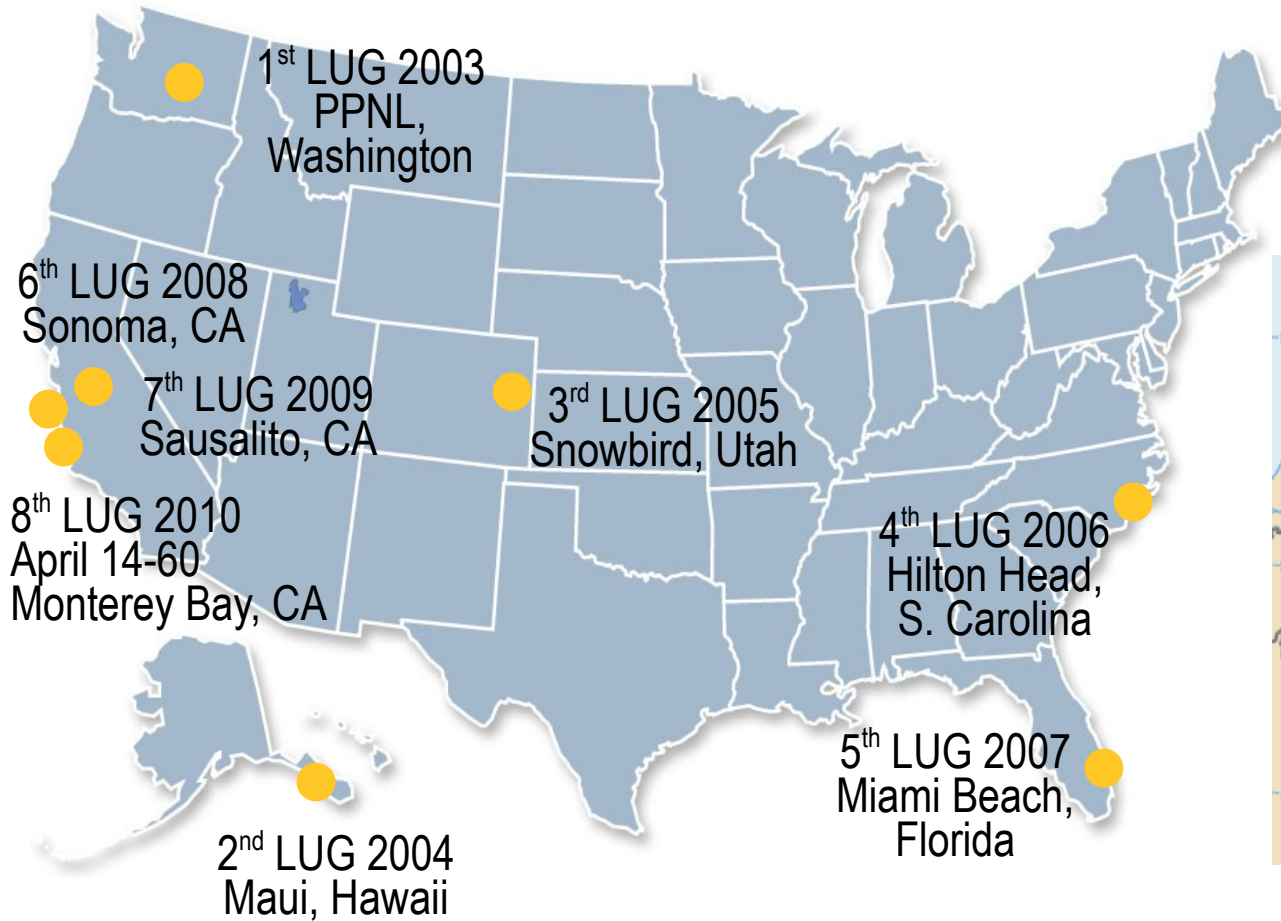# Lustre Roadmap

**HPC Software Workshop
Open Storage Track, Regensburg 2009**

Dan Ferber
Sun Microsystems

Welcome to
The Sun HPC Software Workshop
Regensburg, Germany
Open Storage Track

LUG and Workshop Locations

1st LUG 2003
PPNL,
Washington

6th LUG 2008
Sonoma, CA

7th LUG 2009
Sausalito, CA

3rd LUG 2005
Snowbird, Utah

8th LUG 2010
April 14-60
Monterey Bay, CA

4th LUG 2006
Hilton Head,
S. Carolina

5th LUG 2007
Miami Beach,
Florida

2nd LUG 2004
Maui, Hawaii

HPC Software
Workshop 2010
Regensburg, Bavaria

LUG and Regensburg Participation

Location	Total Registrants	Organizations
Miami Beach, FL	68	40
Sonoma, CA	122	43
Sausalito, CA	125	43
Regensburg	50	25

Thank You

Sponsors

Customer Lustre Presenters
Arnie Wiebalck, Daniel Kobras,
Otto Buechner, Rajmund Krivec,

Sun Lustre Presenters
Andreas Dilger, Dan Ferber, Harriett Coverston
Johann Lombardi, Sven Trautman, Torben Kling-Petersen

Enhanced lustre.org Wiki

Lustre Support Matrix on lustre.org

http://wiki.lustre.org/index.php/Lustre_Support_Matrix

Lustre.org – Calendar | Apple | Yahoo! | Google Maps | YouTube | Wikipedia | News (72)▾ | Popular▾

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Lustre Releases

This table below lists major Lustre releases, including the release date, end of life (EOL) date, and a link to the release's change log.

Lustre Version	Release Date	EOL Date	Change Log
1.8-1.8.x	May 2009	TBD	Change log 1.8
1.6-1.6.x	2007	June 2010	Change log 1.6
1.4-1.4.x	2006	June 2009	Change log 1.4

Lustre Support Matrix

This matrix lists the kernels, e2fsprogs and network versions that are officially supported by each Lustre release, and for which we provide compiled Lustre packages (RPMs).

- A "supported" version has been tested and verified against Lustre, and we provide official support for it.
- A "not supported" version has **not** been tested against Lustre, and we do not provide official support for it. "Not supported" versions are not recommended for use with Lustre, although they may work in a given environment.

NOTE:

For detailed information about the Lustre 1.8 release, see Change Log 1.8.

For detailed information about the Lustre 1.6.x releases, see Change Log 1.6.

Supported Kernels	Lustre Version							
Kernel / Version	**1.8.1**	**1.8.0.1**	**1.8.0**	**1.6.7.2**	**1.6.7.1**	**1.6.6**	**1.6.5.1**	**1.6.4.3**
RHEL 5								
2.6.18-128.1.14.el5	X							
2.6.18-128.1.6.el5		X						

Lustre's OEM Ecosystem

Sun Lustre Storage System
http://sun.com/scalablestorage
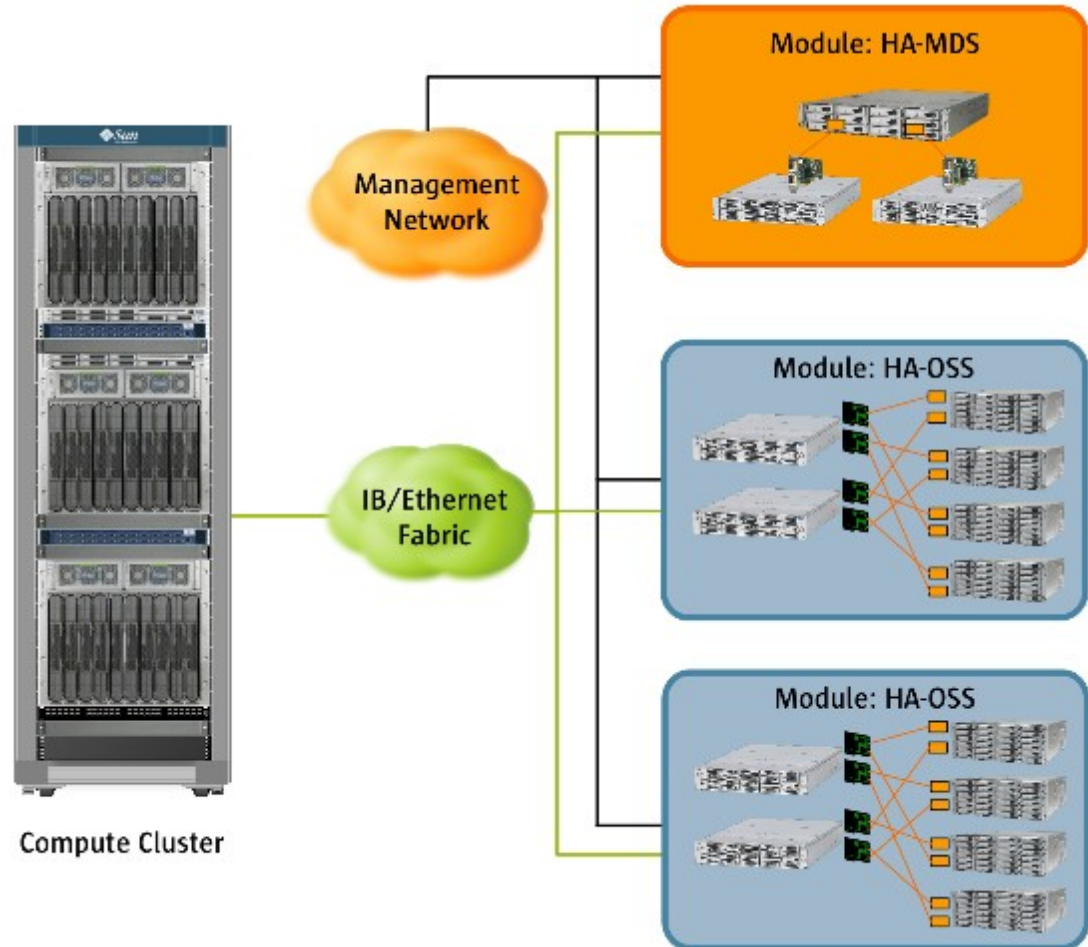
- Fully integrated Lustre storage solution based on proven reference architecture

- Offers compelling price/ performance value through Sun Open Storage products

- Optimized software stack with automated install and configuration tools

- Sun Professional Services and Support to ensure success

Module: HA-MDS

Management Network

IB/Ethernet Fabric

Module: HA-OSS

Module: HA-OSS

Compute Cluster

Professional Services & Support

Sun expertise for your SUCCESS

Enterprise Installation Service
- HPC and storage installation services

Lustre Implementation Services
- Highly flexible, modular design
- Design, implementation and information transfer
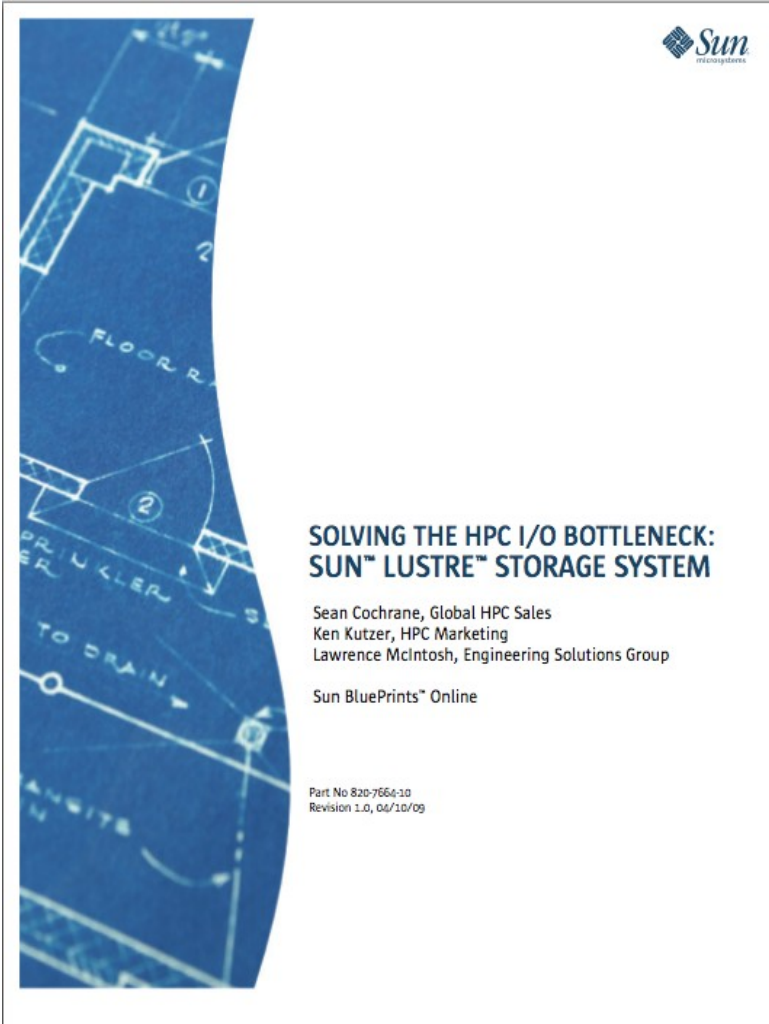
Sun Spectrum Hardware Services Plans
- Dependable maintenance coverage and technical assistance

Sun Spectrum Software Services Plans
- Online technical support, updates (patches), and knowledgeable

More About Lustre Storage System

- Lustre on Sun.com
  http://sun.com/lustre

- Sun Lustre Storage System
  on Sun.com
  http://sun.com/scalablestorage

- White paper – Solving the
  I/O Bottelneck: Sun Lustre
  Storage Solution

- **Presentation
  Tomorrow - Wednesday
  09:30-10:00
  Open Storage Track**

SOLVING THE HPC I/O BOTTLENECK:
SUN™ LUSTRE™ STORAGE SYSTEM

Sean Cochrane, Global HPC Sales
Ken Kutzer, HPC Marketing
Lawrence McIntosh, Engineering Solutions Group

Sun BluePrints™ Online

Part No 820-7664-10
Revision 1.0, 06/10/09

Some 2009 Accomplishments

- Lustre on 7 of top 10 Supercomputers in the world
- Supercomputer JuRoPA2 Forschungszentrum Jülich
  - > Sun, Intel, Bull, ParTec partnering with Jülich
- New IO performance record
  - > 240 GB/s aggregate on ORNL Jaguar
- Advancement on development goals
  - > Hundreds of bugs fixes and enhancements to HEAD
  - > Lustre 2.0 alpha releases
  - > Lustre kDMU server partnership with Jülich
  - > 1.8.1 release of Lustre
- Lustre Internals Guide – Partnership with ORNL

Lustre Roadmap

Available Now

Lustre 1.8.1
- OST pools
- OSS read cache
- Adaptive timeouts
- Version based recovery (VBR)

Lustre 2.0 alpha

Linux Distributions and end of Life Info at:
http://wiki.lustre.org/index.php/Lustre_Support_Matrix

Q4 2009

Lustre 2.0
- Server and client restructured for CMD and ZFS
- Server Change Logs
- Commit on Share
- SOM Preview

2010

- ZFS Lustre GA
- HSM for HPSS
- Improved SMP scaling
- Size on MDS
- Fast Recovery
- Clustered MetaData Preview

2011+

- Clustered MetaData GA
- Online Data Migration
- MD Write Back Cache
- Proxies
- Other HPCS related features

lustre.org Community Site

Use, Learn, Download, Contribute, Get Involved

Other Features In Progress

Windows Native Client

Security GA

Network Request Scheduler

pNFS exports

HSM/SAM-QFS

Scalable health monitoring

Direction and Product Goals

Integrate Lustre with ZFS/DMU (kernel space)

Exabytes of storage, trillions of files, 100,000s of clients

TBs/sec of throughput, 100K MDS operations

Community driven tools and interfaces

Open Storage Track at Sun Regensburg HPC Workshop 2009

Thank You – and say hello to:

- Andreas Dilger, Senior Staff Engineer, Lustre Group

- Harriett Coverston
  SAM/QFS Engineering

- Johann Lombardi
  Lustre Engineering

- Sven Trautman
  Lustre Engineering

- Torben Kling-Petersen
  Lustre Field Engineering

Q & A