Using HLRmon for Advanced Monitoring of Resources Usage by Virtual Organizations

Enrico FATTIBENE, Peter SOLAGNA, Tiziana FERRARI & Giuseppe MISURELLI

INFN, IT

Monitoring the exploitation of Grids is challenging due to the large scale and distributed nature of the infrastructure involved. For this reason, the role played by the Grid accounting service, which collects information about resource usage, is crucial together with the availability of visualization tools that provide various users categories – such as Grid managers, site administrators, VO managers and users – with usage records aggregated into different views.

In this paper we describe HLRmon, a Web portal which provides a set of user-friendly views of accounting information gathered by the Distributed Grid Accounting Service (DGAS). In particular, we described the architecture and implementation of an extended version of HLRmon that was specifically tailored for WLCG, to give Grid managers not only a report of computing usage, but also information concerning the amount of installed storage capacity and its usage for a specified subset of Grid sites and VO.

While the CPU accounting usage records are collected by the DGAS system, the storage accounting records are locally gathered by means of scripts specific to the various storage implementations deployed in the production infrastructure. The usage records are aggregated and stored in the HLRmon RDBMS for permanent storage.

The computing accounting plots can be displayed as CPU time and Wall clock time normalized by the mean average compute power of a logical CPU – expressed in terms of different benchmarks – that is available from the Grid Information System. The HLRmon graphs allow to visually comparing the aggregated usage information against the overall available amount of installed capacity that was negotiated with the respective resource providers.

This extended version of the HLRmon portal was originally implemented to report about the usage of WLCG Tier1 and Tier2 Italian sites but can be easily extended to other usage scenarios.