

Data Processing Systems and Shared Batch Pool

Scientific Computing Workshop 2011

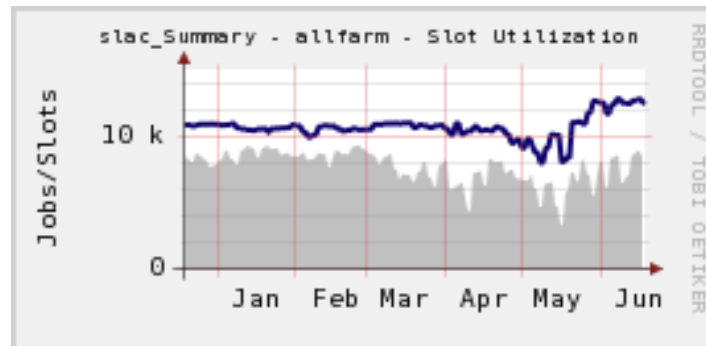
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OCIO Scientific Computing Batch System Overview

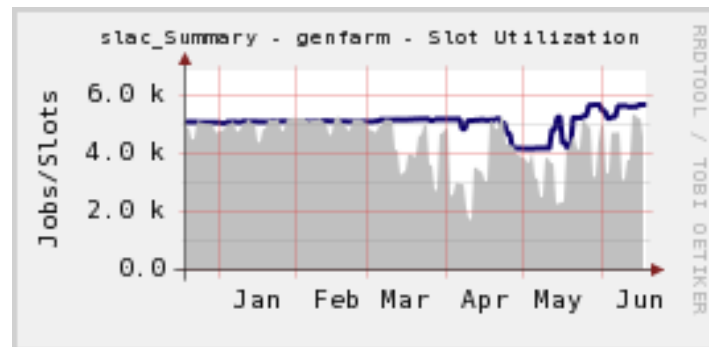
- ~2000 servers
- ~13000 cores or job slots
- Batch job scheduling managed by Platform LSF
- Shared batch pool plus dedicated experiment clusters
- ~1800 users



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Shared Batch Pool

- Shared pool of ~880 servers
- ~5700 cores or job slots
- Available to all SLAC Unix users
- All RHEL5 64 bit OS
- Fermi, ATLAS and Babar hardware contributions shared
- Job scheduling by priority based on "fairshare" policy.



For further information go to the following URL and click "High Performance"
<http://www.slac.stanford.edu/comp/unix/unix.html>

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Batch Server Hardware

Breed

bali

boer

dole

fell

hequ

yili

Horsepower

Sun Fire X2200M2 dual dual-core 2.6GHz Opteron 2218 CPUs, 8GB memory

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Dell R410 dual six-core 2.67GHz Intel Xeon X5650 CPUs, 24GB memory

Dell PowerEdge 1950 dual quad-core 2.66GHz Xeon CPUs, 16GB memory

Dell R410 dual quad-core 2.93GHz Intel Xeon X5570 CPUs, 24GB memory

Sun Fire X4100 dual dual-core 2.2GHz Opteron 275 CPUs, 4GB memory



6/18/11

Data Processing Systems and
Shared Batch Pool

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Shared Pool Batch Queues

- The following "general" queues are accessible to all SLAC users.

Queue Name	CPU Limit (min) (normalized)	RUN limit (min) (wallclock)	Notes
express	3	4	JL/U = 50
short	21	30	Fairshare
medium	168	240	Fairshare
long	1338	1920	Fairshare
xlong	10656	15840	Fairshare
xxl	85680	122400	Fairshare JL/U = 1000
idle	none	none	Low priority/ preemptable

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Interactive Servers

Linux and SciLinux load balanced interactive servers accessible by kernel pool.

<u>Pool Name</u>	<u>Intended Use</u>
rhel4-32	RHEL4 32 bit interactive compute intensive work
rhel4-64	RHEL4 64 bit interactive compute intensive work
rhel5-32	RHEL5 32 bit interactive compute intensive work
rhel5-64	RHEL5 64 bit interactive compute intensive work
sl4-32	Babar building and testing

You may ssh into any of these via their pool names.

For example: `ssh rhel5-64`

More info: <http://www.slac.stanford.edu/comp/unix/public-machines.html>

Note: [rhel6](#) testing in progress. Interested? Contact `unix-admin`.

OCIO Scientific Computing Infiniband Cluster

- Available to users who's parallel processing work can take advantage of the high speed Infiniband interconnect.
- Access to the 32 node *pinto* Infiniband cluster is available by request. Send mail to unix-admin@slac.stanford.edu.
- For further information about the Infiniband cluster and compiling your OpenMPI jobs:

<http://www.slac.stanford.edu/comp/unix/farm/pinto.html>

http://www.slac.stanford.edu/comp/unix/farm/parallel_at_SLAC.html

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Current Power/Cooling/Space Capacity

Power

- Recent addition of 1.5 MW to CGB 050 brings power capacity to ~3.6MW.

UPS

- New UPS provides 450 KW, currently only ~15% utilized.
- 500KW diesel generator to provide ~24 hours at peak load.
- Older UPS unit provides 450KW of power.

Chilled Water

- Currently at 30% capacity.

Space

- ~17000 total square feet of space in CGB 050.
- Recent efforts recovered ~3300 sq ft. for future expansion

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Space, The Future Frontier

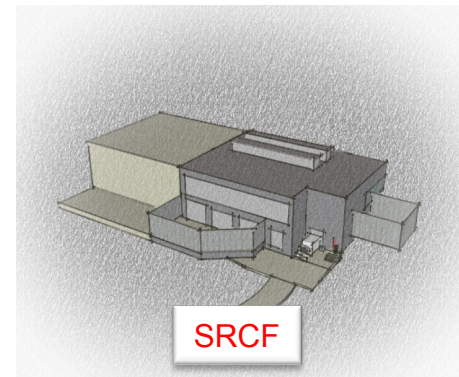
Stanford Research Computing Facility (SRCF)

- Stanford Board of Trustees approved project concept and site location.
- Final BOT approval expected in October.
- Probable groundbreaking December/January
- Phase 1 completion early 2014
- Initial phase will provide SLAC ~3000 sq ft. expansion space.

CGB 050 expansion plans

- PDUs installed in Rm. 111 (old training room) for expansion
- Ten water cooled racks to be installed in Rm. 127 for Clustered Systems cabinets expected in September.

OCIO Scientific Computing Present and Future



Questions or Problem Reporting

Send email to:

unix-admin@slac.stanford.edu