

Dynamic Feedback Load Balancing Scheduling Algorithm for Vietnamese Semantic Web Applications

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Abstract: Enabling technologies in high-speed communication, advanced microprocessor, and operating systems today have pushed cluster systems become mainstream of parallel and distributed platforms for high-performance, high throughput and high-availability computing. These cluster systems are preferred to run large e-science applications. Such a kind of large-scale applications is Vietnamese semantic web applications (VN-KIM), in which Internet clients access hundred thousands of entities in a knowledge base and many coordinated complex processes run. Therefore, a group of powerful workstation-based clusters named SWG for the applications is built. Job scheduling is a problem in the SWG. This paper presents dynamic feedback load balancing scheduling algorithm on the SWG for Vietnamese semantic web applications. The scheduling algorithm is used to distribute requests among computing servers. Beside of static round-robin, the scheduling algorithm considers on response time of each computing server and to increase/decrease number of forwarded request to it. The paper also describes performance tests to prove that the dynamic feedback load balancing scheduling algorithm reduces the turnaround time of each request.

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