

# OUHEP CLUSTER

- Shared by ATLAS and D-Zero
- Hardware (4.8GFlops, 7.5GB, 1TB)
  - OUHEP0, 2x Athlon 1GHz, 2 GB, 100GB + 800GB RAID
  - OUHEP1, 2x P3, 1GHz, 1GB, 150GB
  - OUHEP2, 2x P3, 500 MHz, 1GB, 13GB
  - OUHEP3, 2x P3, 500 MHz, 1GB, 13GB
  - OUHEP4, 2x P3, 1GHz, 1GB, 40GB
  - OUHEP5, 2x P3, 1GHz, 1GB, 30GB
  - OUHEP9, 1x, P4, 2.2GHz, 512MB, 15GB
  - OUHEP[6,7,8], 1x P2, 233MHz, 64MB, 0GB

# OUHEP CLUSTER

- Network
  - University: Gigabit to Internet2
  - Cluster: 100 Mbs Ethernet and Gigabit interconnect on private switch (NFS)
  - Gigabit to OSCER
  - OSCER: 250 CPU (P4/1.5GHz) Linux Cluster

# OUHEP CLUSTER

- Software
  - RH Linux 7.2 (2.4.18 Kernel)
  - D0 software infrastructure
    - Full D0 software releases
    - Code development
  - Remote Data Access - SAM Station
  - MCFarm
  - Globus 2
  - Condor & Condor-g

# OUHEP CLUSTER

- MCFarm
  - 7 nodes/13 CPUs (12 worker CPUs)
  - Using p13.08.00 release
  - Remote job submission from UTA
  - Condor as batch system
  - NFS Automounter for disk availability
    - Better Security - no root daemon
    - Easier administration - system does the work efficiently
    - Simpler system, less code to run

# OUHEP CLUSTER

- Scratch directory structure eases administration, reduces root dependence
  - export FARM\_NODEDIR=/scratch/users/mcfarm/scr
  - export FARM\_CACHE=/scratch/users/mcfarm/cache
  - export FARM\_GATHER=/scratch/users/mcfarm/gather
  - export FARM\_ARCHIVE=/scratch/users/mcfarm/archive
- These are soft links to local scratch storage, which are automounted when needed: *e.g.*
  - scr001 -> /home3/ouhep1/scr001
  - archive001\_A -> scr001/archive
  - cache001\_A -> scr001/cache\_A
  - gather001 ->scr001/gath\_queue

# OUHEP CLUSTERS

## – Portability/Migration Issues

- For use on non-dedicated clusters especially those without root access like the 250 CPU OSCER cluster mcfarm must be as innocuous as possible.
- Remaining root dependence must go:
  - export FARM\_WORK=/fscratch (redundant with automounter)
- Eliminate mcfarm daemons by utilizing the full capabilities of the batch system (Condor, PBS)
  - No user daemons allowed on head or worker nodes of OSCER
- A less restrictive mcfarm implementation for non-dedicated clusters will significantly increase available resources.