

# UCSD CMS 2009 T2 Site Report

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# Whats New?

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- UCSD Site Move from SDSC to Mayer Hall along with Hardware expansion
- T2\_US Phedex Downlink Commissioning
- Xen deployments
- Examining Hadoop
- Glide-in WMS Infrastructure
- DBS Accounting at UCSD
- Cacti
- UAF Ram Disk for users analysis

# Whats coming up?

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- Next Hardware expansion
- Expansion of T2 center infrastructure
- Possible/Probable transition from Dcache/SRM to Hadoop/BeStMan
- Glide-in WMS rollout
- Network path upgrades to Starlight
- Possible 24/48 Port 10GB in each rack

# Site Move

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- Summer 2009 moved the T2 from the SDSC to Mayer Hall
- Use APC Hot Aisle Containment

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

# UCSD T2\_US Phedex Links

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- In PhEDEx, we commissioned all the T2\_US downlinks to UCSD this year
- <http://tinyurl.com/cehmcl>

# Xen Deployment

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- We deployed a production Xen Host
- Currently using the host for a variety of services
- Recently moved GUMS server to Xen replacement an older single CPU installation
- Nagios running in Xen
- Looking for more services to move to Xen and will likely upgrade RAM in Xen system over the next few weeks (Max 48GB)

# Examining Hadoop

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- Encouraged by success at UNL
- Haifeng Pi is heading the effort with support from Terrence Martin
- Currently deployed a small hadoop storage system using production nodes
- Next steps are SRM/BeStMan integration along with analysis side testing of Hadoop performance

# Glidein-WMS

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- See Slides <http://uaf-2.t2.ucsd.edu/~tmartin/crabserver.pdf>

# Local PhEDEx Accounting

Account Name	Number Datasets	Total Size(TB)	Total Num Files
branson	34	7.061	3546
DataOps	5	2.122	1707
doeVisit	10	0.150	160
ewk	86	45.18	42439
fkw	21	1.065	940
higgs	6	4.245	1880
jobRobot	1	0.467	428
phedex	5	0	0
SAM test	1	0.009	10
sharma	25	1.238	789
snt	2	0.092	103
Summer08-central	18	1.913	1548
susy	22	2.475	2034
top	81	51.67	37840
tracker	17	3.393	3354
tracking	156	0.944	15364
ucsb	4	0.685	214
yagil	2	2.337	1809
<b>Totals:</b>	<b>496</b>	<b>125.0</b>	<b>114165</b>

Allows us to keep track of requests from different local groups & purposes.

# UAF Ramdisk for Users

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- Uses tmpfs on user interactive nodes
- ~10GB is a useful size for tmpfs
- Approximately 4x improvement in performance for ntuple analysis
- Tmpfs will use swap if it needs to  
su -  
gfactory; cd  
glideinsubmit/glidein\_POSTCCRC\_v2;  
./factory\_startup stop

# Hardware Expansions in 2009

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- Expanding the T2 capacity from 60KW to 140KW of power/cooling
- Increasing rack space
- Purchasing 32-64 Multi-core nodes based on Intels new CPU and Memory architecture
- Continuing with storage in nodes infrastructure so CPU upgrade will include Disk capacity increase

# Networking Improvements in 2009

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- Spoke with campus late 2008 regarding upgraded 10GBps paths from UCSD to Starlight bypassing CENIC/Internet2
- Possibility for UCSD to get a direct connection (Layer 1 or Layer 2) to Starlight
- Examining Fulcrum 10Gbps over copper for use in racks to solve issues with Multi-core nodes and CMS analysis data requirements

# Monitoring

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- Continuing to add and improve our cacti based RRD monitoring
  - Added additional sensors for condor
  - <https://t2sentry0.t2.ucsd.edu/cacti/index.php>
    - User guest, password guest
- Redeploying Nagios
  - Targeting nagios to monitor very specific components
- Expanding network monitoring to better understand network flows from external sites
- Deploy PerfSONAR