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# HPSS at Caltech

2001 HPSS User's Forum  
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# Usage models

- Standard HSM for supercomputers
- Special projects
  - Particle physics: LHC event generation
  - High-end visualization for both ASCI ASAP center and JPL
  - LIGO: Gravity wave detector project
    - Goes online in 2001, production in 2002
    - Not sure how much data, estimating a couple hundred TB
    - Will run as a storage subsystem
  - Fluid dynamics: rates up to 2 GB/s
- Support FTP & HSI

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# Hardware Configuration

- SP2
  - 5 Silver Nodes (4 proc. 1GB RAM)
    - 1 for metadata servers
    - 4 for mover nodes
  - 8-way 604 high node for user access
- Gigabit Ethernet almost exclusively
- IBM/Ascend/Lucent HPGN turned off

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# Hardware Configuration II

- Disk
  - 544 GB SSA for cache & metadata
  - SSA RAID with FW cache
- Tape
  - IBM 3494 Robot
    - 6 3590 drives
  - STK 4410 silo
    - 4 Redwood drives

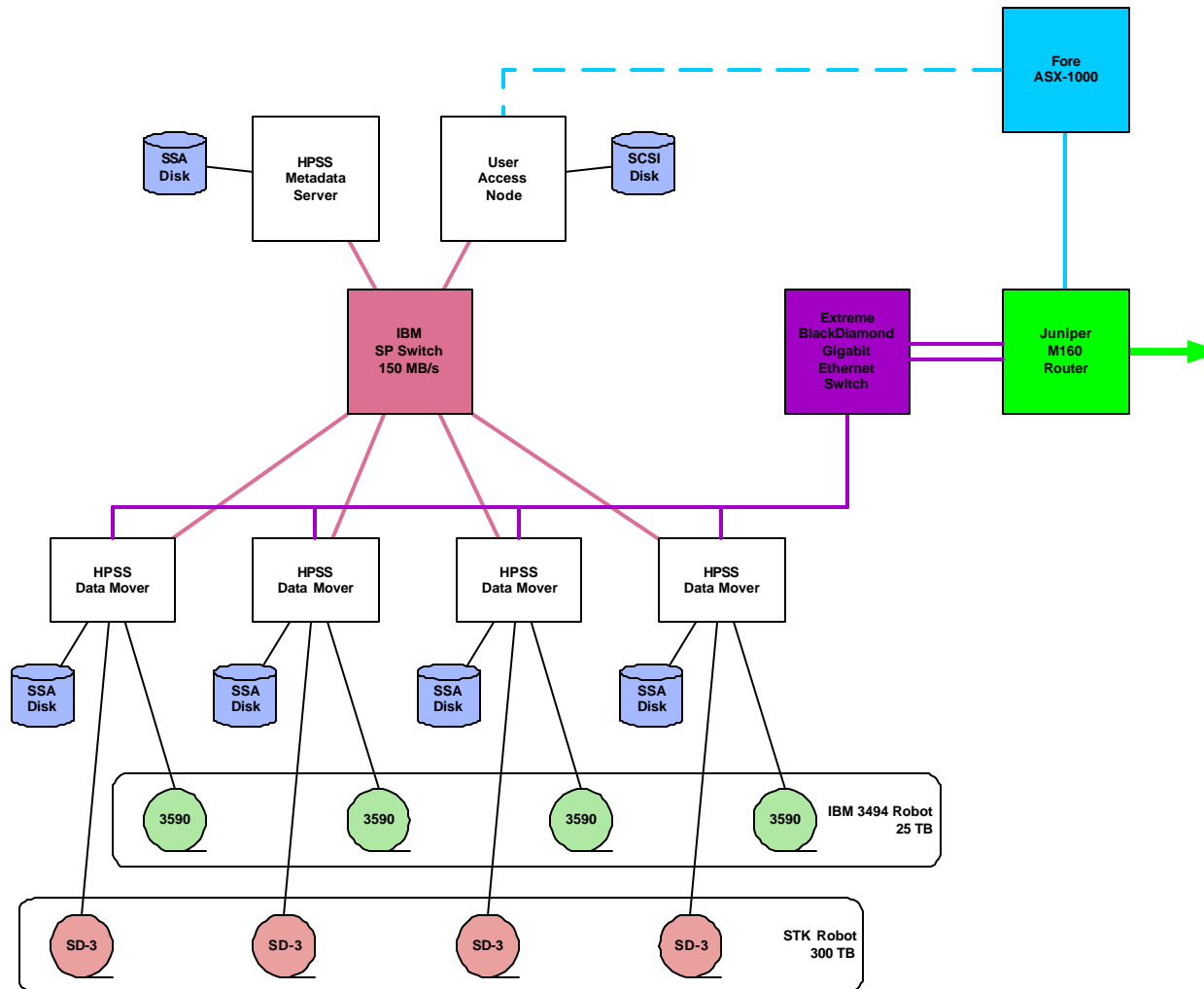
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# Hardware Configuration



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# Storage Numbers

	Files	Storage (TB)
Sep 1999	615,000	20
July 2000	1,077,000	55
June 2001	1,565,000	65

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# What next?

- Upgrade in stages
  - Stage 0 (2000)
    - Replace networking/HPGN
  - Stage 1 (Fall 2001)
    - Replace storage hardware
  - Stage 2
    - Upgrade from current Silver nodes

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# Storage Device Upgrade

- Need to get off of Redwoods NOW!
- Plan
  - Upgrade 4410 to Powderhorn
  - Move to all 9840/9940
  - Slot limits in Silver nodes necessitate FC
  - Dump SSA, move to FC RAID

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# Server Upgrades

- LIGO to come on as storage subsystem
  - Guess we better move to 4.2
  - LIGO decided to use Sun servers
- Sun Benchmarking
  - Which sun to choose?
    - Faster CPU's good
    - More CPU's bad
    - Bind the processes to processor groups!!
  - Still not sure what we are going to pick
    - Still analyzing numbers
    - Upcoming machines not yet announced

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