

A New Distributed Computing Environment Based On Mobile Agents for Massively Parallel Applications

Authors : Fatéma Zahra Benchara, Mohamed Youssfi, Omar Bouattane, Hassan Ouajji, Mohamed Ouadi Bensalah

Abstract : In this paper, we propose a new distributed environment for High Performance Computing (HPC) based on mobile agents. It allows us to perform parallel programs execution as distributed one over a flexible grid constituted by a cooperative mobile agent team works. The distributed program to be performed is encapsulated on team leader agent which deploys its team workers as Agent Virtual Processing Unit (AVPU). Each AVPU is asked to perform its assigned tasks and provides the computational results which make the data and team works tasks management difficult for the team leader agent and that influence the performance computing. In this work we focused on the implementation of the Mobile Provider Agent (MPA) in order to manage the distribution of data and instructions and to ensure a load balancing model. It grants also some interesting mechanisms to manage the others computing challenges thanks to the mobile agents several skills.

Keywords : image processing, distributed environment, mobile agents, parallel and distributed computing

Conference Title : ICPP 2015 : International Conference on Parallel Processing

Conference Location : Paris, France

Conference Dates : March 30-31, 2015