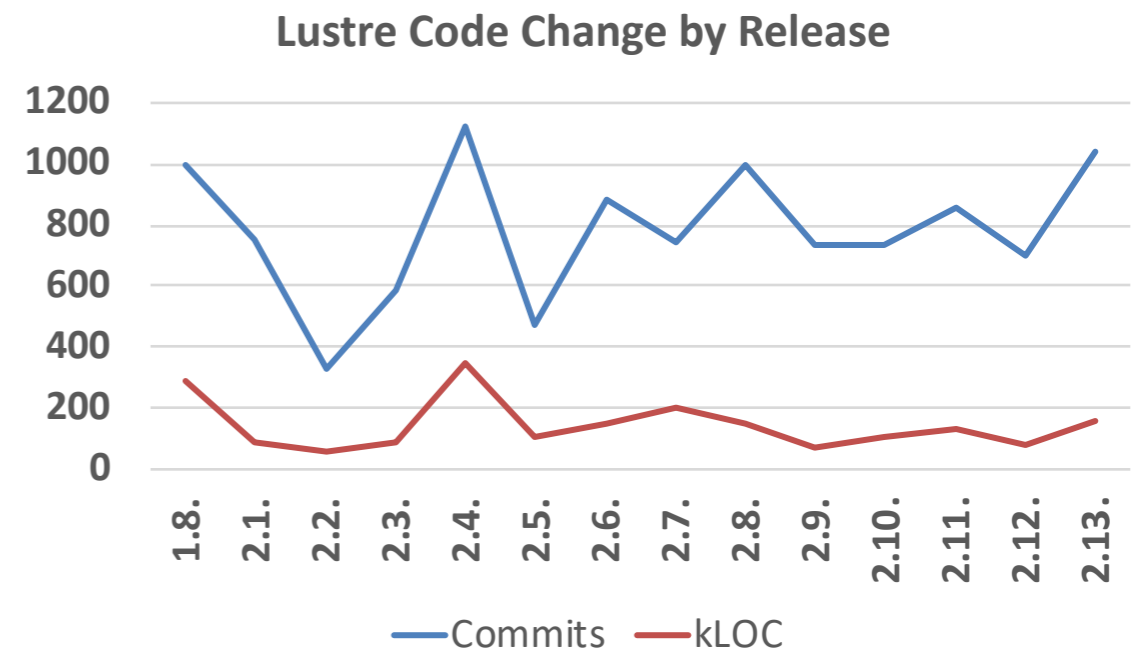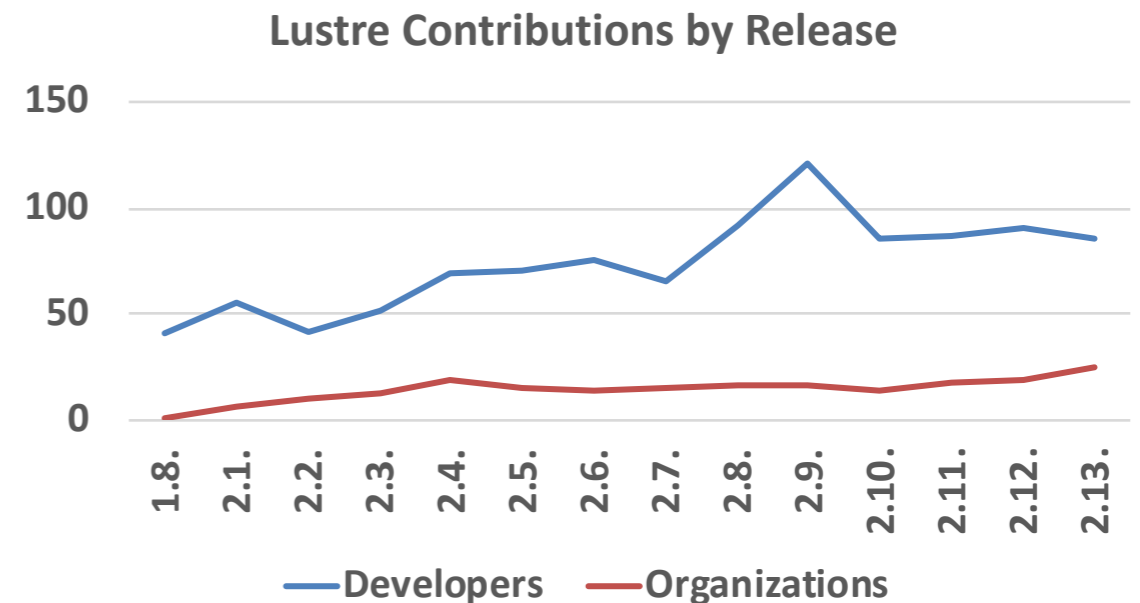# Lustre Update

December 15th 2020

Peter Jones, Whamcloud

OpenSFS Lustre Working Group

A Decade of Community Development

- Prior to OpenSFS designating the canonical release and the kernel-style contribution model, external contributions were rare
  - Lustre 1.8 (2009) had no external contributions
  - Lustre 2.13 (2019) had contributions from 85 developers from 25 organizations
- Over the last ten years we have had Lustre code contributions from
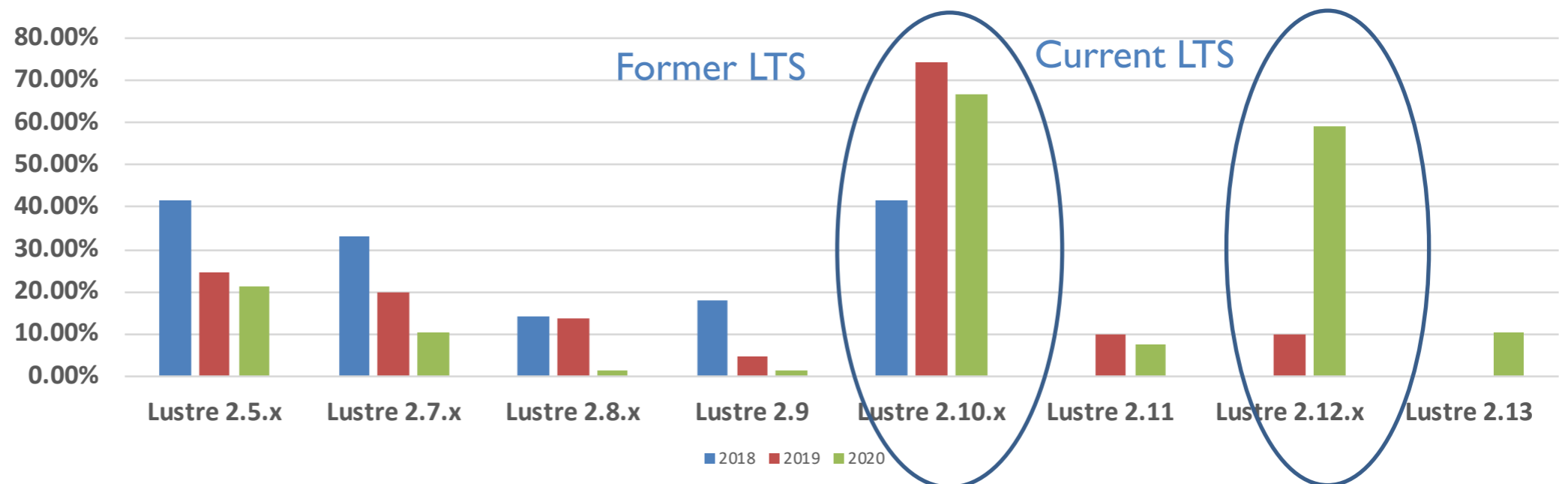 - 45 distinct organizations
  - 217 individual developers

Lustre Contributions by Release

— Developers — Organizations

Lustre Code Change by Release

— Commits — kLOC

Data courtesy of Dustin Leverman (ORNL)

Lustre 2.12.x LTS

- Lustre 2.12.6 went GA on Dec 9th
  - RHEL 7.9 servers/clients
  - RHEL 7.9/RHEL 8.3/SLES12 SP5/Ubuntu 20.04 clients
  - Support for building with MOFED 5.x
    - testing still focused on MOFED 4.9.x
  - http://wiki.lustre.org/Lustre_2.12.6_Changelog
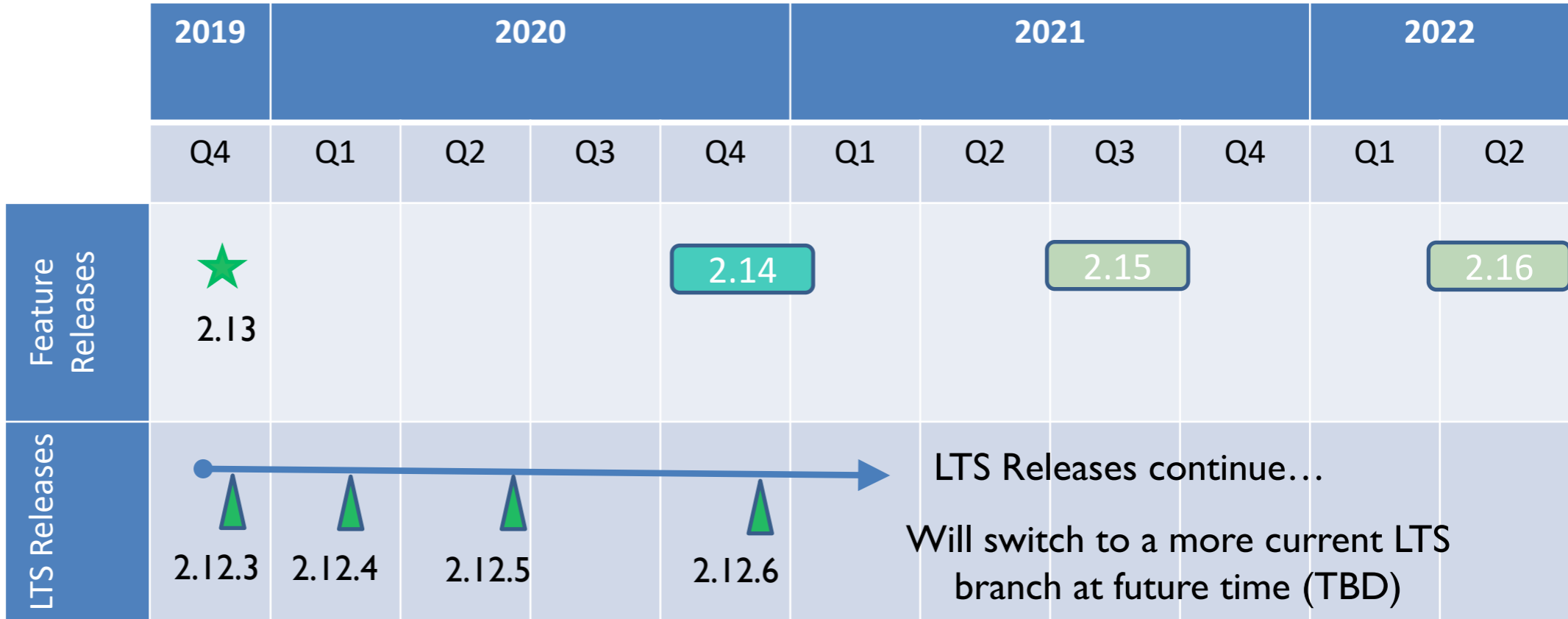- <u>No decision on the next LTS release has been made yet</u>

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

Former LTS   Current LTS

■ 2018 ■ 2019 ■ 2020

Lustre 2.14

- In final release testing; should be out late Q4
- OS support
  - RHEL 8.3 servers/clients
  - RHEL 8.3/SLES15 SP2/Ubuntu 20.04 clients
- Interop/upgrades from 2.13 and latest Lustre 2.12.x
- Will ship with ZFS 2.0 by default
- MOFED 5.2
- Number of useful features
  - Client-side Data Encryption (LU-12275)
  - OST Pool Quotas (11023)
  - DNE Auto Restriping (LU-11025)
- http://wiki.lustre.org/Release_2.14.0

Lustre Community Roadmap

2019	2020				2021				2022	
Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2

Feature Releases

★ 2.13 | | | | 2.14 | | | 2.15 | | | 2.16

LTS Releases

LTS Releases continue…

Will switch to a more current LTS branch at future time (TBD)

2.12.3 2.12.4 2.12.5 2.12.6

LEGEND: ▮ Completed ▮ Expected Timeline ▮ Timeline TBD ●➔ LTS Branch

2.13
- **Persistent Client Cache**
- **Multi-Rail Routing**
- **Overstriping**

2.14
- **Client Data Encryption**
- **OST Pool Quotas**
- **DNE Auto Restriping**

2.15
- **FLR Erasure Coding**
- **Client Directory Encryption**
- **LNet IPv6 Addressing**

2.16
- **FLR Immediate Mirror**
- **Metadata Writeback Cache**

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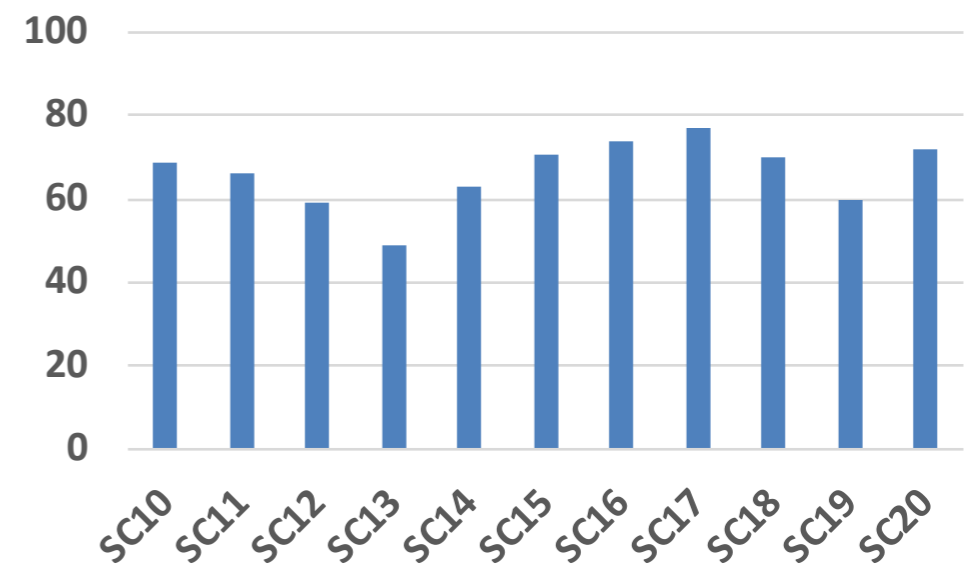* Fuller details of features in development are available at http://wiki.lustre.org/Projects

Community Events

- **LUG20**
  - Webinars on June 17th and Sept 9th
    - http://opensfs.org/lustre-webinar-series/
    - https://www.opensfs.org/lustre-webinar-sept-2020/
- **LAD20**
  - Oct 13th -15th https://www.eofs.eu/events/lad20
- **CLUG**
  - Oct 19th-23rd http://lustrefs.cn/clug2020/
- **SC20**
  - Lustre BOF Thursday 19th 11:30-12:45
    - https://sc20.supercomputing.org/presentation/?id=bof149&sess=sess316
  - IO-500 BOF Wednesday 18th 4:00-5:15
    - https://sc20.supercomputing.org/presentation/?id=bof168&sess=sess313
- **JLUG**
  - Dec 4th https://www.jlug.info

Historic Lustre Top 100

Summary

- LTS model has been well adopted; focus switched to 2.12.x LTS
- Lustre 2.12.6 GA
- Lustre 2.14 in final release testing
- Plenty of options for those interested in contributing to Lustre
- LWG http://wiki.opensfs.org/Lustre_Working_Group

Thank you

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