

CERN USES SOFTWARE DEVELOPED IN CESGA

- **CESGA receives data from LHC experiments for analysis and storage, as a member of the WLCG Grid**

Santiago, April 27th, 2010 .- WLCG (Worldwide LHC Computing Grid), the grid infrastructure created to distribute, store and analyze data drawn from the experiments of the Large Hadron Collider (LHC) at CERN, is using software developed by the Supercomputing Center of Galicia for EGEE (Enabling Grids for E-Science) and EELA (E-science grid facility for Europe and Latin America). Specifically, the Accounting Portal and the Metrics Portal developed for EGEE and software that allows you to use the GridEngine batch system.

The LCG project relies on several other projects for the provision of much of the specialized software used to manage data distribution and access, as well as job submission, authentication and authorization of users. This software is collectively known as the grid middleware. In the case of WLCG, the middleware used is called gLite (Lightweight Middleware for Grid Computing). This middleware is developed within the European project EGEE, and is used (in addition to EGEE) in WLCG and EELA.

CESGA, as a member of EGEE and EELA, developed the Accounting Portal to analyze the use made of computers by generating statistics on consumption of resources. CESGA will maintain the Accounting Portal of the future European grid infrastructure that will continue the work begun in EGEE and called EGI (European Grid Initiative). Moreover, it will adapt to the needs of this new ecosystem in which NGI (National Grid Initiatives) and SSC (Specialised Support Centres) will play a primary role.

Metrics Portal

CESGA has also developed a Metrics Portal for EGEE, which automatically gathers information from various sources and generates the corresponding metrics. The new portal, which is being developed, helps to objectively measure project progress and to monitor project achievements easily.

Additionally, CESGA in collaboration with LIP, (Portugal), and the Imperial College, (UK), has integrated GridEngine in gLite, currently the most widely used grid middleware. GridEngine is the batch system used in supercomputers at CESGA. It has many advanced features that can be useful to centres participating in the grid, which now have the option to choose this batch system, in addition to the solution torque/maui.

Computing Resources available for LHC at CESGA

CESGA offers to the WLCG, EGEE and EELA projects its grid resources, and provides accommodation and contributes to the maintenance of the Tier2 of the Laboratory for High Energy Physics of the University of Santiago, USC, which is responsible for receiving and analyzing the data from the LHCb experiment.

CESGA helps in the four main experiments (ATLAS, CMS, ALICE and LHCb) being made at the LHC at CERN, with the following computer resources:

STORAGE: 143 Terabytes of storage for jobs

CALCULATION: 404 CPUs in the SVG (Galician Virtual Supercomputer) for the execution of jobs with the following features:

- 80 servers DELL Pentium4 750 3.2GHz processor. 48 servers have 1GB main memory and 32 servers have 2GB. The servers have a SATA 160GB drive to 7200rpm. All these nodes are interconnected via Gigabit Ethernet to a data server 1750 with two 3GHz Xeon processors and 438GB SCSI drive RAID 5 configuration.

- 40 blade servers: 36 DELL PE 1955 with dual quad-core Intel Xeon 5310 1.6 GHz with 4GB of main memory and a 72GB SAS disk at 10,000 rpm and 4 DELL PE 1955 blade servers with dual quad-core Intel Xeon 5355 at 2.66GHz with 8GB of main memory and two 72GB SAS disks at 10,000 rpm. All these nodes are interconnected via Gigabit Ethernet to a data server 2950 with two Xeon 5130 processors at 2GHz and 4GB of memory and 1800GB SCSI disk RAID 5 configuration.

- 2 DELL 1425 servers with Pentium 3.2GHz and 3GHz Xeon64, one with 80GB and another with local disk 500GB SATA.

The data traffic received during the past year, is increasing significantly as a result of the achievement of the largest collision of protons of the history, in the LHC tunnel (March 30th), acquiring an energy of 7 TeV and therefore starting the research program of experiments at CERN.

The Supercomputing Center of Galicia (CESGA) is a Foundation taken part for the Galician Government (Xunta de Galicia) and for the Spanish National Research Council (CSIC). From its creation in 1993, CESGA has the mission of contributing to the advance of the science and the technology through research and application of High Performance Computing and communications, in collaboration with other institutions, for the welfare of society.

More info:

www.cesga.es

<http://public.eu-egee.org/>

<http://www.eu-eela.eu/>

<http://glite.web.cern.ch/glite/>

Contact:

promocion@cesga.es

0034 981 569 810