Community Release Update

LAD 2016

Peter Jones HPDD, Intel
OpenSFS Lustre* Working Group
OpenSFS Lustre Working Group

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

Central 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
OpenSFS Tree Contract Complete

- OpenSFS no longer providing financial contributions towards costs of producing community releases
  - Tree contract ran from Nov 2011 – June 2016
- Community releases continue to be coordinated by LWG
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
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
Lustre 2.8

- GA March 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)
- Number of production sites on this release
  - Lustre on ZFS* perf and newer kernel support drivers
- [http://wiki.lustre.org/Release_2.8.0](http://wiki.lustre.org/Release_2.8.0)
Lustre 2.9

• Targeted GA August 2016
  • In release testing atm; hopefully out soon
  • [http://wiki.lustre.org/Release_2.9.0](http://wiki.lustre.org/Release_2.9.0)
• Will support RHEL 7.2 servers/clients and SLES*12 SP1 clients
  • Dropping support for RHEL 6 and SLES11
• Interop/upgrades from Lustre 2.8 servers/clients
• A number of new features targeted for this release

<table>
<thead>
<tr>
<th>UID/GID Mapping (LU-3291)</th>
<th>Shared Key Crypto (LU-3289)</th>
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</thead>
<tbody>
<tr>
<td>Subdirectory Mounts (LU-28)</td>
<td>Weak updates (LU-5614)</td>
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<tr>
<td>Large Block IO (16MB IO for Idiskfs) (LU-7990)</td>
<td>Server side advise and hinting (LU-4931)</td>
</tr>
</tbody>
</table>
Lustre 2.9 – Contributions So Far

Number of Commits

- Intel 292
- Cray 32
- DDN 26
- Seagate 65
- SGI 1
- ANU 14
- Atos 7
- CEA 8
- Clogeny 1
- Other 10
- ORNL 22
- Oracle 0
- LLNL 28
- IU 24
- Purdue 1

Lines of Code Changed

- Intel 32798
- DDN 2466
- Cray 3617
- Seagate 1945
- ANU 545
- SGI 305
- Atos 449
- CEA 210
- Clogeny 15
- Purdue 43
- Other 878
- ORNL 3413
- ORNL 2652
- IU 7491

Statistics courtesy of Chris Morrone (LLNL)

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

Aggregated data by organization between 2.8.50 and 2.8.57

*Other names and brands may be claimed as the property of others.*
Lustre 2.9 – Reviews So Far

Statistics courtesy of Chris Morrone (LLNL)
Aggregated data by organization between 2.8.50 and 2.8.57 tags
Source: http://git.whamcloud.com/fs/lustre-release.git/shortlog/refs/heads/master
# Lustre Version Statistics

<table>
<thead>
<tr>
<th>Version</th>
<th>Commits</th>
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<th>Organizations</th>
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Source: [http://git.whamcloud.com/fs/lustre-release.git](http://git.whamcloud.com/fs/lustre-release.git)

** Data until 2.8.57

Statistics courtesy of Chris Morrone (LLNL)
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

2.9
- UID/GID Mapping
- Shared Key Crypto
- Large Block IO
- Subdirectory Mounts

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

2.11
- Progressive File Layouts
- Data on MDT

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)
Last updated: June 15th 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
Summary

- Strong community adoption of recent releases
- Lustre 2.8 is GA and being used in production
- Lustre 2.9 should be GA in the near future
- Some interesting developments in progress for 2.10 and beyond
- Plenty of options for those interest in participating
Thank you