

# Technical Review - Sustaining NEP-101

# Technical Review - Deliverables

Key Tasks	Start Date dd/mm/yy	End Date dd/mm/yy	Person Days	Budget	Milestone / Deliverable
Glint			200 (1 FTE)		Installation of Glint into the OpenStack software stack
Shoal Squid CVMFS			50 (0.25 FTE)		Expanded production deployment of Shoal for ATLAS and Belle-II
Ongoing maintenance			50 (0.25 FTE)		The services used for production operation of ATLAS, Belle-II and CANFAR require support.
Data federation			100 (0.5 FTE)		Continued development and testing of the UGR data federation system

# Technical Review - Glint

- Placed in production on Compute Canada (west) cloud:
  - Initial performance problems (insufficient resources) resolved
- Application submitted for Paste/Webobg refactoring submitted to stackforge
- Glance tasks for data movement:
  - Prototype developed
- Review of Keystone federation:
  - Cloud administrator centric implementation
  - Not compatible with Glint's client centric federation
- Testing and Documentation ongoing
- Ongoing maintenance

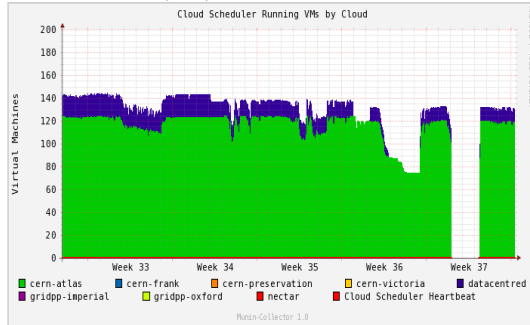
## Technical Review - Shoal

- Updated Squid web cache verification process
- Updated service build
- Ongoing maintenance

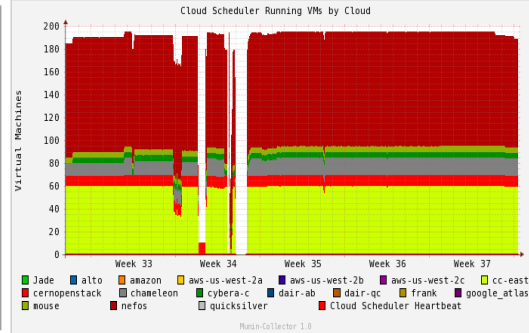
# Technical Review - Maintenance

- ATLAS and Belle-II production – last six weeks

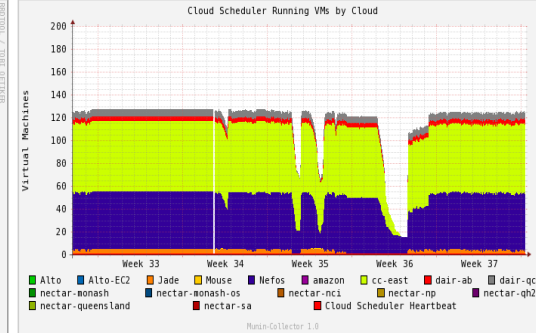
- cloudscheduler.cern.ch (csvms)



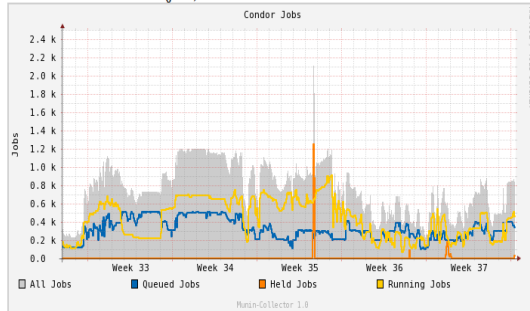
- bellecs.heprc.uvic.ca (csvms)



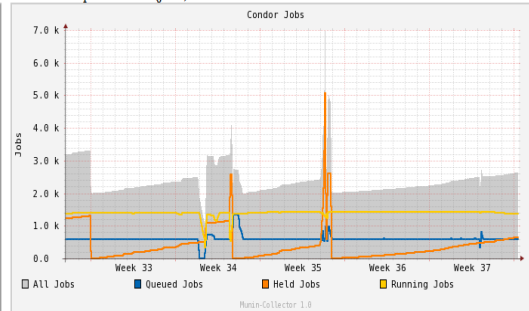
- elephant.heprc.uvic.ca (csvms)



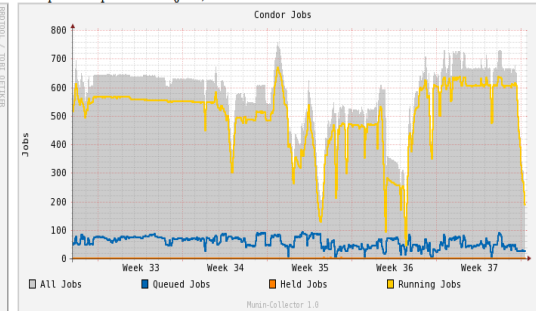
- cloudscheduler.cern.ch (jobs)



- bellecs.heprc.uvic.ca (jobs)



- elephant.heprc.uvic.ca (jobs)



- Averaging ~440 VMs, ~2,400 jobs

# Technical Review - Maintenance

- Challenges with new clouds:
  - Chameleon OpenStack cloud
    - Uses Blazer, a new reservation system
      - Can't instantiate without a reservation ID
      - Requires Python 2.7, Nova API v2 and Keystone API v3
      - Prototyping underway
    - Provides a “bare metal” cloud
      - Machine images required to be in a specific format different from VM images
      - CernVM will not support bare metal
- Received grant for MS Azure cloud

# Technical Review - Maintenance

- Cloud Scheduler on Compute Canada
  - Development of dynamic quota system to maximize resource utilization
  - Rationalized cloud control process for improved cloud administration:
    - Clouds disabled by default
    - Enablement by `cloud_admin` now permanent
  - Development of training materials to promote adoption by new projects

# Technical Review - UGR

- Planning:
  - Met with Dynafed/UGR developers
  - Ensure continued support, funding switched from EMI to CERN/IT
  - Focusing on Remote I/O as opposed to streaming or staging
    - Uses HTTP protocol
    - Reads only the required blocks of data
- Ongoing maintenance



# Technical Review – Summary

- Activities over the last two months:
  - Continued to develop Glint and promotes its adoption by OpenStack
  - Improved reliability of Shoal service
  - Continued development of support for the OpenStack Blazer service
  - Improved Cloud Scheduler administration
  - Promoting adoption of Cloud Scheduler by new projects
  - Planning for new developments