

Abstract

Docker and KVM are virtualization technologies that mostly used in worldwide. Both of these virtualizations have advantages and disadvantages. One of Docker disadvantages is network transfer rates. In this study, performance comparison has been done between hypervisor-based virtualization, KVM, and container-based virtualization, Docker. Benchmark application is used. The parameters are bandwidth and network transfer speed, I/O performance, CPU performance, and bandwidth memory. Results showed that Docker outperform KVM in network bandwidth by 35%, but KVM outperform Docker in transfer rate at 38%. I/O performance showed that Docker outperform KVM in almost all case. On CPU performance, KVM has 17% advantage over integer processing, and Docker outperform KVM by 9% in the floating point rate. While for memory bandwidth, KVM surpass Docker less than 1%.

Keywords: Virtualization, container based-virtualization, hypervisor-based virtualization, KVM, Docker, benchmark.