

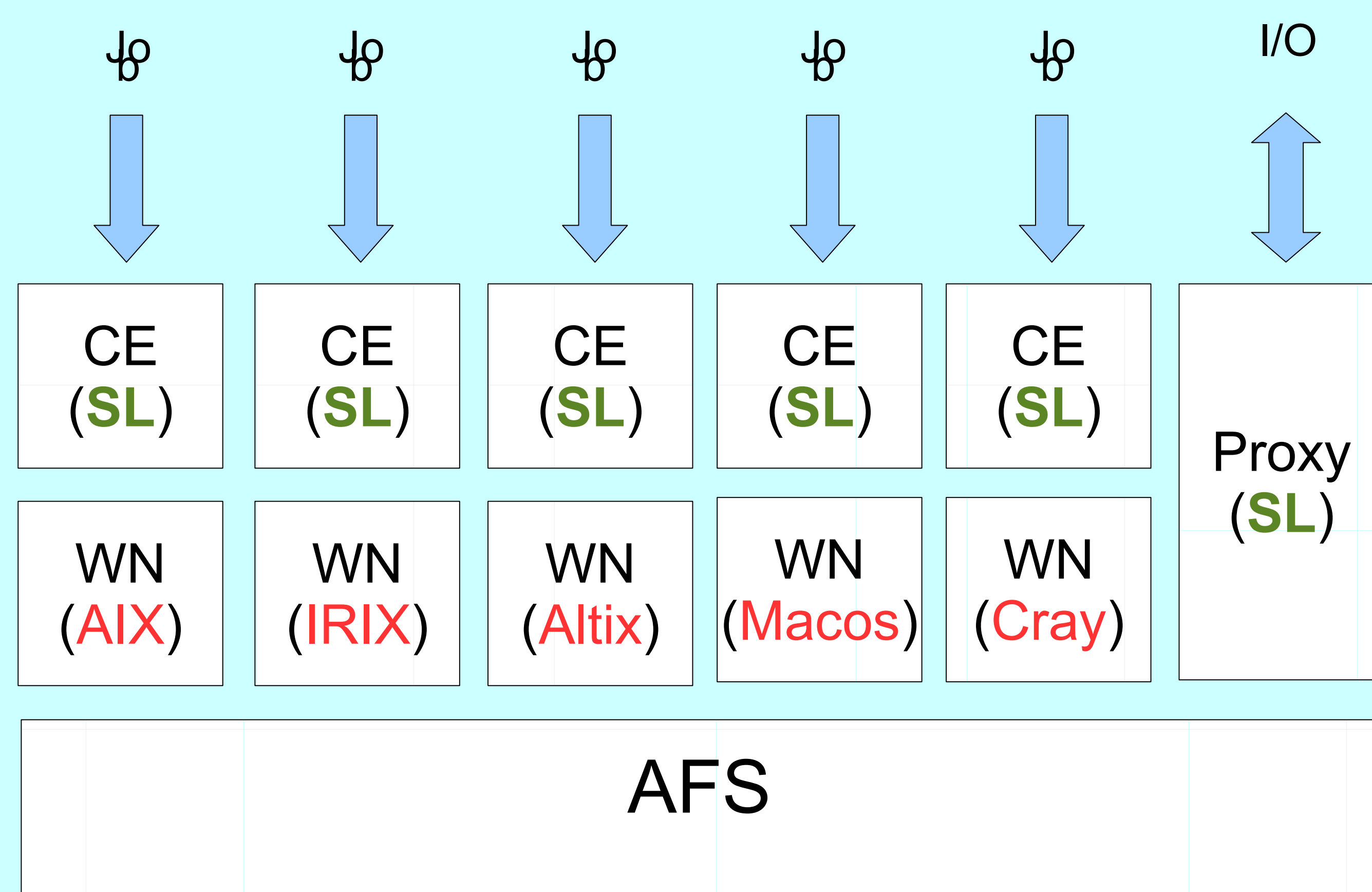
Integration of heterogeneous computational resources in EGEE infrastructure: a live demo (*technical details*)

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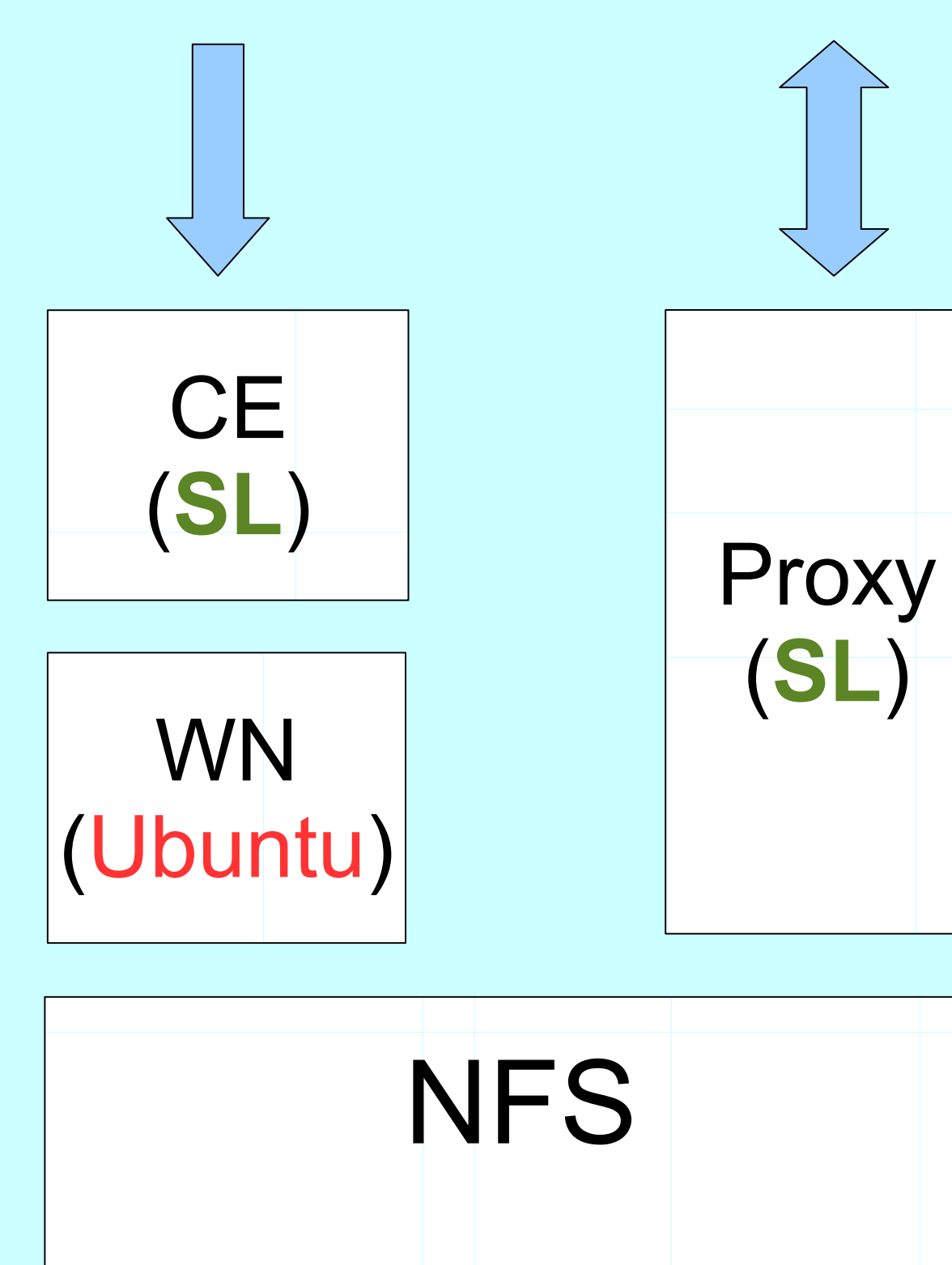
DEMO: First part

It shows four different Computing Elements each one supporting a different type of Worker Node; AFS is the shared filesystem employed.



DEMO: Second part

It shows the steps that must be done to integrate a non-standard Worker Node into gLite; NFS is the shared filesystem employed.



DEMO implementation: site administration for SPAGO set-up

How to use SPAGO: Computing Element modifications

- 1) Home directories of grid accounts (both pool and personal accounts) must be located on the shared filesystem.
- 2) Cleanup-grid-accounts script should be turned on only on the CE or the Proxy, not both.
- 3) A script that periodically copies the content of the /etc/grid-security/certificates/ and /etc/grid-security/vomsdir/ into analogous directories of the shared filesystem is required to guarantee that the Worker Node is able to correctly process certificates.
- 4) **LSF specific:** The script lsf.pm, which submit the job to execute to the LSF resource manager must be slightly modified to export a modification of the environment variable GLOBUS_LOCATION.

How to use SPAGO: Worker Node modifications

- 1) Add the grid accounts (pool and personal accounts) to the Worker Node.
- 2) Mount the shared filesystem on the worker node; in this case NFS.
- 3) Activate the batch system, in this case LSF.

With a properly configured CE and Proxy the Worker Node is already online.

How to use SPAGO: Proxy setup

The package for a Worker Node must be installed on the Proxy, with the following modifications:

- 1) Home directories of grid accounts (both pool and personal accounts) must be located on the shared filesystem.
- 2) Cleanup-grid-accounts script should be turned on only on the CE or the Proxy, not both.

How to use SPAGO: Shared filesystem setup

- 1) Create a directory which will contain the home directories of grid accounts (both pool and personal accounts).
- 2) Create a directory containing a set of wrappers which invoke the resource manager to execute the corresponding gLite command on the proxy.

How to use SPAGO: Resource manager (LSF) setup

- 1) Be sure that the Worker Node is added to the proper queues of the resource manager.
- 2) Setup the resource manager jobstarter so that the environment variables GLOBUS_LOCATION, EDG_LOCATION, etc, all point to the wrappers in the shared filesystem.

ANY UNIX-Like system can be put on the GRID using gLite and SPAGO!

Two EGEE technical notes prepared to document SPAGO

EGEE Technical Note EGEE-TR-2007-001
 "The gateway approach providing EGEE/gLite access to non-standard architectures" Bracco, G.; Migliori, S.; Sciò, C.; Santoro, A.;
<http://doc.cern.ch/archive/electronic/egee/tr/egee-tr-2007-001.pdf>

EGEE Technical Note EGEE-TR-2006-006
 "AFS Pool Account Users - GSSKLOG and LCMAPS extension to support AFS users as EGEE pool account users" Bracco, G.; Giammarino, L.; Migliori, S.; Sciò, C.;
<http://doc.cern.ch/archive/electronic/egee/tr/egee-tr-2006-006.pdf>