

Optimal Media Service Scheduling in Clouds

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Abstract—Cloud becomes increasingly important currently, and media services, which usually have multiple steps and complexity computing requirement, are applied in it. Although this scheduling topic has been investigated a lot, most of works focus on balancing jobs or decreasing the execution time of one job. For large scale paralleling media services, the job request usually contains a series tasks, and how to schedule them to a cloud or a grid with high efficiency and low cost is an important problem. To achieve this target, we focus on the fine grain tasks for media services and propose a task-based scheduling algorithm, in which two-stage scheduling approach is designed, including initializing stage and adjustment stage. In this algorithm, after the initializing assignment process, in order to meet the need of the limited cost consumption, the characters of nodes or virtual machines(VMs), such as balance character, capability character, are considered deeply in scheduling adjusting process. Evaluation shows that our algorithm presents obviously better performance in terms of makespan, cost consumption, and balance factor than several benchmarks.

Keywords—scheduling, adjusting stage, media cloud



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