Community Release Update

October 13th 2020

Peter Jones, Whamcloud
OpenSFS Lustre Working Group
OpenSFS Lustre Working Group

• Has been operating as the single forum for planning activities for the community releases for a decade
• Led by Peter Jones (Whamcloud) and Dustin Leverman (ORNL)
• All welcome to attend and/or join the mailing list
• For more information visit the wiki

• LWG issues survey annually in March to track trends in Lustre usage
• Full details available at [http://wiki.opensfs.org/Lustre_Community_Survey](http://wiki.opensfs.org/Lustre_Community_Survey)

![Graph showing number of respondents over years 2012 to 2020]
Community Survey - Versions

- Usage coalescing around LTS releases
- Lustre 2.12.x LTS has the fastest adoption rate for production usage
Lustre 2.12.x LTS

• Lustre 2.12.5 went GA on June 8th
  • RHEL 7.8 server and client support
  • RHEL 8.2 and SLES12 SP5 client support
  • MOFED 4.9 (though MOFED 5.x expected to work)
  • Bug fixes from production 2.12.x deployments
  • http://wiki.lustre.org/Lustre_2.12.5_Changelog

• Lustre 2.12.6 will be released in the coming weeks
  • Support for building with MOFED 5.1
    • testing still focused on MOFED 4.9.x

• No decision on the next LTS release has been made yet
A Decade of Community Development

- Prior to OpenSFS designating the canonical release and the kernel-style contribution model, external contributions were rare
  - Lustre 1.8 (2009) had no external contributions
  - Lustre 2.13 (2019) had contributions from 85 developers from 25 organizations

Data courtesy of Dustin Leverman (ORNL)
A Decade of Community Development

- Over the last ten years we have had Lustre code contributions from
  - 45 distinct organizations
  - 217 individual developers

- Many of the developers have worked for multiple organizations over that period

- The contribution model means Lustre continues to thrive even as participating organizations change strategies

Contributions over ten years by Active Developers

<table>
<thead>
<tr>
<th>Developer</th>
<th>kLOC</th>
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<tbody>
<tr>
<td>James Simmons</td>
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<td>John Hammond</td>
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<td>Andreas Dilger</td>
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<td>Mike Pershin</td>
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<td>Patrick Farrell</td>
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<td>Yu Jian</td>
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<td>Amir Shehata</td>
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<td>Yang Sheng</td>
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<td>Lai Siyao</td>
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<td>Andreas Dilger</td>
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<td>Oleg Drokin</td>
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<td>237</td>
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<td>Yang Sheng</td>
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James Simmons (ORNL)
Top contributor of the decade in terms of Lines of Code

Data courtesy of Dustin Leverman (ORNL)
Lustre 2.14

• In final release testing; should be out late Q4
• OS support
  • RHEL 8.2 servers/clients
  • RHEL 8.2/SLES15 SP1/Ubuntu 20.04 clients
• Interop/upgrades from 2.13 and latest Lustre 2.12.x
• Will ship with ZFS 0.8.4 by default
• MOFED 5.1
• Number of useful features
  • Client-side Data Encryption (LU-12275)
  • OST Pool Quotas (11023)
  • DNE Auto Restriping (LU-11025)
• \[http://wiki.lustre.org/Release_2.14.0\]
Release Testing

• Release testing practices continue to evolve
• Functional testing
  • Switched to new POSIX validation test from [https://github.com/pjd/pjdfstest](https://github.com/pjd/pjdfstest)
  • Added new test groups focused on security
    • review-dne-ssk, review-dne-selinux, review-dne-selinux-ssk
  • Introduced sanity-Lnet test group
  • New distros (Ubuntu 20.04 and SLES15 SPx)
• Performance testing
  • IO-500 used for performance comparison between releases
• LUTF
  • Test framework for LNet
Release Testing (cont)

- Gatekeeper pre-landing tests
  - *-next “boiling pot” using debug kernels with pathological usage patterns
    - Spotlights new crashes
  - “Gatekeeper helper“
    - Smatch static code analysis on every patch submission
    - Spotlights new test failures
## Lustre Community Roadmap

<table>
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<tr>
<th>Feature Releases</th>
<th>LTS Releases</th>
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<tbody>
<tr>
<td>2019</td>
<td>2020</td>
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<td>Q4</td>
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<td>2.12.3</td>
<td>2.12.4</td>
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**LEGEND:**
- **Completed**
- **Expected Timeline**
- **Timeline TBD**
- **LTS Branch**

### Feature Releases 2.13
- **Persistent Client Cache**
- **Multi-Rail Routing**
- **Overstriping**

### Feature Releases 2.14
- **Client Data Encryption**
- **OST Pool Quotas**
- **DNE Auto Restriping**

### Feature Releases 2.15
- **FLR Erasure Coding**
- **Client Directory Encryption**
- **LNet IPv6 Addressing**

### Feature Releases 2.16
- **FLR Immediate Mirror**
- **Metadata Writeback 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)
Summary

• LTS model has been well adopted; focus switched to 2.12.x LTS
• Lustre 2.12.6 coming soon
• Lustre 2.14 in final release testing
• Plenty of options for those interested in contributing to Lustre
• LWG http://wiki.opensfs.org/Lustre_Working_Group
Thank you

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