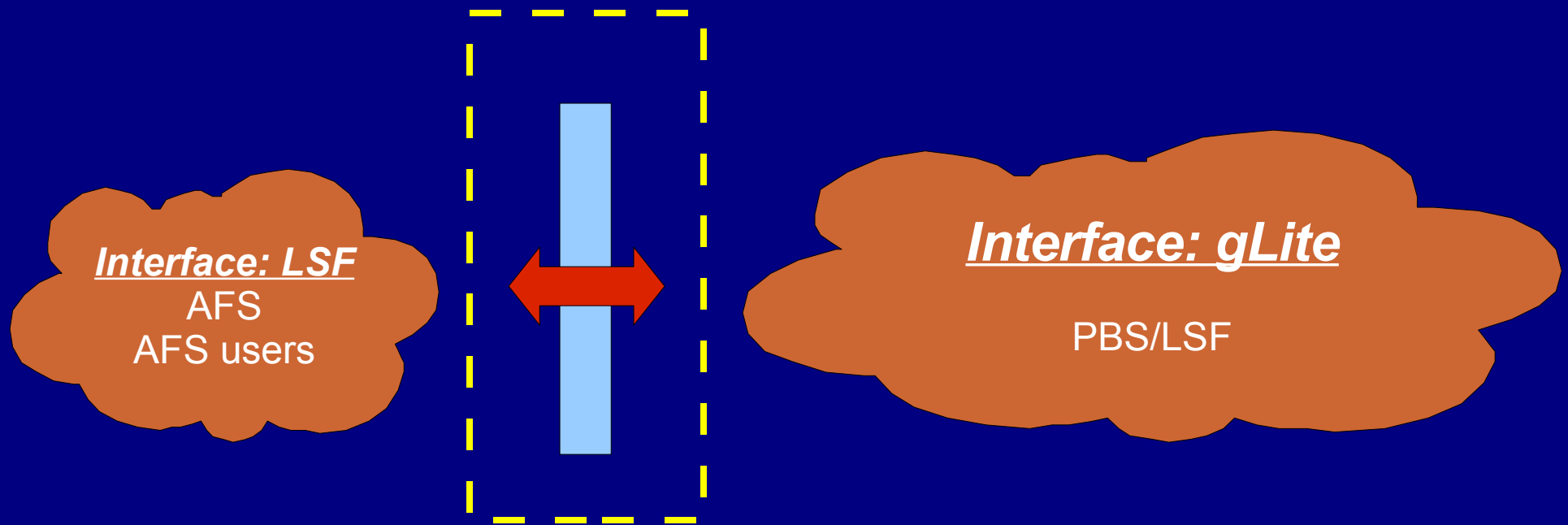


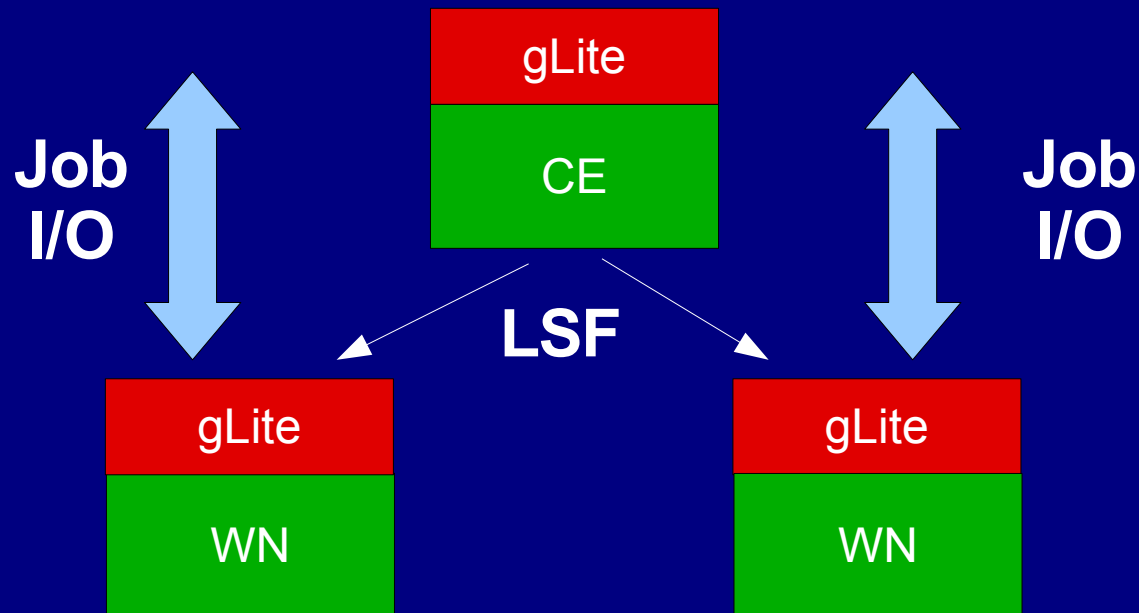
Interoperability ENEA-GRID <---> EGEE



- From EGEE to ENEA-GRID
- From ENEA-GRID to EGEE

From EGEE to ENEA-GRID

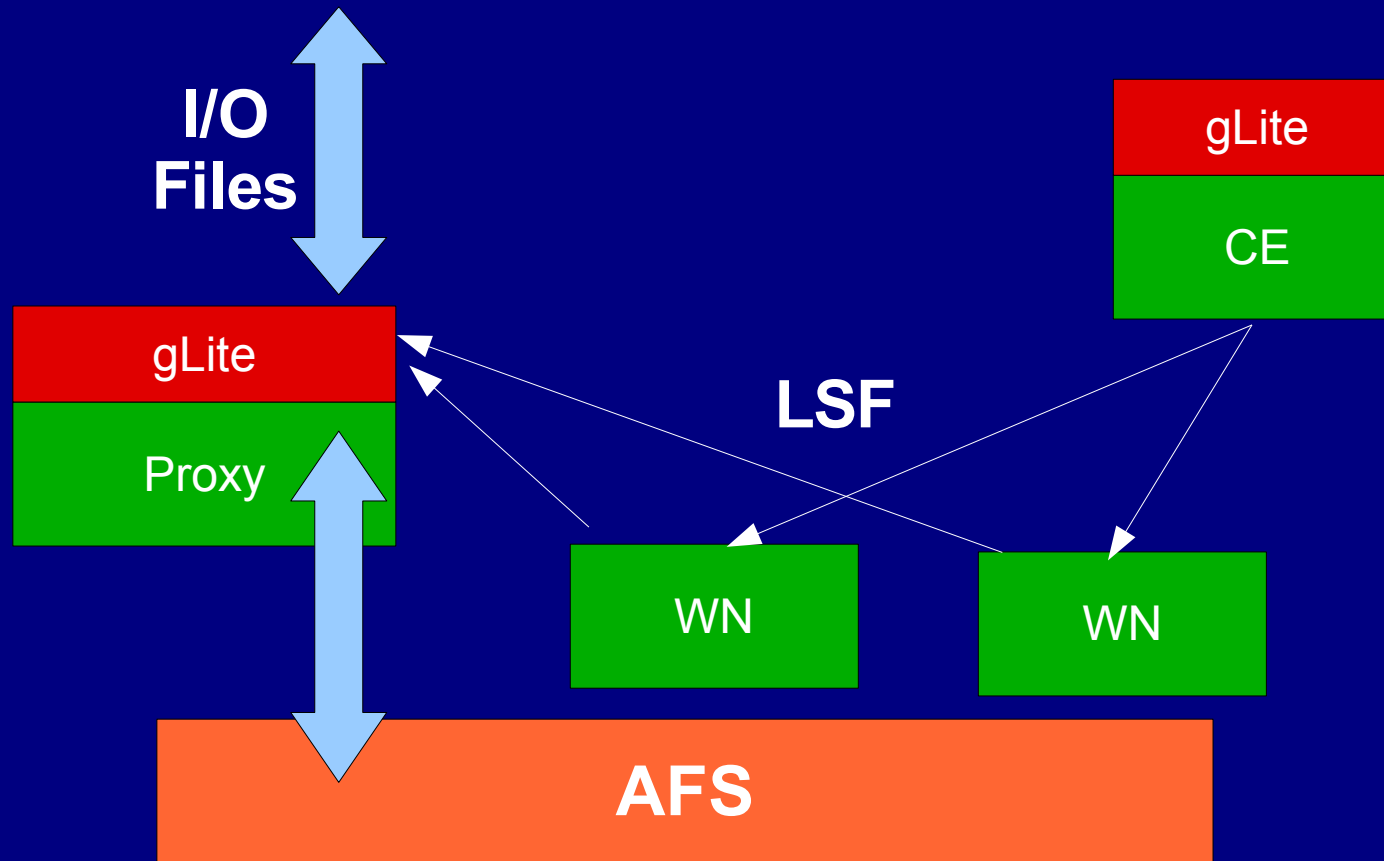
Computing Element in EGEE



Limitation:

gLite must be installed on each WN
(non-linux machines excluded from EGEE)

Shared Proxy Approach for GRID Objects (SPAGO)



- Worker nodes do not mount gLite
- Required additional gLite machine (“proxy”)

Example

gLite Standard

- CE: bsub -q egee JOBSRIPT
- WN: JOBSRIPT
 - Globus-url-copy file-di-input
 - JOB
 - Globus-url-copy file di output

SPAGO

- CE: bsub -q egee JOBSRIPT
- WN: JOBSRIPT
 - Globus-url-copy file-di-input
 - lsr -m proxy Globus-url-copy file-di-input
 - JOB
 - Globus-url-copy file di output
 - lsr -m proxy Globus-url-copy file-di-output

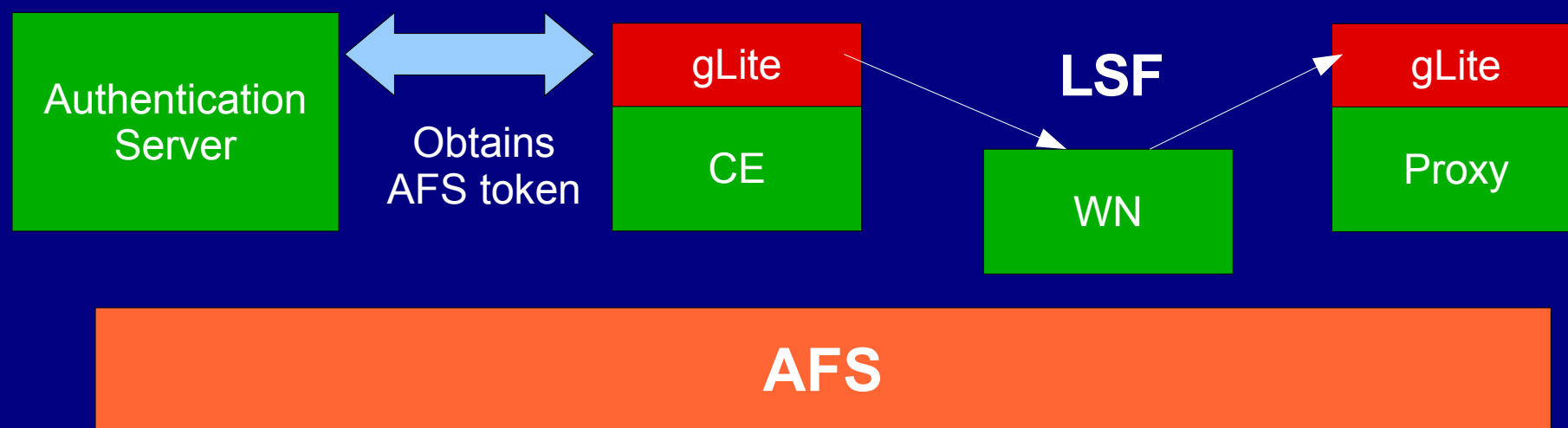
Authentication Issues

- EGEE employs X509 certificates
- ENEA-GRID employs Kerberos tickets and AFS tokens
- Conversion from X509 to kerberos users is built-in into gLite.



Access to AFS is not given

Obtaining AFS tokens



1. CE periodically updates the authentication information on AFS
2. CE receives a job from EGEE user A
3. CE obtains a token for user A from authentication server
4. CE sends job to WN using LSF, propagating the token
5. WN may use the proxy through LSF, propagating the token

SPAGO on other architectures

SPAGO Prerequisites

- Shared Filesystem (AFS for ENEA)
- Job dispatching mechanism (LSF for ENEA)

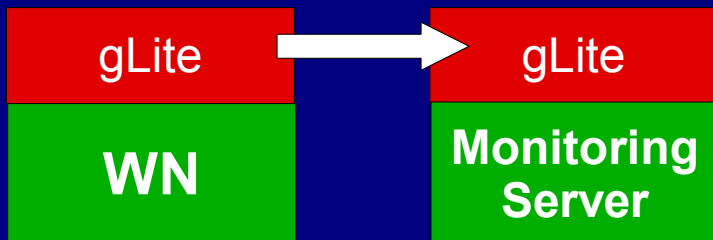
A simple porting of SPAGO

- Shared filesystem: NFS
- Elementary job dispatching mechanism: SSH

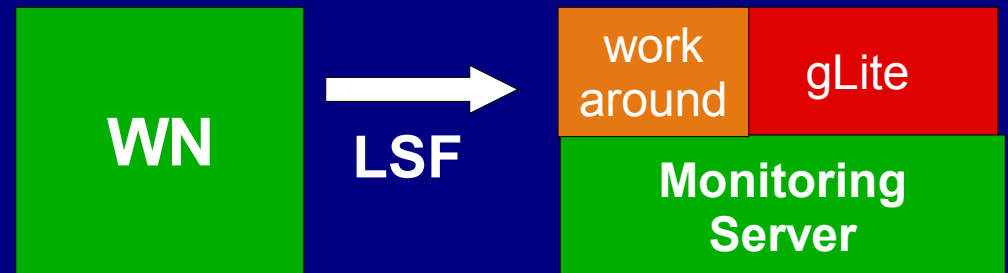
SPAGO Limitation

- Sometimes EGEE requires monitoring/accounting software on WN
- It is often possible to find a work-around
 - eg: GridICE

Typical GridICE



Modified GridICE



From ENEA-GRID to EGEE

- Job submission mechanism
 - ENEA-GRID employs LSF
 - gLite employs different commands and proper “JDL files”.
 - From EGEE to ENEA-GRID conversion is already performed by gLite
- Authentication credentials
 - ENEA-GRID employs Kerberos tickets and AFS credentials
 - gLite employs X509 certificates
 - From EGEE to ENEA-GRID conversion is already (partially) performed by gLite

Interface

- `setup-egee-proxy`
 - Obtains the X509 credentials
- `bsub -q egee`
 - Invokes an ad-hoc LSF jobstarter that:
 1. builds the JDL file;
 2. submits the job to EGEE using gLite;
 3. waits for job completion;
 4. reports the output flows on the proper channels.

References

Technical Reports

- 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>

Recent Presentations

- Grid Camp 2007, WLCG Tier 2 & EU-IndiaGrid Workshop, Taipei 28/10/2007-2/11/2007, "The ENEA gateway approach to provide EGEE/gLite access to non-standard architectures" Bracco, G; Migliori S.; Quintiliani A. ; S. Sciò, C. ; Santoro, A.; reported by G. Andronico in the "Interoperability in Asia" session.
- EGEE'07 Conference Budapest (Hungary) 1-5/10/2007, poster & demo session. "The ENEA gateway approach to provide EGEE/gLite access to non-standard architectures" Bracco, G; Migliori S.; Quintiliani A. ; S. Sciò, C. ; Santoro , A.; (abstract), poster id 135, stand #12.
- EGEE tutorial for administrators, CNAF Bologna 6-8/06/2007, "Site setup using AFS pool account users", C. Sciò, G. Bracco, A. Santoro.