UTA DPCC/RAC STATUS

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2nd SAR Workshop

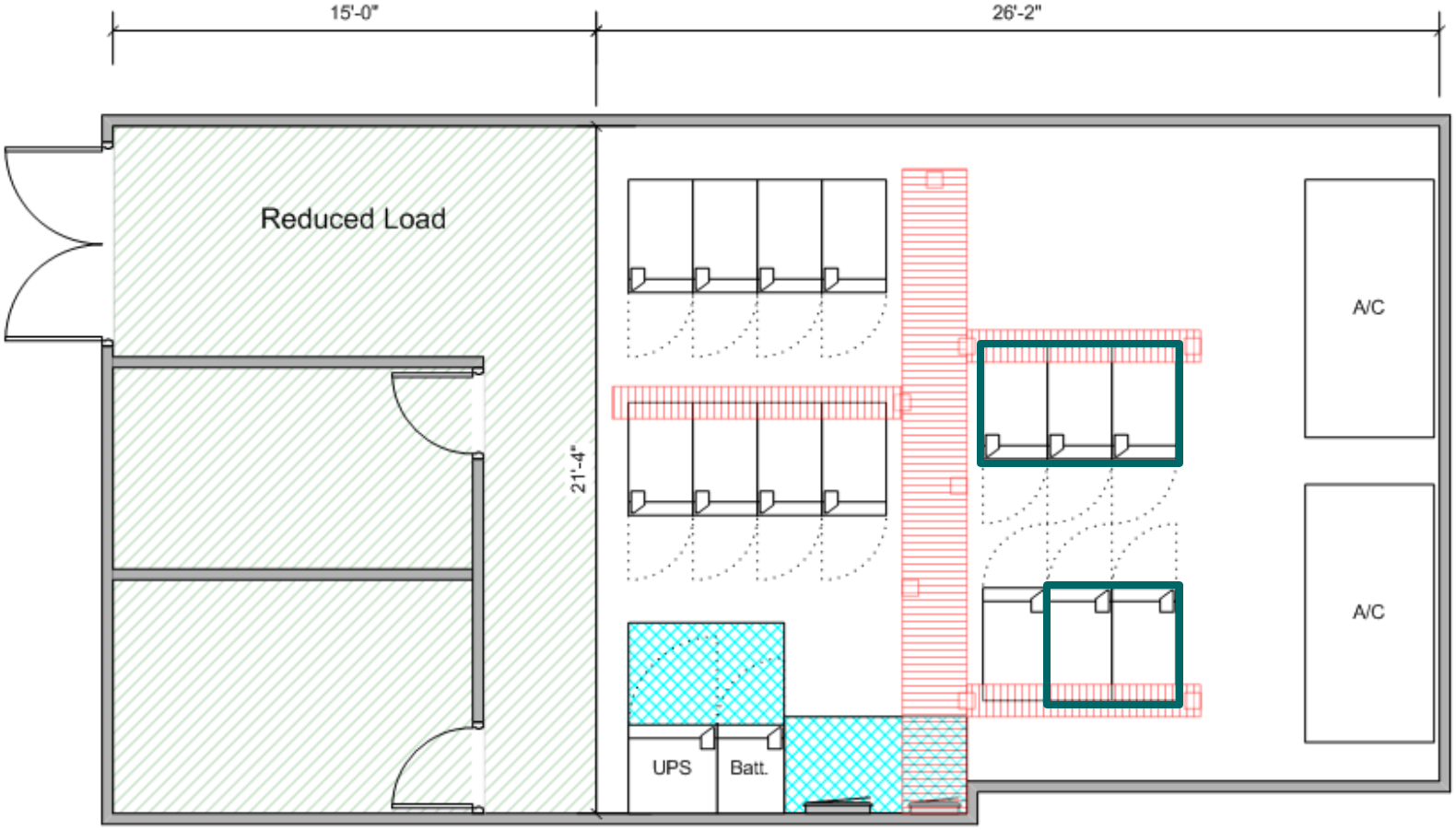
Sept. 26 – 27, 2003

Oklahoma University

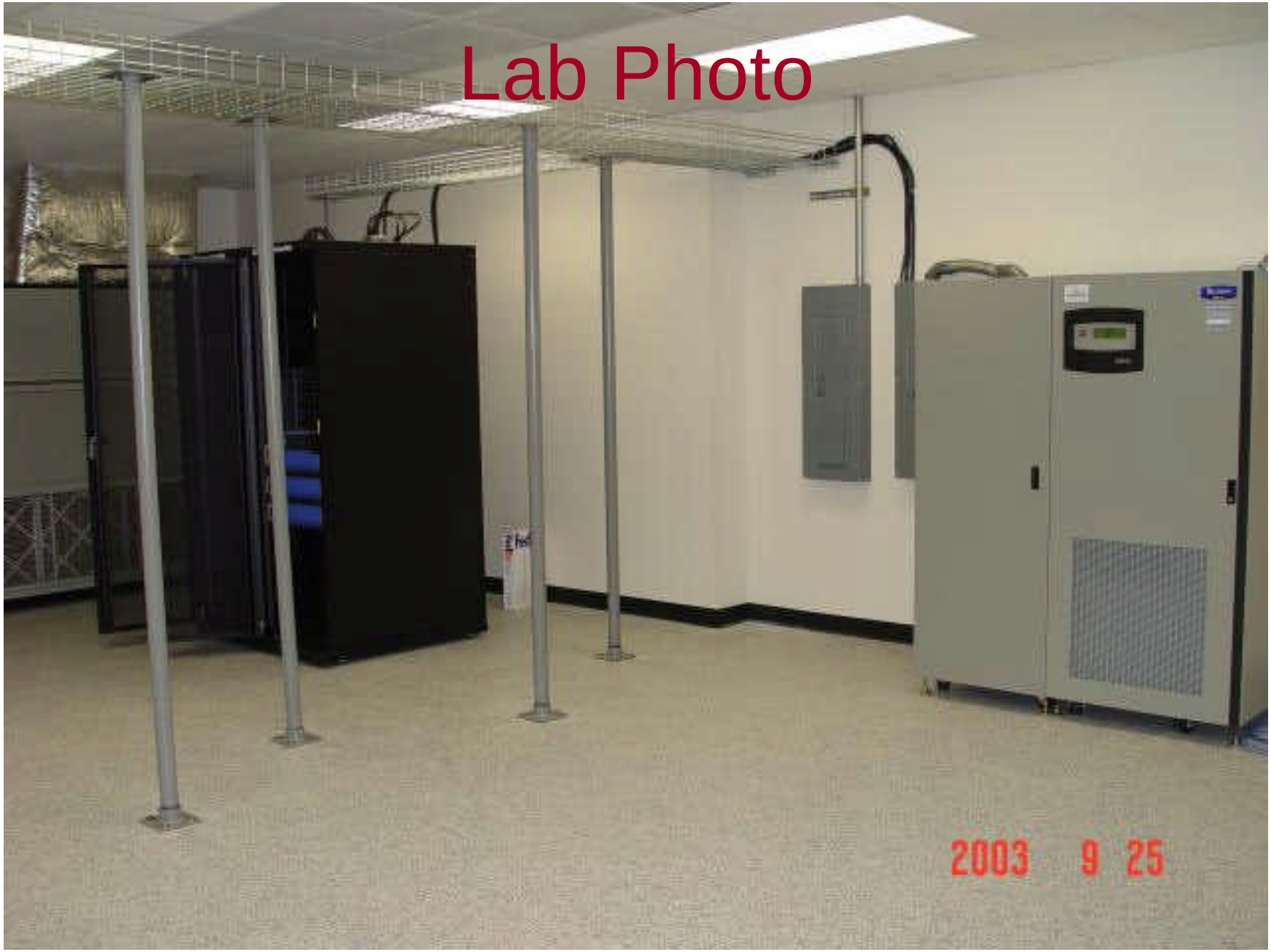
DPCC/RAC

- DPCC: Distributed & Parallel Computing Center
- NSF MRI funded facility
  - Joint proposal of UTA HEP and CSE + UTSW Med.
  - 2 HEP, 10 CSE and 2 UTSW Medical
- 160+ processors in distributed cluster
- 60 TB storage in Network Attached Storage RAID units
- 5 TB storage in Storage Area Network
- Small SMP (TBD)
- Networking equipment
- Full Time Administrator

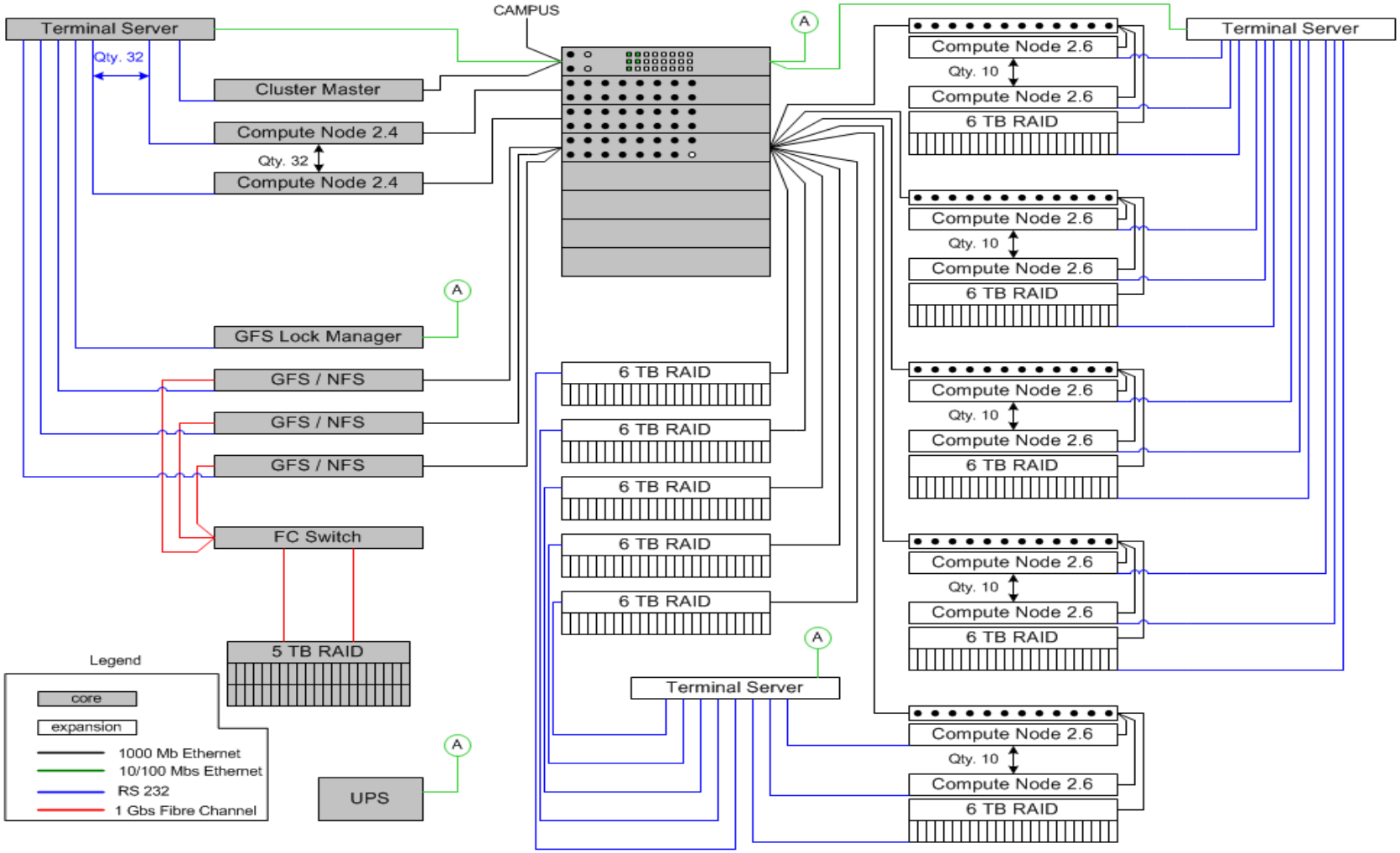
Lab Space



Lab Photo



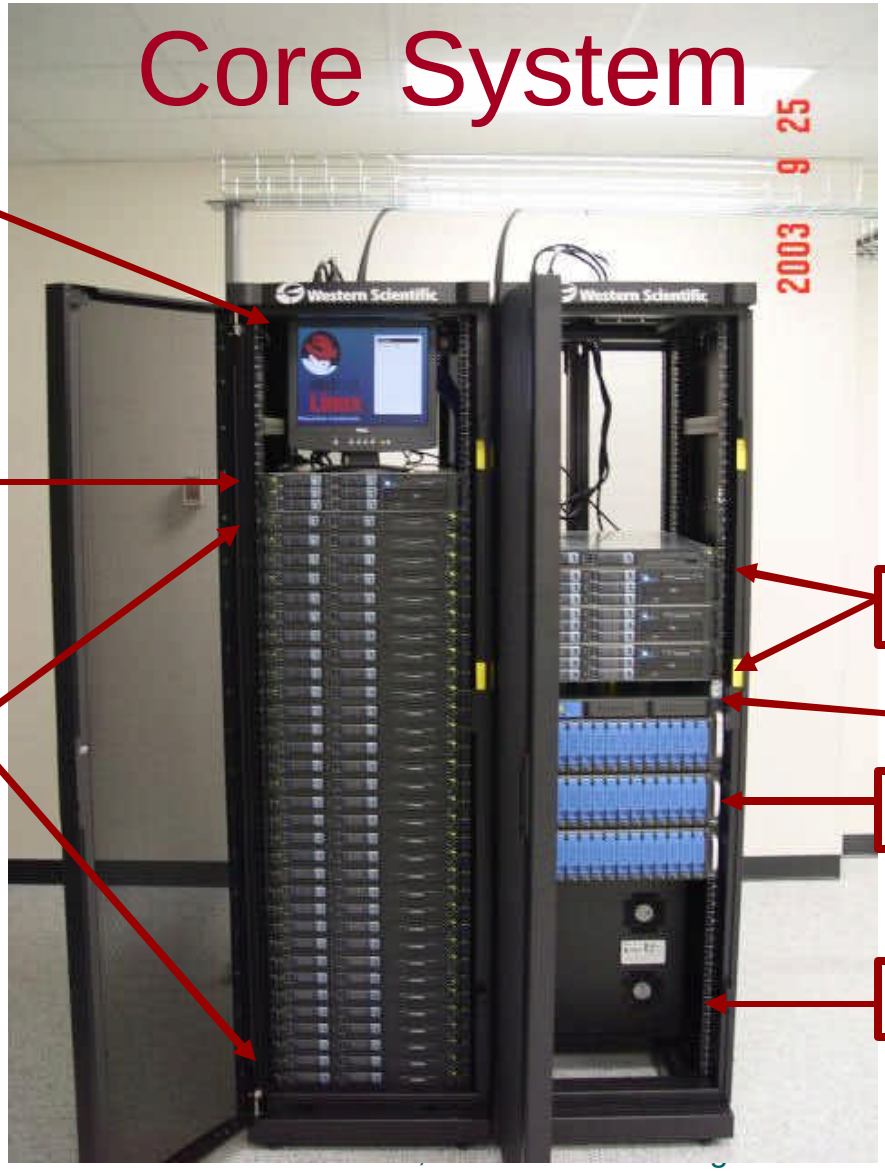
Cluster Architecture



Core System

- 32 compute nodes + Master
  - 2.4 GHz Dual Xeon (154GHz total)
  - 2 GB RAM (64GB total)
  - 60 GB disk drives (192GB total)
- 5 TB SAN
  - Fibre Channel RAID unit
  - FC switch
  - 3 GFS nodes (NFS to cluster) + lock manager
- FastIron 800 - 1000 Mbs Switch
  - 52 - 1000 Mbs ports (data transfer and communication)
  - 24 - 10/100 Mbs ports (for system management)
- 32 KVA UPS
- Terminal server

Core System



Terminal Server (hidden)

Master Node

Worker Nodes

GFS Nodes

FC Switch

FC RAID

FastIron Switch

Expansion System

- 50 Compute nodes
  - 2.6 GHz Dual Xeon (260 GHz Total)
  - 2 GB RAM (100GB total)
  - 80 GB disk drive (4TB total)
- 10 RAID Units NAS
  - IDE Based
  - 6 TB/unit raw storage
- 5 Network Switches (1000Mbs each)
- Additional terminal servers

Delivery Status

- Core system
  - Delivered to lab on 9/16
  - Waiting for electricians to provide wiring for racks
  - Turn-on scheduled for 9/26
- Expansion system
  - Order placed on 9/05
  - Compute nodes shipping on 9/29
  - RAID units shipping on ???
  - Sundry items (Racks, terminal servers, etc) being delivered this week (9/22)

Short Term Plans

- Prepare cluster for general use
  - Cross-project software installations (10/17)
    - PBS batch scheduler
    - Database (Oracle or DB2)
    - Grid Software (plain Globus for now, eventually VDT)
    - MPI (Message Passing Interface)
  - HEP specific installations (10/31)
    - Install D0 Software (with assistance)
    - Install McFarm (with assistance)
    - Install SAM station (with assistance)
    - Install SAM/Grid (with assistance)
    - Install ATLAS software
- Complete the expansion system (10/31)
- Prepare for SC2003 activities (thru 11/21)

Long Term Plans

- Improve storage allocations

  (For expedience, SC2003 will rely heavily on SAN)
- Measure and improve network throughput
- Create process for outside (UTA) collaborators to have accounts
- Recruit more users from inside and outside of UTA

Conclusion

- DPCC being established
- First part of cluster coming up now
  64 processors, 5TB storage
- Expansion to quickly follow
  100 processors, 60TB storage
- Supporting SC2003 activities is a priority
- Opportunity for the center to grow quickly serving HEP, CSE and other needs

For further information contact Patrick McGuigan (mcguigan@uta.edu)