

ALICE REQUIREMENTS FOR THE DISTRIBUTION OF THE CREAM-CE

Document created by P. Méndez Lorenzo

CERN, 22/10/08

Introduction

The ALICE experiment has expressed their interest in the deployment of the CREAM-CE at all the WLCG sites. In the period 20 July to 10 September 2008 ALICE tested the direct job submission feature supported by this service. The tests were discussed at regular meetings between the CREAM-CE developers and CERN. The CREAM-CE tests were performed on a setup provided at GridKA.

The CREAM-CE test setup at GridKA

1. A 2nd VOBOX was provided to the experiment to allow parallel submission to the gLite-CE (through WMS) and the CREAM-CE. The goal was to have a clean isolation layer between the production system and the CREAM-CE test system.
2. The VOBOX was configured to submit to the CREAM-CE with the GridKA PPS service behind with a limited number of CPU cores.
3. The setup included a gridftp server installed on the VOBOX to retrieve the output sandbox of the jobs

The first 3 weeks of tests under constant load showed a high stability of the CREAM-CE with minimal human intervention on all service levels. After the successful completion of the functionality tests, ALICE proceeded with a scalability exercise. This is achieved by

4. Setup of the standard ALICE production queues behind the CREAM-CE.

The running job profile for the test period is shown in Fig.1. At the end of the scalability test more than 55000 have passed through the CREAM-CE. During the entire period the CREAM-CE system showed a remarkable stability and no special interventions were required in the VOBOX and at the service itself.

Based on these results ALICE requires the progressive deployment of the CREAM-CE in all the sites providing support to the experiment.

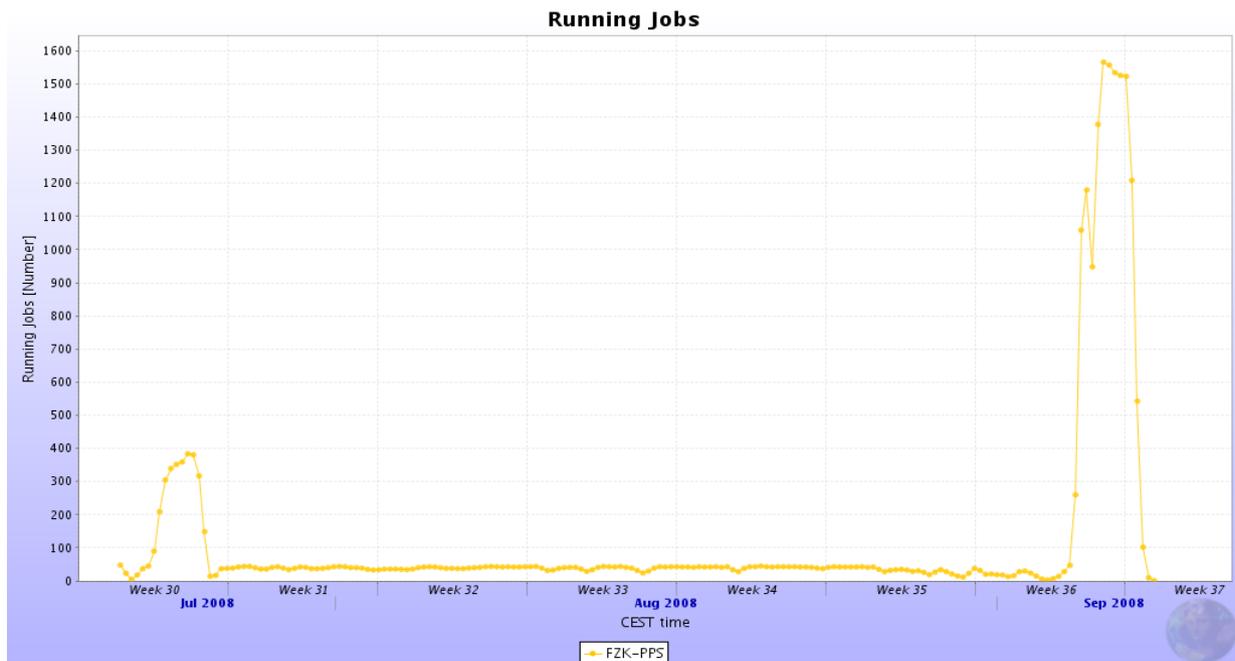


Figure 1 - Running job profile for the test period of CREAM-CE at GridKA.

The distribution of CREAM-CE service at the WLCG sites

At the October 2008 pre-GDB and GDB, the deployment strategy for the CREAM-CE was presented as follows:

“Unlikely to be deployable as an lcg-CE replacement on this timescale, but we can continue with rollout in parallel”. In addition: “If the use case is direct submission with no proxy renewal CREAM is basically ready »

According to the ALICE computing model, the expectations of the experiment are fulfilled by the 2nd statement. ALICE intends to use the CREAM-CE for direct job submission. Based on the maximal lifetime of the VOMS proxy, currently set to 48h by the CERN Security team, the proxy renewal mechanism will not be used by the experiment.

The setup strategy defined by the ALICE also fits with the 1st statement concerning the parallel deployment and operation of both the gLite-CE and the CREAM-CE. ALICE proposes the following setup:

1. For all sites already participating to ALICE and willing to provide a CREAM-CE service, the setup of a 2nd VOBOX is required.
 - a. The requirement of the 2nd VOBOX is consistent with the WLCG policy of parallel operation of lcg-CE by the CREAM-CE services. The maintenance of a single VOBOX would force ALICE to replace the current production via the lcg-CE with the CREAM-CE as explained in the introduction.
 - b. The experiment assumes the deployment of the 2nd VOBOX at all T1 sites. For T2s centres willing to provide the CREAM-CE service, but which cannot provide a 2nd VOBOX, the following procedure is proposed:
 - i. the 2nd VOBOX can be setup as a virtual machine
 - ii. If a 2nd VOBOX is not provided, ALICE can use the CREAM-CE in replacement of the gLite-CE. Possible instabilities in the system will

stop the test and ALICE will come back to the previous gLite-CE setup.

2. The access to the ALICE production queue at the site should be granted for both the gLite-CE and the CREAM-CE
3. Setup of a gridftp server, which can be deployed inside or outside the VOBOX following the preferences of the site administrators.

Deployment plans and support

ALICE requires the sites to inform the experiment about the CREAM-CE planning and deployment strategies. At any moment the ALICE Offline core team at CERN and the WLCG support and deployment team will support sites.