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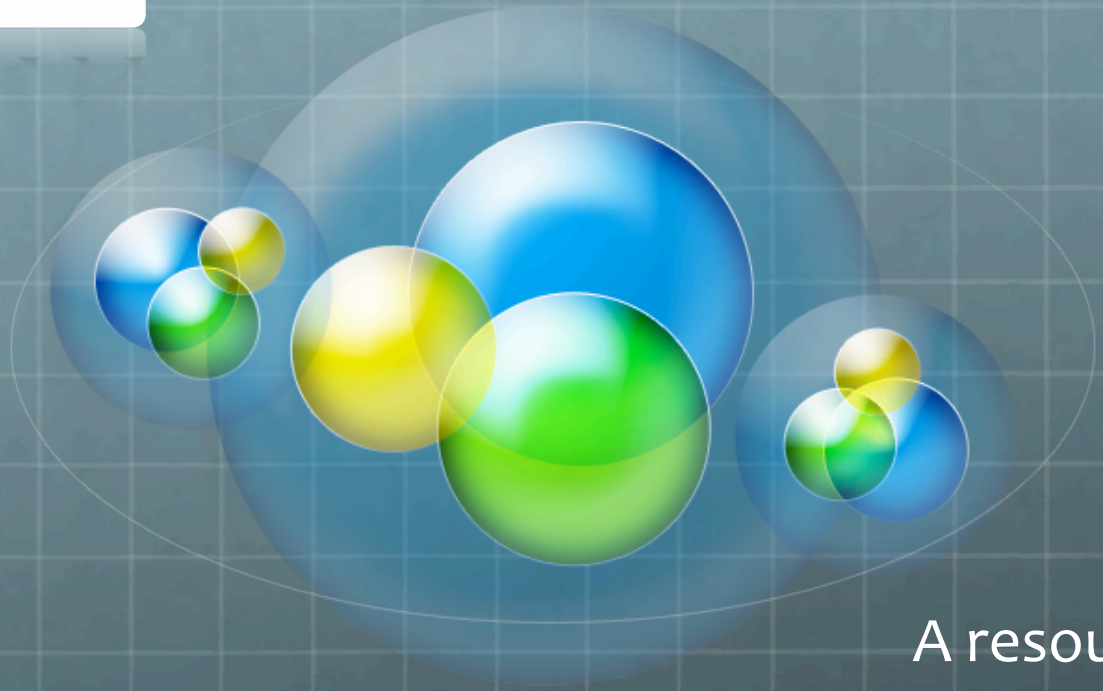


OAR

A resource manager and batch scheduler for large clusters

SC08

SC08 is the International Conference for High Performance Computing, Networking, Storage and Analysis

Overview

- Batch scheduler / resource manager
- Clusters / Grids
- Open Source

Technical Overview

- Perl
- SSH
- DataBase: MySQL / Postgres

Features

- Batch and Interactive jobs
- Reservations
- Besteffort jobs
- Job dependencies

Features

- Environment deployment (taktuk)
- Good nodes cleaning after a job (cpuset feature)
- Multi-scheduler (one of these provided is Fair-Sharing)
- Gantt scheduling
- Two web interfaces

Advantages

- No specific daemon on nodes
- No dependence on specific computing libraries (like MPI)
- Upgrades are made on the servers, nothing to do on computing nodes
- Manages heterogeneous clusters

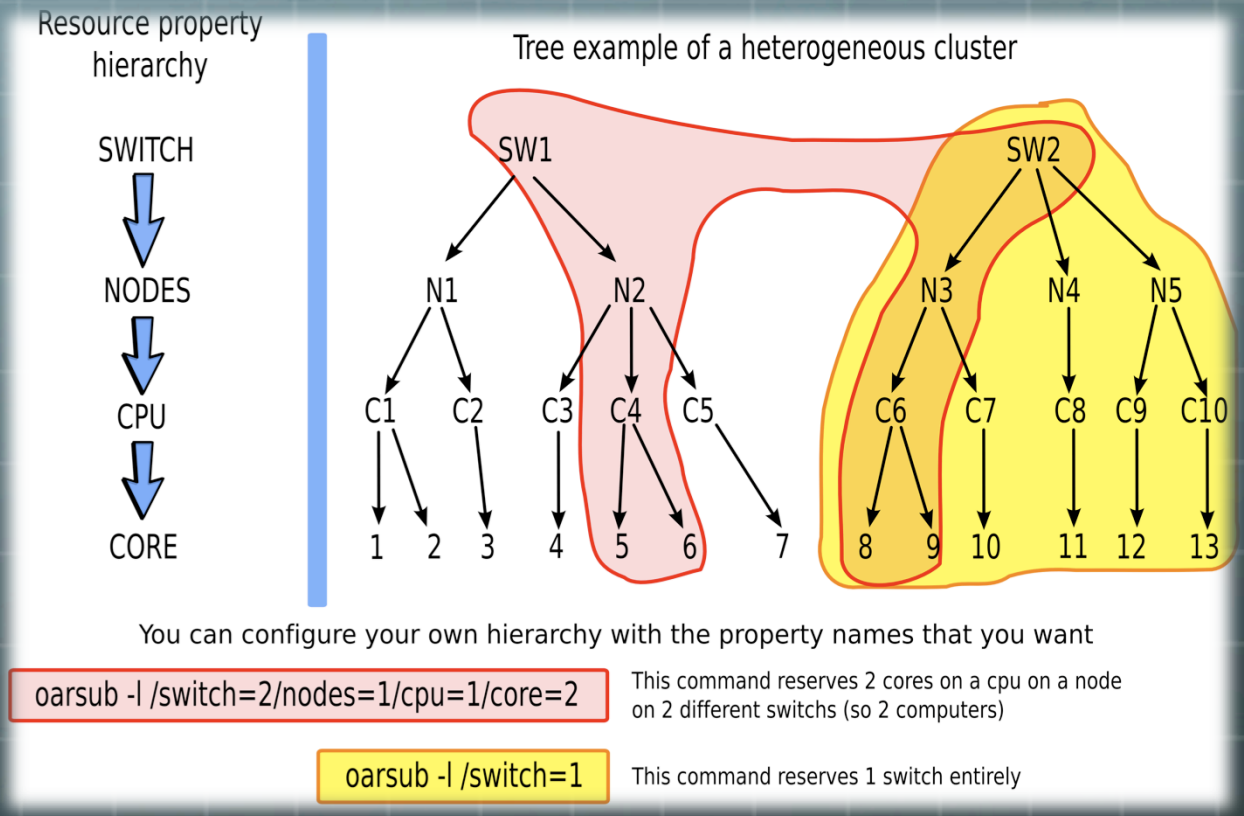
Advantages

- Checkpoint / resubmit jobs
- Licences servers management support
- Hierarchical resource requests
  (heterogeneous clusters)
- Dynamic nodes support

Principles

- Database
  - Contains all the OAR's cluster knowledge
  - OAR's communications nerve center
- Everything is a resource
  - Compute nodes, cpus, cores, licences, memory…
  - Flexible resources hierarchy

Resources hierarchy example



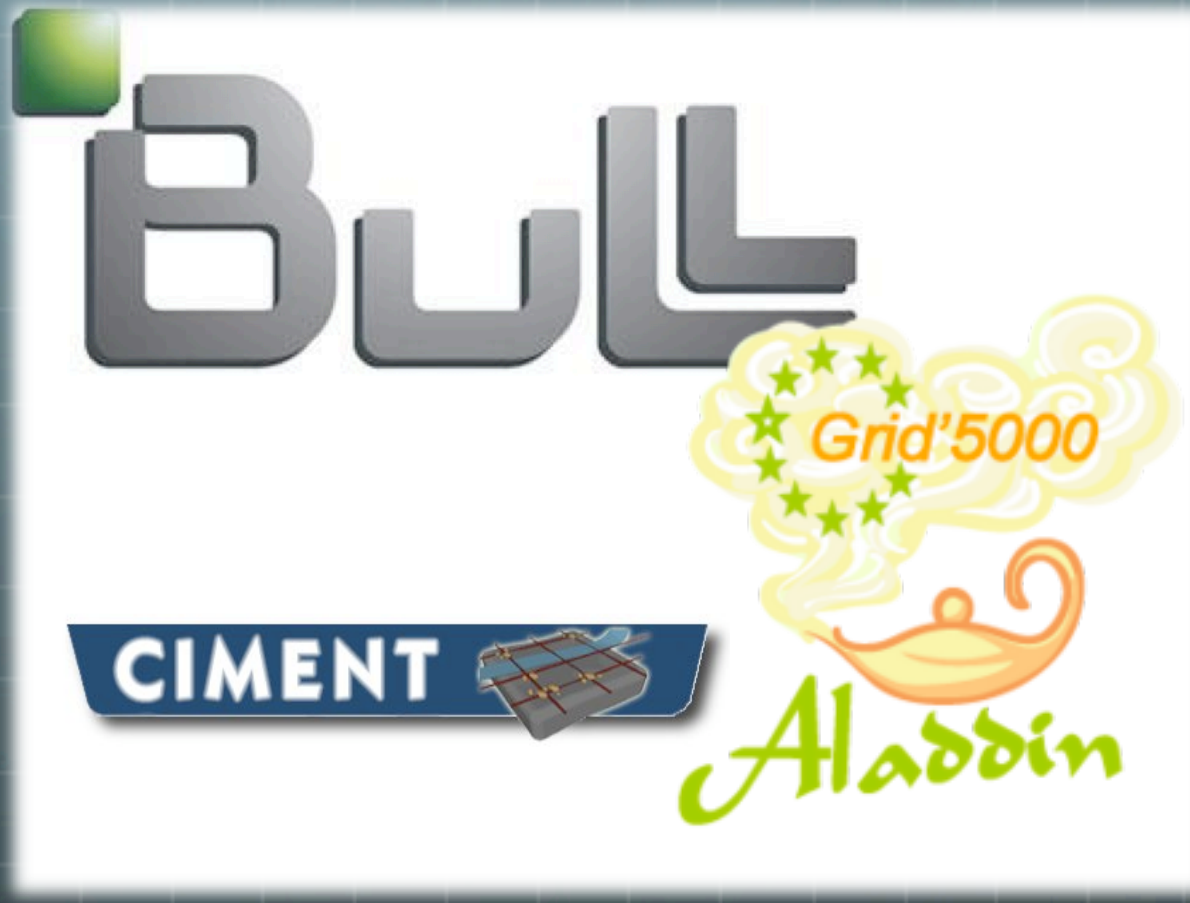
Principles

- **SSH wrapper OARSH:** only way to connect a node
- **Use of cpuset:** enhances job cleaning
- **Temporary users:** better isolation

Principles

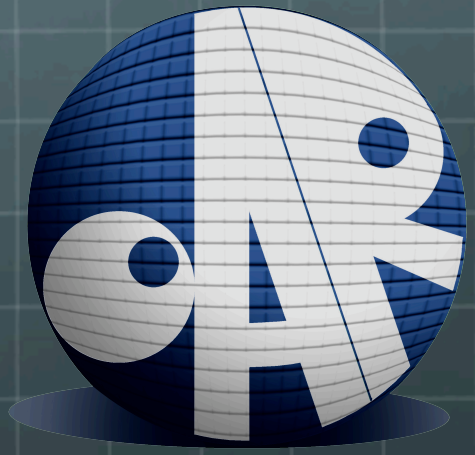
- Taktuk based: (http://taktuk.gforge.inria.fr)
  - Large scale remote execution deployment
  - Used for nodes management
- Scheduling implementation language is free

Partners



Contact

http://oar.imag.fr



Demos