

An Approach for Resource and Task Monitoring within Heterogeneous Grid Environment based on Meta Level Computing

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Monitoring within heterogeneous grid environment is a challenging task. Differences in underlying hardware and software infrastructure require special consideration for designing an adaptable monitoring framework. Grid user communities vary in terms of their intended usage of the grid platform. A grid user who submits a job is mainly interested in acquiring status information of the job, whilst grid administrators are interested in resource availability and utilization. The framework should not only be able to acquire monitoring related data in a consistent format but should also be able to present it irrespective to the underlying grid node specification. In this paper, we propose a monitoring framework based on the notion of Meta objects, utilizing computational reflection and mechanism for advanced concurrent programming support. The framework gathers resource and task specific data of interest from different platforms and allows it to be communicated across the grid environment using multi paradigm concurrent communication mechanism.