

ملخص البحث باللغة الانجليزية :

Cloud computing will continue to play a critical role due to its ability to deliver various types of on-demand information technology (IT) services according to customer needs. Unfortunately, Cloud computing has faced many challenges. The task scheduling problem is considered one of the main challenges because the user has to pay for a resource. Therefore, a good mapping of users' tasks on the available resources is required to reduce the total execution time of the users' tasks (i.e., reduce makespan), execution cost, enhance load balancing, increase resource utilization, etc. Many heuristic algorithms have been existed to solve task scheduling problems. Although, the Heterogeneous Earliest Finish Time (HEFT) heuristic algorithm is considered one of the best task scheduling algorithms in a heterogeneous environment, it does not concern load balancing. In this paper, a modification has been introduced to the HEFT algorithm to satisfy load balancing. The modified algorithm is called Load Balancing HEFT (LB-HEFT). A comparative study has been done among the proposed LB-HEFT, the Enhancement Heterogeneous Earliest Finish Time (E-HEFT), and HEFT algorithms to evaluate the performance of the proposed LB-HEFT algorithm. According to the comparative results, it is found that the proposed LB-HEFT algorithm outperforms the existing E-HEFT and HEFT algorithms by improving load balancing by 43.49% and 72.59%, respectively in average, enhancing resource utilization by 2.28% and 5.61%, respectively in average, and reducing makespan by 7.55%, and 3.75% respectively in average

البحث مشتق من رسالة علمية

يقع البحث ضمن مجالات البحث بالقسم العلمي

عميد الكلية

أ.د/ محمد حلي عبد العزيز خفاجي