A Mobile Agent Based Middleware for Grid Computing

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ABSTRACT

Grid provides computational power beyond the capacity of even the largest parallel computer system, and merges extremely heterogeneous physical resources into a single virtual resource. In spite of its ambitious goals, grid computing still benefits only a handful of researchers who are free to forage among supercomputers and high-performance workstations for their computation-intensive projects. The majorities of users, on the other hand, have few opportunities to access such computing facilities and are assumed to pay little attention to computational grids in favor of their own desktop computing environments. If they could authorize each other to mutually use their computers, a collection of such desktop machines would consistently provide them with an enormous computing resource. In this type of grid systems, besides performance, adaptive and platform independence is the key issue. This paper describes the architecture of a mobile agent based middleware for grid computing environment, whose aim is acquire adaptive and high performance computing power, and explores the benefits of using mobile agent as its key middleware building technology. We describe the adaptive mode of task execution of the system, as well as our current work and future plan.

Keywords: mobile agent, grid computing, middleware, broker mode.