**Datacenter  Fabric  Workshop**

# SRP Initiator and Boot over IB

Roland  Dreier

# SRP Summary

- Published T10 standard for SCSI over RDMA transports
  - spec includes InfiniBand mapping
  - IB spec for device management
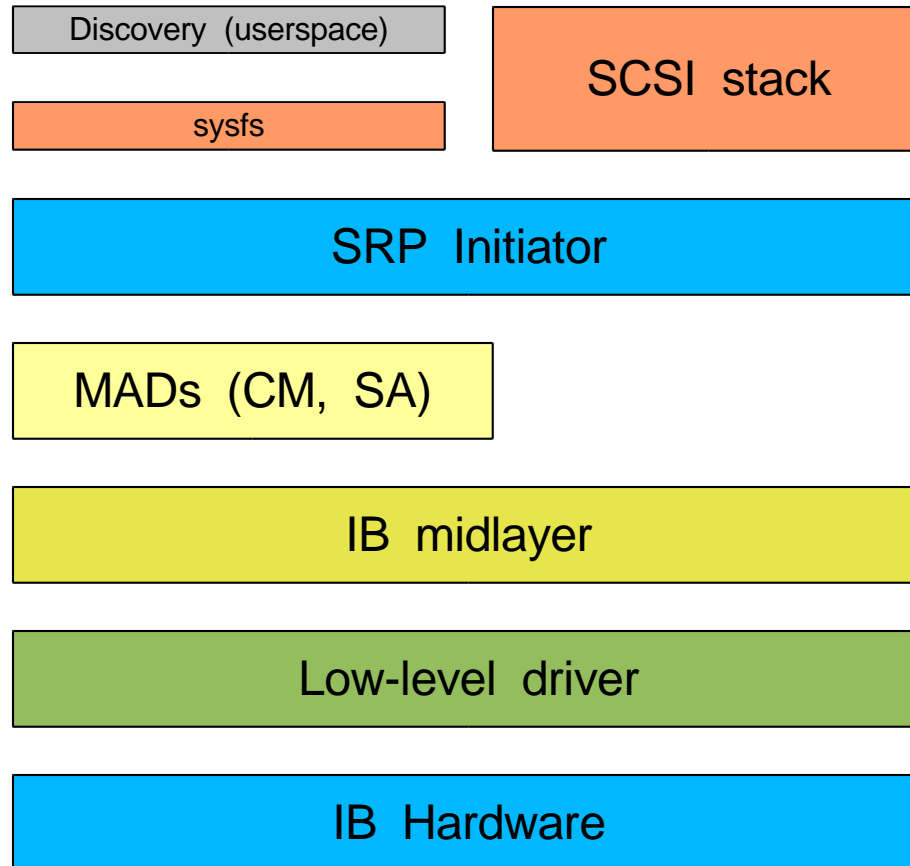- SRP provides high-performance storage over InfiniBand

# OpenIB SRP initiator

- Device discovery done in userspace
  - More flexible, keeps kernel simple
- Current code working stably
  - Tested on i386, x86_64 and ppc64
  - Not all error conditions handled yet
- Checked into OpenIB svn trunk
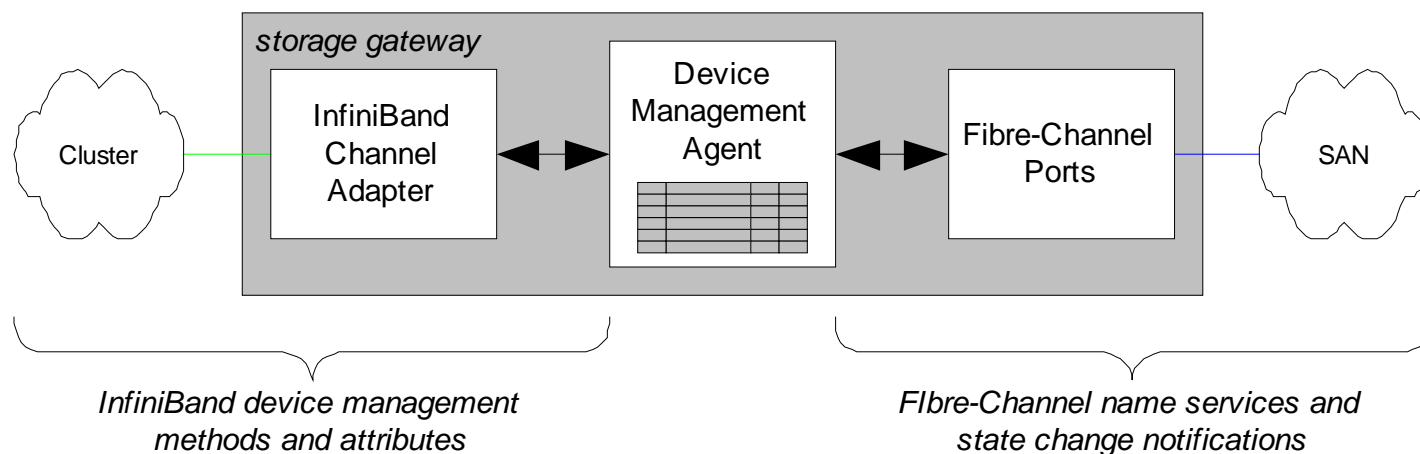- Targeting upstream merge for kernel 2.6.14

# OpenIB SRP stack

Discovery (userspace)

SCSI stack

sysfs

SRP Initiator

MADs (CM, SA)

IB midlayer

Low-level driver

IB Hardware

# Boot over SRP

- Use 2.6 kernel "initramfs" feature
- Build minimal filesystem with klibc
  - Connect to SRP target
  - Mount root filesystem over SRP
  - Start real init process

# SRP  targets

**storage gateway**

| Cluster |   | InfiniBand Channel Adapter | ◄──► | Device Management Agent | ◄──► | Fibre-Channel Ports |   | SAN |

*InfiniBand device management methods and attributes*

*FIbre-Channel name services and state change notifications*

- ## SRP to Fibre Channel gateways
  - Multiple vendors: Cisco, SilverStorm
- ## Native SRP storage
  - Mellanox, Engenio, DataDirect

# SRP vs. iSER

- Not much technical difference
  - both carry SCSI over RDMA transports
  - both have spec for discovery/management
- SRP: more mature, more momentum
  - Published spec vs. IETF work-in-progress
  - iSER requires iSCSI management structure
  - Multiple vendors vs. single source