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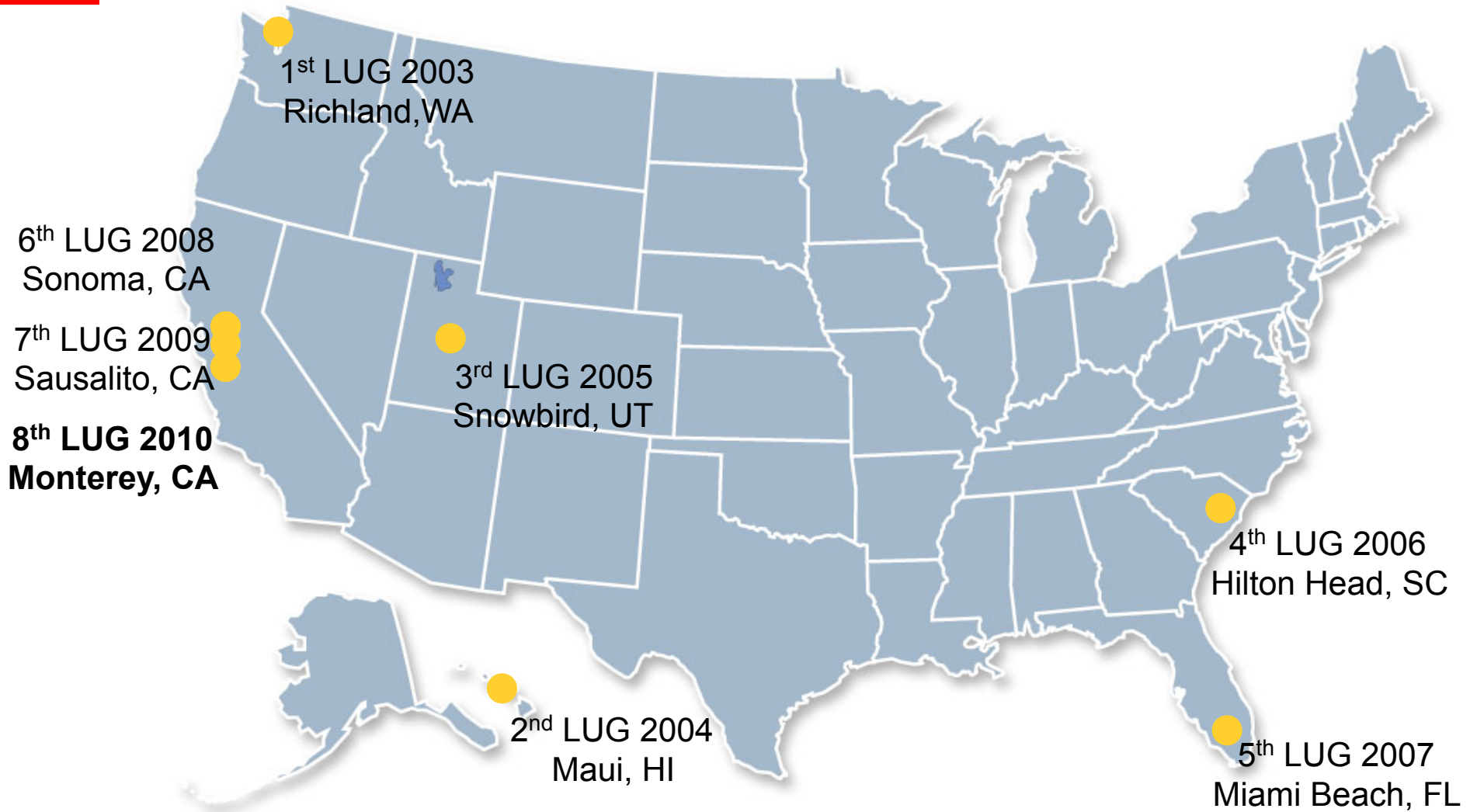


## **Lustre User Group 2010 Opening Address**

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Director, Lustre Group  
Open Storage Systems

# Welcome to Seascape Beach Resort Monterey Bay, California







# LUG Participation

Year	Location	Total Registrants	Growth	Organizations
2007	Miami Beach, FL	68		40
2008	Sonoma, CA	122	79%	43
2009	Sausalito, CA	125	3%	43
2010	Monterey, CA	143	14%	60

50% increase in organizations in 2010!



# Lustre

## The World's Fastest and Most Scalable File System

- Parallel, scalable shared POSIX file system
  - Global name space up to 32 Petabytes of storage
  - Aggregate 240 GB/second IO for file system
  - 15,000 metadata operations/second
- High-performance heterogeneous networking
  - 50,000+ clients
  - 2GB/s+ IO for individual clients & servers
- High availability
- Object-based architecture
- Open source GPL 2.0 license for use with Linux
- Supported by Oracle



# Accomplishments in 2010

- 7 of top 10 Supercomputers in the World
- New IO performance records
  - 240 GB/s on ORNL Spider
- Lustre 1.8 releases running like clockwork
- Advancement on development goals
  - Major advancements with Lustre 2.0
  - Major advancements with kDMU for ZFS
  - Metadata performance R&D / SMP scaling improvements
- Acquisition by Oracle



# February Public Statement

- Oracle plans to:
  - Continue to invest in Lustre engineering, marketing, and sales
  - Honor all Lustre support commitments and allow customers to renew their support contracts
  - Continue with the Lustre User Group 2010 seminar, scheduled for April 14-16 2010. See <http://lug2010.org/> for more info
- Oracle will communicate a more detailed plan for Lustre by the ~~end of March 2010~~ week of LUG






# Getting To Know Oracle

- A much bigger pond
  - CFS – 100 employees
  - Sun – 27,000 employees
  - Oracle – ~~83,000~~ 110,000 employees
- Enormous product portfolio
- Complete solutions based on hardware, software, and services (Storage Server 7000, Exadata 2)
- Disciplined about how we manage products and messaging to customers
- Highly profitable and dedicated to remaining so
- Future-looking statements, including product roadmaps, are not shared publicly
- This necessarily impacts the way we talk with the Lustre community



# April Public Statement

- Answer important questions about Oracle's support for Lustre
  - What is Oracle's open source strategy for Lustre?
  - Where can I get Lustre today?
  - Is Oracle going to support a Lustre community?
  - Will Oracle continue to work with resellers?
  - Will Oracle continue to release a software-only Linux version of Lustre?
  - Will kDMU be made available for Linux?
  - Will Oracle continue to invest in Idiskfs?
  - What's the Lustre roadmap beyond Lustre 2.0?
  - How can Lustre 1.8 customers upgrade to Lustre 2?
- Lustre 2 Qualification Program



The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.



# What is Oracle's Open Source Strategy for Lustre?

- The Core Lustre file system technology, including both Lustre 1.8 and Lustre 2, will remain open source, licensed under GPL 2.0
- Oracle intends for Sun Lustre Storage Systems built with Lustre 2 to include both the core file system and other components that may or may not be open source



# Where can I get Lustre today?

- Oracle intends to deliver Lustre storage according to its vision of integrated hardware and software solutions
- These systems will leverage Oracle's comprehensive investments in storage, compute, and networking hardware, Oracle Solaris, Oracle Enterprise Linux, and Lustre 2
- Product details, including pricing, will be published when products are available
- We encourage customers to consider the Sun Storage Server 7000 for many types of HPC-related workloads because it's fast, offers flexible storage options, and is competitively priced



# Is Oracle going to support a Lustre community?

- Yes, Oracle intends to continue hosting the Lustre community
- Oracle is hosting the annual Lustre User Group meeting, scheduled for April 14-16 2010; see <http://lug2010.org/> for more information
- Oracle intends to continue hosting and improving the community web site, public git source code repository with canonical Lustre releases, mailing lists, and Bugzilla issue tracking system
- The Lustre Group will continue to accept software defect reports from the community and address them to improve the quality of Lustre for all
- The Lustre Group intends to accept community patches that are submitted based on established contributions guidelines for inclusion in the canonical release branches



## Will Oracle continue to work with resellers?

- There are no changes to our current reseller relationships for Lustre 1.8
- Oracle intends to continue to fix bugs for this release but will not add any new features or performance optimizations for new hardware
- To maintain the highest levels of quality, reliability, and interoperability, Oracle intends to introduce a Lustre 2 qualification program for support of custom configurations, accompanied by an updated reseller program



## Will Oracle continue to release a software-only Linux version of Lustre?

- Oracle intends to continue to release Lustre 1.8 as a software package as it is today, tested, qualified, and packaged for all the currently qualified client and server platforms
- Oracle intends to support Lustre 2 on its future integrated storage products, distinguished as the only storage vendor to offer comprehensive support for hardware, operating system, and the Lustre file system
- Oracle intends to build and test a software-only release of Lustre 2 but there is no plan to support this open source version





## Will kDMU be made available for Linux?

- The kDMU module works with ZFS on Solaris but it can't be used with Lustre on Linux since ZFS isn't available on that operating system
- Oracle continues to advance this integration between Lustre and ZFS on Solaris



## Will Oracle continue to invest in Idiskfs?

- Yes, Oracle intends to continue maintaining Idiskfs, which is the backing store for Linux Lustre and an integral part of our integrated storage solutions



# What's the Lustre roadmap beyond Lustre 2.0?

- Oracle intends to complete the beta program and deliver a final release candidate of Lustre 2.0 within the next six months
- Updated roadmaps will be provided at future LUG events and accompanying Lustre releases
- Oracle intends to continue investing in Lustre 2, improving metadata and IO performance and delivering features for more effective integration and management in HPC computing environments



# How can Lustre 1.8 customers upgrade to Lustre 2?

- Lustre 1.8 clients will interoperate with Lustre 2 servers so you can mount both Lustre 1.8 and 2.x storage clusters from the same client
- Since Lustre 2 is only qualified and supported on Oracle's integrated storage systems, a supported migration path does not exist from Lustre 1.8 to Lustre 2
- Oracle will continue to support customers with Lustre 1.8 support contracts and allow them to renew when the time comes
- Customers who want the advanced features of Lustre 2 can purchase Oracle's integrated storage configurations to get the highest levels of reliability, performance, and support



# Lustre 2 Qualification Program

- Oracle is developing a program to allow resellers to qualify their own reference configurations to run Oracle's Oracle Enterprise Linux software stack featuring Lustre 2
- This enables Oracle to maintain good quality and a positive reputation for Lustre 2 and assures customers that the one canonical version meets the highest standards in the industry
- Under the program, resellers can qualify systems with a verification test plan, working closely with Lustre Engineering to configure, test, and tune the configuration
- Lustre 2 partners qualified under the program are entitled to use Oracle's officially supported Oracle Enterprise Linux software stack and to purchase an Oracle Premiere Support contract for each Lustre server (OSS and MDS), based on the qualified reference configuration
- The reseller remains responsible for the hardware and servers, including servicing and diagnostics



# Outlook for 2010

- Lustre 2.0 final release within the next 6 months
- Sustainable cadence for Lustre 2 feature development and releases
- New Lustre Storage Solutions from Oracle
- Substantially expanded global sales, support, and professional services for Oracle storage
- Continued support and collaboration with the Lustre user community

**SOFTWARE.**  
**HARDWARE.**  
**COMPLETE.**

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