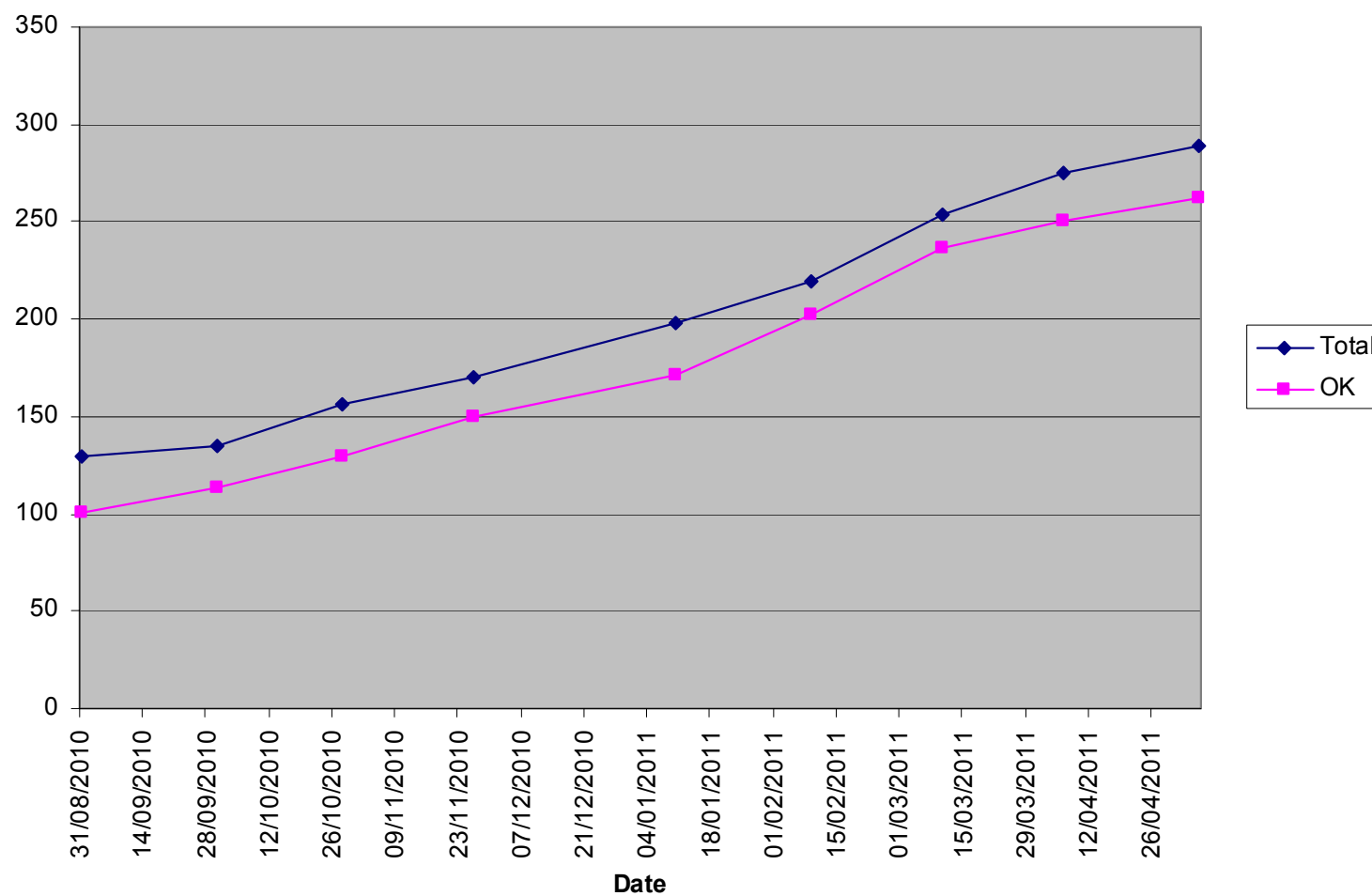# CREAM
Status and Plans

Massimo Sgaravatto – INFN Padova

On behalf of the gLite job management Product Team

Status

- CREAM: service for job management operations at the Computing Element (CE) level
  - Allows to submit, cancel, monitor,…jobs
- CREAM CE installations keep increasing
- Used by several VOs, using different clients
  - Direct submission (in particular via CREAM CLI)
  - Through gLite WMS
  - Through CondorG
- No more showstoppers reported by VOs
  - → Deployment of LCG-CE no longer mandatory in WLCG

Number of EGI related CREAM CE installations (source SAM tests)

CREAM-CE vs. LCG-CE

- Since a few days the number of EGI-related CREAM installations exceeds the number of LCG-CE installations

May 6, 2011 9:09 UTC	CREAM-CE	LCG-CE
Total	289	280
OK	253	247

ALICE

- Submissions of pilots to CREAM using the CREAM CLI

- L. Betev (ALICE Computing Operations Manager): "The service is very solid, and as before, we are happy with its performance and especially the support. All sites are using exclusively CREAM. I think there is still a bit of mixture of old/new versions. Given that both perform well, there is no issue with this."

ATLAS

- Submissions of pilots to CREAM mainly using CondorG as client
- They have recently (~ 2 weeks ago) reported some issues
  – Condor gridmanager crashes, the status does not seem to update quickly
  – Fixed with a newer version of Condor
- General problem
  – 2 software components under the responsibility of different teams (CREAM product team, Condor team)
  – Difficult for end users to understand if a particular issue is up to Condor or to CREAM

ATLAS (cont.ed)

- To address the issue:
  - We (CREAM team) will analyze how CREAM is used by Condor and in case suggest improvements in the use of CREAM by Condor and/or address problems if they are in the CREAM side
    - Already identified and reported to Condor developers some possible sources of problems in how CREAM is/was used by Condor
      - E.g. approach used to detect job status changes
  - Long term infrastructure (provided by Cern IT) to test at some scale Condor submission to CREAM
    - A CREAM CE pointing to a batch system with O(1K) job slots
    - An ATLAS pilot factory running the version of Condor suggested by the Condor team
    - Stress tests run any time a new release of CREAM is certified, as well as any time the developer of the pilot factory believes it is time to upgrade the version of Condor

CMS

- Submissions to CREAM
  - Through gLite WMS
  - Through glidein WMS (Condor)
- Reporting problems for CREAM CEs using SGE as batch system
  - CESGA responsibility
  - Manpower issues being sorted out
- CREAM CE 1.6.6 will address these problems
  - Just certified by CESGA
- Not aware of other major issues

LHCB

- Submitting pilots to CREAM through gLite WMS
  - But now going to (also) move to direct submission
- Operations
  - Not aware of major issues
    - Reported some instabilities some months ago
      - Mainly site level problems
    - Receiving and following all their GGUS tickets created for CREAM related issues
    - Things seem better now

Releases

- In production: CREAM CE 1.6.5 for gLite 3.2/sl5_x86_64

- CREAM CE 1.6.6 for gLite 3.2/sl5_x86_64 just certified by CESGA
    - Bug fixes for interactions with (S)GE as batch system

- Updates for gLite 3.1/sl4_ia32 finished at end of March

- Next release is the one just released with EMI-1

- No more updates in gLite apart from fixes for major problems

What's new in EMI-1

- CREAM-CE can be optionally configured to use ARGUS as authorization system

- Support for gLite-cluster
  - Node type that can publish information about clusters and subclusters in a site, referenced by any number of compute elements

- Support for description and allocation of resources in a multi-core environment
  - How cores should be distributed over the cluster, whether whole nodes should be used, how many nodes should be used

- Experimental publishing of computing service information in Glue 2.0 format

What's new in EMI-1 (cont.ed)

- Support of OutputData JDL attribute in the CREAM CE
  - Allows automatic upload and registration to the Replica Catalog of datasets produced by the job
- Bug fixes
- Other general (non CREAM specific) EMI-1 highlights
  - Support for sl5_x86_64
  - Supported package formats: tar.gz, src.tar.gz, rpm, src.rpm
  - One single EMI repository for all components
    - No more a repo per node type
    - Same version of a given component everywhere
  - Components follow common packaging guidelines and policies defined by Fedora, EPEL and Debian
    - Adherence to FHS (Filesystem Hierarchy Standard)

CREAM in Open Science Grid (OSG)

- A. Roy: "We're really interested in CREAM. It shows a lot of promise, and we have users who want it "yesterday". So we would really like to get it working."

- They don't use the gLite/EMI installation system and they have problems in integrating CREAM installation in their pacman based installation system
  - We are now helping them in the finalization of the installation procedure

- Next steps
  - CREAM – GUMS integration (for authorization)
  - Improve CREAM knowledge by OSG/VDT guys
    - Probably someone from their team will visit us

Some next steps

- Implementation of EMI Execution Service interface
  - Specification already defined
  - To be implemented in CREAM-CE, ARC-CE and UNICORE CE
  - CREAM legacy interface will not be dropped

- Support for high availability/scalability
  - Pool of CREAM CE machines seen as a single CREAM CE
  - Cern in particular is pushing for this stuff

- Address batch system support issue
  - Now provided by several different partners but in most of the cases only partially and on a best effort basis
  - Support to be provided by IGI ?

Other info

http://grid.pd.infn.it/cream

being moved to:

http://wiki.italiangrid.org/CREAM

Thank you!