FINITE-DIMENSIONAL AND DYNAMIC OPTIMIZATION IN A DISTRIBUTED COMPUTING ENVIRONMENT

A.P. Afanasyev

Institute of Systems Analysis of Russian Academy of Sciences, Moscow
Moscow Institute of Physics and Technology
apa@isa.ru

An approach to solve finite-dimensional and dynamic optimization problems in a distributed computing environment is discussed. The approach is based on the integration of heterogeneous computing resources with customized services. Each computing resource is associated with a services implemented as a distributed object instance. Differences in methods of access specific computing nodes are hidden from the user and encapsulated in batch files. This approach makes it easy to connect computing resources of various types. We developed and implemented modules for connecting supercomputers, working through the queuing system, grid-nodes working under service grid middleware and desktop grids based on BOINC.