

Effective Internet Grid Computing for Industrial Users

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Abstract

Platform Computing's Distributed Resource Management (DRM) solutions turn disparate computing resources into a set of collaborating clusters for High Performance Computing. DRM concepts can be applied to the ASP market and we will examine how we help ASPs solve security and QoS issues. The talk will also look at how the Internet Computing Grid may affect the IT infrastructure and resource sharing models of industrial users.

Top design and manufacturing companies are now relying heavily on their networks of powerful supercomputers, servers, compute farms and workstations to better design and produce innovative products for consumers worldwide. In order to streamline the research and development process, these companies are making the transition from having individual R&D teams in different countries maintain their own computing resources, to a set of federated clusters using common sharing policies.

To make this transition, a number of challenges had to be overcome. First, what is the most effective allocation of computing resources across geographically dispersed areas so that the business priorities of the entire company are met. Second, how to make the best placement for job requests so that the queueing time is minimized. Third, how to hide the remote clusters to provide transparency in job scheduling, monitoring and control. Finally, how to perform inter-cluster job execution securely.

In addition to streamlining the management of resources, these companies have also been looking to off-load some of the workload to Application Service Providers (ASPs). Such outsourcing allows them to provision their computing resources on an average processing demand basis and thereby reduce the IT infrastructure cost. The primary challenge is to protect the intellectual property and ensure the QoS.