

SPAGO, a Flexible Approach to open HPC Resources to the GRID: the example of the CRESCO HPC System

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gLite-based infrastructure Based on a homogeneous platform



Biodiversity
 preservation from a
 Grid-related paper

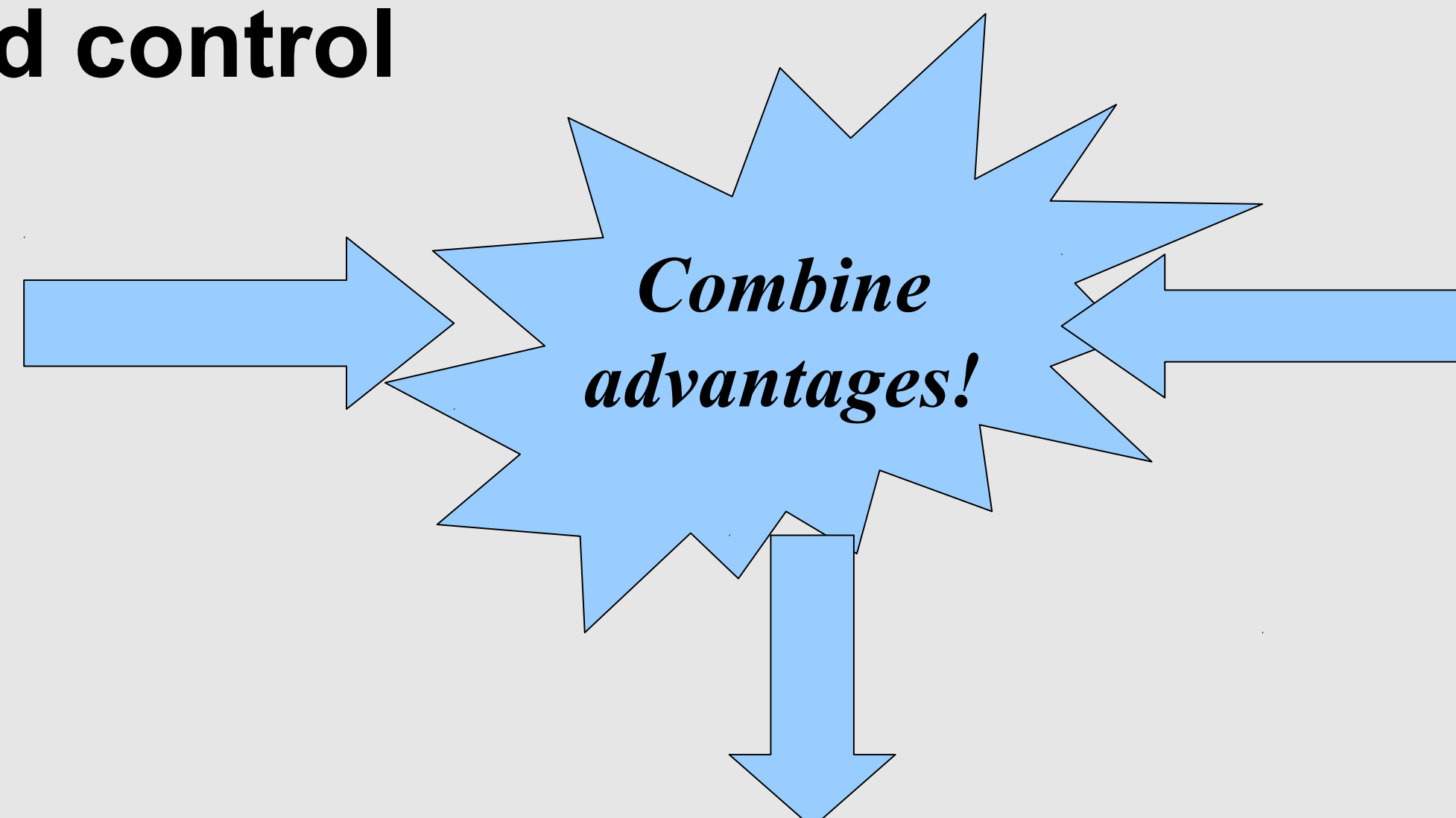
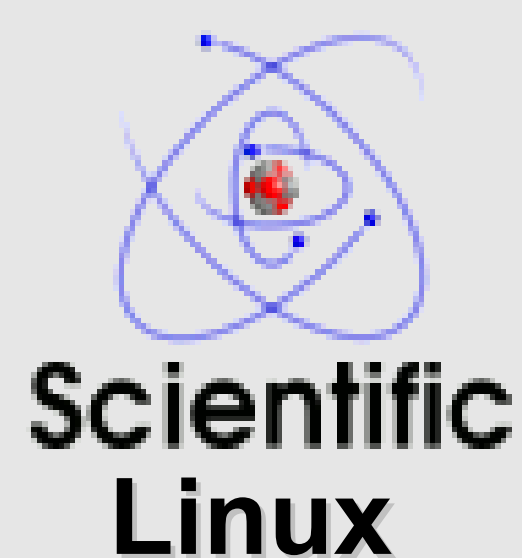
Other environments

Diversity, even in nature, favors flexibility



Conserving Biodiversity at Peru's CIP – ISGTW 15/7/2009

Monolithic approach based on scientific linux
 Easy to manage and control



Many heterogenous platforms.
Unexploited!

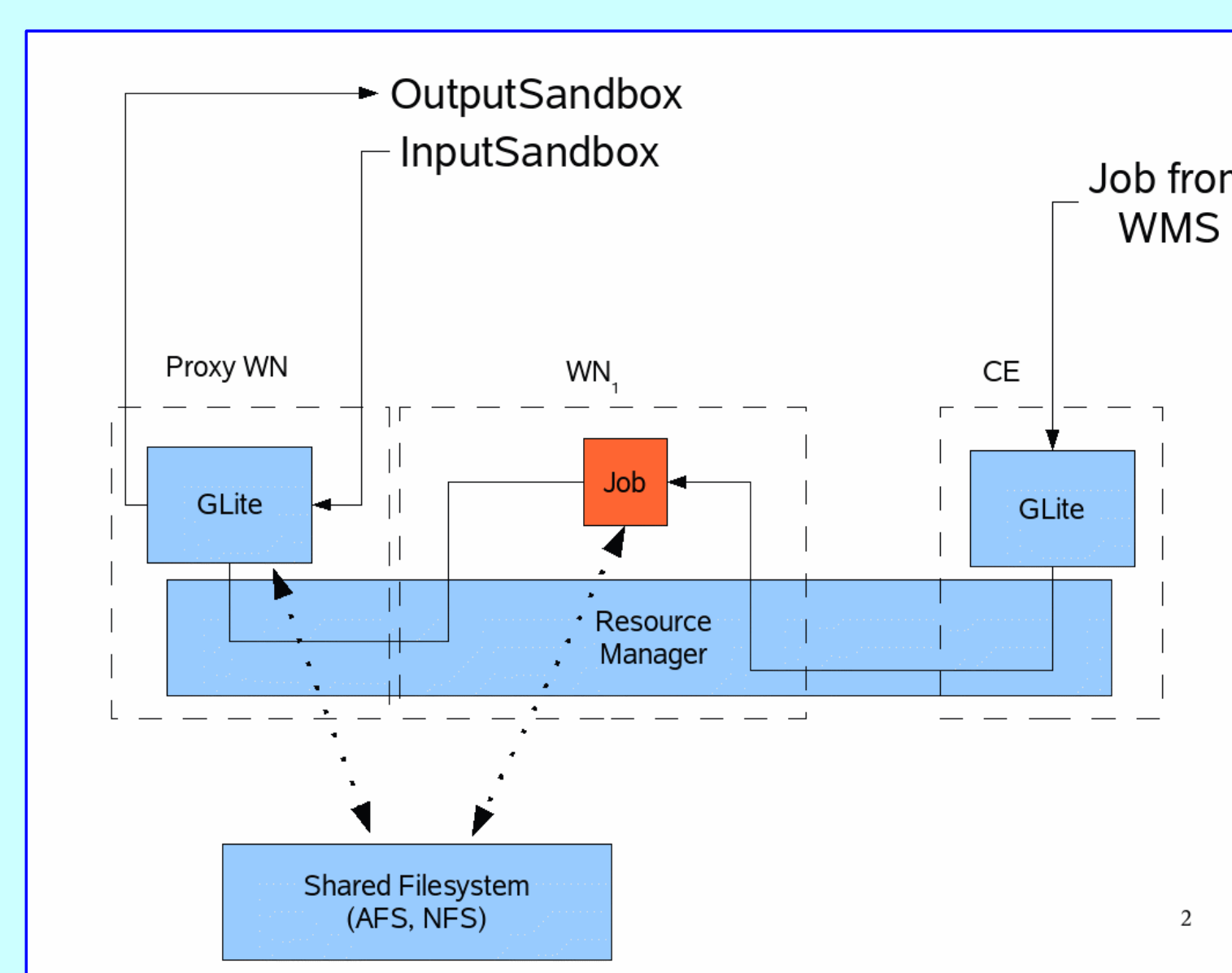


The SPAGO approach



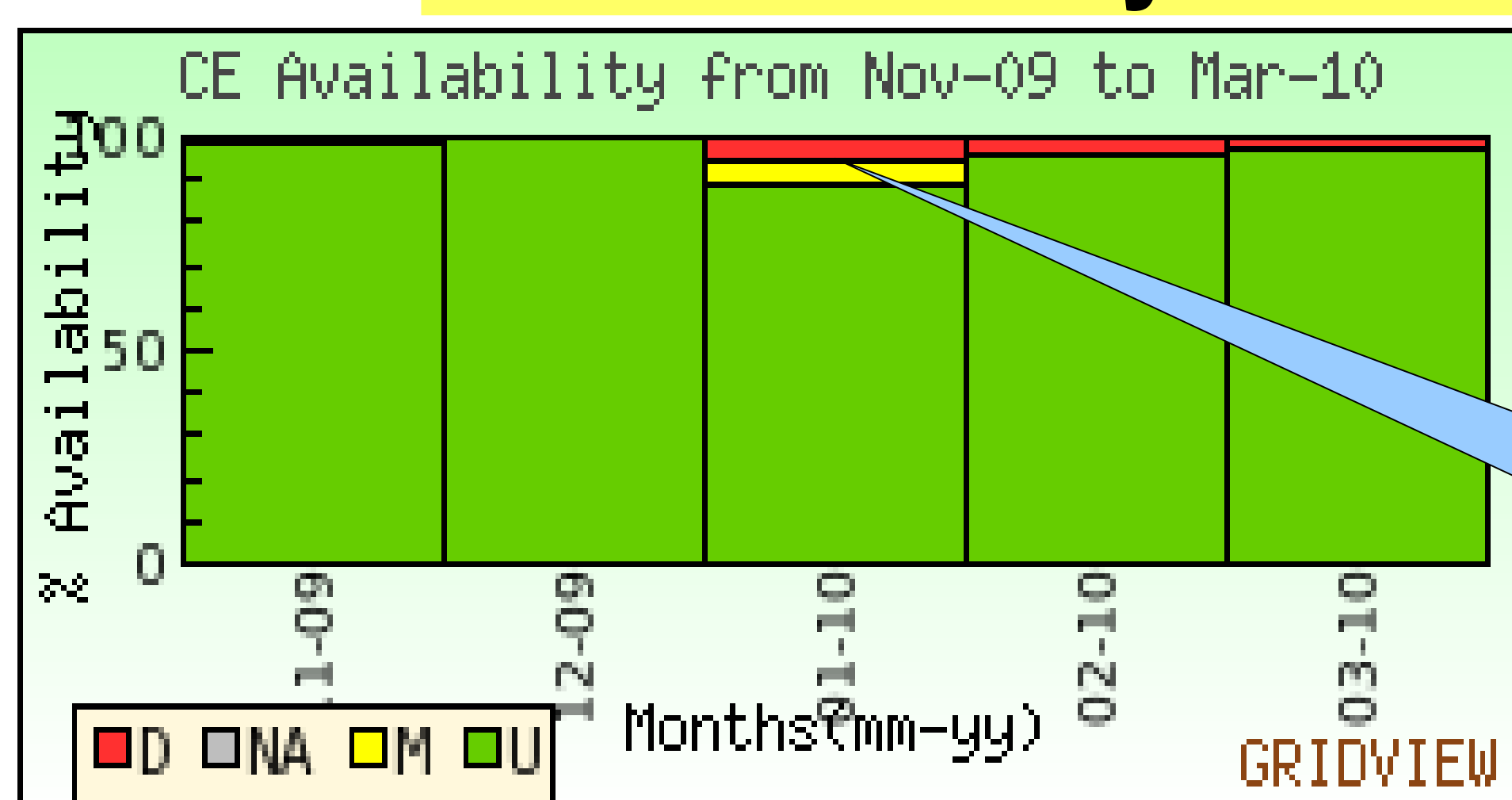
The SPAGO approach: no middleware on WN

- Middleware Is not installed on WNs
- WN middleware is installed on dedicated “Proxy WN” machines.
- “Proxy” machines and WNs employ the same shared filesystem (NFS/AFS/GPFS)
- gLite commands are executed by the Proxy WN.
- A pool of proxy WN can be adopted for load balancing concerns



Also, the service provider retains its autonomy!

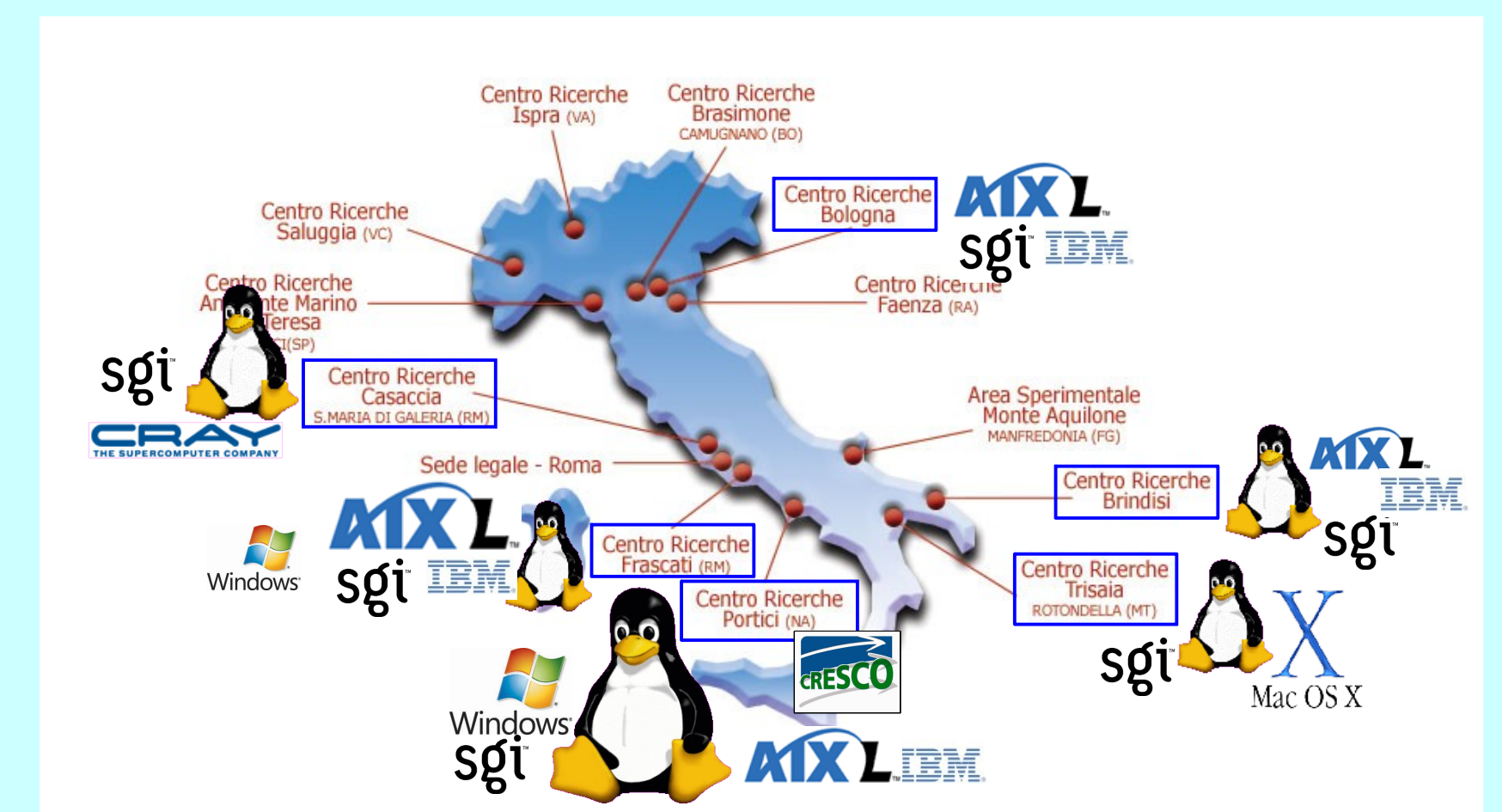
Availability of CRESCO in EGEE



**110 CPU YEARS computed
 for EGEE in 2009**

Cluster down for scheduled
 Operating System update

ENEA
 [Italian National Agency for New Technologies, Energy and Environment]
 12 Research sites and a Central Computer and Network Service (ENEA-INFO)
 with 6 computer centres managing multi-platform resources for serial & parallel
 computation and graphical post processing.



CRESCO HPC Centre
 www.cresco.enea.it

Computational Research Center
 for Complex Systems

- 2700 cores (x86_64)
- (~17.1 Tflops HPL Benchmark #362 top500/2009)
- InfiniBand network
- 120 TB storage area (GPFS)

Three Different laboratories:

1. Computing Science
2. Computational Systems Biology
3. Complex Networks Systems

**MPI Support in EGEE
 through SPAGO**