

Computing Infrastructure – Minos 2009/12

- Downtime schedules – PNFS down Dec 17
- Dcache status – stable !
- Hardware plans – Minos Cluster, disk expansion
- Condor / Grid status - stable
- Bluearc performance – cpn working well
- Parrot status – moving AFS to Bluearc
- Nucomp and GPCF futures

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DOWNTIMES

- Minos servers got fresh kernels Nov 19
 - no further kernel updates needed for at least 60 days
- /minos/data2 locked while copies completed Nov 19-21
- PNFS failed Dec 6, 7, and 9
 - Hardware problem with the stkensrv1 server, fixed Dec 9
- PNFS scheduled upgrades Thu Dec 17 07:00-12:00

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DCache issues

- Dcache stable
 - Server raid controller problem fixed Sep 10.
- Raw data pools expanded Sep 20.
 - capacity 9.6 TB, good forever ?
- Migration to LTO4 tapes still underway - transparent

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Hardware plans

- Minos Cluster replacements are here
 - 5 hosts (8 cores, 8 TB local disk each)
 - Deployment is not scheduled yet
 - Plan needed for our migration (code building, 64bit, etc)
- Oracle servers requisitioned, share with Minerva/Nova
 - Replacements for 6 year old Sun/AMD systems
- FY10 plans are on hold – see budget
 - Replace remaining older servers (sam02/3, etc)
 - Add 30 TB Bluearc to /minos/data
 - Add 30 TB to Dcache (shift from Bluearc)

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Condor/Grid status

- Ryan Patterson managing condor, THANKS !!!
- We continue to reach peaks of 2000 running jobs
 - still want 5000, after fixing Bluearc issues
- Still using wrapper for condor_rm, condor_hold
 - To prevent SAZ authentication overload
 - Condor 7.4 upgrade will fix this internally, next year

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Bluearc performance

- /minos/data2 moved to higher performance disks
 - The copy took months, data rates under 20 MB/sec
 - Data rates are now around 50 MB/sec.
 - 4 hours of slow reads in 4 months since D0 separation
- LOCKING - /grid/fermiapp/minos/scripts/cpn
 - Allows 'n' copies, presently 20, polls in a controlled manner
 - cpn has locked about 610K times
 - The old cp1 has locked 360K times so far
 - Sep/Oct/Nov locks were 56K / 19K / 4K
 - Will symlink cp1 to cpn

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Bluearc performance

- Continuing performance tests
 - Writes of 660 GB, at sustained 100 Mbytes/sec.
 - 32 Kbyte blocks on /minos/data2 help fragmentation
- See monitoring plots, such as
 - <http://www-numi.fnal.gov/computing/dh/bluearc/rates/minos27/NOW.png> - current day
 - <http://www-numi.fnal.gov/computing/dh/bluearc/rates/minos27/WEEK.png> - current week
 - <http://www-numi.fnal.gov/computing/dh/bluearc/rates/minos27/> - historical
 - <http://www-numi.fnal.gov/computing/dh/bluearc/rates/minos-sam04/20090629.week.png> - scratch
- Older Minos Cluster nodes read data under 10 MB/sec, will retire them
- /minos/scratch is now /minos/app, for consistency with Fermigrid
 - /mios/scratch remains available for compatibility for present

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PARROT deployment on FermiGrid

- PARROT has problems with SAM projects, etc
 - Possible problems with I/O intensive activity (like cp1 or cpn)
 - Parrot is designed for CPU limited applications
- We rsynced the parrot-accessed files to /grid/fermiapp and /minos/data
- Robert has worked hard to upgrade the setup scripts and framework
- Usage – see Robert's Dec 10 email to [minos_software_discussion](#)
 - At present, this is for brave pioneers

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NUCOMP / GPCF

- Nucomp monthly coordination meeting - Lee Lueking
 - These continued, plus workshops
- IF login cluster
 - Similar to Minos Cluster, but shared, primarily Minerva at present
- GPCF – General Physics Computing Facility
 - FNALU replacement and Grid front end, for general users
 - Minerva/Nova/Mu2e will be early customers
 - Budget calls for about 128 cores interactive, 256 cores batch
 - Spend money in early FY10