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Virtual Working Nodes in gLite Middleware

Project(s) or EGEE activity presenting the demo or poster (project or activity names only)

none

Special requirements other than the set up mentioned in the CfA text.

none

Abstract

We extend gLite middleware so as to create virtual Working Nodes (VWN) that run in actual Working Nodes (WN) in the Grid. The VWNs are in fact Virtual Machines (VM), which have specific characteristics. One could argue that a different approach would be to run VM as jobs; however, by the proposed approach we can take advantage of the rich and sophisticated functionalities provided by gLite middleware regarding the management of the WNs. The VWNs are initiated, either statically or dynamically. In the first case the user dictates the Workload Management System (WMS), through its Job Description File that for a job's execution, a new VWN has to be initiated. In the second case the WMS decides, based on the Grid load, to create new VWNs or destroy existing ones. By using VWNs one can execute in the same machine jobs that require different configurations. Moreover, the creation of VWNs can enhance the performance of the Grid, by applying cpu sharing related scheduling policies.

Primary authors: Mr KRETSIS, Aristotelis (RACTI); Prof. VARVARIGOS, Manos (RACTI); Mr KOKKINOS, Panagiotis (RACTI)

Presenter: Mr KOKKINOS, Panagiotis (RACTI)