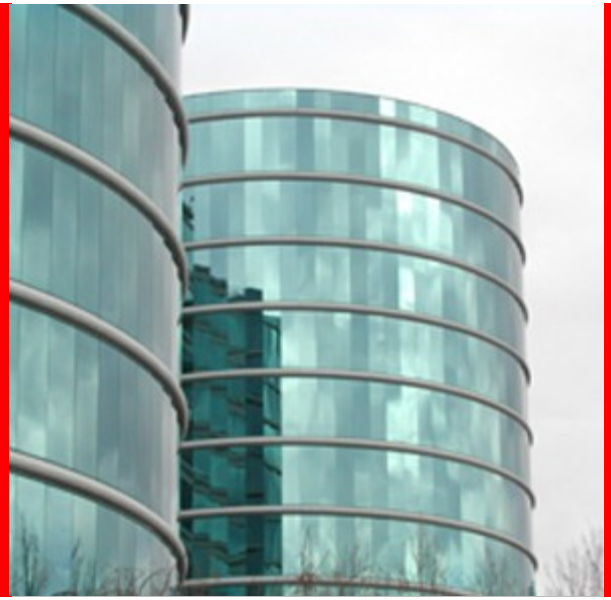
ORACLE®

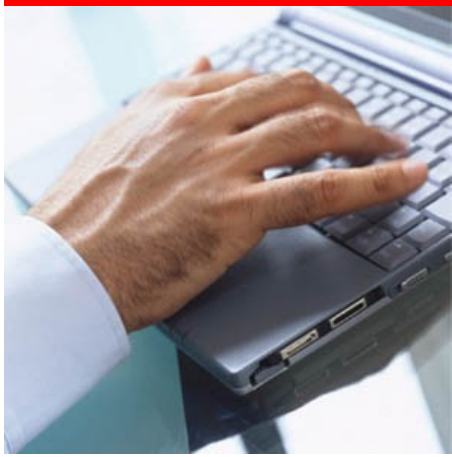


ORACLE®

Lustre HSM

Hua Huang
Engineering Manager, Lustre Group

Lustre HSM Table of Contents



- Objectives
- Status
- HSM releases & features
- HSM Support

Objectives

- A cost-effective way to expand the storage capacity with customer's choice of storage backend
  - CEA/ORNL and HPSS
  - Cray/TACC and SAMQ
  - FNAL and Enstore
- Provide an archive solution with better scalability and performance
- Make Sun Storage 7000 series unified storage systems our choice of backend Archive Servers

Status

- Collaborative effort between Oracle and CEA
- Most ambitious Lustre community development effort ever undertaken
- Started in late 2008 with CEA/Sun
- Plan to release in two main phases, V1 and V2
- First interface with HPSS and SAMQ
- Currently, completed V1 feature development, integration testing is under way.

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.

Lustre HSM releases and features

• Primary Functionality (V1)

- Full file archive, release and restore
- Fully-automatic restore at file open
- Policy Engine
- Copytool for HPSS
- Generic Copytool
- Tool to import files from existing archives
- Tool for per-file archive status and management
- Multiple HSM archive support

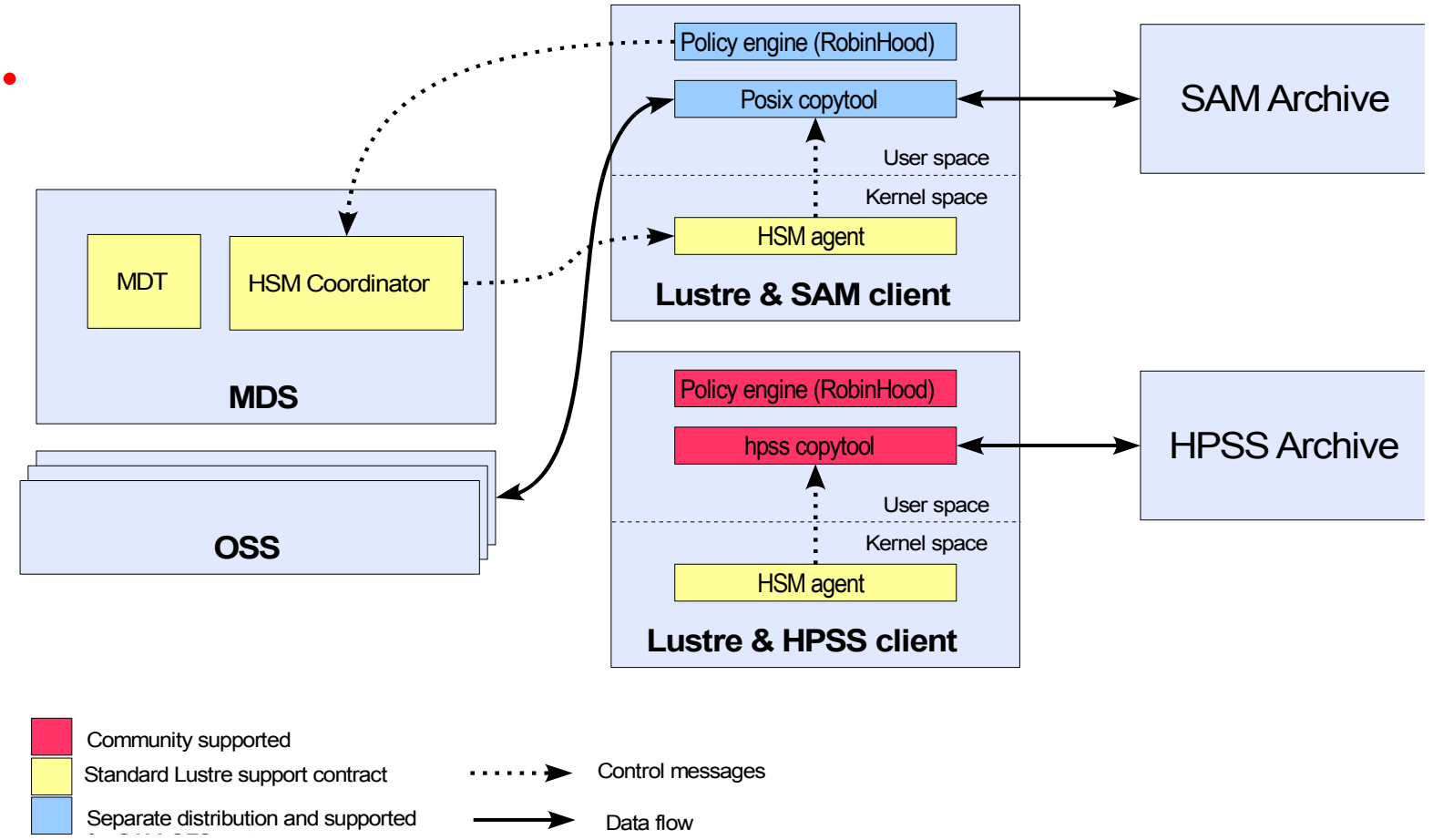
• Advanced Functionality (V2)

- File restore on first read (sub-stripe write)
- Partial file release
- File writes may cancel archive operation
- Add small-file aggragation to coordinator (TBD)
- User-settable complex policies (TBD)

HSM V1 Overview

- Components
  - Agents/Copytools
  - Coordinator
  - Policy Engine
  - Lustre MDT changes
- Basic actions
  - Archive a file
  - Release a file
  - Restore a file
  - Import a file / archive
- No support for Lustre HSM client/server interoperability and compatibility.

HSM Support


Policy engine (RobinHood)
Posix copytool
SAM Archive
User space
Kernel space
HSM agent
Lustre & SAM client
MDT
HSM Coordinator
MDS
OSS
Policy engine (RobinHood)
hpss copytool
HPSS Archive
User space
Kernel space
HSM agent
Lustre & HPSS client
Community supported
Standard Lustre support contract
Separate distribution and supported
Control messages
Data flow

ORACLE®