Moving Lustre* Forward
What We’ve Learned and What’s Coming

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* Some names and brands may be claimed as the property of others.
Intel is Firmly Committed to Open Source
Our activity with Open Tree

- Open Source Tree Stewardship
  - Feature Releases in association with funding from OpenSFS
  - Maintenance Releases
  - Development with funding from OpenSFS and others
  - Gate Keeping in association with the tree contract from OpenSFS
- Hosting the Open Lustre* Assets
  - Code repository, bug database, documentation
- We are software focused: we do not sell Lustre storage

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What we’ve learned in the past year

• Lustre* is safe, but needs a strong community to remain so
  • EOFS and OpenSFS are the core of the Open Source Community
  • Intel is a strong supporter and major contributor

• We learned the market wants more than just an open release
  • Many want the best support available for a technology they rely on
  • Customers asking for a branded offering, backed by Intel

• “Beyond HPC” opportunities have started to appear
  • Customers with “Big Data” problems gained sufficient confidence to talk
  • IDC has a new phrase for this: HPDA High Performance Data Analytics

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Intel Enterprise Edition for Lustre

- Open source Lustre core
- Intel® Manager for Lustre
- Technical Support
- Partner Program

- Unmatched performance
- Multi-vendor
- Simple administration
- Extensible interfaces
- Trusted by the most demanding users
- Global coverage
- Web-based training
- GTM resources

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Intel Manager for Lustre

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IML getting “heat” maps
High Performance Data Analysis (HPDA)

HPC workloads create and keep LOTS of data…

Hadoop uses local, direct-attached storage

But, HPC nodes are diskless

- PAIN POINT ➔ storage efficiency and management complexity

Recent IDC research uncovered:

- ~67% of HPC sites are running Hadoop workloads on their HPC systems
- Hadoop workloads consume about 30% of their computing cycles

+18% CAGR for HPDA storage, twice HPC storage growth

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Lustre* + Hadoop: Open Platform for High Performance Data Analytics

Value Prop: Features, Functions, and Benefits

**Performance**
- Bring compute to the data: Run MapReduce* on Lustre without code changes
- Run MapReduce faster: Avoid the intermediate file shuffle with shared storage

**Efficiency**
- Avoid Hadoop* islands in the sea of HPC systems
- Run MapReduce jobs alongside HPC workloads with full access to the cluster resources

**Manageability**
- Use the seamless integration to manage one common platform for Hadoop and HPC
- Develop with multiple programming models and deploy on shared storage

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Solution: Intel® Enterprise Edition for Lustre* Software

Integration and support of Lustre* out of the box for Cloudera Hadoop

Intel® Enterprise Edition for Lustre* Software

- Full open source core
- Simple GUI for install and management with central data collection
- Direct integration with storage HW and applications
- Global support

- Storage plug-in; deep vendor integration
- REST API—extensibility
- Hadoop* Adapter for shared simplified storage for Hadoop

Hadoop Adapter
Lustre storage for MapReduce applications

Intel® Manager for Lustre* Software
Configure, Monitor, Troubleshoot, Manage

REST API
Extensibility

Management and Monitoring Service

Lustre File System
Full distribution of open source Lustre software

Storage Plug-in
Integration

Intel® value-added Software
Open Source Software

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Intel Cloud Edition for Lustre* Software

• Available now in the AWS Marketplace
• More exciting news soon…

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What to expect in the next year

• Continued significant contributions to open activities
  • Partnered with OpenSFS for feature releases
  • New features added as you’ll learn about this week
  • A review and focus on development process and stability

• Intel Enterprise Edition of Lustre*
  • Focus on channel partner priorities, releases and support
  • Enabling technologies such as the Hadoop adaptor

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