Community Release Update

LUG 2016

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OpenSFS Lustre Working Group
OpenSFS Lustre* Working Group

Lead by Peter Jones (Intel) and Sarp Oral (ORNL)
   – Took over from Chris Morrone Nov 2015

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

For more information visit the wiki
http://wiki.opensfs.org/Lustre_Working_Group

*Other names and brands may be claimed as the property of others.
Community Survey

- Has been running for 5 years
- LWG devises questions
- Useful for tracking trends in Lustre usage
- Highest number of respondents yet for 2016 survey (97)
- Full details available at http://wiki.opensfs.org/Lustre_Community_Survey
Community Survey - Versions

Which version(s) of Lustre are you running in production today?

- Lustre* 2.5.x remains the dominant version in production usage
- Strong adoption of more current releases (even 2.8 before GA)
- Lustre 1.8.x usage finally dwindling

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Community Survey - Linux distros

- RHEL/CentOS 6.x still the most widely used distro
- RHEL/CentOS 7.x clients; servers appearing
- RHEL/CentOS 5.x winding down

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Community Survey - Networks

Which kind of networks do you use with Lustre within your organization?

- Many options used but Mellanox and 10 GigE most common

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• Lustre on ZFS used at significant number of productions sites
• DNE and LFSCK usage expected to increase this coming year
• Even split between those self-supporting and those using/providing vendor support
Lustre* Quality

- Well-established release validation practices
  - Automated functional regression tests across test matrix
  - SWL runs on Hyperion
  - Execution of feature test plans
- Continuing to evolve testing practices
  - Fault injection
  - Soak testing
  - Static code analysis tools
- Drawing on expertise from outside Lustre community
  - Influence from upstream Linux community
  - Input from Intel software experts

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Lustre* 2.8

• GA March 2016
  • Originally targeted for Sept 2016

• Strong feature set
  • RHEL 7.2 server support (LU-5022)
  • DNE Phase 2 (LU-3534)
  • LFSCK Phase 4 (LU-6361)
  • Client Metadata RPC Scaling (LU-5319)

• [http://wiki.lustre.org/Release_2.8.0](http://wiki.lustre.org/Release_2.8.0)
Lustre* 2.8 - Contributions

Number of Commits

- Intel 669
- ORNL 78
- LLNL 19
- IU 9
- Other 7
- SGI 2
- Clogeny 3
- ANU 6
- Canonical 1
- CEA 15
- Cray 58
- Fujitsu 3
- SGI 1
- DDN 30
- Seagate 63
- LLNL 19

Lines of Code Changed

- Intel 100631
- ORNL 26809
- IU 1404
- LLNL 798
- Other 606
- ANU 37
- CEA 1114
- Cray 5796
- DDN 2540
- SGI 931
- GSI 21
- Fujitsu 82
- Seagate 2908
- Other 63
- SGI 531
- Clogeny 91

Statistics courtesy of Chris Morrone (LLNL)

Source: http://git.whamcloud.com/fs/lustre-

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Lustre* 2.8 - Reviews

Number of Reviews

- Intel 2456
- ORNL 252
- Seagate 56
- Cray 116
- CEA 31
- Cray 116
- DDN 9
- IU 9
- GSI 7
- LLNL 7
- SGI 4
- SUSE 1
- Atos 12

Statistics courtesy of Chris Morrone (LLNL)

Source: http://git.whamcloud.com/fs/lustre-release.git/shortlog/refs/heads/b2_8
Aggregated data by organization between 2.7.50 and 2.8.0 tags
# Lustre* Version Statistics

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<th>Version</th>
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</table>

Statistics courtesy of Chris Morrone (LLNL)
Source: [http://git.whamcloud.com/fs/lustre-release.git](http://git.whamcloud.com/fs/lustre-release.git)

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Lustre* 2.9

• Targeted GA August 2016
  • Feature freeze end of May
• Will support RHEL 7.2 servers/clients and SLES12 SP1 clients
  • Dropping support for RHEL 6 and SLES11
• Interop/upgrades from Lustre 2.8 servers/clients
• Several new features targeted for this release
  • UID/GID Mapping (LU-3291)
  • Share Key Crypto (LU-3289)
  • Subdirectory Mounts (LU-28)
• http://wiki.lustre.org/Release_2.9.0

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Lustre* 2.10 and Beyond

• Many interesting long term features in development
  • Multi-rail LNET
  • Progressive File Layouts
  • Project quotas
• Full list maintained on lustre.org wiki
  • http://wiki.lustre.org/Projects
• Highlights and timelines shown on community roadmap
  • http://lustre.org/roadmap/
Community Release Roadmap

2.8
- DNE Async Commits
- RHEL 7.x servers
- SE Linux Client
- Multiple Modify RPCs

Q1 | Q2 | Q3 | Q4
2016

2.9
- UID/GID Mapping
- Shared Key Crypto
- Lock Ahead
- Subdirectory Mounts

2.10
- ZFS Snapshots
- Multi-rail LNET
- Project Quotas

2.11
- Progressive File Layouts
- Data on MDT

Q1 | Q2 | Q3 | Q4
2017

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
Last updated: March 24th 2016
Lustre* Release Documentation

• Latest version of user documentation dynamically available to download
  • http://lustre.opensfs.org/documentation/

• See Richard Henwood’s LUG 2013 LUG presentation for details on 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

• Scope to create more dynamic content on lustre.org
  • Ken Rawlings will be talking about how you can help here!
Summary

• Strong community adoption of recent releases
• Lustre 2.8 is GA and many sites planning to adopt it
• Some interesting developments in progress
• Plenty of options for those interest in participating
Thank you