



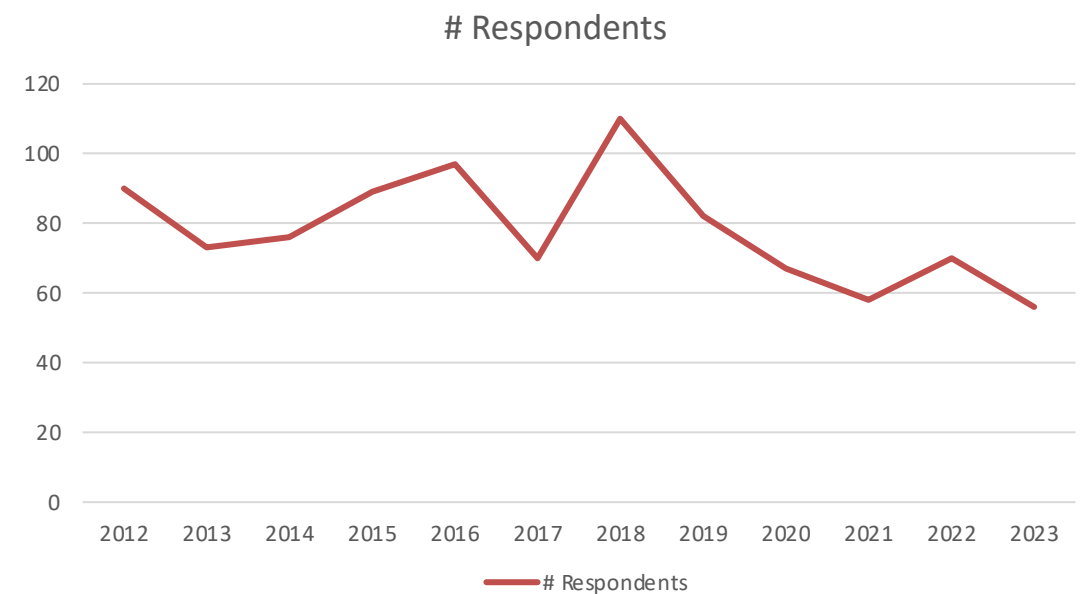
Community Release Update

Oct 5th 2023

Peter Jones, Whamcloud
OpenSFS Lustre Working Group

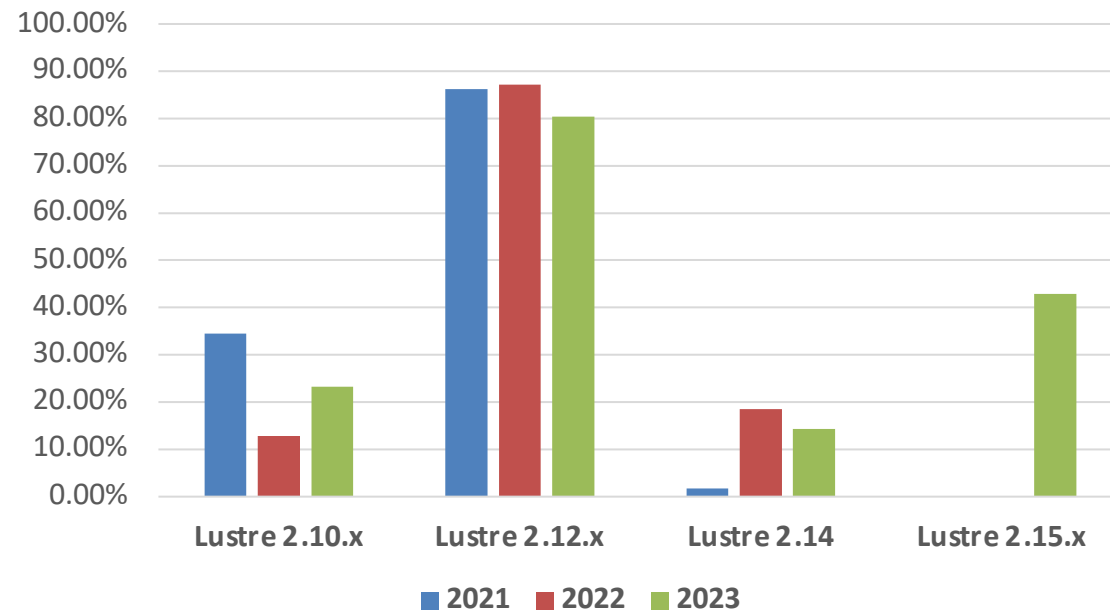
OpenSFS Lustre Working Group

- Has been operating as the forum for collaboration on the community releases for over a decade
- Led by Peter Jones (Whamcloud) and Dustin Leverman (ORNL)
- All welcome to attend and/or join the mailing list
- For more information visit the wiki
- http://wiki.opensfs.org/Lustre_Working_Group
- LWG issues survey annually in March to track trends in Lustre usage
- Full details available at http://wiki.opensfs.org/Lustre_Community_Survey



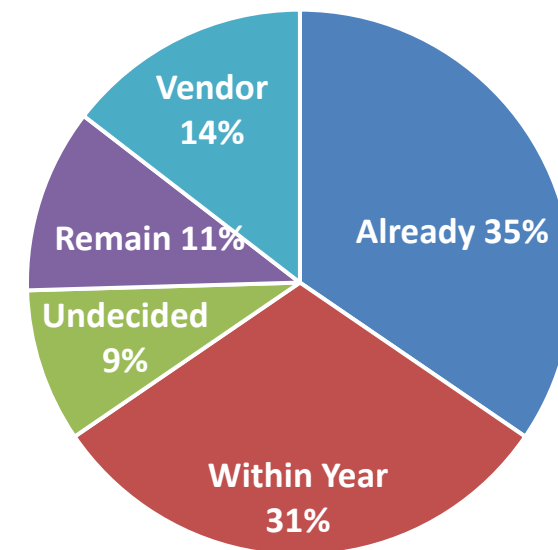
Community Survey – LTS Transition

Which Lustre versions do you use in production? (select all that apply)



Strong early adoption of 2.15.x

How quickly do you plan to move to a Lustre 2.15.x LTS release?



Majority intended to have switched before March 2024

Lustre 2.15.x LTS

- Lustre 2.15.0 GA June 2022
 - Replacing 2.12.x as LTS branch
 - http://wiki.lustre.org/Lustre_2.15.0_Changelog
- Lustre 2.15.1 GA Aug 2022
 - RHEL 8.6 servers/clients; Ubuntu 22.04 clients
 - http://wiki.lustre.org/Lustre_2.15.2_Changelog
- Lustre 2.15.2 GA Jan 2023
 - RHEL 8.7 servers/clients; SLES15 SP4/ RHEL 9.0 clients
 - http://wiki.lustre.org/Lustre_2.15.2_Changelog
- Lustre 2.15.3 GA Jun 2023
 - RHEL 8.8 servers/clients(LU-16755); RHEL 9.2 clients (LU-16756)
 - http://wiki.lustre.org/Lustre_2.15.2_Changelog
- Lustre 2.15.4 coming soon
 - RHEL 8.9 servers/clients; RHEL 9.3 clients

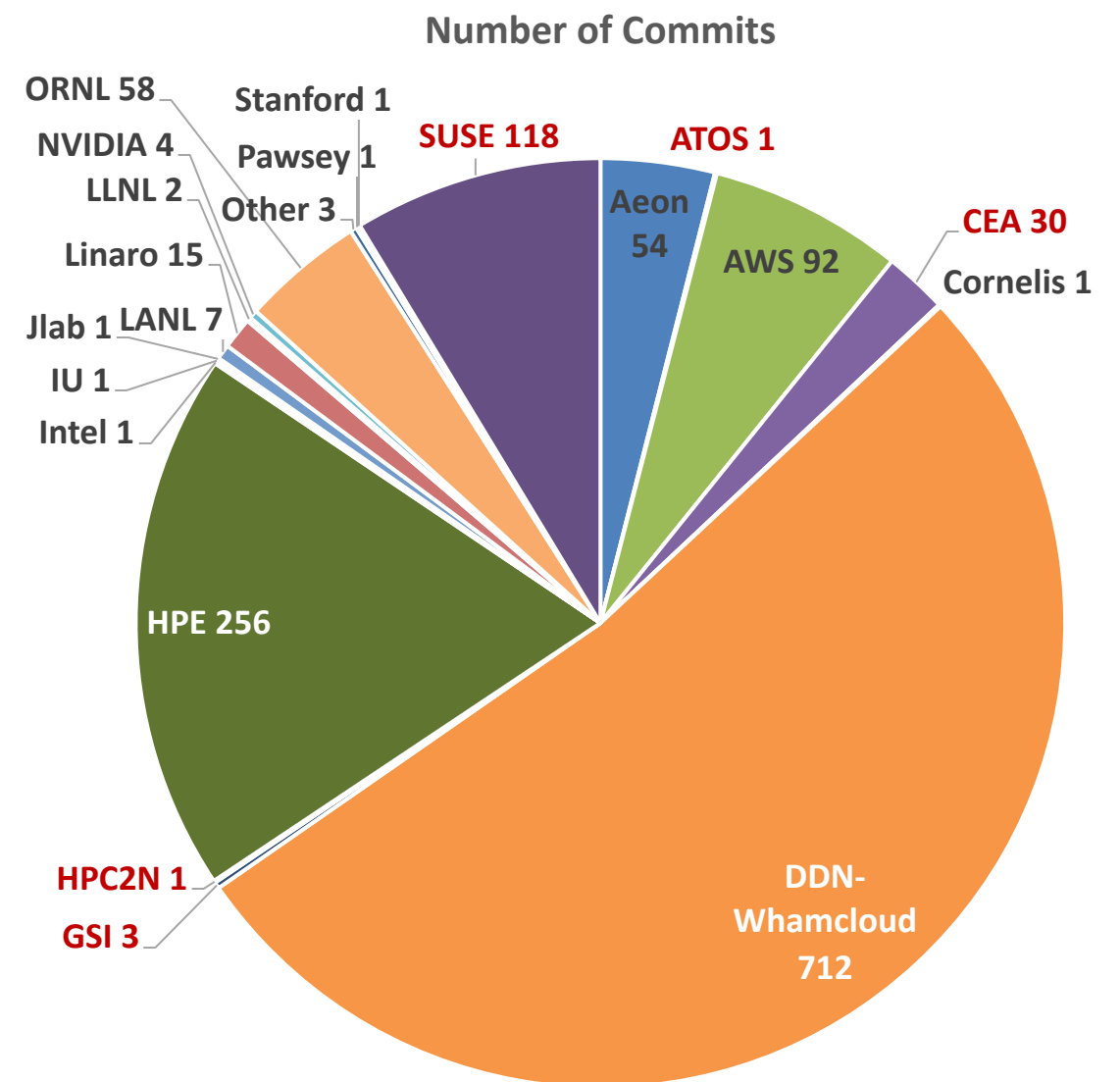
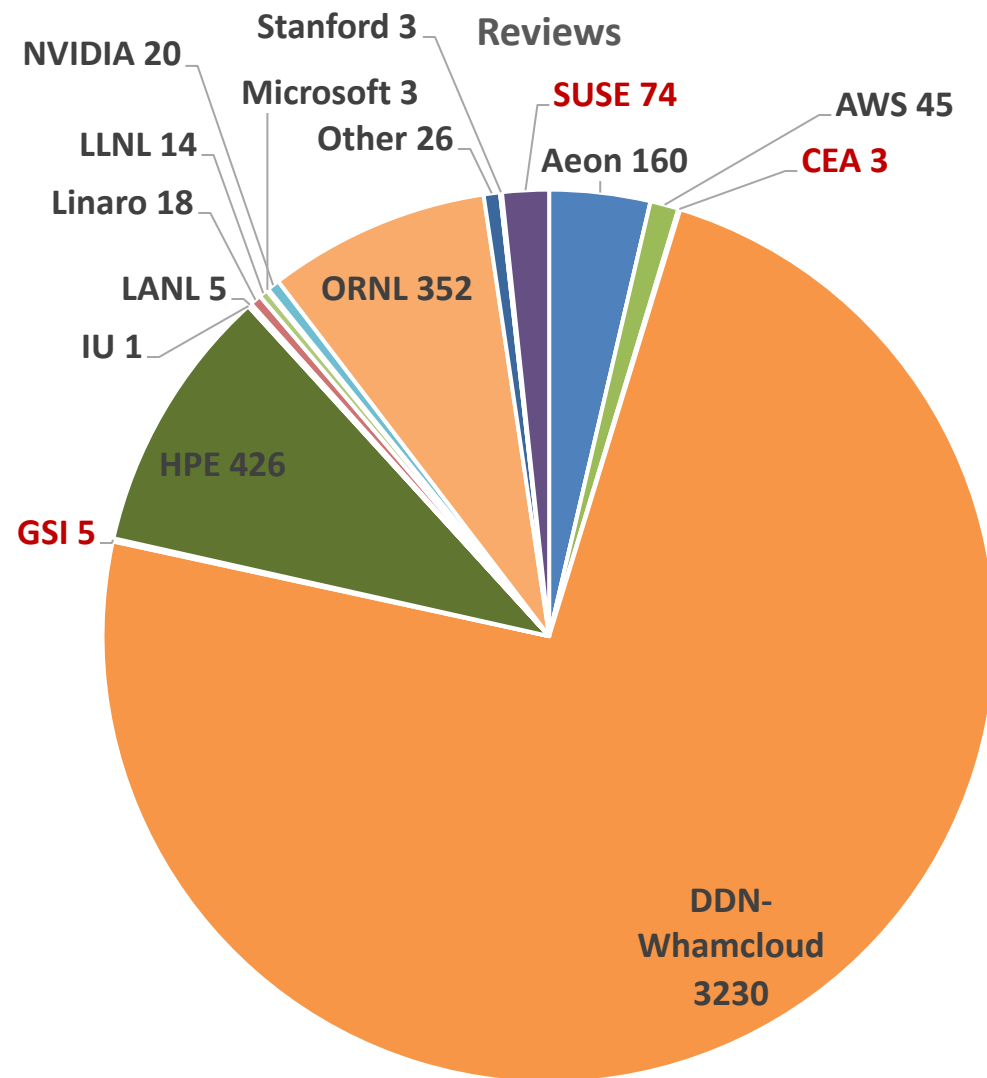
Lustre 2.16

- Targeting for release in Q4 2023
 - http://wiki.lustre.org/Release_2.16.0
 - Feature freeze extended to allow IPv6 work to complete
 - RHEL 9.2 servers/clients (may shift to RHEL 9.3)
 - SLES15 SP5/Ubuntu 22.04 clients
- Interop/upgrades from latest Lustre 2.15.x
- Features in the release
 - RHEL 9.x server support **MERGED**
 - IPv6 Support ([LU-10391](#)) **(MOSTLY) MERGED**
 - [9 patches remaining](#)
 - Optimized Directory Traversal ([LU-15975](#)) **MERGED**
 - Aka "Improved Statahead"

Lustre 2.16 "Hidden Gems"

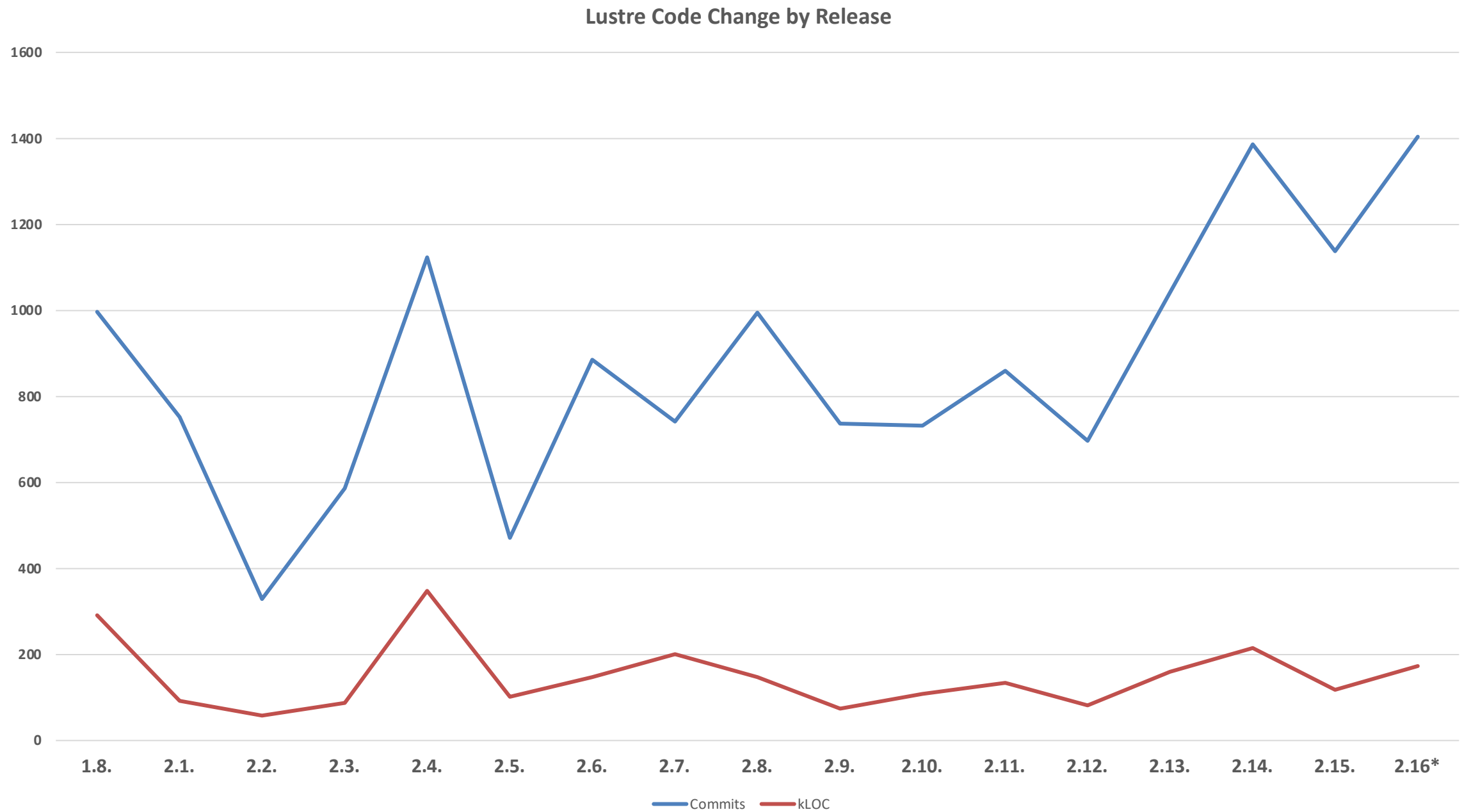
- Improved support for cgroups ([LU-16713](#))
 - Better memory management for nodes running Lustre
- Statahead performance with filename patterns ([LU-14361](#))
 - Applies to many AI/ML workloads
- Kerberos revival ([LU-17015](#))
 - Sébastien Buisson will elaborate...
- Unaligned Direct IO ([LU-13805](#))
 - Patrick Farrell will elaborate...
- lljobstat utility for monitoring top jobs ([LU-16228](#))
 - Simplifies debugging for high load situations
- JobID in MDT inode xattr ([LU-13031](#))
 - Records origins of file so helps with debugging etc

Lustre 2.16 Contribution Statistics (to date)



Data courtesy of Dustin Leverman (ORNL)
 Source: <https://git.whamcloud.com> 2.15.50 to 2.15.58

Historic Contribution Statistics



Lustre 2.16 data only up to 2.15.58

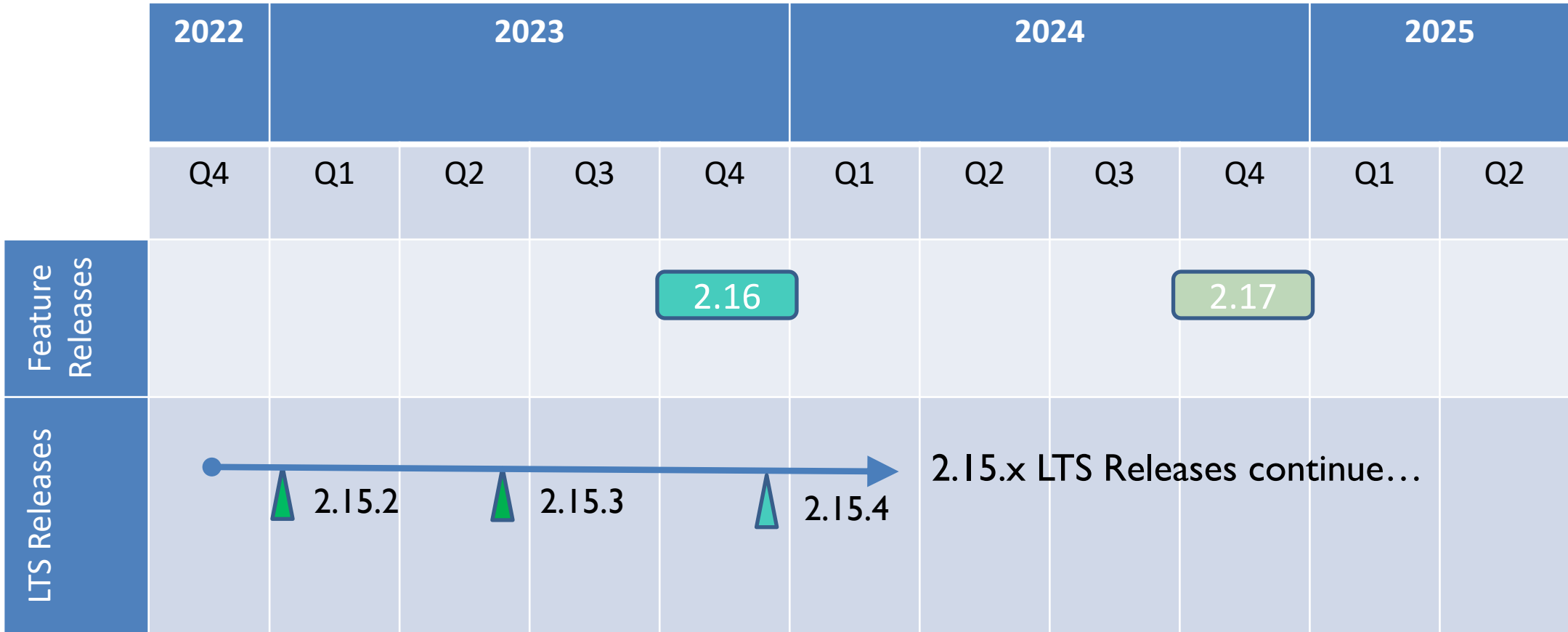
Looking ahead: Considering LTS options

- RHEL 9.x server support will become driver to switch LTS version at some point
- Options will be 2.16/2.17/2.18
- Will start polling the community in the 2024 OpenSFS survey
- Plenty of notice will be given for any change and opportunity will be provided to have input into the decision



By nclm - Own work, CC0, <https://commons.wikimedia.org/w/index.php?curid=48583105>

Lustre Community Roadmap



LEGEND: Completed Expected Timeline Timeline TBD LTS Branch

- 2.15 (GA Q2 2022)**
- [Client Directory Encryption](#)
 - [GPUDirect Storage](#)
 - [MDT Space Balance](#)

- 2.16**
- [RHEL9 Server Support](#)
 - [IPv6](#)
 - [Optimized Directory Traversal](#)

- 2.17**
- [Client Data Compression](#)
 - [Metadata Writeback Cache](#)
 - [Erasure Coding](#)

* Estimates are not commitments and are provided for informational purposes only
 * Fuller details of features in development are available at <http://wiki.lustre.org/Projects>



How to Contribute

- Complete the annual OpenSFS survey
 - https://wiki.opensfs.org/Lustre_Community_Survey
- Participate in the LWG
 - https://wiki.opensfs.org/Lustre_Working_Group
- Lustre documentation
 - Lustre Ops Manual – report issues in LUDOC JIRA project
 - https://wiki.lustre.org/Lustre_Manual_Changes
 - Lustre.org wiki (Lustre internals and sysadmin info)
 - http://wiki.lustre.org/Category:Lustre_Systems_Administration
- Join a Lustre community organization (OpenSFS/EOFS)
- Participate in Community events
 - LUG, LAD, Regional LUG events, SC/ISC BOFs, online
- Lustre development
 - Submitting/Reviewing/Testing Lustre code
 - <https://wiki.lustre.org/Development>



LUG23 Developer Day

- Last minute withdrawals meant that event became a hackathon
- Proposed list of tasks provided <https://jira.whamcloud.com/issues/?filter=18216>
- Mix of experienced and beginner/novice developers collaborated to push patches
- Participants from
 - Aeon Computing
 - CEA
 - DDN-Whamcloud
 - LANL
 - LLNL
 - ORNL
 - Southern Methodist



Photo courtesy of Sarp Oral (ORNL)

21 patches (and counting) merged

Summary

- Lustre 2.16.0 coming soon (ish)
- Lustre 2.15.4 targeted before the end of the year
 - RHEL 8.9 support
- LWG http://wiki.opensfs.org/Lustre_Working_Group

Thank you

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