



Lustre Development Update

Christopher Morrone

Lustre Working Group Chair, OpenSFS
File System Software Team Lead, LLNL

lustre.org

lustre.org Timeline

- April 8, 2014 - Seagate announces intent to transfer lustre.org to community (LUG 2014)
- November 14, 2014 - Asset Purchase Agreement
- February 27, 2015 - lustre.org domain transferred
- March 10, 2015 - lustre.org AMIs (virtual machine images) copied and running

Lustre.org: Under New Management!



The screenshot shows the homepage of Lustre.org. At the top, there is a navigation menu with links for "Download", "Documentation", "Development", "News", and "About". The "Lustre" logo is prominently displayed on the left. A search bar is located on the right side of the header. The main content area features a welcome message, a description of the Lustre file system, and a "What's Here?" section with three bullet points. On the right side, there are logos for "OpenSFS" and "EOFS European Open File System". Below these logos, there are two sections: "Latest News" with three items and "Lustre Links" with two items.

Download Documentation Development News About

Lustre®

Search 

Welcome to the official home of the Lustre filesystem

The Lustre® file system is an open-source, parallel file system that supports many requirements of leadership class HPC simulation environments. Whether you're a member of our diverse development community or considering the Lustre file system as a parallel file system solution, these pages offer a wealth of resources and support to meet your needs.

What's Here?

- Here's how to [get started with the Lustre file system](#), with links to the [documentation](#), and information on how to [download](#) the Lustre software.
- The [Releases Roadmap](#) outlines the community's schedule of releases and main features.
- The [Development](#) page describes how you can participate in the advancement of the Lustre file system by joining the development activities currently taking place, including code development, testing, filing bugs, and benchmarking.



Latest News

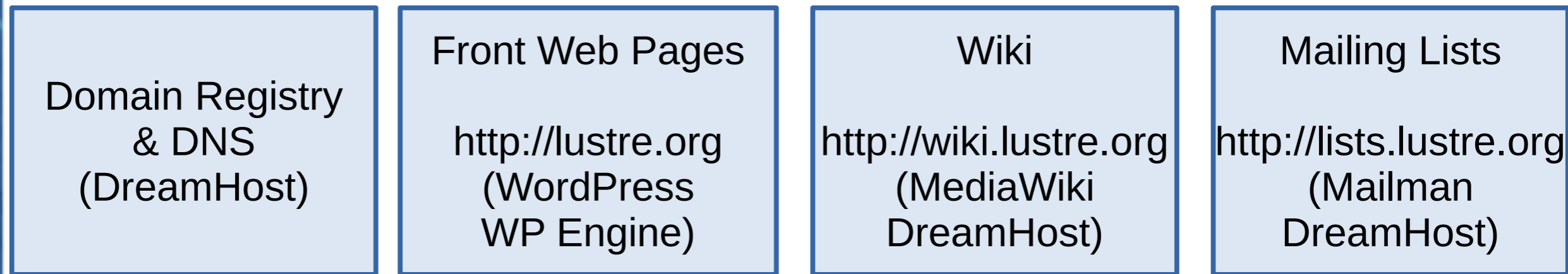
- [Lustre 2.7.0 Released](#)
- [Developer Day April 16, 2015](#)
- [LUG 2015](#)

Lustre Links

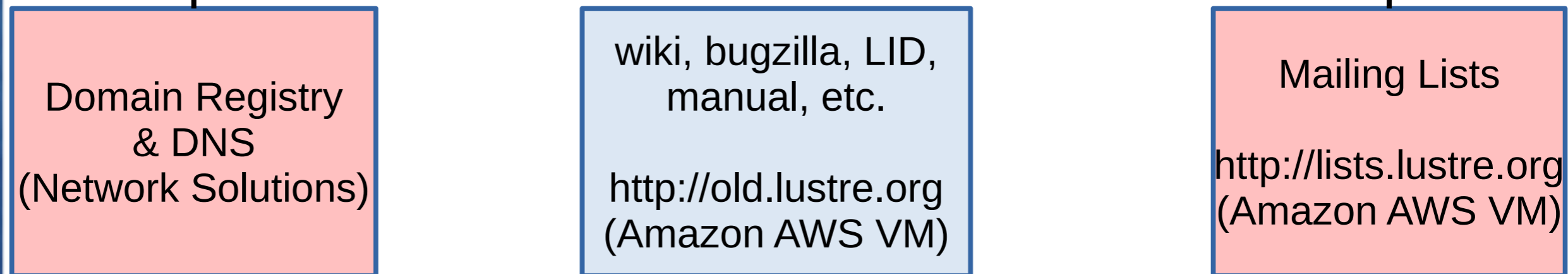
- [Download Lustre](#)
- [Releases Roadmap](#)

lustre.org IT infrastructure

New Infrastructure



Old Infrastructure



Mailing List Proliferation

discuss@lists.opensfs.org

lustre-devel@lists.lustre.org

hpdd-discuss@lists.10.org

lwg@lists.opensfs.org

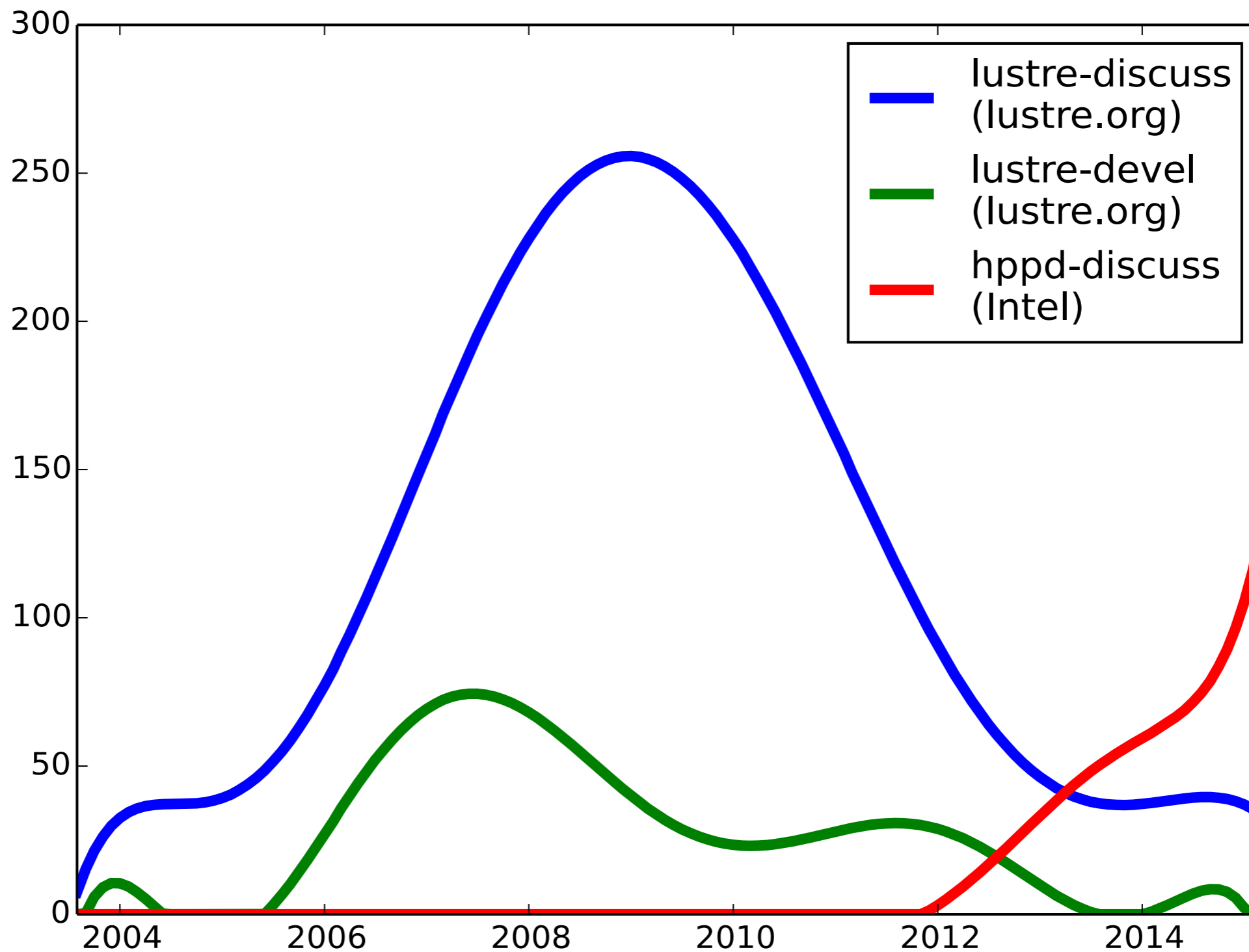
lustre-discuss@lists.lustre.org

lustre-devel@lists.opensfs.org

lustre-announce@lists.lustre.org

lustre-community@lists.lustre.org

Mailing List Traffic



Official Lustre Mailing Lists

lustre-announce

lustre-discuss

lustre-devel

See: <http://lustre.org/mailing-lists>

Recent Releases

Lustre 2.6.0 - July 21, 2014

- LFSCK Phase 2, MDT-OST Consistency (Intel/OpenSFS)
- Client single thread performance improvements (Intel)
- Striped Directories - Technology Preview (Intel/OpenSFS)

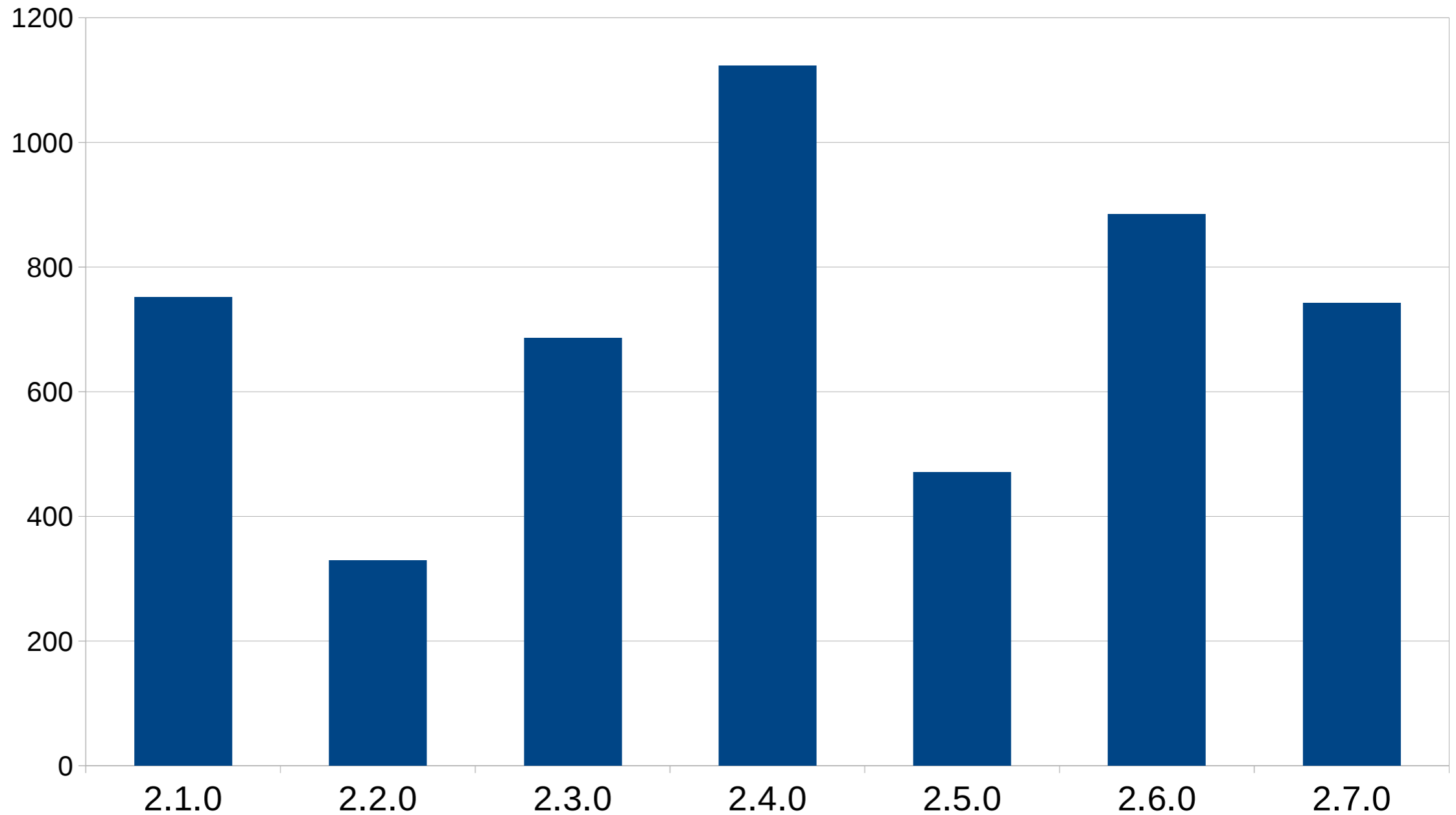
Lustre 2.7.0 - March 13, 2015

- LFSCK Phase 3 - MDT-MDT Consistency (OpenSFS/Intel)
- Dynamic LNet Config (Intel)
- Fine grain OST placement (Fujitsu)
- UID/GID mapping (Indiana University)
- Striped Directories - Technology Preview Continues

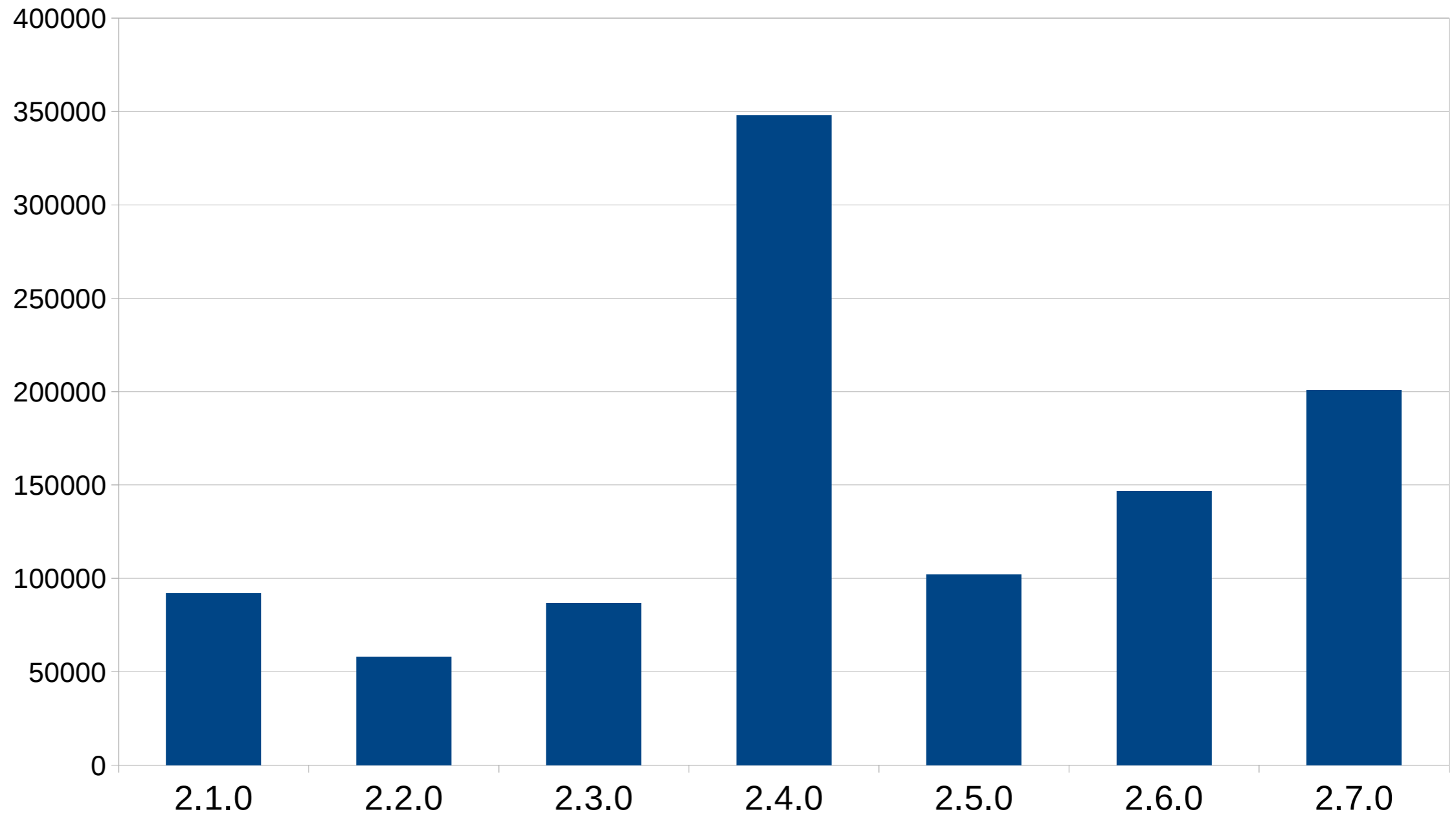
High Level Release Information

Lustre Version	Commits	LOC	Commit Authors	Commit Reviewers
2.1.0	752	92K	55	NA
2.2.0	329	58K	42	NA
2.3.0	586	87K	52	NA
2.4.0	1123	348K	69	NA
2.5.0	471	102K	70	NA
2.6.0	885	147K	76	67
2.7.0	742	201K	65	60

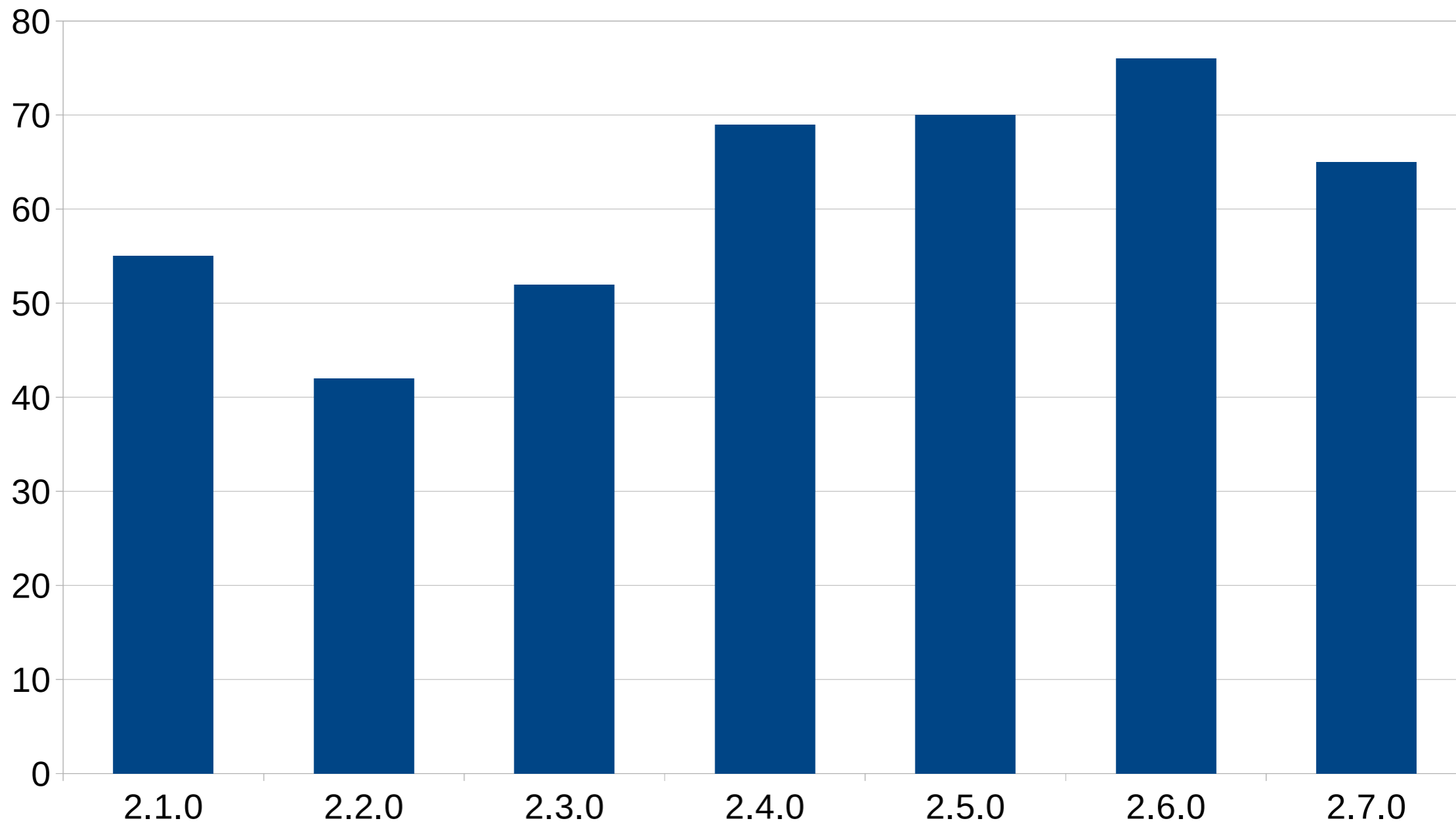
Commits Per Lustre Release



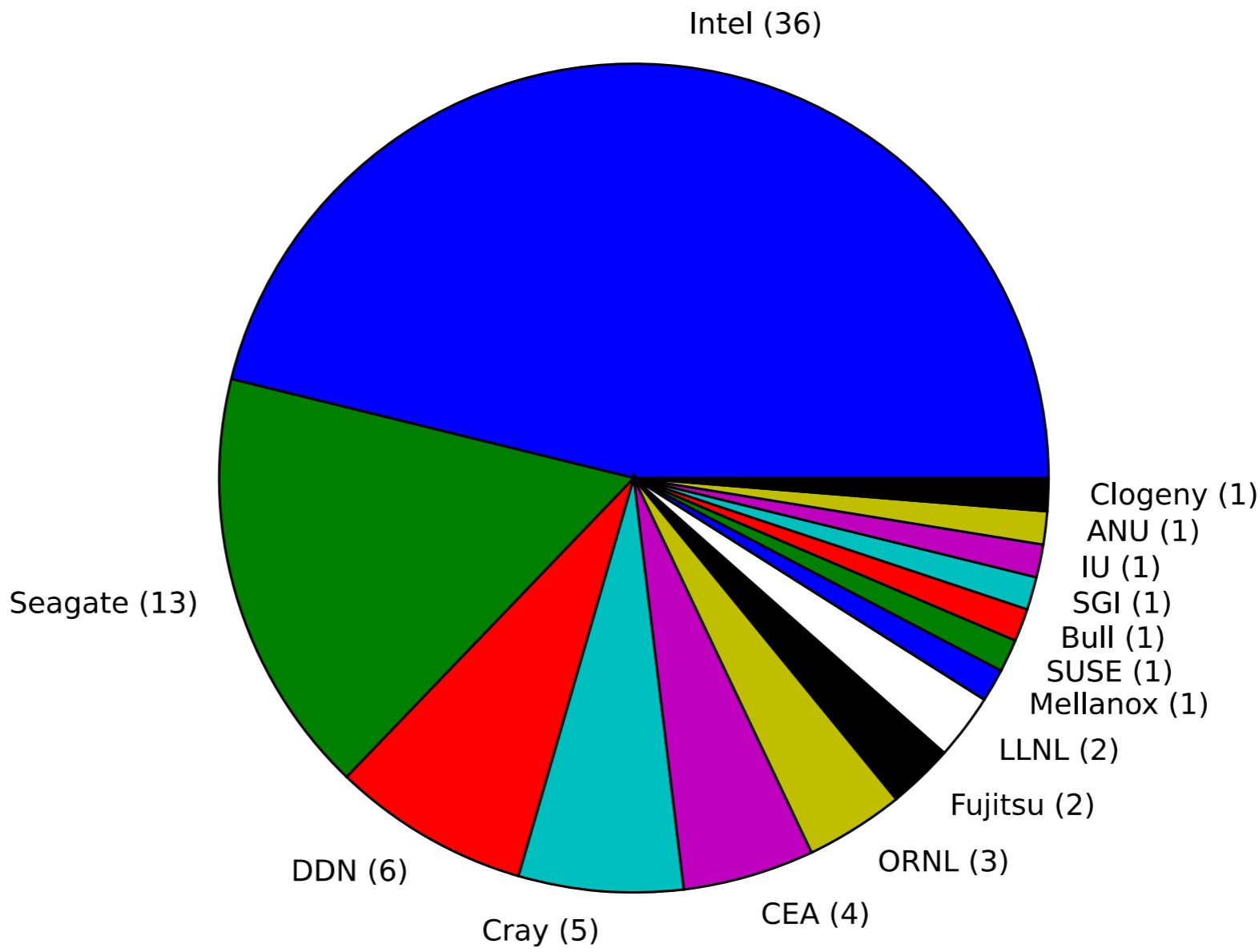
Lines of Code Changed Per Lustre Release



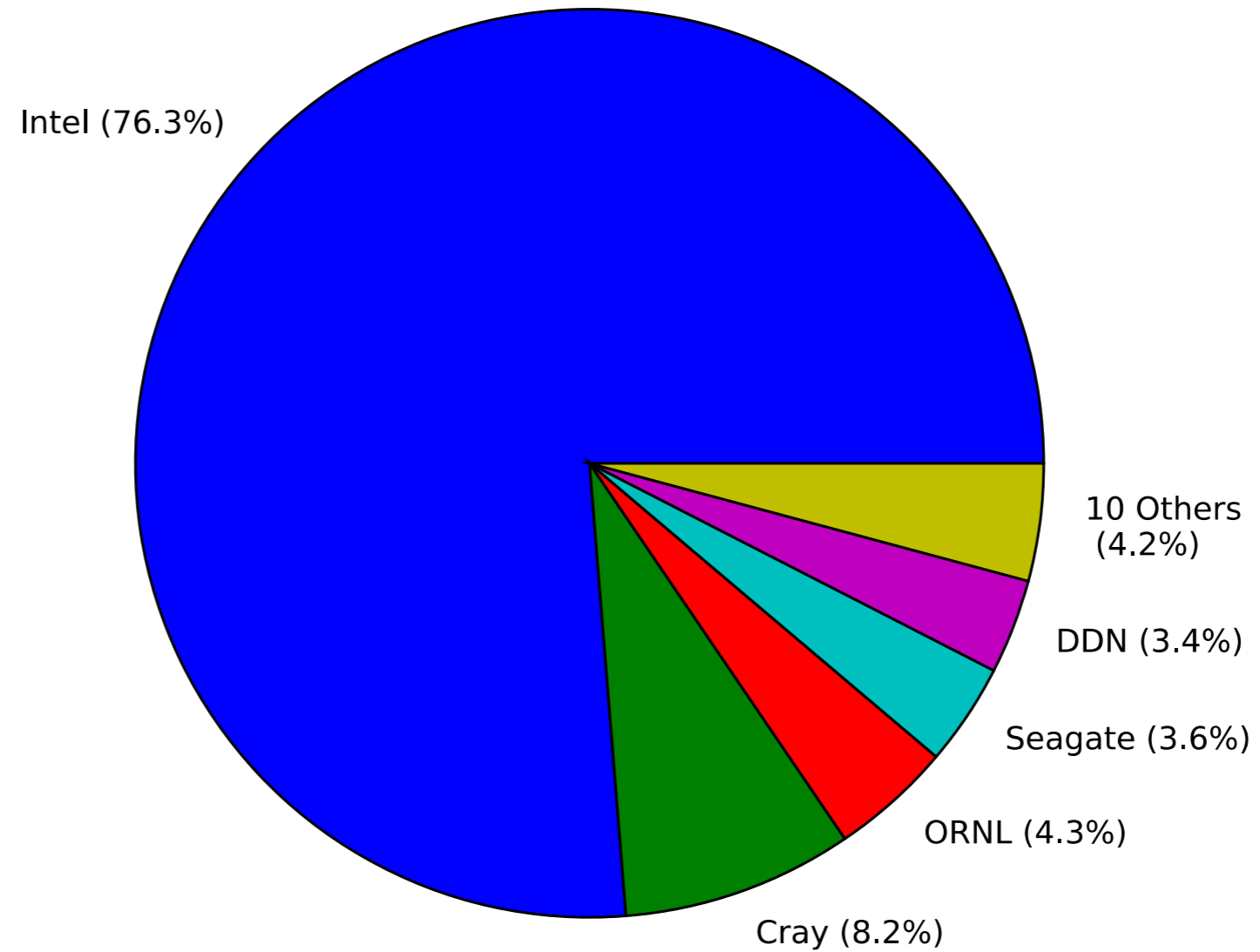
Commit Authors Per Lustre Release



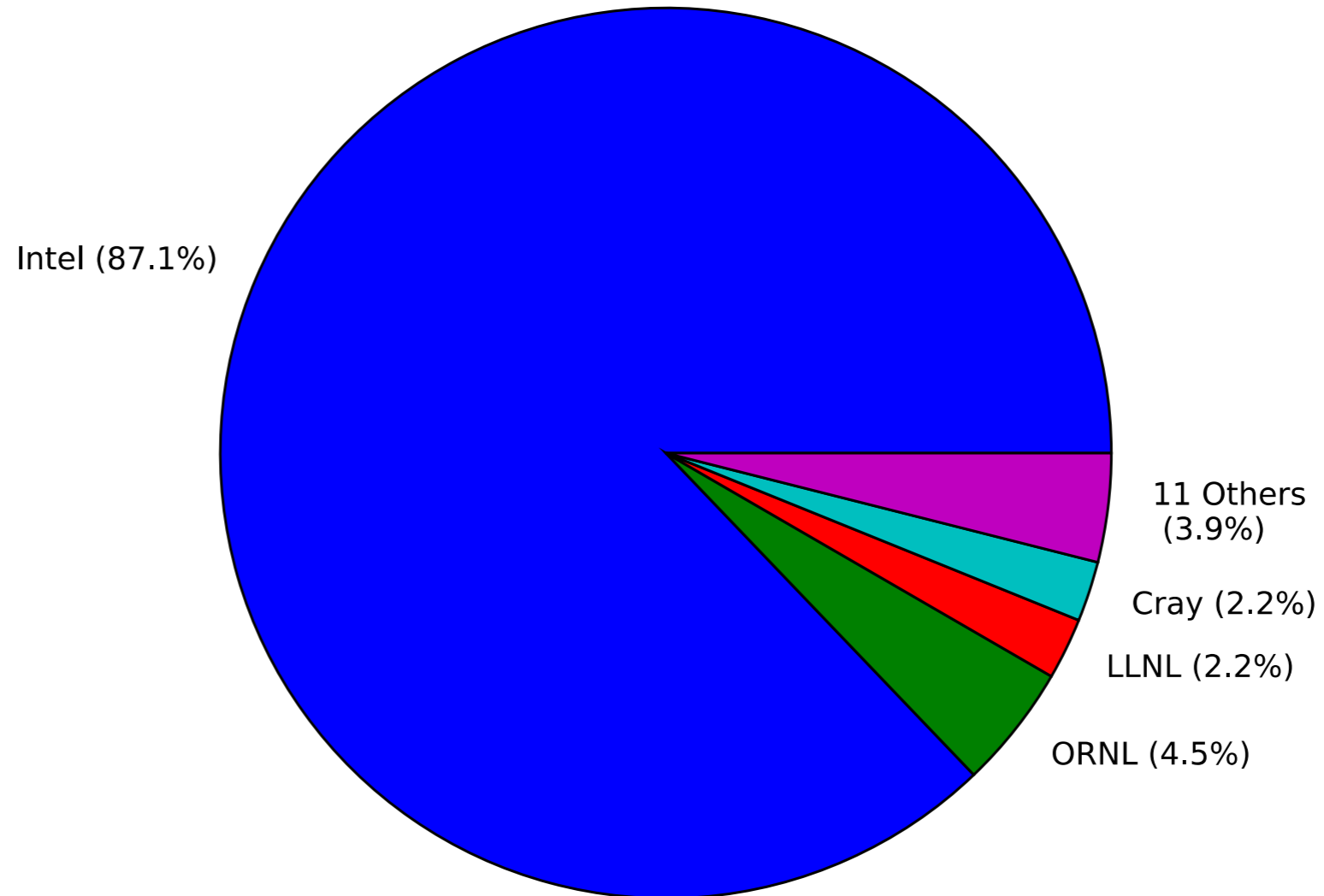
Developers Per Organization



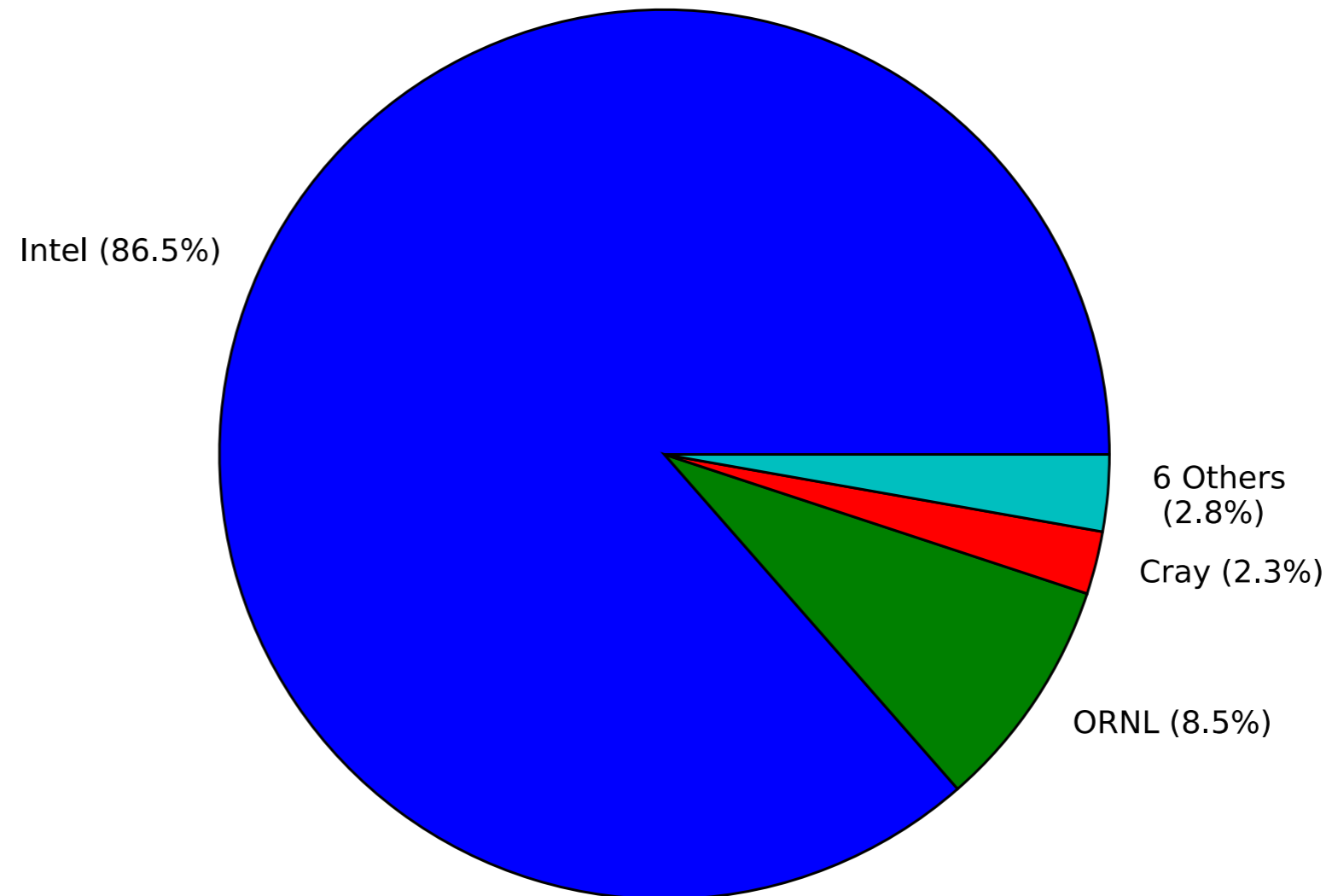
Commits Per Organization



Lines Of Code Per Organization



Final Commit Reviews Per Organization



Code Review Overview

5% people,
>50% of reviews

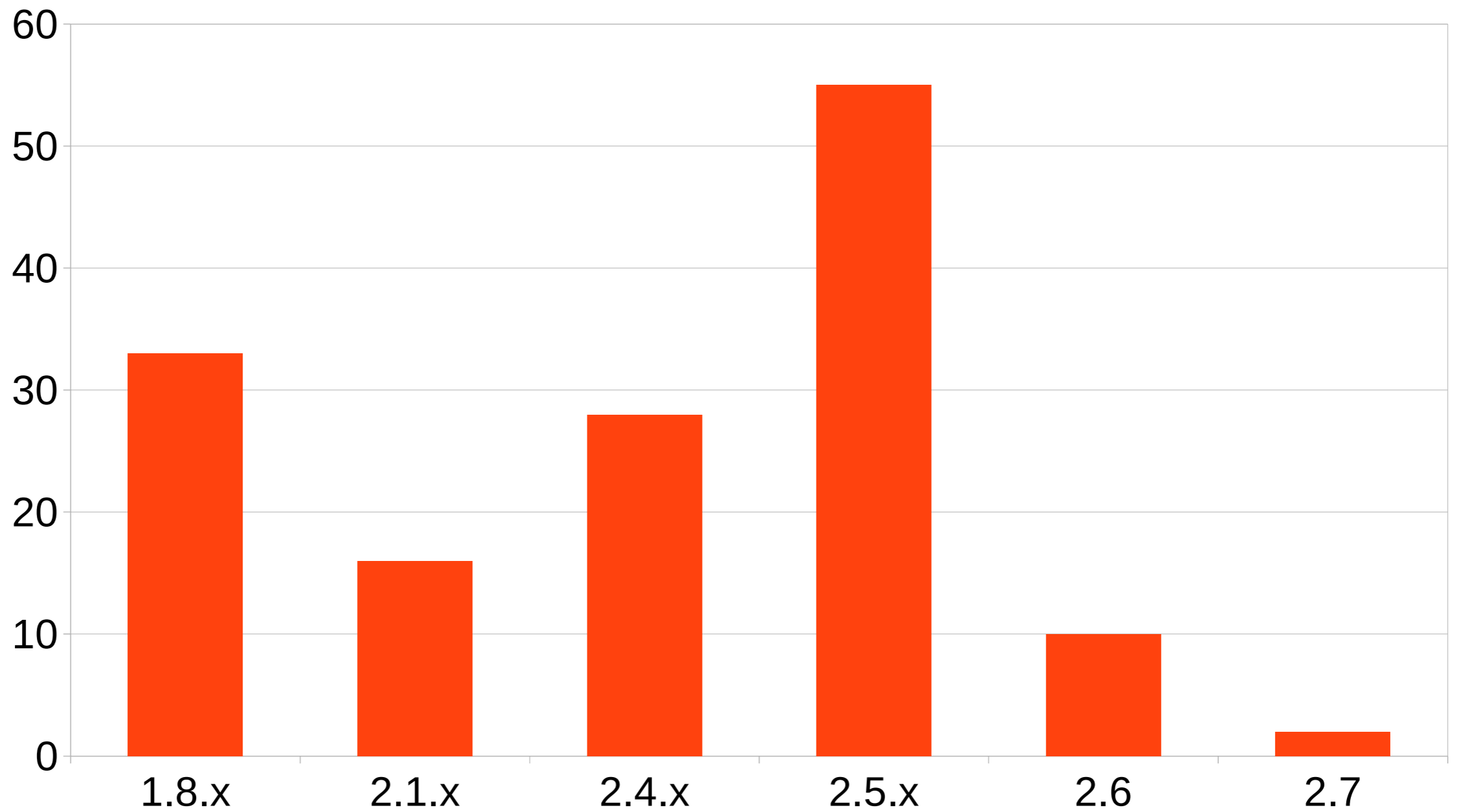
27% people,
>90% of reviews

2015 Survey

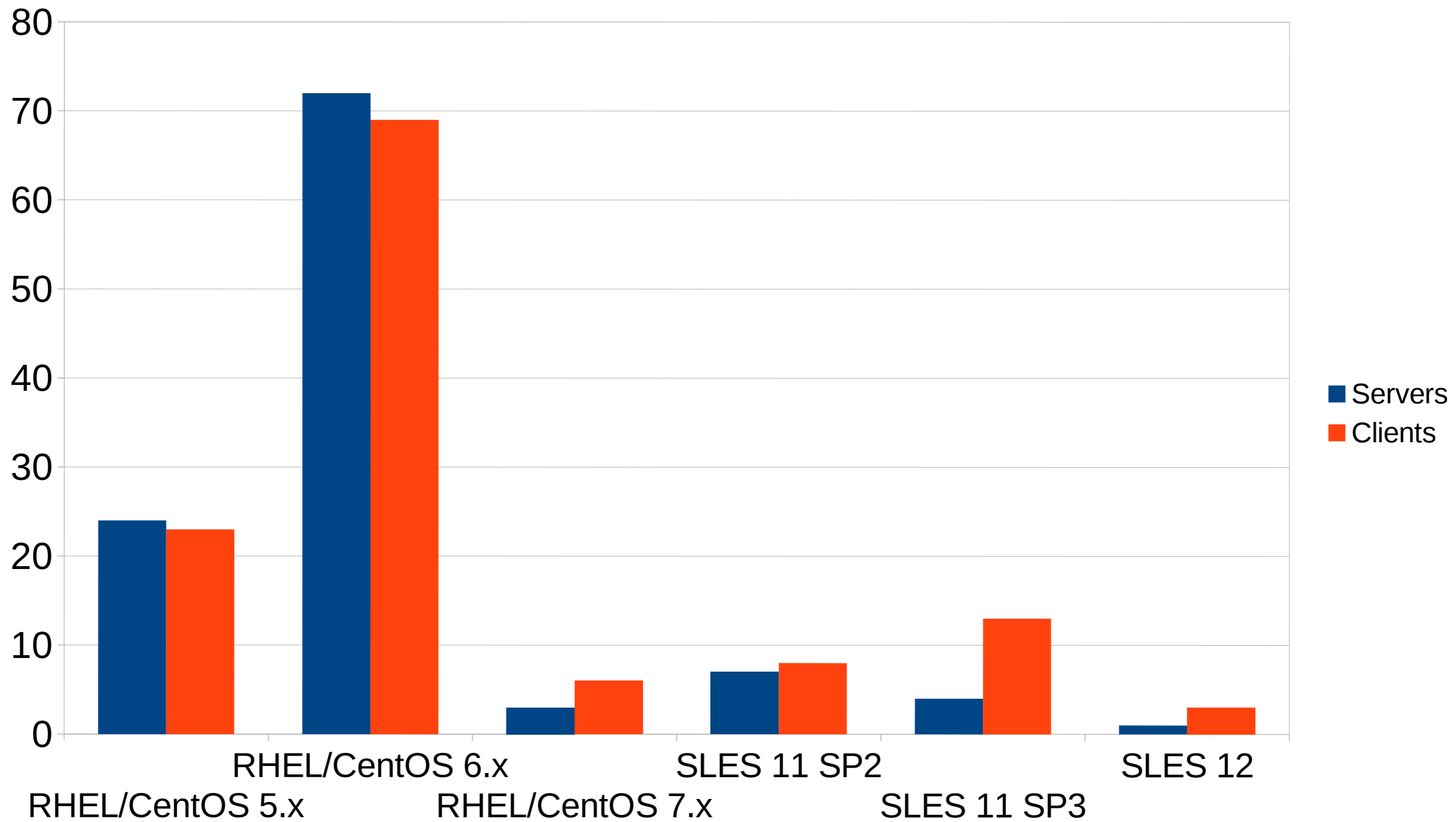
Survey Response totals

2012	90
2013	73
2014	76
2015	89

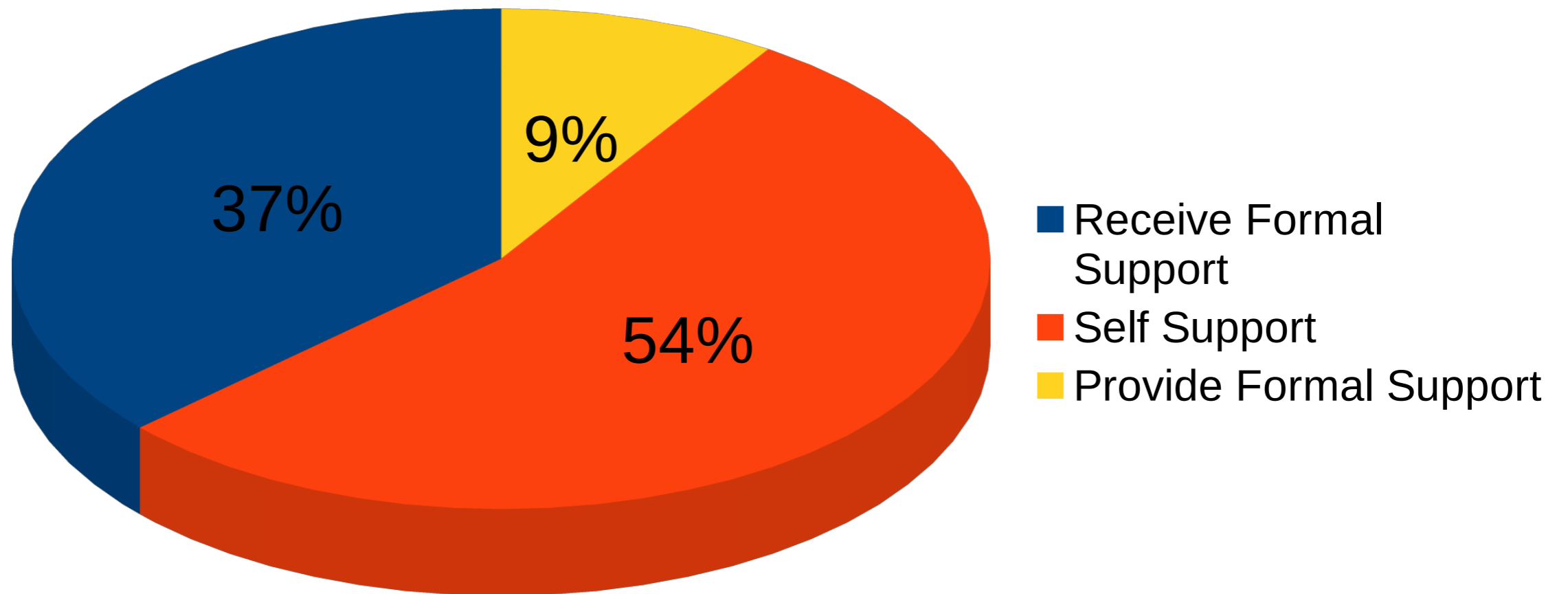
Lustre Versions in Production



Linux Distributions Used



Support Situation



Roadmap

Major Releases Every Six Months

Lustre 2.7.0 : March 2015

Lustre 2.8.0 : September 2015

Lustre 2.9.0 : March 2016

Development Projects Under Way

- April 2015 - NRS Delay for fault injection (Cray)
- May 2015 - Updates for servers on RHEL7
- May 2015 - Striped Directories (Intel/OpenSFS)
- May 2015 - UID/GID Mapping Conf. (IU/OpenSFS)
- May 2015 - Multiple MD Modify RPCs (Bull/Atos)
- Nov 2015 - Shared Key Crypto (IU/OpenSFS)

See: <http://wiki.lustre.org/Projects>

Development Process Improvement

Goal: Enlarge the Pool of
Lustre Developers

Challenge: Code's Steep
Learning Curve

Make Lustre's Code Approachable

Document the Protocol

Comment the Code

Refactor the Code

Improve the Build & Packaging System

Improve the Web Pages

Overhaul the Manual

Code Approachability Activities

Document the Protocol	Contract SFS-DEV-005
Comment the Code	Contract SFS-DEV-003
Refactor the Code	Contracts SFS-DEV-003 & -004
Improve the Build & Packaging System	Various contributions
Improve the Web Pages	lustre.org, EOFS & OpenSFS
Overhaul the Manual	Not yet

<http://wiki.opensfs.org/Contracts>

Keep the Code Approachable

“Feature Releases” renamed to “Major Releases”

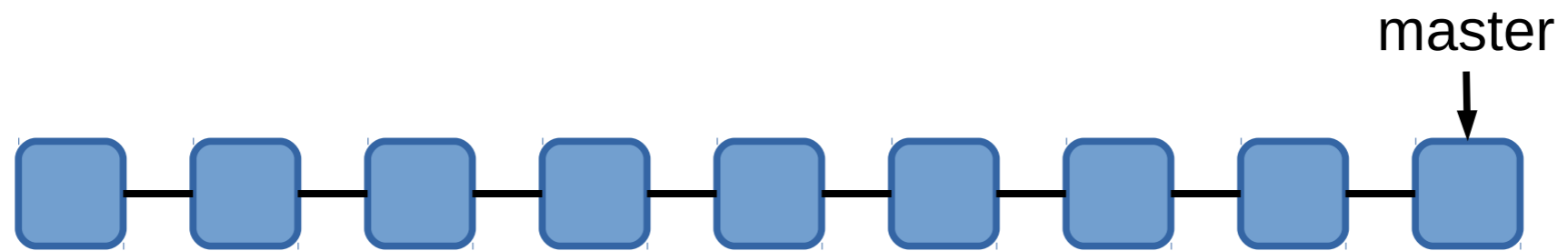
Branch-and-merge in addition to cherry-pick

Features only land when done

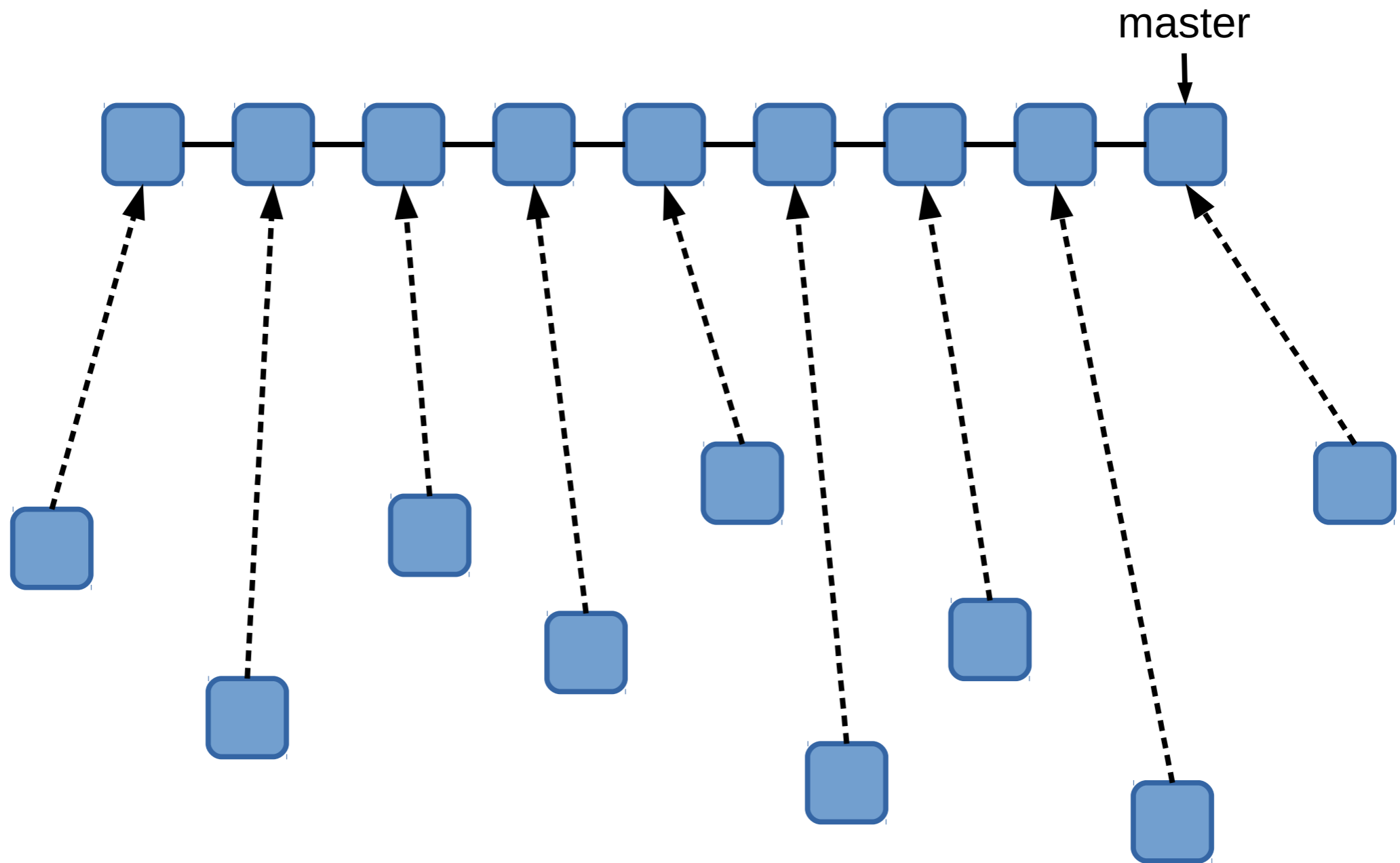
Improve code reviews

Continually evaluate and improve processes

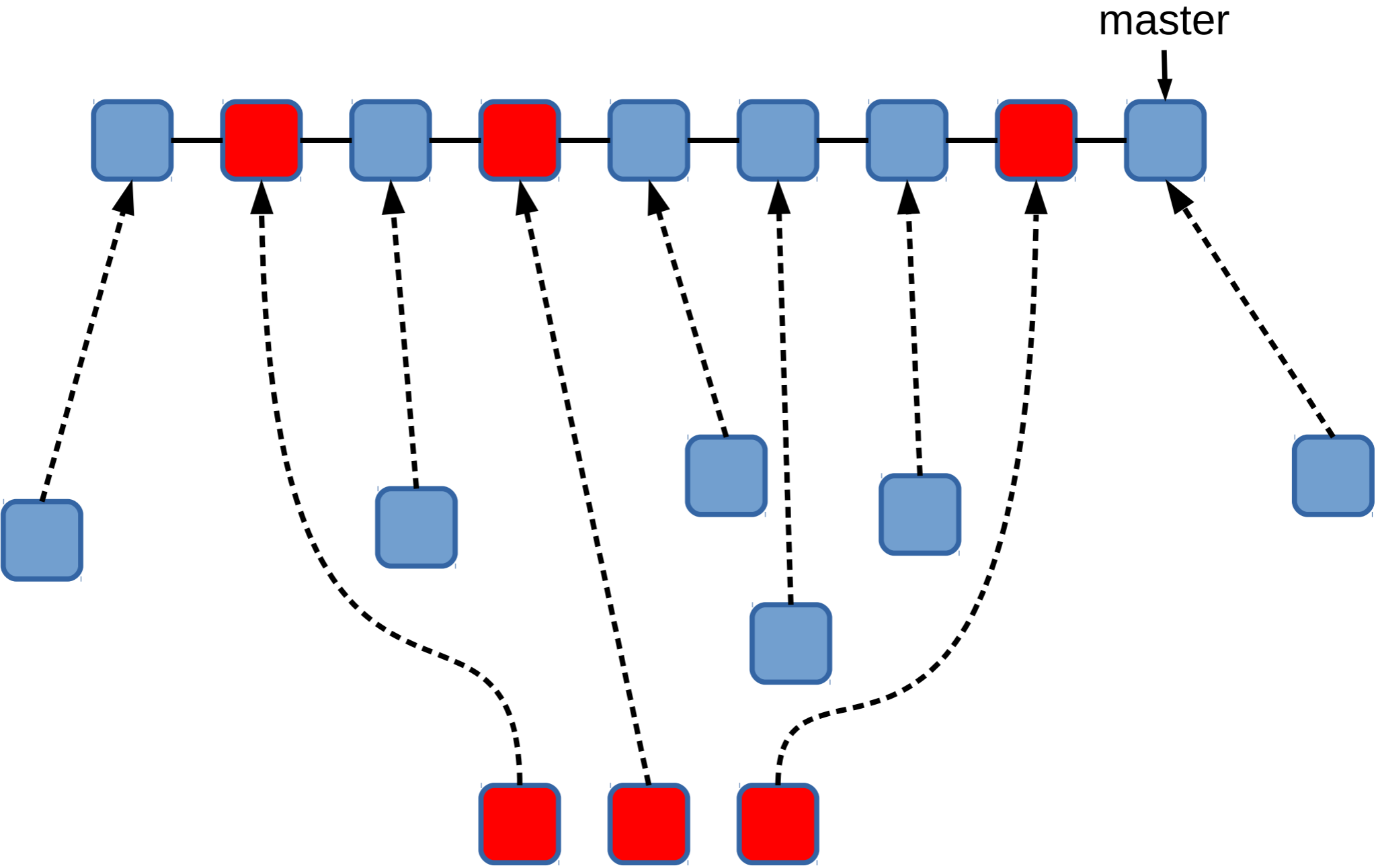
A branch.



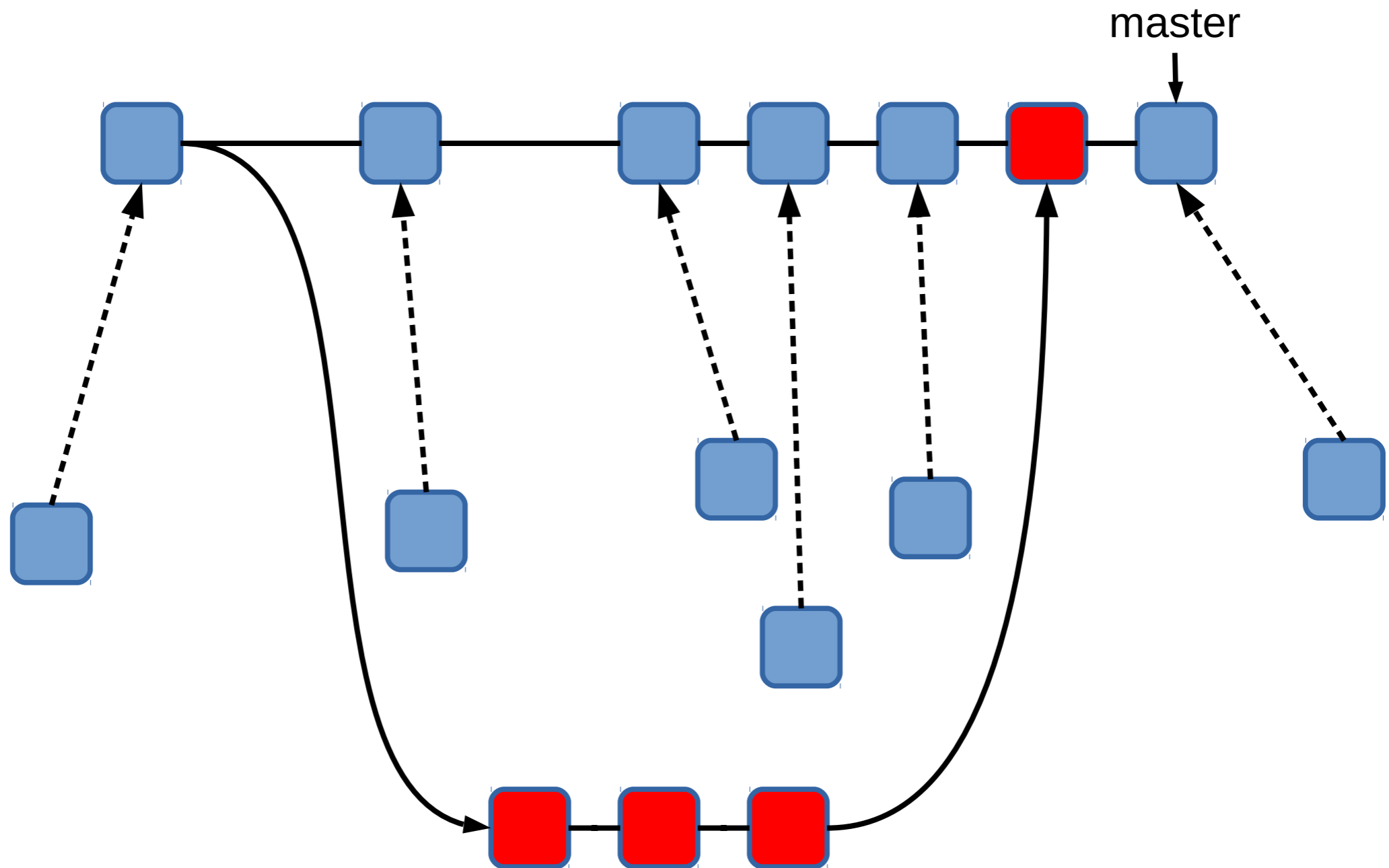
Cherry-pick method



Cherry-pick Applied to Features



Branch and Merge



Keep the Code Approachable

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Improve code reviews

Continually evaluate and improve processes

We Need YOU!

- Managers
 - Make Lustre's master branch a priority for your employees
- Software Developers
 - Participate in code reviews
 - Contribute code improvements
- Everyone
 - Improve Lustre's documentation
 - Work on lustre.org

Don't know what you can do? Just ask!

Come back to lustre.org!
Use the mailing lists.
Help generate content.



Open Scalable File Systems, Inc.
3855 SW 153rd Drive Beaverton, OR 97006
Ph: 503-619-0561 | Fax: 503-644-6708
admin@opensfs.org | www.opensfs.org