Community Release Update

LUG 2018

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OpenSFS Lustre Working Group
OpenSFS Lustre Working Group

Lead by Peter Jones (Intel) and Dustin Leverman (ORNL)

Single forum for all Lustre development matters
  – Oversees entire Lustre development cycle
  – Maintains the roadmap
  – Plans major releases
  – Collects requirements for future Lustre features
  – Sets priorities for test matrix

All welcome to attend and/or join the mailing list

For more information visit the wiki

http://wiki.opensfs.org/Lustre_Working_Group
Community Survey

- Has been running for 7 years
- LWG devises questions
- Useful for tracking trends in Lustre usage
- Spike in respondents compared to 2017 survey (70 to 110)
- Full details available at http://wiki.opensfs.org/Lustre_Community_Survey
Community Survey - Versions

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

• Lustre 2.10.x and 2.5.x most commonly-used version in production
Community Survey - Linux distros

What Linux distributions do you use in production? (select all that apply)

- Ubuntu 16.04
- Ubuntu 14.04
- SLES 12 SPx
- SLES 11 SPx
- RHEL/CentOS 7.x
- RHEL/CentOS 6.x
- RHEL/CentOS 5.x

- RHEL/CentOS 7.x replaces RHEL 6.x as most widely used Linux distro
Community Survey - Networks

Which kind of networks do you use with Lustre within your organization? (select all that apply)

- Many options used but Mellanox and 10 GigE remain the most common
Community Survey – Feature Usage

What describes your level of interest in...

- ZFS
- Project Quotas
- Progressive File Layouts
- Multi-Rail LNET
- LFSCK (lctl)
- IML
- HSM
- File Level Redundancy
- DNE (Striped directories)
- DNE (remote directories)
- Data on MDT

- Will use within year
- Use in production

- ZFS Production usage has grown in recent years (~22% 2016; ~36% 2018)
- Adoption of DNE has been slower than expected
- Strong interest in using Project Quotas and Data on MDT
Community Survey - Usage

How would you characterize your primary usage of Lustre? (select all that apply)

- Other
- Storage Vendor/Integrator
- Meteorology
- Media/Entertainment
- Manufacturing/CAD/CAE
- Government
- Genomics/Life Sciences
- Financial Services
- Energy
- Defense
- Education
- AI/Machine Learning

- AI/Machine Learning much higher than anticipated
- Need to refine categories based on feedback in Other
Lustre LTS Releases

- Lustre 2.10.0 went GA July 2017
  - Lustre 2.10.1 Oct 2017
  - Lustre 2.10.2 Dec 2017
  - Lustre 2.10.3 Jan 2018
- Lustre 2.10.4 targeted for Q2 2018
  - Will provide support for RHEL 7.5 servers and clients
- LWG will decide baseline/timing of next LTS stream Q4 2018
Lustre 2.11

- GA April 3\textsuperscript{rd} 2018
- Supports
  - RHEL 7.4 servers/clients
  - SLES12 SP3 clients
  - Ubuntu 16.04 clients
- Interop/upgrades from Lustre 2.10.x servers/clients
- [http://wiki.lustre.org/Release_2.11.0](http://wiki.lustre.org/Release_2.11.0)
Lustre 2.11 - Features

• New features included in this release
  • Data on MDT (LU-3285)
  • FLR Delayed Resync (LU-9771)
  • Lock-ahead (LU-6179)

• Enhancements to existing features
  • Lustre Audit with Changelogs (LU-9727)
  • OI Scrub for ZFS (LU-7585)
Lustre 2.11 - Contributions

Number of Commits

Lines of Code Changed

Statistics courtesy of Dustin Leverman (ORNL)

Source: http://git.whamcloud.com/fs/lustre-release.git/shortlog/refs/heads/master

Aggregated data by organization between 2.10.50 and 2.11.0 tags
Lustre 2.11 - Reviews

Source: http://git.whamcloud.com/fs/lustre-release.git/shortlog/refs/heads/master
Aggregated data by organization between 2.10.50 and 2.11.0 tags
Statistics courtesy of Dustin Leverman (ORNL)
# Lustre Version Statistics

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Statistics courtesy of Chris Morrone (LLNL)/ Dustin Leverman (ORNL)

Source: http://git.whamcloud.com/fs/lustre-release.git
Lustre 2.12

- Targeted for October 2018 release
  - Feature cut-off end of June; Feature freeze end of July
- Will support
  - RHEL 7.5 servers/clients
  - SLES12 SP3 clients
  - Ubuntu 18.04 clients
- Interop/upgrades from latest Lustre 2.10.x and 2.11.x servers/clients
- Several features targeted for this release
  - DNE Directory Restriping (LU-4684) ONGOING
  - LNet Network Health (LU-9120) ONGOING
  - Lazy Size on MDT (LU-9538) ONGOING
Lustre Community Roadmap

2.10
- ZFS Snapshots
- Multi-rail LNet
- Progressive File Layouts
- Project Quotas

2.11
- Data on MDT
- FLR Delayed Resync
- Lock Ahead

2.12
- Lazy Size on MDT
- LNet Health
- DNE Dir Restriping

2.13
- FLR Erasure Coding
- Persistent Client 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](http://wiki.lustre.org/Projects)
Lustre Release Documentation

- Latest version of manual dynamically available to download
  - [http://lustre.org/documentation/](http://lustre.org/documentation/)
  - Also links for how to contribute
- If you know of gaps then please open an LUDOC ticket
  - If you have not got time to work out the correct format to submit then unformatted text will provide a starting point for someone else to complete
- Large amount of content being added on lustre.org
  - [http://wiki.lustre.org/Category:Lustre_Systems_Administration](http://wiki.lustre.org/Category:Lustre_Systems_Administration)
  - Lustre Internals content being refreshed
Summary

• Hugely productive year in terms of roadmap advancement
• Lustre 2.11 is GA; Lustre 2.12 underway
• Lustre 2.10.4 is targeted for Q2
• Plenty of options for those interest in contributing to Lustre
Thank you

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