Lustre Update

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History of Lustre

Illustrates the resilience of open source technology in the face of organizational changes
Lustre LTS Releases

• Lustre 2.10.0 went GA July 2017
  • Declared as initial LTS branch
  • Regular 2.10.x maintenance releases since
  • Strong adoption of this release
  • Lustre 2.10.6 Dec 2018 (added RHEL 7.6 support)
  • Lustre 2.10.7 targeted for Q1

• Lustre 2.12.0 went GA Dec 2018
  • Will be next LTS branch
  • Provides reliable option for newer kernels/features
  • Will provide transition period with 2.10.x LTS
  • Lustre 2.12.1 targeted for Q1
Lustre 2.12

• OS support
  • RHEL 7.6 servers/clients
  • SLES12 SP3/Ubuntu 18.04 clients
• Interop/upgrades from latest Lustre 2.10.x and 2.11
• Ships with latest ZFS 0.7.x but ZFS 0.8.x ready
• 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 2.12 Contributions

git://git.Whamcloud.com/fs/lustre-release.git 2.11.50 to 2.12.0
Lustre and Arm

New in Lustre 2.12!

Arm® Lustre clients now included in CI development process

http://lustre.org/development/
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
- LNet Selection Policy
- Self Extending Layouts

2.14
- FLR Erasure Coding
- Health Monitoring
- 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](http://wiki.lustre.org/Projects)
Integrated Manager for Lustre

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

- IML 4.0 GA Oct 2017
  - Compatible with Lustre 2.10.x
  - Latest maintenance release 4.0.8
  - 4.0.9 in final testing
  - Distributed under an MIT license
  - Possible to upgrade from Intel EE 2.x/3.x
- IML 5.0 targeted for mid-2019
  - Compatible with Lustre 2.12.x
  - Extending scale of clusters it can manage
  - More flexibility around HA schemes
  - Reduced resource utilization
  - Will require downtime to upgrade
Lustre in Linux Kernel

• Added to kernel staging area in 3.11
  • Basic code reformatting had not been done beforehand
  • Kernel staging rules made subsequent updates challenging
• Removed from staging area in 4.17
• Work is continuing at https://github.com/neilbrown/lustre
  • Suse and ORNL driving this initiative
  • Now functionally equivalent to 2.10.x client
• Plan to resubmit when code is ready for acceptance
• Major ldiskfs patch merged into upstream ext4/e2fsprogs
  • Now much easier to keep Lustre e2fsprogs current
Lustre in the Cloud

• Intel AWS offering transferred to DDN-Whamcloud
  • https://aws.amazon.com/marketplace/pp/B07FTX9GBV
  • Used in production environments since 2015
• Amazon announced FSX for Lustre Software in Nov 2018
  • https://aws.amazon.com/fsx/lustre/
  • Intending to be active community participants
• Google also interested in Lustre
  • Gave several talks about Lustre at SC18 and entered IO-500
  • Submissions ranked 12th in main list and 6th in 10 node challenge
  • https://www.vi4io.org
Lustre Users Group

SAVE THE DATES

LUG 19
UNIVERSITY of HOUSTON
CENTER FOR ADVANCED COMPUTING & DATA SYSTEMS

May 14--Developers Day
May 15-17 Lustre Users Group (LUG) Conference

Student Center--University of Houston Main Campus
Houston, TX 77204

www.opensfs.org/events/lug-2019/
Thank you