



An intelligent resource selection system based on neural network for optimal application performance in a grid environment

Wednesday 29 September 2004 10:00 (1 minute)

Grid computing is a large scale geographically distributed and heterogeneous system that provides a common platform for running different grid enabled applications. As each application has different characteristics and requirements, it is a difficult task to develop a scheduling strategy able to achieve optimal performance because application-specific and dynamic system status have to be taken into account.

Moreover it may be possible to obtain optimal performance for multiple application simultaneously using a single scheduler. Hence in a lot of cases the application scheduling strategy is assigned to an expert application user who provides a ranking criterion for selecting the best computational element on a set of available resources. Such criteria are based on user perception of system capabilities and knowledge about the features and requirements of his application.

In this paper an intelligent mechanism has been both implemented and evaluated to select the best computational resource in a grid environment from the application viewpoint.

A neural network based system has been used to capture automatically the knowledge of a grid application expert user. The system scalability problem is also tackled and a preliminary solution based on sorting algorithm is discussed. The aim is to allow a common grid application user to benefit of this expertise.

Authors: PISCITELLI, G.; CASTELLANO, M. (DEE -POLITECNICO DI BARI, V. ORABONA, 4, 70125 - BARI, ITALY); COVIELLO, T. (DEE -POLITECNICO DI BARI, V. ORABONA, 4, 70125 - BARI, ITALY)

Presenter: COVIELLO, T. (DEE -POLITECNICO DI BARI, V. ORABONA, 4, 70125 - BARI, ITALY)

Session Classification: Poster Session 2

Track Classification: Track 4 - Distributed Computing Services