Bosco: Enabling Researchers to Expand Their HTC Resources

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Condor Week
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The Open Science Grid (OSG) has focused much of its effort on campuses from its inception. All OSG computing power comes from campuses and National Laboratories. OSG has a footprint on over 100 campuses and labs in the US and abroad. Both Inter- and Intra- campus bridging.

http://display.grid.iu.edu
Focus on the Researcher (…or Artist)

- What can we do to increase the throughput of your computing?

One step at a time
Bosco: Part of The OSG Campus Infrastructure Initiative

Community Building (just beginning)

- Support for campus infrastructure builders
  - Email support, blogs, online training, ...
  - [http://twiki.grid.iu.edu/bin/view/CampusGrids/WebHome](http://twiki.grid.iu.edu/bin/view/CampusGrids/WebHome)

- How-to center for community expertise
  - How-to support application environments (coming)
    - Matlab, “R”, Amber, Workflow environments ...

- Share DHTC Best Practices
  - Distributed High Throughput Computing
  - Set up a campus infrastructure
  - Utilize HTTP caching (Squid)
  - Enable researchers to access DHTC (Bosco)
Researchers may (or may not) be using a local cluster
Bosco Extends the Researcher’s Reach

- SSH Access
- No grid cert needed!
But Wait! That’s not all …
Bosco v1 (June) is designed for researchers

- Download
- Untar
- Bosco_install
- Bosco_cluster -add (hostname, Qsize)
- Bosco_cluster -test
  - Submits a job, identifies problem areas
- Jobs submitted using Condor syntax
  - The submit model does not change

Same as the GlideinWMS Model
Under the hood of Bosco

Integrated combination of:
- Campus Factory – glide-in (U Nebraska) +
- Condor pieces (some under devel) +
- SSH +
- Glue +
- Easy interface +
- Documentation

Bosco uses SSH to submit pilot jobs to worker nodes (WNs). WNs communicate back to the researcher’s workstation…
Campus Infrastructure Direction

- Help the researcher use local resources
  - Run on a local campus cluster
  - Run on several local clusters
    - Use local authentication credentials
- Use/share resources with a collaborator on another campus
- Access to the national cyberinfrastructure
  - OSG (and also XSEDE) resources

Submit Locally, Run Globally
YOU can be part of the action

Fraser at anl.gov
Bgore at morgridgeinstitute.org

We may even come to your campus