

Database Performance shines on VMware vSphere 4

VMware recently released a whitepaper Virtualizing Performance-Critical Database Applications in VMware vSphere™ 4 that shows why vSphere 4 is an excellent platform for performance-critical database applications. The paper details performance experiments using an OLTP workload against an Oracle database. Results show

that even at very high loads, benchmark throughput is 85% of native on VMware vSphere™ 4. As can be seen in the table below that summarizes statistics for these tests, this ratio to native was observed while performing 60k iops, which is a order of magnitude higher than load levels expected from a single server in production.

M E T R I C	NATIVE	VM
Throughput in business transactions per minute	293K	250K
Disk IOPS	71K	60K
Disk Megabytes/second	305MB/s	258 MB/s
Network packets/second	12K/s receive 19K/s send	10K/s receive 17K/s send
Network bandwidth/second	25Mb/s receive 66Mb/s send	21Mb/s receive 56Mb/s send

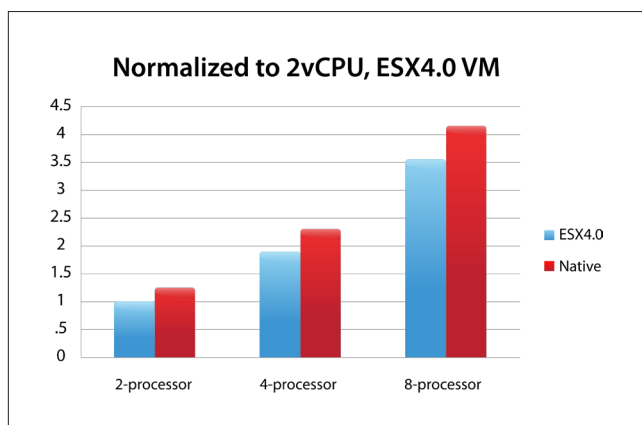


Figure 1. vSphere 4 vs. Native—throughput normalized to 2vCPU, ESX 4.0.

These results are the outcome of numerous performance enhancements in VMware vSphere™ 4. These include added hardware support for memory virtualization, more efficient and feature-rich storage stack, and significantly better CPU resource management. The net result is a 24-28% increase in throughput over ESX 3.5, for 2- and 4- vCPU VMs, respectively. Additionally, with support for 8-vCPU VMs, maximum throughput achievable from a single VM is much higher in VMware vSphere™ 4 than in ESX 3.5.

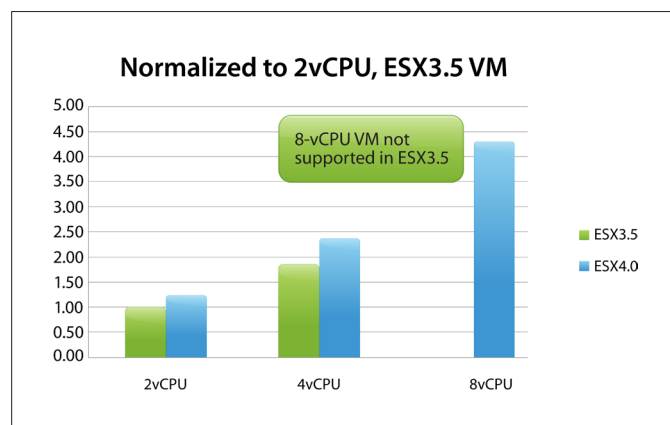


Figure 2. vSphere 4 vs. ESX 3.5—throughput normalized to 2vCPU, ESX 4.0.

vSphere has the capability to handle loads far larger than that demanded by most Oracle database applications in production. Support for VMs with 8 vCPUs, a near-linear scale-up and a 24% performance boost over ESX 3.5, make VMware vSphere™ 4 an excellent platform for virtualizing very high end Oracle databases.

For details regarding experiments and the performance enhancements in vSphere, please read the paper at: Virtualizing Performance-Critical Database Applications in VMware vSphere™ 4.