

OCHEP DOSAR STATUS

HORST SEVERINI

DOSAR WORKSHOP, UJ

APRIL 8, 2010

OCHEP Tier 2 Hardware

- 61 Node (260 Core) 2.33/3.2 GHz Xeon-64
- 10 Support Nodes (5 head, 5 storage) 2.33/3.2 GHz Xeon-64
- 2 GB RAM per Core
- 16 TB of usable DDN/IBRIX3 storage (24 TB raw)
- ROCKS 4.1 (RHEL4 64 bit), OSG 0.8.0, LFC, DQ2 from UTA
- tier2-01: head node
- tier2-02: storage node (gsiftp)
- tier2-05: SRM-Bestman-Gateway (storage resource manager)
- Monitoring: Ganglia, MonALISA, cron scripts
- Used for PanDA production and analysis and OSG integration



OCHEP Tier 2 Status



Ganglia Cluster Toolkit: Cluster Report

https://tier2-01.ouchep.ou.edu/ganglia/?c=OU_OC...

PLATFORM
OPEN CLUSTER STACK

Cluster Report for Wed,
25 Feb 2009 12:21:36
-0600

Get Fresh Data



Metric: load_one
Last: hour
Sorted: descending

Physical View

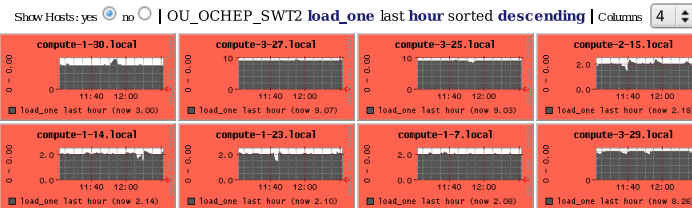
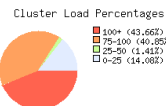
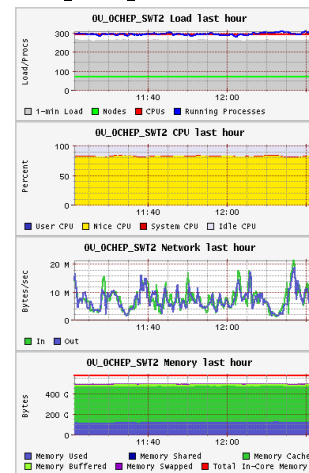
OCHEP Grid > OU_OCHEP_SWT2 > --Choose a Node

CPUS Total: 291
Hosts up: 71
Hosts down: 0

Avg Load (15, 5, 1m):
90%, 90%, 90%
Localtime:
2009-02-25 12:21

Rocks Tools:
[Job Queue](#) | [Cluster Top](#) | [Gmetrics](#)

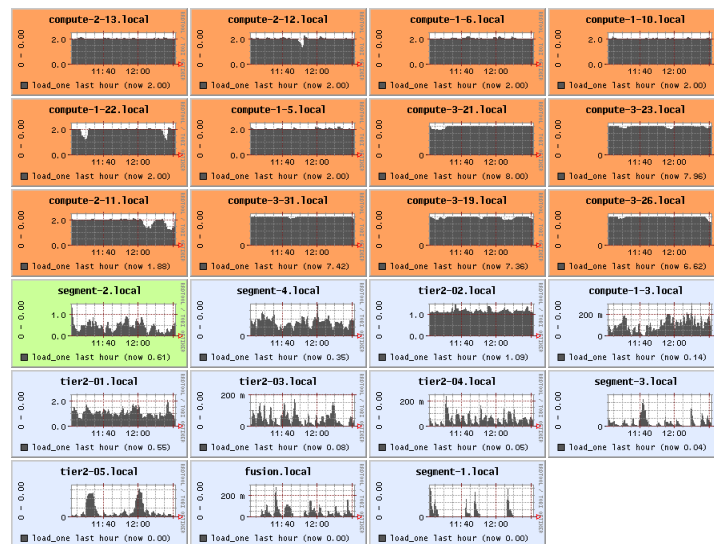
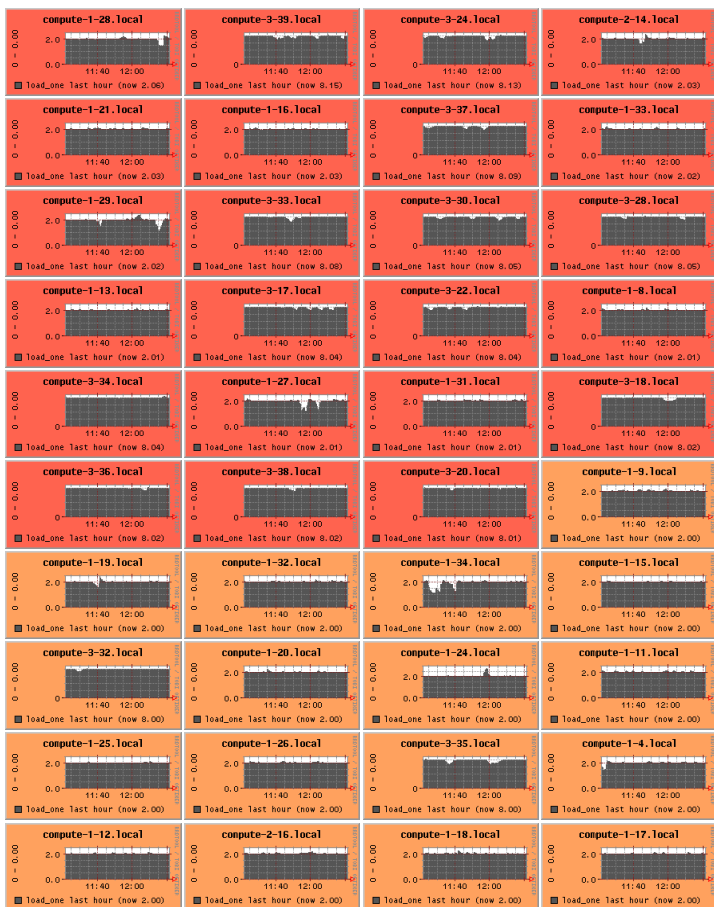
Overview of OU_OCHEP_SWT2



Ganglia Cluster Toolkit: Cluster Report

https://tier2-01.ochep.ou.edu/ganglia/?c=OU_OC...Ganglia Cluster Toolkit: Cluster Report

https://tier2-01.ochep.ou.edu/ganglia/?c=OU_OC...



(Nodes colored by 1-minute load) | Legend

Gmetad Web Frontend version 2.5.7 [Check for Updates.](#)
Gmetad Web Backend (gmetad) version 2.5.7 [Check for Updates.](#)
Downloading and parsing ganglia's XML tree took 0.0709s.
Images created with FRDTool.

2 of 3

02/25/2009 12:22 PM 3 of 3

02/25/2009 12:22 PM



New OCHEP Tier 2 Hardware

- 34 Dell Dual Quad R410 Nodes (272 Cores) 2.26 GHz E5520
- 3 GB RAM per Core
- 200 TB of usable DDN/Lustre storage (fiber channel)
- 3 R710 Lustre Data Servers
- Upgrade to ROCKS 5.3 (RHEL5 64 bit), OSG 1.2.8



Other OUHEP Resources

- **OUHEP: 46 Nodes (80 cores) P4/Xeon, 30 TB storage**
 - OSG Production site, OSG Integration site, OUHEP SAM station, OSG SAM station, and ATLAS Distributed Data Management (DDM) services
 - Used for DØ SAMGrid production, ATLAS MC, OSG and SAMGrid integration testing, and local theory calculations
 - About to get \$20k ARRA Tier 3 funds, will buy 4-5 Dual Quad raid servers for PROOF Farm



Other OU Resources

- **Current OSCER cluster, Sooner**
 - 534 Node (4272 core) 2.0 GHz Xeon-64
 - 150 TB storage
 - OSG 1.0.0 installed – about to upgrade to 1.2
 - Will be used for ATLAS Tier 2 and DØ computing as available
- **750 Node Condor Pool:**
 - 3.0 GHz P4, 1 GB RAM, 40 GB HD, 100 Mbps network
 - Distributed over Campus PC labs
 - WinXP with CoLinux and Condor
 - Upgraded to OSG 1.2.0
 - Also upgraded head nodes and Condor to RHEL5/Condor 7.2



OU Network

- OU connected at 10 Gbps to NLR and I2 via OneNet
- OU Campus backbone at 10 Gbps
- 10 Gbps connection straight from SRTC
- 4-5 Gbps from Tier 2 cluster to BNL



Current Activities

- **DOSAR**
 - OSCER resources have been used for local DOSAR jobs for several years
 - Jobs submitted locally because users not yet familiar with Grid procedures
 - Pool running DØ SAMGrid production since 2006
 - OSG Monitoring and Accounting
 - OSG Outreach and Education
 - OSG Liaison for GridUNESP



Current Activities (cont.)

- **ATLAS**
 - ATLAS PanDA production running on OSCER cluster since May 2007
 - Remote DQ2 operations to OCHEP Tier2 Storage Element
 - ATLAS Network Throughput Initiative

Future Plans

- DOSAR
 - Continue using it for DØ SAMGrid production
 - Expand Pool to all 750 IT Lab Machines
 - Start using it for ATLAS production as well
 - This requires shared file system – now done, but not stable yet
 - Educate local users about OSG interface, including MPI submission
 - Then teach them to submit to other OSG resources
 - Expand OSG Outreach and Education activities



Future Plans (cont.)

- ATLAS
 - About to upgrade OCHEP cluster to RHEL5 and OSG 1.2
 - Add more nodes and storage – 200 TB Lustre file system
 - Install/configure GUMS and implement role based auth.
 - Continue utilizing OSCER cluster, Sooner, for ATLAS PanDA and DØ SAMGrid production



Summary/Outlook

- OU is in very good position for Grid Computing
- Lots of Hardware, fast Network
- Both DOSAR and ATLAS (and DØ) making very good progress
- Lots of OSG work going on as well – Monitoring, Accounting, Outreach, Education, ...
- Much more work to do

