Community Release Update

September 27th 2022

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OpenSFS Lustre Working Group
OpenSFS Lustre Working Group

- Has been operating as the forum for collaboration on the community releases for over 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
  - http://wiki.opensfs.org/Lustre_Working_Group

- LWG issues survey annually in March to track trends in Lustre usage
- Full details available at http://wiki.opensfs.org/Lustre_Community_Survey

![Graph showing number of respondents over years from 2012 to 2022]
Community Survey – Lustre Versions

Majority of respondents using Lustre 2.12.x LTS in production
Lustre 2.14 usage exceeds that of the former LTS release 2.10.x
Community Survey – LTS Transition

How quickly do you plan to move to a Lustre 2.15.x LTS release?

- Immediate 28%
- Monitor 7%
- Remained 16%
- Undecided 49%

Significant numbers intend to be earlier adopters but most waiting for more data first
Community Survey - Analysis

• Expect to see strong adoption of Lustre 2.15.x in 2023 survey
  – Lustre 2.15.x LTS means that features in 2.13/14/15 will get more usage

• Responses about LWG/Lustre improvements discussed
  – Limited suggestions for LWG improvements
  – More feedback relating to Lustre improvements
    • Stability mentioned several times (mature feature set)
    • Support for newer ZFS versions on LTS branch
    • Adding/Removing Storage
    • Several comments about kernel patches / distro support
Lustre LTS Releases

• Lustre 2.12.x
  • Lustre 2.12.9 went GA June 17\textsuperscript{th}
    • \url{http://wiki.lustre.org/Lustre_2.12.9_Changelog}
  • Lustre 2.12.10 may be issued
    • Driver would be to add support for RHEL 8.7 clients
• Lustre 2.15.x
  • Lustre 2.15.1 went GA August 10\textsuperscript{th}
    • \url{http://wiki.lustre.org/Lustre_2.15.1_Changelog}
  • Lustre 2.15.2 will likely come out before the end of the year
    • Support for RHEL 8.7 servers/clients
    • Support for RHEL 9.0/SLES15 SP4 /Ubuntu 22.04 clients
Lustre 2.15.x

- Went GA June 16th
  - [http://wiki.lustre.org/Release_2.15.0](http://wiki.lustre.org/Release_2.15.0)
- RHEL 8.5 servers/clients
- RHEL 8.5/SLES15 SP3/Ubuntu 20.04 clients
- Interop/upgrades from 2.14 and latest Lustre 2.12.x
- Features in the release
  - Network Selection Policy (UDSP) (LU-9121)
  - Client Filename Encryption (LU-13717)
  - GPU Direct Storage (LU-14798)
Lustre 2.15 Contribution Statistics

Data courtesy of Dustin Leverman (ORNL)
Source: https://git.whamcloud.com 2.14.0 to 2.15.0
Historic Contribution Statistics

Data courtesy of Chris Morrone (LLNL) and Dustin Leverman (ORNL)

Source: https://git.whamcloud.com
How to Contribute?

• Lustre development
  • Submitting/Reviewing/Testing Lustre code
  • [https://wiki.lustre.org/Development](https://wiki.lustre.org/Development)
• Lustre documentation
  • Lustre Ops Manual – report issues in LUDOC JIRA project
  • Lustre.org wiki (Lustre internals and sysadmin info)
• Participate in Community events
  • LUG, LAD, Regional LUG events, SC/ISC BOFs, online
• Complete the annual OpenSFS survey
  • [https://wiki.opensfs.org/Lustre_Community_Survey](https://wiki.opensfs.org/Lustre_Community_Survey)
• Participate in the LWG
  • [https://wiki.opensfs.org/Lustre_Working_Group](https://wiki.opensfs.org/Lustre_Working_Group)
• Join a Lustre community organization (OpenSFS/EOFS)
Lustre 2.16

- Targeting for release in Q2 2023
  - [http://wiki.lustre.org/Release_2.16.0](http://wiki.lustre.org/Release_2.16.0)
- RHEL 8.6 servers
- RHEL 8.6/SLES15 SP4/Ubuntu 22.04 clients
- Interop/upgrades from latest Lustre 2.15.x
- Features in the release
  - IPv6 Support (LU-10391)
  - Optimized Directory Traversal (LU-13717)
Lustre Community Roadmap

<table>
<thead>
<tr>
<th>Feature Releases</th>
<th>LTS Releases</th>
<th>Timeline</th>
<th>LTS Branch</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.15</td>
<td>2.12.8</td>
<td></td>
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<tr>
<td>2.15.x LTS Releases stopping soon…</td>
<td>2.12.9</td>
<td></td>
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<tr>
<td>2.15</td>
<td>2.12.10</td>
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<tr>
<td>2.15.x LTS Releases continue…</td>
<td>2.15.1</td>
<td></td>
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</tbody>
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**LEGEND:**
- Completed
- Expected Timeline
- Timeline TBD
- LTS Branch

**2.15**
- Client Directory Encryption
- GPUDirect Storage
- MDT Space Balance

**2.16**
- IPv6
- Optimized Directory Traversal

**2.17**
- Client Data Compression
- Metadata Writeback Cache
- Erasure Coding

* 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)
Some General Advice

Compiled from common misunderstandings

• **Always use the latest version of e2fsprogs**
  • Not tied to the version at the time of your Lustre release
  • Ensures that you always have the latest bugfixes
  • [https://downloads.whamcloud.com/public/e2fsprogs/latest/](https://downloads.whamcloud.com/public/e2fsprogs/latest/)

• **Development builds are not suitable for production**
  • If $z > 50$ in the x.y.z release number then it is a dev build
  • Tags are created through the release cycle as part of QE process

• **Lustre clients can usually be built against older kernel**
  • Lustre releases are tested against the latest available version of a given distro at the time but usually will build and work fine with down-rev versions
Summary

• Lustre 2.15.2 out before the end of the year
• Lustre 2.16 targeted for Q2 2023
• LWG http://wiki.opensfs.org/Lustre_Working_Group
Thank you