عنوان فارسی مقاله:
زمان بندی شغل‌های موازی با اجرای‌های آزمایشی و ادغام در ابر

عنوان انگلیسی مقاله:
Scheduling parallel jobs with tentative runs and consolidation in the cloud
5. Conclusions and future work

Running parallel applications in the cloud becomes more and more popular now. It is a challenging for cloud providers to achieve responsiveness of parallel jobs and high processor utilization simultaneously. In this paper, we introduced a prioritized two-tier VMs architecture to organize VMs for running parallel jobs. The foreground tier of VMs has higher CPU priority than that of the background tier of VMs. The performance of jobs running in the foreground VMs is close to that of jobs running in dedicated processors (less than 4% performance loss), meanwhile, the idle CPU cycles can be well used by the jobs running in background VMs. We gave a scheduling algorithm named ACFCFS to exploit the increased computing capacity provided by the two-tier VMs architecture. The proposed ACFCFS algorithm extends the popularly used FCFS algorithm, and it preserves all the advantages of FCFS, such as no starvation, no requirement for job’s runtime estimation, easy to implement and no job migration. Our evaluation showed that ACFCFS significantly outperforms FCFS, and achieves comparable performance to the runtime-estimation-based EASY algorithm. ACFCFS is robust in terms that it allows inaccurate CPU usage estimation of parallel processes and low available idle CPU cycles.