
BOSCO Testing



Open Science Grid

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BOSCO-ITB meeting

12/13/12

Meeting agenda 12/13/2012

- BOSCO
- BOSCO Testing
 - 3 different use cases
 - Single user, single cluster
 - Multi cluster
 - Multi user and integration w/ HTCondor
 - Supported platforms
 - Different tests: functionality and at scale
- Feedback to Developers
- Installation support and issue tracking

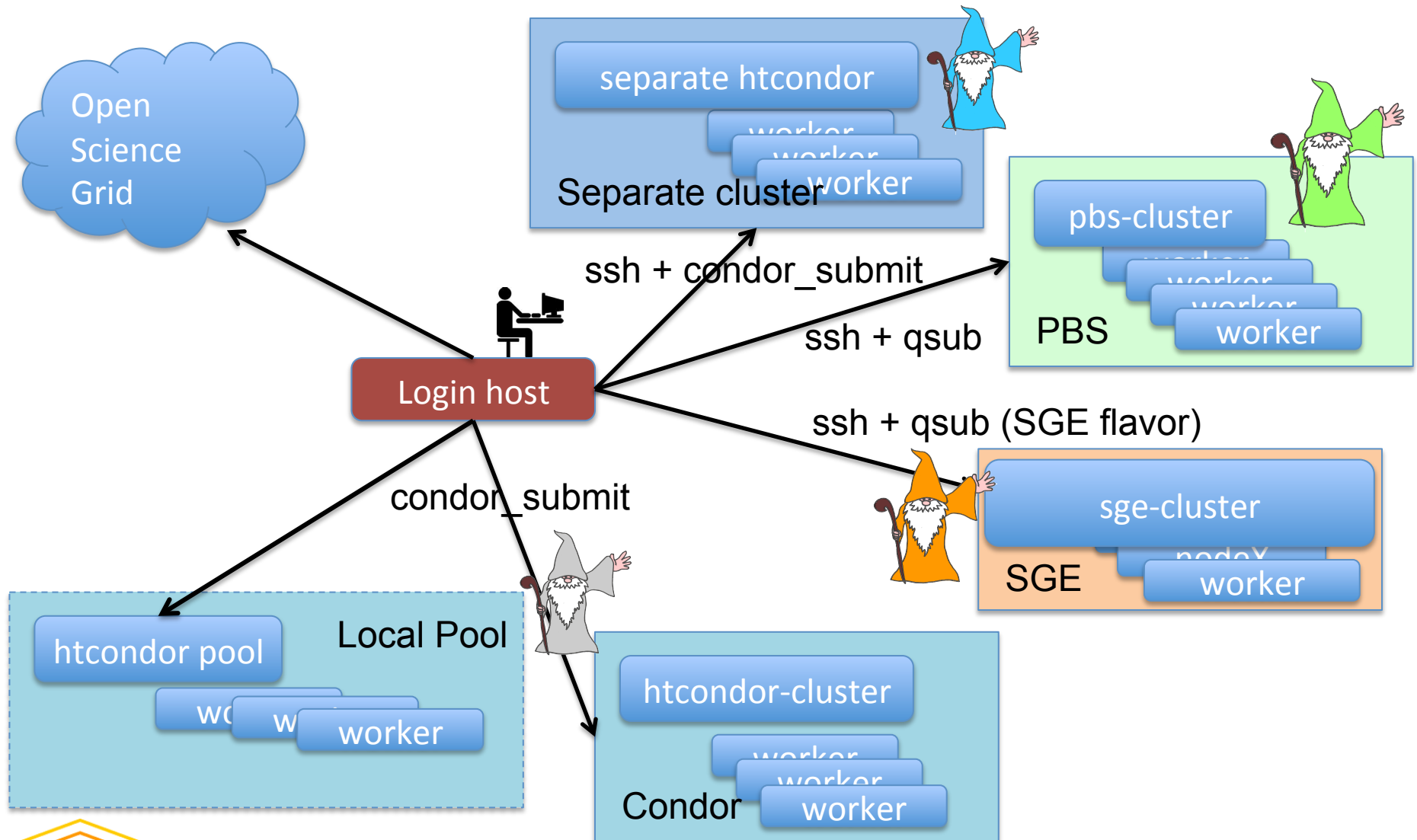


BOSCO

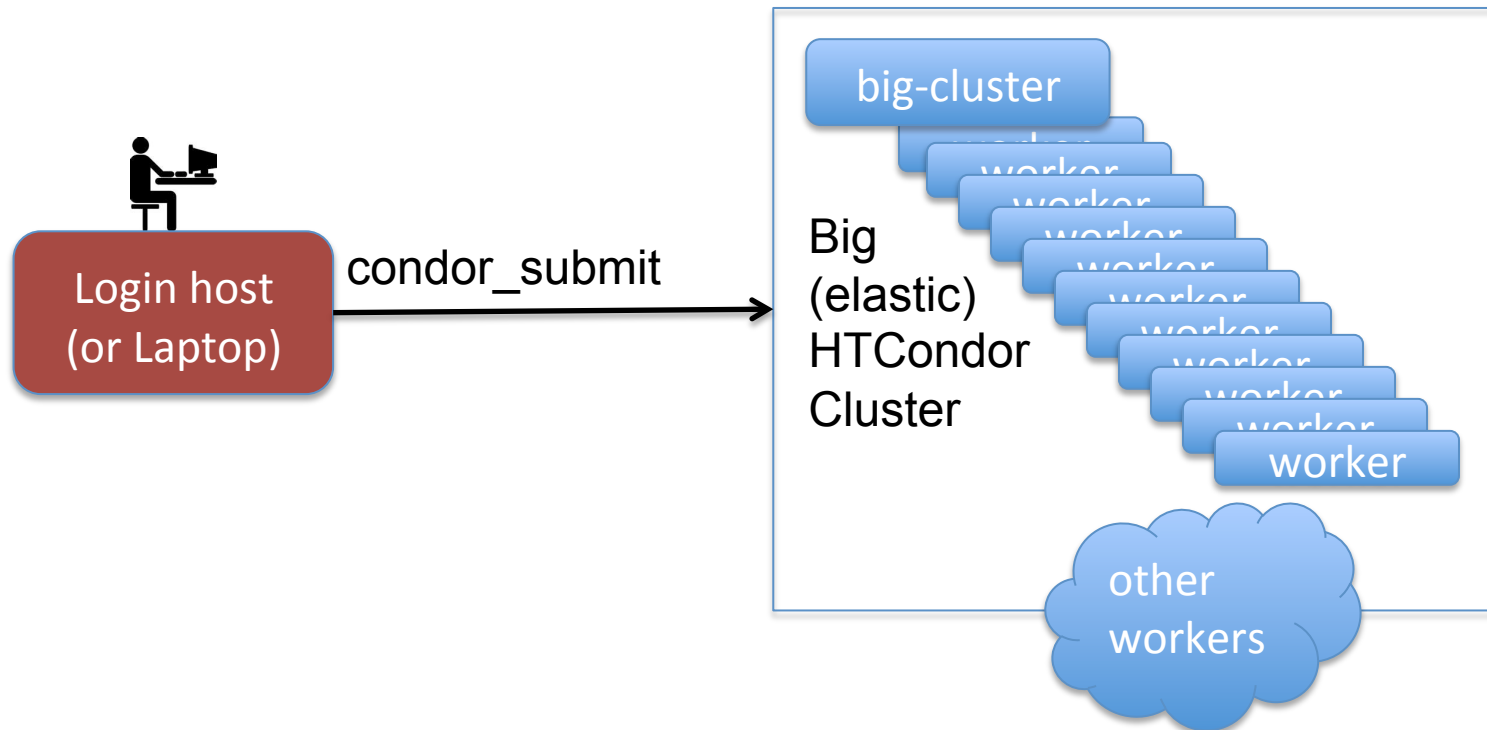
- Tool developed within Open Science Grid
 - Easier High Throughput Computing
 - Submit Locally (from your workstation)
 - One Submit Model for Different Cluster Types
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- <http://bosco.opensciencegrid.org/>
 - <https://twiki.grid.iu.edu/bin/view/CampusGrids/BoSCO>



Resources in a Campus - diverse

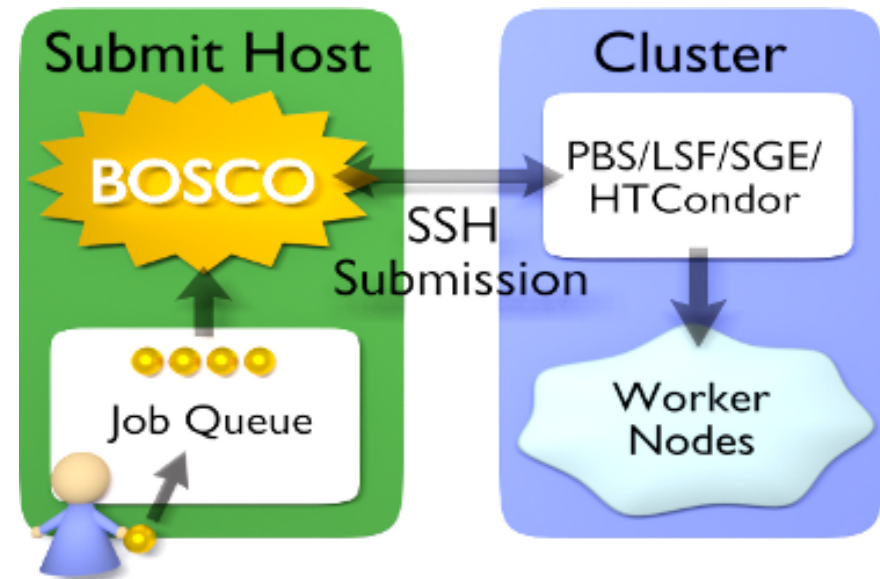


Submit locally, compute globally



Components of a BOSCO system

- BOSCO Submit node
- BOSCO Resources
 - Cluster Login Node
 - Cluster (worker nodes)



Use cases / Test cases

- Single user, single cluster
- Multi cluster (via Campus Factory)
- Multi user and integration with a HTCondor infrastructure



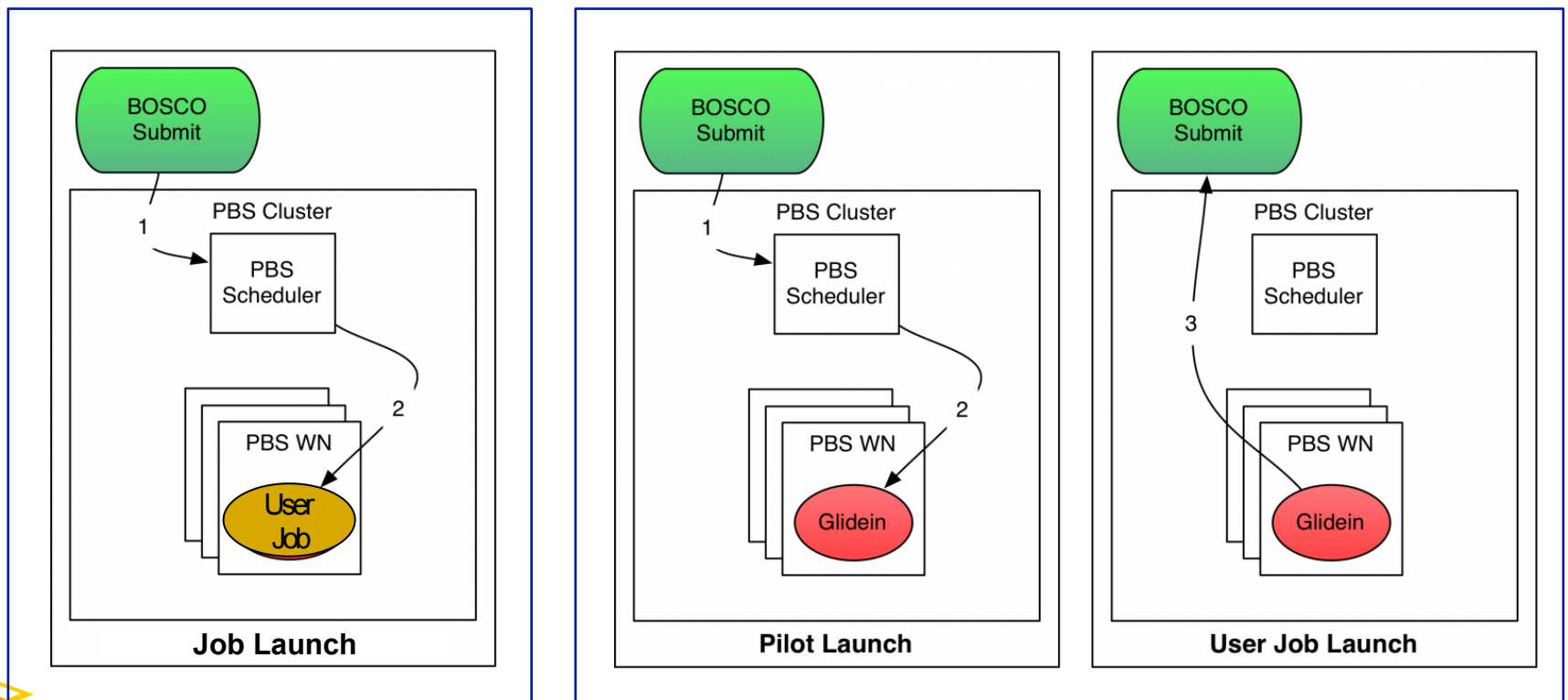
SINGLE cluster vs. MULTI cluster

- | | |
|--|---|
| ■ Direct submission of “grid” universe jobs (GHAP via SSH), one resource at the time | ■ “vanilla” univers jobs using HTCondor glideins (submitted via GHAP via SSH) |
| ■ SSH to login node of the BOSCO resource | ■ SSH to login node of the BOSCO resource |
| ■ No network service | ■ Using port 11000 (no firewall blocking it, no other service using it) |
| ■ BOSCO submit node can have no inbound connectivity | ■ BOSCO submit node reachable from BOSCO resources |
| ■ No outbound connectivity from the BOSCO resource | ■ Worker nodes require outbound connectivity and the ability to reach port 11000 of the submit node |
| ■ Can transfer executable, input files and output files | ■ Can transfer executable, input files and output files |



Differences in job submission

- Direct “grid” universe job batch
- “vanilla” universe job using HTCondor glideins: pilot + job



BOSCO SINGLE-user vs. BOSCO MULTI-user

- Installed by user
 - User manages BOSCO
 - BOSCO started as User
 - Contributing clusters (BOSCO resources) added by User
 - User must have SSH access on all BOSCO resources
 - Only User can submit jobs to the HTCondor pool of BOSCO
 - No choices because it must be easy to install and run for scientists without system administration experience
- Installed as administrator (root)
 - Administrator manages BOSCO
 - BOSCO started as root
 - Contributing clusters added using a single service account
 - SSH access via group service account (negotiated by admin)
 - All the users on the system can submit jobs to the HTCondor pool of BOSCO
 - More flexible because there may be more customization to add BOSCO in the Campus Grid



Requirements

■ BOSCO Submit Node

- ❑ RH5/6, Debian 6, Mac OS X 10.6 or later
- ❑ Outbound SSH
- ❑ Ability to receive connections on port 11000 *

■ BOSCO Resources (Clusters)

- ❑ RH5/6, Debian 6
- ❑ Local Resource Manager: PBS: Torque and PBSPro, HTCondor 7.6+, LSF, SGE
- ❑ Incoming SSH connection (Cluster Login Node)
- ❑ Connecting back to the BOSCO Submit Node (Cluster Worker Nodes) *

BOSCO standard tests

■ Functionality

- ❑ Single cluster (and all the rest)
 - Install/un-install
 - Add/remove BOSCO resources
 - “Grid” universe job
- ❑ Multi cluster only
 - “vanilla” universe job
- ❑ Multi user only (in Campus)
 - Flocking
 - Monitoring

■ Scalability and reliability

- ❑ Completion of multiple jobs
- ❑ Running continuously



Help us improving BOSCO!

- Test procedures and test results are available online:

<https://twiki.grid.iu.edu/bin/view/CampusGrids/TestBoSCO>

- It's a wiki page and you are welcome to add your test results or comments

- Questions or suggestions?

Write to bosco-discuss@opensciencegrid.org

