Lustre Community Release Update

June 17th 2019

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OpenSFS Lustre Working Group
Lustre Community Survey

- Has been running for 8 years
- LWG devises questions
- Useful for tracking trends in Lustre usage
- Full details available at [http://wiki.opensfs.org/Lustre_Community_Survey](http://wiki.opensfs.org/Lustre_Community_Survey)

Data courtesy of Dustin Leverman (ORNL)

Analysis of commits on git.whamcloud.com v2.11.50 to 2.12.0
Lustre LTS Releases

• Lustre 2.10.0 GA July 2017
• Initial LTS branch with regular updates
• Lustre 2.10.8 GA May 28th
  • MOFED 4.6 support
• Likely the last release on this branch

• Lustre 2.12.0 GA Dec 2018
• Current LTS branch
• Lustre 2.12.2 GA May 28th
  • MOFED 4.6 support
• Lustre 2.12.3 targeted for Q3
  • ZFS 0.8 support
  • Tentative RHEL 8.0 client support
Lustre 2.12

- GA Dec 2018
- OS support
  - RHEL 7.6 servers/clients
  - SLES12 SP3/Ubuntu 18.04 clients
- Interop/upgrades from latest Lustre 2.10.x and 2.11
- Number of useful features
  - DNE Directory Restriping (LU-4684)
  - LNet Network Health (LU-9120)
  - Lazy Size on MDT (LU-9538)
  - T10PI end to end data checksums (LU-10472)
Lustre 2.13

• Targeted for Q3 2019 release
• OS support
  • RHEL 7.6 servers/clients
  • SLES12 SP4/Ubuntu 18.04 clients
  • Tentative RHEL 8.0 clients
• Interop/upgrades from latest Lustre 2.12.x
• Feature Freeze is now in effect
  • Persistent Client Cache (LU-10092) CONFIRMED
  • Multi-Rail Routing (LU-11297) CONFIRMED
  • Overstriping (LU-9846) CONFIRMED
• [http://wiki.lustre.org/Release_2.13.0](http://wiki.lustre.org/Release_2.13.0)
Lustre Community Roadmap

**Feature Releases**
- 2.11
  - Data on MDT
  - FLR Delayed Resync
  - Lock Ahead

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

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

- 2.14
  - FLR Erasure Coding
  - Pool Quota
  - DNE Auto Restriping

* 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

**LEGEND:**
- Green: Expected Timeline
- Light Green: Timeline TBD
- Blue: Completed
- LTS Branch

**Timeline:**
- Q2 2018
- Q3 2018
- Q4 2018
- Q1 2019
- Q2 2019
- Q3 2019
- Q4 2019
- Q1 2020
- Q2 2020
- Q3 2020

**LTS Updates:**
- 2.10.4
- 2.10.5
- 2.10.6
- 2.10.7
- 2.10.8
- 2.10.X LTS Release Stream
- 2.12.X LTS Release Stream
- 2.12.0
- 2.12.1
- 2.12.2
- 2.12.3
- LTS releases continue.....
Lustre in Linux Kernel

• Repo for work at https://github.com/neilbrown/lustre
  • SUSE and ORNL driving this initiative
  • Plan to submit when code is ready for acceptance
• Major ldiskfs patches merged into upstream ext4/e2fsprogs
  • Now much easier to keep Lustre e2fsprogs current
Lustre in the Cloud

- Intel AWS offering transferred to [DDN-Whamcloud](#)
  - Used in production environments since early 2015
- Amazon announced [FSX for Lustre](#) Software in Nov 2018
  - Presented at [LUG19](#)
- Google have been talking publicly about Lustre
  - [Whamcloud GCP offering](#) launched April 2019
- Multiple offerings on Azure
  - [Cray Azure offering](#) has been available since late 2017
  - [Whamcloud Azure offering](#) launched May 2019
Integrated Manager for Lustre

https://github.com/whamcloud/integrated-manager-for-lustre/releases

- IML 5.0 now GA
  - Open source management and monitoring tool for Lustre
  - Compatible with Lustre 2.12.x
  - Extending scale of clusters it can manage
  - More flexibility around HA schemes
  - Reduced resource utilization
  - Docker support
  - Simplified install and upgrades
And Finally...

- HPC I/O in the Data Center Workshop
  - Thursday June 20th 2pm Frankfurt Marriot Hotel
  - Lustre – the Next 20 Years (Andreas Dilger)
    https://hps.vi4io.org/events/2019/iocd
Thank you

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