

DESIGN OF MIDDLEWARE FOR RESOURCE ALLOCATION TO THE HETEROGENEOUS TASK USING THE HEURISTIC CONSTRAINTS BASED ON MATHEMATICAL MODELLING

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ABSTRACT

The computational Grids facilitate the software applications to integrate instruments, displays, and computational resources which are managed by various organizations from extensive locations. The network performance monitoring and prediction provides the necessary information for the enrichment of scheduling the best resources such as where to get or put the data and where to execute the job, fault detection and trouble -shooting, identifying the bottleneck, performance analysis and tuning. The existing monitoring strategy will significantly increase the system overhead when the size of the computing facility grows. Activating all monitoring tools for different resources involved with an application, collecting such data, filtering them for obtaining useful information may become a major problem. In this scenario, the mobile agent technology can play a vital role because of its capability to cope up with the system's heterogeneity. Grid Resource Brokering strategy for resource allocation handling the resource metrics as well as the network metrics and integrated with CARE Resource Broker (CRB) for job submission using mobile agents were proposed. This paper mainly focuses on network monitoring in Grid which is based on Grid Monitoring Architecture (GMA) and network performance measurements to improve the resource utilization and reduced the load on the Grid resources.

KEYWORDS: Grid Middleware, Resource Monitor, Resource Broker, Resource Allocation, Mathematical Model PERT