-Q3	0.28

Changesets efficiency: Infrastructure
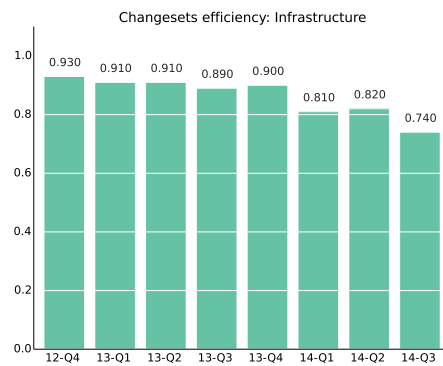
Period	Closed/Opened
12-Q4	0.93
13-Q1	0.91
13-Q2	0.91
13-Q3	0.89
13-Q4	0.9
14-Q1	0.81
14-Q2	0.82
14-Q3	0.74

Time to merge (days): Infrastructure
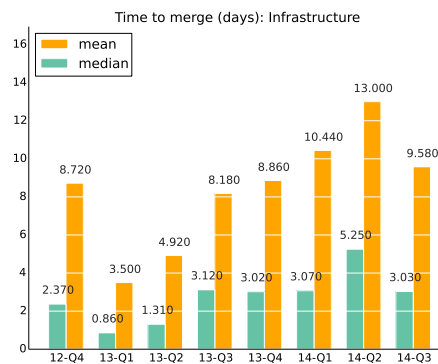
Period	Median	Mean
12-Q4	2.37	8.72
13-Q1	0.86	3.5
13-Q2	1.31	4.92
13-Q3	3.12	8.18
13-Q4	3.02	8.86
14-Q1	3.07	10.44
14-Q2	5.25	13.0
14-Q3	3.03	9.58

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Patchsets per Changeset: Infrastructure
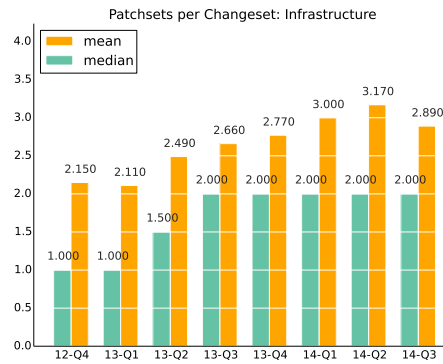
Period	Median	Mean
12-Q4	1.0	2.15
13-Q1	1.0	2.11
13-Q2	1.5	2.49
13-Q3	2.0	2.66
13-Q4	2.0	2.77
14-Q1	2.0	3.0
14-Q2	2.0	3.17
14-Q3	2.0	2.89

Time waiting for the reviewer: Infrastructure
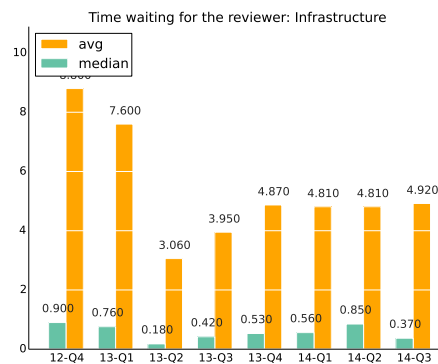
Period	Median	Mean
12-Q4	0.9	8.8
13-Q1	0.76	7.6
13-Q2	0.18	3.06
13-Q3	0.42	3.95
13-Q4	0.53	4.87
14-Q1	0.56	4.81
14-Q2	0.85	4.81
14-Q3	0.37	4.92

Time waiting for the submitter: Infrastructure
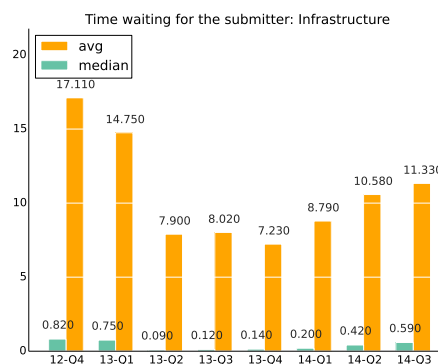
Period	Median	Mean
12-Q4	0.82	17.11
13-Q1	0.75	14.75
13-Q2	0.09	7.9
13-Q3	0.12	8.02
13-Q4	0.14	7.23
14-Q1	0.2	8.79
14-Q2	0.42	10.58
14-Q3	0.59	11.33

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2.7 Quality Assurance

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
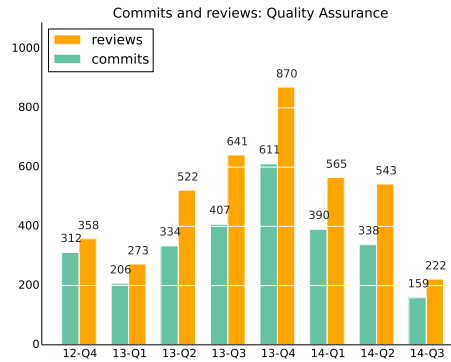
| Period	Commits	Reviews
12-Q4	312	358
13-Q1	206	273
13-Q2	334	522
13-Q3	407	641
13-Q4	611	870
14-Q1	390	565
14-Q2	338	543
14-Q3	159	222
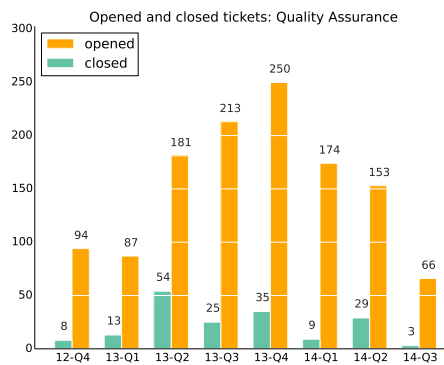
Period	Closed	Opened
12-Q4	8	94
13-Q1	13	87
13-Q2	54	181
13-Q3	25	213
13-Q4	35	250
14-Q1	9	174
14-Q2	29	153
14-Q3	3	66

Biergia
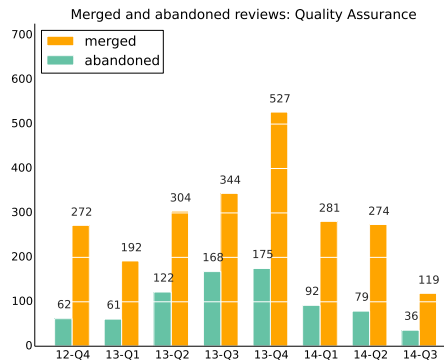
| Period	Merged	Abandoned
12-Q4	272	62
13-Q1	192	61
13-Q2	304	122
13-Q3	344	168
13-Q4	527	175
14-Q1	281	92
14-Q2	274	79
14-Q3	119	36

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
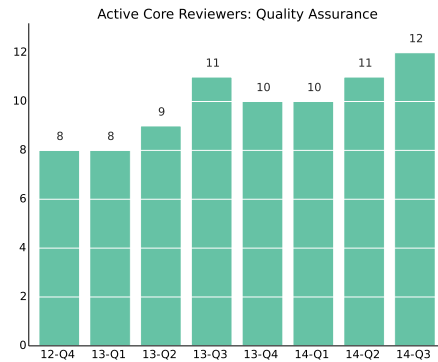
Period	Active Core
12-Q4	8
13-Q1	8
13-Q2	9
13-Q3	11
13-Q4	10
14-Q1	10
14-Q2	11
14-Q3	12
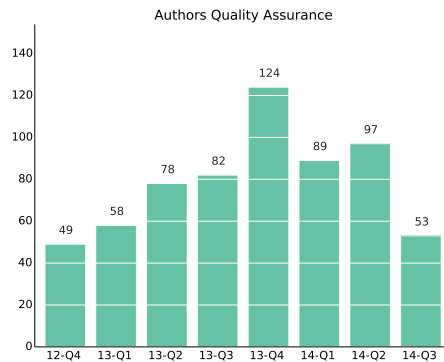
Period	Authors
12-Q4	49
13-Q1	58
13-Q2	78
13-Q3	82
13-Q4	124
14-Q1	89
14-Q2	97
14-Q3	53

Commit (s)	Author
13	Ghanshyam Mann
11	Andrea Frittoli
11	Ken'ichi Ohmichi
10	Matthew Treinish
10	Sean Dague
9	Yair Fried
7	Adam Gandelman
7	Chandan Kumar
7	Chris Dent
7	David Kranz

Commit (s)	Organizations
44	HP
35	Red Hat
28	NEC
18	IBM
7	Canonical
2	Cisco Systems
2	Cloudscaling
2	OCTO Tech.
1	B1 Systems
1	Bit Switch Networks

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.


Efficiency closing tickets: Quality Assurance
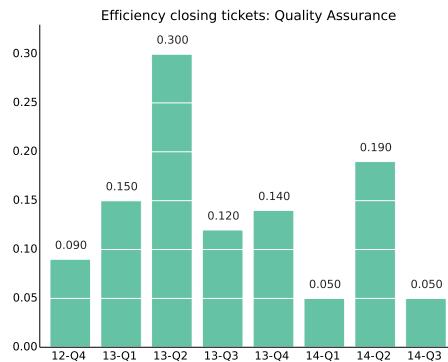
Period	Closed/Opened
12-Q4	0.09
13-Q1	0.15
13-Q2	0.3
13-Q3	0.12
13-Q4	0.14
14-Q1	0.05
14-Q2	0.19
14-Q3	0.05

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Bitergia

Changesets efficiency: Quality Assurance
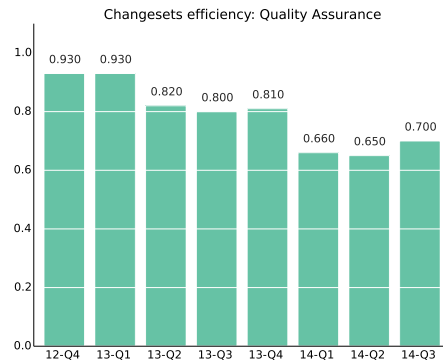
Period	Closed/Opened
12-Q4	0.93
13-Q1	0.93
13-Q2	0.82
13-Q3	0.8
13-Q4	0.81
14-Q1	0.66
14-Q2	0.65
14-Q3	0.7

Time to merge (days): Quality Assurance
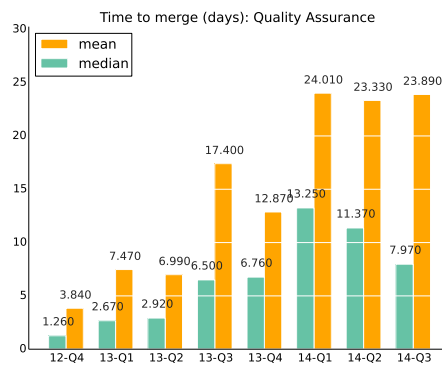
Period	Median	Mean
12-Q4	1.26	3.84
13-Q1	2.67	7.47
13-Q2	2.92	6.99
13-Q3	6.5	17.4
13-Q4	6.76	12.87
14-Q1	13.25	24.01
14-Q2	11.37	23.33
14-Q3	7.97	23.89

Patchsets per Changeset: Quality Assurance
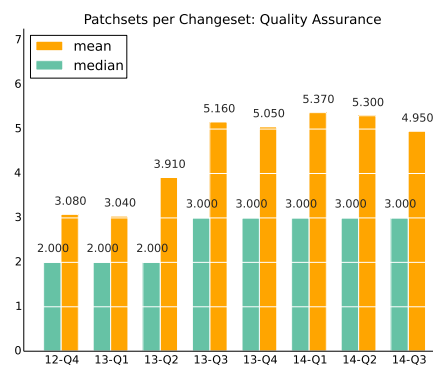
Period	Median	Mean
12-Q4	2.0	3.08
13-Q1	2.0	3.04
13-Q2	2.0	3.91
13-Q3	3.0	5.16
13-Q4	3.0	5.05
14-Q1	3.0	5.37
14-Q2	3.0	5.3
14-Q3	3.0	4.95

Bitergia

Time waiting for the reviewer: Quality Assurance
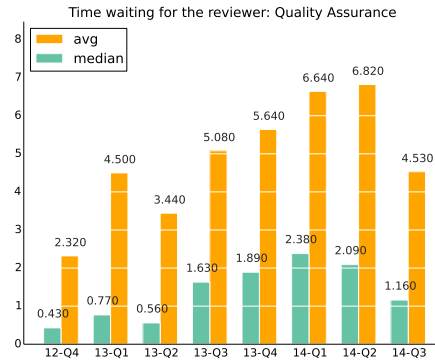
Period	Median	Mean
12-Q4	0.43	2.32
13-Q1	0.77	4.5
13-Q2	0.56	3.44
13-Q3	1.63	5.08
13-Q4	1.89	5.64
14-Q1	2.38	6.64
14-Q2	2.09	6.82
14-Q3	1.16	4.53

Time waiting for the submitter: Quality Assurance
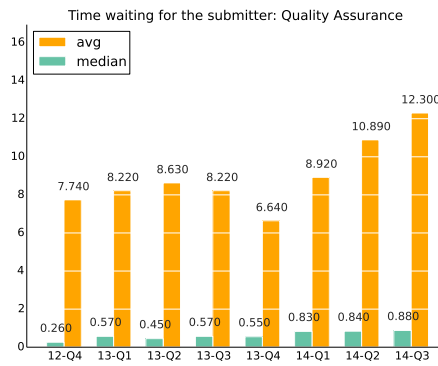
Period	Median	Mean
12-Q4	0.26	7.74
13-Q1	0.57	8.22
13-Q2	0.45	8.63
13-Q3	0.57	8.22
13-Q4	0.55	6.64
14-Q1	0.83	8.92
14-Q2	0.84	10.89
14-Q3	0.88	12.3

2.8 Release Cycle Management

Tickets activity information is not available. This affects the activity of opened and closed tickets and the BMI chart.

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: Release cycle management
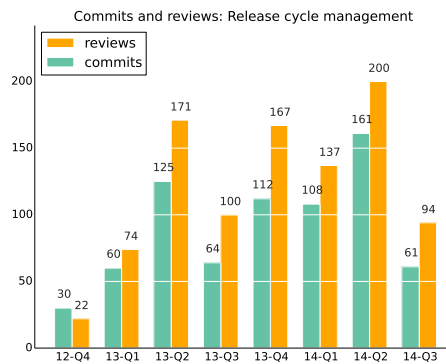
Period	Commits	Reviews
12-Q4	30	22
13-Q1	60	74
13-Q2	125	171
13-Q3	64	100
13-Q4	112	167
14-Q1	108	137
14-Q2	161	200
14-Q3	61	94

Merged and abandoned reviews: Release cycle management
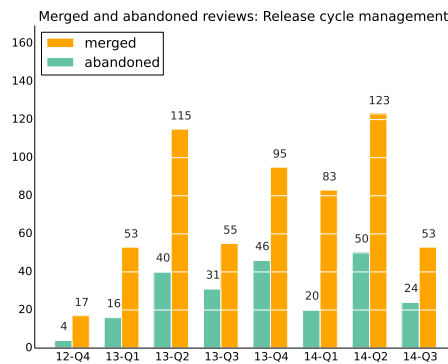
Period	Merged	Abandoned
12-Q4	17	4
13-Q1	53	16
13-Q2	115	40
13-Q3	55	31
13-Q4	95	46
14-Q1	83	20
14-Q2	123	50
14-Q3	53	24

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Release cycle management
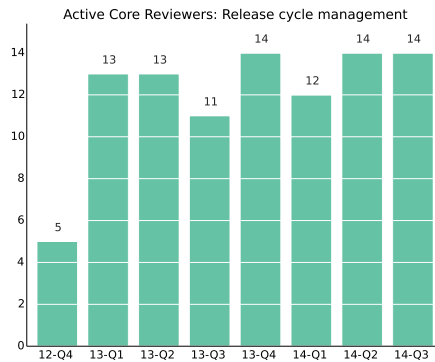
Period	Active Core
12-Q4	5
13-Q1	13
13-Q2	13
13-Q3	11
13-Q4	14
14-Q1	12
14-Q2	14
14-Q3	14

Authors Release cycle management
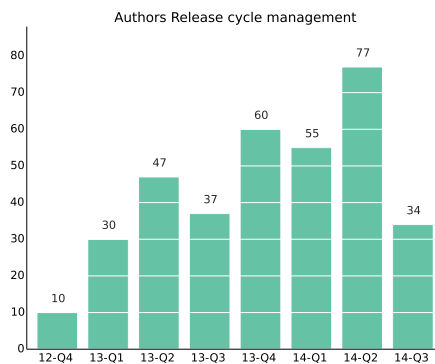
Period	Authors
12-Q4	10
13-Q1	30
13-Q2	47
13-Q3	37
13-Q4	60
14-Q1	55
14-Q2	77
14-Q3	34

Commit (s)	Author	Commit (s)	Organizations
6	Matthew Treinish	17	HP
5	Davanum Srinivas	7	IBM
5	Doug Hellmann	7	Red Hat
3	Andreas Jaeger	5	DreamHost
3	Kiall Mac Innes	3	Canonical
3	Sean Dague	3	Mirantis
2	Adam Gandelman	3	Rackspace
2	Alan Pevec	3	SUSE
2	Angus Lees	2	Huawei
2	Ian Cordasco	2	OpenStack Foundation

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review

Bitergia

process.

Time to merge (days): Release cycle management

Period	Median	Mean
12-Q4	1.96	3.82
13-Q1	2.9	4.39
13-Q2	1.88	5.01
13-Q3	2.9	7.46
13-Q4	4.5	9.46
14-Q1	3.18	11.68
14-Q2	3.15	10.1
14-Q3	2.19	11.9

Changesets efficiency: Release cycle management
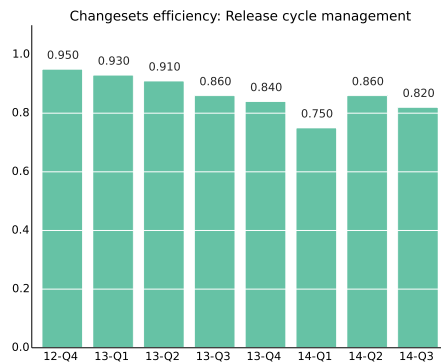
Period	Closed/Opened
12-Q4	0.95
13-Q1	0.93
13-Q2	0.91
13-Q3	0.86
13-Q4	0.84
14-Q1	0.75
14-Q2	0.86
14-Q3	0.82

Patchsets per Changeset: Release cycle management
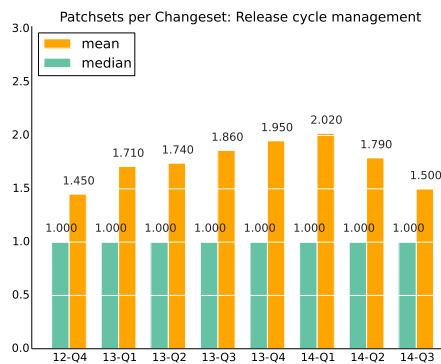
Period	Median	Mean
12-Q4	1.0	1.45
13-Q1	1.0	1.71
13-Q2	1.0	1.74
13-Q3	1.0	1.86
13-Q4	1.0	1.95
14-Q1	1.0	2.02
14-Q2	1.0	1.79
14-Q3	1.0	1.5

Bitergia

Time waiting for the reviewer: Release cycle management
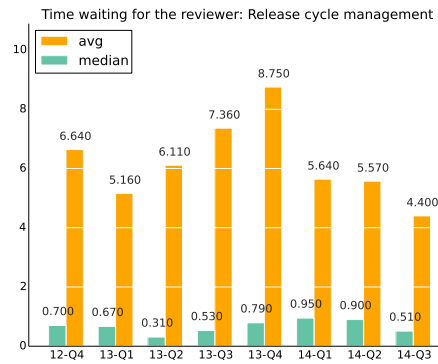
Period	Median	Mean
12-Q4	0.7	6.64
13-Q1	0.67	5.16
13-Q2	0.31	6.11
13-Q3	0.53	7.36
13-Q4	0.79	8.75
14-Q1	0.95	5.64
14-Q2	0.9	5.57
14-Q3	0.51	4.4

Time waiting for the submitter: Release cycle management
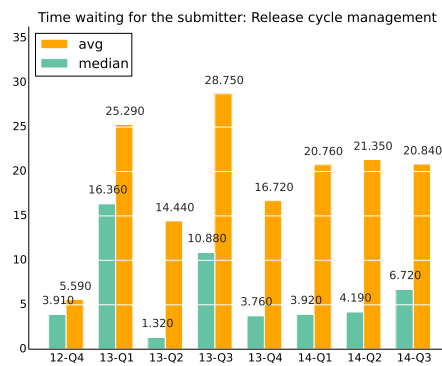
Period	Median	Mean
12-Q4	3.91	5.59
13-Q1	16.36	25.29
13-Q2	1.32	14.44
13-Q3	10.88	28.75
13-Q4	3.76	16.72
14-Q1	3.92	20.76
14-Q2	4.19	21.35
14-Q3	6.72	20.84

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Chapter 3

General Activity and Community Evolution

3.1   Git Community Structure
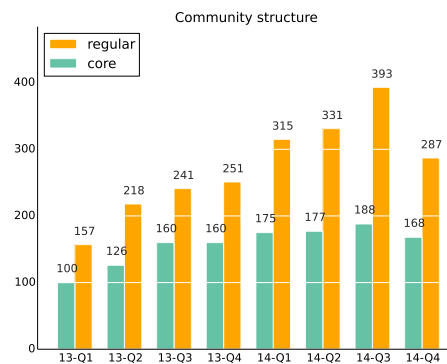
Community structure

Period	Core	Regular	Occasional
13-Q1	100	157	236
13-Q2	126	218	277
13-Q3	160	241	384
13-Q4	160	251	360
14-Q1	175	315	477
14-Q2	177	331	429
14-Q3	188	393	559
14-Q4	168	287	317

Main Git Contributors
Last quarter of 2013 and first quarter of 2014

Commit (s)	Author	Commit (s)	Author
481	Andreas Jaeger	364	Andreas Jaeger
232	Sean Dague	228	Sean Dague
224	James E. Blair	161	Christian Berendt
222	rbtcollins	154	Clark Boylan
200	Brant Knudson	145	Joshua Harlow
197	Jeremy Stanley	121	Matt Riedemann
169	Joe Gordon	116	Brant Knudson
152	Sergey Lukjanov	114	Joe Gordon
123	Shilla Saebi	109	James E. Blair
120	Derek Higgins	100	Sergey Lukjanov

Last two quarters main git contributors

Commit (s)	Author	Commit (s)	Author
474	Andreas Jaeger	112	Andreas Jaeger
284	Christian Berendt	84	Sean Dague
151	Flavio Percoco	66	Flavio Percoco
149	James E. Blair	64	Christian Berendt
144	Matt Riedemann	62	Steve Martinelli
134	Roger Luethi	57	Davanum Srinivas
129	Jeremy Stanley	54	Matt Riedemann
122	Steve Martinelli	53	garyk
117	Brant Knudson	53	Michael Krotscheck
112	Sean Dague	52	Matthew Treinish

Developers per Month

Developers per month

Period	Authors per month
13-Q1	245.5
13-Q2	310.5
13-Q3	391.0
13-Q4	385.0
14-Q1	481.5
14-Q2	466.5
14-Q3	567.5
14-Q4	755.0

3.2 Mailing Lists

Emails sent
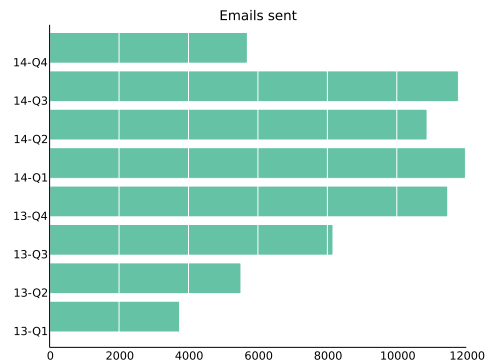
Period	Emails
13-Q1	3743
13-Q2	5511
13-Q3	8162
13-Q4	11466
14-Q1	11977
14-Q2	10872
14-Q3	11775
14-Q4	5696

People sending emails
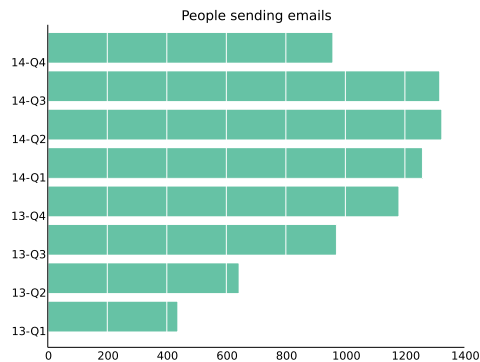
Period	People
13-Q1	437
13-Q2	643
13-Q3	970
13-Q4	1180
14-Q1	1259
14-Q2	1324
14-Q3	1317
14-Q4	958

People initiating threads
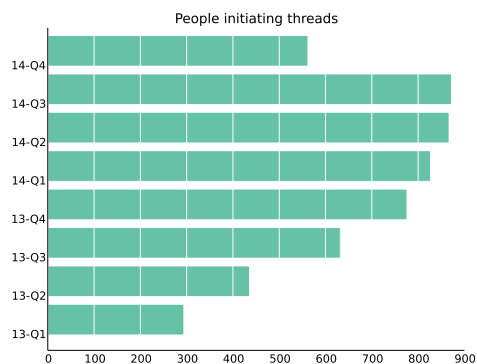
Period	People
13-Q1	294
13-Q2	436
13-Q3	632
13-Q4	776
14-Q1	827
14-Q2	867
14-Q3	872
14-Q4	562

Initial Author and Date	Subject	Number Messages
alawson 2014-10-13	[openstack-dev] [Nova] Automatic evacuate	58
Angus Lees 2014-10-14	[openstack-dev] [kolla] on Dockerfile patterns	49
Doug Hellmann 2014-10-02	[openstack-dev] [all][tc] governance changes for "big tent" model	37
azemlyanov 2014-11-05	[openstack-dev] [Fuel] fuel master monitoring	36
Richard Jones 2014-11-11	[openstack-dev] [Horizon] the future of angularjs development in Horizon	35
Alexis Lee 2014-11-05	[openstack-dev] [Heat] New function: $first_n onnull$	33
Everett Toews 2014-10-08	[openstack-dev] [api] Forming the API Working Group	32
Michael Chapman 2014-11-06	[Openstack-operators] Proposal for an 'Operations' project	28
Salvatore Orlando 2014-10-03	[openstack-dev] Quota management and enforcement across projects	28
Visnusaran Murugan 2014-11-13	[openstack-dev] [Heat] Using Job Queues for timeout ops	27

Initial Author and Date	Subject	Diff. People
Craig Tracey 2014-11-08	[Openstack-operators] Proposal for an 'Operations' project	17
Sylvain Bauza 2014-10-14	[openstack-dev] [Nova] Automatic evacuate	17
Angus Salkeld 2014-10-17	[openstack-dev] [all] add cyclomatic complexity check to pep8 target	16
rbtcollins 2014-11-25	[openstack-dev] [tc][neutron] Proposal to split Neutron into separate repositories	15
Chris Yeoh 2014-10-14	[openstack-dev] [api] Forming the API Working Group	14
Ben Nemec 2014-11-26	[openstack-dev] [nova] Proposal new hacking rules	14
Baohua Yang 2014-10-15	[openstack-dev] [kolla] on Dockerfile patterns	13
ERROR 2014-11-21	[openstack-dev] [Fuel] fuel master monitoring	13
Salvatore Orlando 2014-11-18	[openstack-dev] Quota management and enforcement across projects	13
Tim Bell 2014-10-23	[openstack-dev] [Nova] Cells conversation starter	12

3.3 Questions and Answers
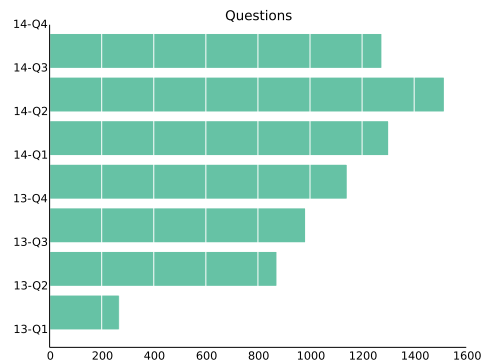
Questions

Period	Questions
13-Q1	268
13-Q2	873
13-Q3	983
13-Q4	1143
14-Q1	1302
14-Q2	1516
14-Q3	1276
14-Q4	0
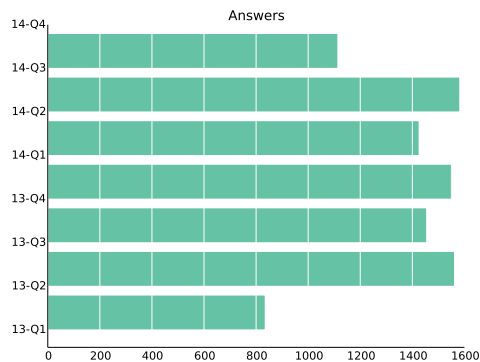
Answers

Period	Answers
13-Q1	835
13-Q2	1562
13-Q3	1455
13-Q4	1550
14-Q1	1426
14-Q2	1582
14-Q3	1114
14-Q4	0
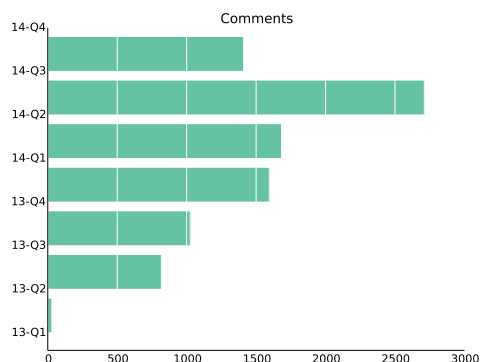
Comments

Period	Comments
13-Q1	29
13-Q2	818
13-Q3	1026
13-Q4	1595
14-Q1	1683
14-Q2	2711
14-Q3	1410
14-Q4	0

People asking Questions
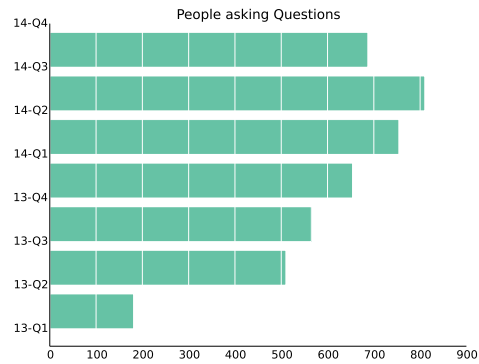
Period	People asking
13-Q1	181
13-Q2	510
13-Q3	565
13-Q4	654
14-Q1	754
14-Q2	810
14-Q3	687
14-Q4	0

- Top visited questions.

Question subject	Visits

- Top questions with more comments.

Question subject	Comments

- Top questions with the highest number of different people participating.

Question subject	People participating

- Top tags

Tag name	Ocurrences

3.4 IRC

Messages in IRC channels
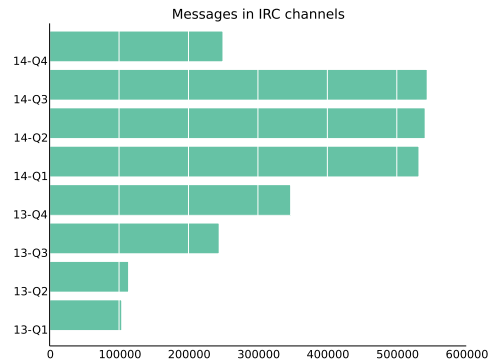
Period	Messages
13-Q1	103851
13-Q2	113730
13-Q3	244193
13-Q4	347085
14-Q1	531899
14-Q2	540845
14-Q3	543772
14-Q4	249656

People in IRC channels
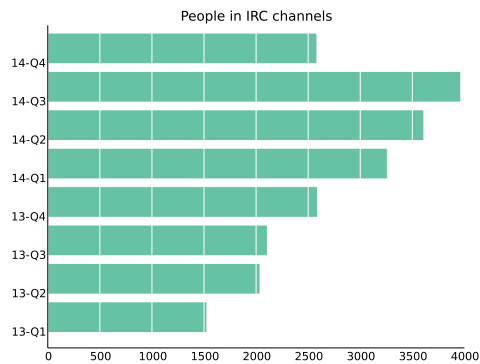
Period	People
13-Q1	1528
13-Q2	2038
13-Q3	2109
13-Q4	2591
14-Q1	3260
14-Q2	3611
14-Q3	3965
14-Q4	2584

IRC id	Messages sent
clarkb	6766
Jeremy Stanley	5669
ayoung	4802
morganfainberg	4444
Anita Kuno	4030
jroll	3293
flaper87	3133
Angus Salkeld	2786
Thierry Carrez	2704
Lucas Alvares Gomes	2522
sdake	2512
mtreinish	2501
Sam-I-Am	2501
Devananda	2413
openstack	2295

Appendix A

Metrics Definitions

Metrics depicted in each OpenStack program:

- Commit: this is defined as the action(s) that performes a change in the source code. Bots, merges and other type of automatic activity is removed from the records. Besides, when aggregating several Gits, this metric only counts unique revisions (unique hashes found in the Git repositories). Finally, all branches are aggregated to the analysis.

- Submitted changeset: a changeset is the process of peer reviewing source code changes. A commit is not merged to the master code of a given project till this is approved for at least one core reviewer of such project. A submitted changeset is defined as any changeset submitted to the Gerrit system. However, given the limitations of the current version of the tool, with at least 5,900 changesets detected as having an erroneous creation date, this metric counts the first patchset upload action.

- Merged and abandoned changsets: a merge is defined as the patchset that was finally submitted to the source code. An abandoned changeset is a potential merge that was finally dismissed by developers as being part of the source code. This status is found in the status of the final patchset. However, although a patchset can be merged or abandoned, this action can be reverted. If a patchset presents several of these changes in the same period of time, only one of them is counted (the very last one). On the other hand, if those changes take place in different periods of analysis, both status would be counted.

- Open and closed ticket: a ticket in Launchpad is counted as closed if

the status of such ticket is defined as 'Fix Released'. The rest of the tickets are counted as opened tickets.

- Active Core Reviewer: a core reviewer has the possibility to use +2 or -2 actions when reviewing the code. However, if there are developers that for some period do not use those actions, those can not be measured as core reviewer. Thus, this metric provides information about 'active' core reviewers. This can be also defined as those developers that actively have used the +2 or -2 review action. Besides, this metric is filtered by branch of activity, only using 'master'. This helps to detect actual core reviewers in each of the projects.

- Authors: a developer is defined as author if she is the owner of the patchset sent for reviewing and this is merged into the source code. As previously indicated, automatic commits such bot's are removed from this analysis.

- Efficiency closing issues: this metric is a derivation of the Backlog Management Index (BMI) that measures the number of closed tickets out of the opened tickets in a period of time. Values under 1.0 indicates that the number of closing issues is lower than the number of opened issues arriving. On the contrary, higher charts would indicate better maintenance effort by the community.

- Efficiency closing changesets: this metric is a derivation of the Backlog Management Index as it is named as Review efficiency index (REI). As similarly used in the BMI index, this metrics measures the number of closed changesets (merged or abandoned) out of the total number of new changesets.

- Time to Merge: this time consists of the time between the first upload of the first patchset (as defined as a submitted changeset) till the last patchset of the changeset is merged into the code and this is indicated in the comments side of the Gerrit tool. This metric is provided in number of days.

- Patchsets per changeset: this metric calculates the total number of iterations in a changeset till this is abandoned or merged.

- Time waiting for the reviewer or the submitter: a changeset is waiting for a reviewer action if a new patchset upload or a new changset arrives to the system. On the other hand, a submitter action is required when

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a specific negative verification or reviewing action takes place (Verified -1/-2 or Code-Review -1/-2). In addition, when a Code-Review +2 action takes place, it is assumed that the changeset is closing and no more times are registered either for the reviewer or the submitter. For this analysis, those patchsets flagged as work in progress are ignored.

Metrics depicted in the general overview:

- Community structure, core, regular and casual developers: developers are ordered in descendant order by the number of commits authored for a given period. Core developers are defined as the list of developers that reach 80% of the total commits. Regular is the set of developers that are between that 80% and 95% of the commits. Casual developers are found in the rest of the 5%. Bots are ignored in this list of developers.

- Developer per month: average of developers per month ignoring bots.

- Emails sent: number of emails sent by people to the several mailing lists. Bots are not registered.

- People sending emails: number of people sending those emails ignoring bots.

- People initiating threads: a thread is defined as a list of emails that has the same root. There may exist threads of one email.

- Top threads: this list provides the longest threads in terms of number of emails that have a common root email.

- Questions, answers and comments in Askbot.

- People asking questions in Askbot: number of people sending a new question.

- Top visited questions.

- Top tags: each of the questions has a list of associated tags. The top tags are those with the highest number of repetitions aggregating all of the questions.

- Messages and people in IRC: this analysis ignores as a message those entries in the IRC channels that provide information about people entering or leaving the system.

Appendix B

Source Code and Data Sources

The data source used to provide the data of this analysis can be found at the GrimoireLib library. Specifically the openstack_report.py file[1].

With respect to the list of analyzed repositories per project, the following table lists all of them. There are three data sources: git activity (scm), tickets activity (its) and review activity (scr). This information is based on the information listed in the yaml organizational file[2] provided by the OpenStack Foundation.

Program	Data source	Repository
barbican	its	https://bugs.launchpad.net/barbican
barbican	scm	git://git.openstack.org/openstack/kite
barbican	scm	git://git.openstack.org/openstack/barbican
barbican	scr	review.openstack.org_openstack/kite
barbican	scr	review.openstack.org_openstack/barbican
ceilometer	its	https://bugs.launchpad.net/ceilometer
ceilometer	scm	https://github.com/openstack/ceilometer.git
ceilometer	scr	review.openstack.org_openstack/ceilometer
cinder	its	https://bugs.launchpad.net/cinder
cinder	scm	https://github.com/openstack/cinder.git
cinder	scr	review.openstack.org_openstack/cinder

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[1]`https://github.com/VizGrimoire/GrimoireLib/blob/master/vizGrimoireJS/openstack_report.py`.
In order to download the exact version used for this analysis with the hash *xxxx*

[2]urlhttp://git.openstack.org/cgit/openstack/governance/tree/reference/programs.yaml

clients	its	https://bugs.launchpad.net/python-ceilometerclient
clients	its	https://bugs.launchpad.net/python-keystoneclient
clients	its	https://bugs.launchpad.net/python-swiftclient
clients	its	https://bugs.launchpad.net/python-glanceclient
clients	its	https://bugs.launchpad.net/python-novaclient
clients	its	https://bugs.launchpad.net/python-cinderclient
clients	its	https://bugs.launchpad.net/python-marconiclient
clients	its	https://bugs.launchpad.net/python-heatclient
clients	its	https://bugs.launchpad.net/python-saharaclient
clients	its	https://bugs.launchpad.net/python-designateclient
clients	its	https://bugs.launchpad.net/python-neutronclient
clients	scm	git://git.openstack.org/openstack/python-kiteclient
clients	scm	https://github.com/openstack/python-glanceclient.git
clients	scm	https://github.com/openstack/python-neutronclient.git
clients	scm	https://github.com/openstack/python-ceilometerclient.git
clients	scm	https://github.com/openstack/python-keystoneclient.git
clients	scm	https://github.com/openstack/python-troveclient.git
clients	scm	git://git.openstack.org/openstack-dev/heat-cfnclient
clients	scm	https://github.com/openstack/python-heatclient.git
clients	scm	https://github.com/openstack/python-novaclient.git
clients	scm	https://github.com/openstack/python-cinderclient.git
clients	scm	https://github.com/openstack/python-marconiclient.git
clients	scm	git://git.openstack.org/openstack/python-saharaclient
clients	scm	https://github.com/openstack/python-ironicclient.git
clients	scm	https://github.com/openstack/python-swiftclient.git
clients	scr	review.openstack.org_openstack/python-saharaclient
clients	scr	review.openstack.org_openstack/python-cinderclient
clients	scr	review.openstack.org_openstack/python-neutronclient
clients	scr	review.openstack.org_stackforge/python-designateclient
clients	scr	review.openstack.org_openstack/python-ironicclient
clients	scr	review.openstack.org_openstack/python-swiftclient
clients	scr	review.openstack.org_openstack/python-glanceclient
clients	scr	review.openstack.org_openstack/python-novaclient
clients	scr	review.openstack.org_openstack/python-kiteclient
clients	scr	review.openstack.org_openstack/python-ceilometerclient
clients	scr	review.openstack.org_openstack/python-keystoneclient
clients	scr	review.openstack.org_openstack/python-troveclient
clients	scr	review.openstack.org_openstack/python-heatclient
Common Libraries	its	https://bugs.launchpad.net/hacking
Common Libraries	its	https://bugs.launchpad.net/taskflow

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Common Libraries	its	https://bugs.launchpad.net/oslo.messaging
Common Libraries	its	https://bugs.launchpad.net/pbr
Common Libraries	scm	git://git.openstack.org/openstack/oslo.rootwrap
Common Libraries	scm	git://git.openstack.org/openstack/taskflow
Common Libraries	scm	git://git.openstack.org/openstack/pycadf
Common Libraries	scm	https://github.com/openstack/oslo.messaging.git
Common Libraries	scm	git://git.openstack.org/openstack/oslo.vmware
Common Libraries	scm	https://github.com/openstack/oslo-incubator.git
Common Libraries	scm	git://git.openstack.org/openstack-dev/oslo-cookiecutter
Common Libraries	scm	git://git.openstack.org/openstack/stevedore
Common Libraries	scm	https://github.com/openstack/oslo.version.git
Common Libraries	scm	git://git.openstack.org/openstack/oslo.db
Common Libraries	scm	git://git.openstack.org/openstack/oslosphinx
Common Libraries	scm	https://github.com/openstack/oslo.config.git
Common Libraries	scm	git://git.openstack.org/openstack/oslo.i18n
Common Libraries	scr	review.openstack.org_openstack-dev/hacking
Common Libraries	scr	review.openstack.org_openstack/oslo.db
Common Libraries	scr	review.openstack.org_openstack/oslo.config
Common Libraries	scr	review.openstack.org_openstack-dev/pbr
Common Libraries	scr	review.openstack.org_openstack/oslo.i18n
Common Libraries	scr	review.openstack.org_openstack/oslo-incubator
Deployment	its	https://bugs.launchpad.net/python-tuskarclient
Deployment	its	https://bugs.launchpad.net/tuskar
Deployment	scm	git://git.openstack.org/openstack/os-refresh-config
Deployment	scm	git://git.openstack.org/openstack/tripleo-puppet-elements
Deployment	scm	https://github.com/openstack/tripleo-incubator.git
Deployment	scm	git://git.openstack.org/openstack/os-cloud-config
Deployment	scm	https://github.com/openstack/tripleo-heat-templates.git
Deployment	scm	git://git.openstack.org/openstack/python-tuskarclient
Deployment	scm	git://git.openstack.org/openstack/os-collect-config
Deployment	scm	https://github.com/openstack/tripleo-image-elements.git
Deployment	scm	git://git.openstack.org/openstack/os-apply-config
Deployment	scm	git://git.openstack.org/openstack/tuskar
Deployment	scr	review.openstack.org_openstack/tripleo-heat-templates
Deployment	scr	review.openstack.org_openstack/os-refresh-config
Deployment	scr	review.openstack.org_openstack/tuskar
Deployment	scr	review.openstack.org_openstack/os-cloud-config
Deployment	scr	review.openstack.org_openstack/tripleo-image-elements
Deployment	scr	review.openstack.org_openstack/diskimage-builder
Deployment	scr	review.openstack.org_openstack/python-tuskarclient

Deployment	scr	review.openstack.org_openstack/tripleo-puppet-elements
Deployment	scr	review.openstack.org_openstack/os-collect-config
Deployment	scr	review.openstack.org_openstack/tripleo-incubator
Deployment	scr	review.openstack.org_openstack/os-apply-config
designate	its	https://bugs.launchpad.net/designate
designate	scm	git://git.openstack.org/openstack/designate
designate	scr	review.openstack.org_openstack/designate
Devstack	its	https://bugs.launchpad.net/devstack
Devstack	scm	git://git.openstack.org/openstack-dev/devstack
Devstack	scr	review.openstack.org_openstack-dev/devstack
Documentation	its	https://bugs.launchpad.net/openstack-api-site
Documentation	its	https://bugs.launchpad.net/openstack-manuals
Documentation	scm	git://git.openstack.org/openstack/security-doc
Documentation	scm	https://github.com/openstack/identity-api.git
Documentation	scm	https://github.com/openstack/volume-api.git
Documentation	scm	git://git.openstack.org/openstack/openstack-doc-tools
Documentation	scm	https://github.com/openstack/api-site.git
Documentation	scm	https://github.com/openstack/object-api.git
Documentation	scm	https://github.com/openstack/image-api.git
Documentation	scm	https://github.com/openstack/compute-api.git
Documentation	scm	https://github.com/openstack/openstack-manuals.git
Documentation	scm	git://git.openstack.org/openstack/ha-guide
Documentation	scm	git://git.openstack.org/openstack/operations-guide
Documentation	scm	https://github.com/openstack/netconn-api.git
Documentation	scm	git://git.openstack.org/openstack/training-guides
Documentation	scr	review.openstack.org_openstack/netconn-api
Documentation	scr	review.openstack.org_openstack/identity-api
Documentation	scr	review.openstack.org_openstack/operations-guide
Documentation	scr	review.openstack.org_openstack/ha-guide
Documentation	scr	review.openstack.org_openstack/api-site
Documentation	scr	review.openstack.org_openstack/object-api
Documentation	scr	review.openstack.org_openstack/training-guides
Documentation	scr	review.openstack.org_openstack/openstack-doc-tools
Documentation	scr	review.openstack.org_openstack/security-doc
Documentation	scr	review.openstack.org_openstack/image-api
Documentation	scr	review.openstack.org_openstack/volume-api
Documentation	scr	review.openstack.org_openstack/compute-api
Documentation	scr	review.openstack.org_openstack/openstack-manuals
glance	its	https://bugs.launchpad.net/glance
glance	scm	git://git.openstack.org/openstack/glance_store

glance	scm	https://github.com/openstack/glance.git
glance	scr	review.openstack.org_openstack/glance_store
glance	scr	review.openstack.org_openstack/glance
heat	its	https://bugs.launchpad.net/heat
heat	scm	https://github.com/openstack/heat.git
heat	scr	review.openstack.org_openstack/heat
horizon	its	https://bugs.launchpad.net/horizon
horizon	scm	https://github.com/openstack/horizon.git
horizon	scr	review.openstack.org_openstack/horizon
Infrastructure	its	https://bugs.launchpad.net/openstack-ci
Infrastructure	scm	git://git.openstack.org/openstack-infra/os-loganalyze
Infrastructure	scm	https://github.com/openstack-infra/askbot-theme.git
Infrastructure	scm	https://github.com/openstack-infra/gerritbot.git
Infrastructure	scm	https://github.com/openstack-infra/nose-html-output.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/activity-board
Infrastructure	scm	git://git.openstack.org/openstack-infra/subunit2sql
Infrastructure	scm	https://github.com/openstack-infra/zuul.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/nodepool
Infrastructure	scm	git://git.openstack.org/openstack-infra/tripleo-ci
Infrastructure	scm	https://github.com/openstack-infra/gear.git
Infrastructure	scm	https://github.com/openstack-infra/jeepyb.git
Infrastructure	scm	https://github.com/openstack-infra/statusbot.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/project-config
Infrastructure	scm	git://git.openstack.org/openstack-infra/elastic-recheck
Infrastructure	scm	git://git.openstack.org/openstack-infra/storyboard
Infrastructure	scm	https://github.com/openstack-infra/config.git
Infrastructure	scm	https://github.com/openstack-infra/gerritlib.git
Infrastructure	scm	https://github.com/openstack-infra/releasestatus.git
Infrastructure	scm	https://github.com/openstack/openstack-planet.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/odsreg
Infrastructure	scm	git://git.openstack.org/openstack-infra/zuul-packaging
Infrastructure	scm	https://github.com/openstack-infra/gearman-plugin.git
Infrastructure	scm	https://github.com/openstack-infra/jenkins-job-builder.git
Infrastructure	scm	git://git.openstack.org/openstack-dev/openstack-nose
Infrastructure	scm	https://github.com/openstack-infra/zmq-event-publisher.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/groups
Infrastructure	scm	git://git.openstack.org/openstack-infra/storyboard-webclient
Infrastructure	scm	https://github.com/openstack-infra/devstack-gate.git

Infrastructure	scm	https://github.com/openstack-infra/git-review.git
Infrastructure	scm	https://github.com/openstack-infra/reviewday.git
Infrastructure	scr	review.openstack.org_openstack-dev/openstack-nose
Infrastructure	scr	review.openstack.org_openstack-infra/gearman-plugin
Infrastructure	scr	review.openstack.org_openstack-infra/gitdm
Infrastructure	scr	review.openstack.org_openstack-infra/nose-html-output
Infrastructure	scr	review.openstack.org_openstack-infra/puppet-vcsrepo
Infrastructure	scr	review.openstack.org_openstack-infra/zmq-event-publisher
Infrastructure	scr	review.openstack.org_openstack-infra/devstack-gate
Infrastructure	scr	review.openstack.org_openstack-infra/gerritlib
Infrastructure	scr	review.openstack.org_openstack-infra/lodgeit
Infrastructure	scr	review.openstack.org_openstack-infra/puppet-apparmor
Infrastructure	scr	review.openstack.org_openstack-infra/reviewday
Infrastructure	scr	review.openstack.org_openstack-infra/askbot-theme
Infrastructure	scr	review.openstack.org_openstack-infra/gerrit
Infrastructure	scr	review.openstack.org_openstack-infra/jeepyb
Infrastructure	scr	review.openstack.org_openstack-infra/odsreg
Infrastructure	scr	review.openstack.org_openstack-infra/pypi-mirror
Infrastructure	scr	review.openstack.org_openstack-infra/zuul
Infrastructure	scr	review.openstack.org_openstack-infra/subunit2sql
Infrastructure	scr	review.openstack.org_openstack-infra/gear
Infrastructure	scr	review.openstack.org_openstack-infra/git-review
Infrastructure	scr	review.openstack.org_openstack-infra/meetbot
Infrastructure	scr	review.openstack.org_openstack-infra/puppet-dashboard
Infrastructure	scr	review.openstack.org_openstack-infra/statusbot
Infrastructure	scr	review.openstack.org_openstack-infra/project-config
Infrastructure	scr	review.openstack.org_openstack-infra/config
Infrastructure	scr	review.openstack.org_openstack-infra/gerritbot
Infrastructure	scr	review.openstack.org_openstack-infra/jenkins-job-builder
Infrastructure	scr	review.openstack.org_openstack-infra/publications
Infrastructure	scr	review.openstack.org_openstack-infra/releasestatus
Infrastructure	scr	review.openstack.org_openstack/openstack-planet
ironic	its	https://bugs.launchpad.net/ironic
ironic	scm	https://github.com/openstack/ironic.git
ironic	scm	git://git.openstack.org/openstack/ironic-python-agent
ironic	scr	review.openstack.org_openstack/ironic-python-agent
ironic	scr	review.openstack.org_openstack/ironic
keystone	its	https://bugs.launchpad.net/keystone
keystone	scm	git://git.openstack.org/openstack/python-keystoneclient-federation

keystone	scm	https://github.com/openstack/keystone.git
keystone	scm	git://git.openstack.org/openstack/keystonemiddleware
keystone	scm	git://git.openstack.org/openstack/python-keystoneclient-kerberos
keystone	scm	git://git.openstack.org/openstack/keystonemiddleware
keystone	scr	review.openstack.org_openstack/python-keystoneclient-federation
keystone	scr	review.openstack.org_openstack/keystonemiddleware
keystone	scr	review.openstack.org_openstack/keystone
keystone	scr	review.openstack.org_openstack/python-keystoneclient-kerberos
manila	its	https://bugs.launchpad.net/manila
manila	scm	git://git.openstack.org/openstack/manila
manila	scr	review.openstack.org_openstack/manila
neutron	its	https://bugs.launchpad.net/neutron
neutron	scm	https://github.com/openstack/neutron.git
neutron	scr	review.openstack.org_openstack/neutron
nova	its	https://bugs.launchpad.net/nova
nova	scm	https://github.com/openstack/nova.git
nova	scr	review.openstack.org_openstack/nova
others	its	https://bugs.launchpad.net/tuskar-ui
others	its	https://bugs.launchpad.net/heat-templates
others	its	https://bugs.launchpad.net/django-openstack-auth
others	its	https://bugs.launchpad.net/swift-bench
others	its	https://bugs.launchpad.net/heat-cfntools
others	scm	git://git.openstack.org/openstack/sahara-image-elements
others	scm	git://git.openstack.org/openstack/sahara-dashboard
others	scm	git://git.openstack.org/openstack/tuskar-ui
others	scm	git://git.openstack.org/openstack/django_openstack_auth
others	scm	git://git.openstack.org/openstack/swift-bench
others	scm	git://git.openstack.org/openstack/sahara-extra
others	scm	git://git.openstack.org/openstack/heat-cfntools
others	scm	git://git.openstack.org/openstack/trove-integration
others	scr	review.openstack.org_openstack/heat-templates
others	scr	review.openstack.org_openstack/sahara-image-elements
others	scr	review.openstack.org_openstack/sahara-dashboard
others	scr	review.openstack.org_openstack/heat-cfntools
others	scr	review.openstack.org_openstack/trove-integration
others	scr	review.openstack.org_openstack/sahara-extra
Quality Assurance	its	https://bugs.launchpad.net/tempest

Quality Assurance	scm	git://git.openstack.org/openstack-dev/grenade
Quality Assurance	scm	https://github.com/openstack/tempest.git
Quality Assurance	scr	review.openstack.org_openstack-dev/grenade
Quality Assurance	scr	review.openstack.org_openstack/tempest
Release cycle management	scm	git://git.openstack.org/openstack-infra/release-tools
Release cycle management	scm	git://git.openstack.org/openstack/requirements
Release cycle management	scr	review.openstack.org_openstack/requirements
sahara	its	https://bugs.launchpad.net/sahara
sahara	scm	git://git.openstack.org/openstack/sahara
sahara	scr	review.openstack.org_openstack/sahara
swift	its	https://bugs.launchpad.net/swift
swift	scm	https://github.com/openstack/swift.git
swift	scr	review.openstack.org_openstack/swift
trove	its	https://bugs.launchpad.net/trove
trove	scm	https://github.com/openstack/trove.git
trove	scr	review.openstack.org_openstack/trove
zaqar	its	https://bugs.launchpad.net/zaqar
zaqar	scm	git://git.openstack.org/openstack/zaqar
zaqar	scr	review.openstack.org_openstack/zaqar