

VMware® VMmark™ V1.0.0 Results

Vendor and Hardware Platform: Sun Fire X4450
Virtualization Platform: VMware ESX Server V3.5.0 (Build 64607)

VMmark V1.0.0 Score =
12.23 @ 8 Tiles

Tested By: Sun Microsystems, Burlington, MA

Test Date: Apr-2008

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Performance

	webservers		javaserver		mailserver		fileserver		database		
TILE_0	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2000.65	1.96	18116.28	1.09	1561.00	1.42	22.09	1.72	2285.88	1.53	1.52
p1	2002.95	1.97	17643.17	1.06	1719.28	1.57	22.32	1.74	2288.65	1.53	1.54
p2	1997.05	1.96	18128.55	1.09	1807.55	1.65	21.98	1.71	2285.53	1.53	1.56
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2003.92	1.97	18115.22	1.09	1553.95	1.42	22.63	1.76	2266.55	1.52	1.52
p1	1994.80	1.96	18106.83	1.09	1775.50	1.62	22.34	1.74	2277.43	1.53	1.56
p2	1990.97	1.95	18115.62	1.09	1794.38	1.64	22.52	1.76	2273.05	1.52	1.56
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1998.85	1.96	18116.92	1.09	1553.17	1.42	22.51	1.75	2251.50	1.51	1.52
p1	2005.80	1.97	17668.17	1.06	1775.10	1.62	22.30	1.74	2251.43	1.51	1.55
p2	1995.88	1.96	18118.65	1.09	1793.17	1.63	22.50	1.75	2248.50	1.51	1.56
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2011.22	1.97	17630.28	1.06	1428.58	1.30	22.39	1.75	2249.10	1.51	1.48
p1	2000.70	1.96	18103.70	1.09	1693.67	1.54	22.09	1.72	2251.70	1.51	1.54
p2	1987.95	1.95	18139.75	1.09	1621.15	1.48	22.38	1.74	2262.53	1.52	1.53
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2008.78	1.97	18135.95	1.09	1435.00	1.31	22.54	1.76	2251.28	1.51	1.49
p1	2001.03	1.96	18124.35	1.09	1621.70	1.48	22.13	1.73	2253.18	1.51	1.53
p2	2002.85	1.97	18118.15	1.09	1672.20	1.52	22.44	1.75	2264.75	1.52	1.54
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2002.00	1.96	18048.38	1.09	1359.17	1.24	22.65	1.77	2248.50	1.51	1.48
p1	2002.65	1.97	18070.12	1.09	1616.67	1.47	22.28	1.74	2261.62	1.52	1.53
p2	1988.00	1.95	18073.53	1.09	1678.25	1.53	22.49	1.75	2262.18	1.52	1.54
TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1998.17	1.96	17606.50	1.06	1282.72	1.17	22.65	1.77	2233.10	1.50	1.45
p1	1991.12	1.95	18061.80	1.09	1506.90	1.37	22.38	1.74	2252.70	1.51	1.50
p2	1998.78	1.96	18061.85	1.09	1628.40	1.48	22.48	1.75	2260.18	1.51	1.53
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2001.88	1.96	18018.10	1.08	1191.03	1.09	22.55	1.76	2220.38	1.49	1.43
p1	1987.40	1.95	17570.03	1.06	1492.95	1.36	22.33	1.74	2220.38	1.49	1.49
p2	1992.55	1.96	18039.78	1.09	1659.38	1.51	22.49	1.75	2234.28	1.50	1.53

p0_score:	11.89
p1_score:	12.23
p2_score:	12.35
Unreviewed_VMmark_Score:	12.23

Configuration

System Under Test (SUT)	
Processor Vendor and Model	Quad-Core Intel Xeon X7350
Processor Speed (GHz)	2.93
# of Sockets/Cores per Socket	4 Sockets / 4 Cores per Socket (16 Cores Total)
Primary Cache	32KB(I) + 32KB(D) on chip, per core
Secondary Cache	8MB(I+D) on chip, per chip, 4MB shared/2 cores
Other Cache	None
Memory	64GB(16x4GB) 667 MHz ECC CL5 DDR2 FB-DIMM
Disk Subsystem	SAS
# of Disk Controllers	5
Host Bus Adapters Vendor and Model	4Gb FC Dual Port PCIe Express Module, QLogic
# of Host Bus Adapters	3
# of Network Controllers	2
Network Controllers Vendor and Model	Intel PRO/1000 PT Dual Gigabit Ethernet
Network Switches Vendor and Model	Netgear GSM7224
Network Speed	1000Base-T
Other Hardware	None
Other Software	None
Hardware Availability Date	Apr-2008
Software Availability Date	Apr-2008

Virtualization Platform	
Vendor, Product, and Version	VMware ESX Server 3.5.0
Virtualization Type	Hardware Virtualization
Supplemental Software	None
Virtualization Platform Availability Date	Dec-2007

Storage	
Array Vendor and Model/ Firmware Version	Sun StorageTek 2540
Fibre Channel Switches Vendor and Model	Brocade 5000
Used GB	532
Array Cache GB	4.5GB
Number and Size of LUNs	LUN 1: 400GB LUN 2: 400GB LUN 3: 405GB LUN 4: 405GB LUN 5: 410GB

	LUN 6: 410GB LUN 7: 415GB LUN 8: 415GB LUN 9: 460GB LUN 10: 462GB
RAID Type	RAID 10
Number of Members per RAID Set	12
Disk Vendor and Model/Speed	Seagate Cheetah/15K
Clients	
# of Clients	8
System Model	Sun Blade X6250
Processor Vendor and Model	AMD Opteron 2220
Processor Speed (GHz)	2.8
# of Sockets/# of Cores	2/4
Memory	16GB
Network Controller Vendor and Model	10-Port NVIDIA nForce Networking Controller
Operating System, Version, and Service Pack	Microsoft Windows Server 2003 R2 Enterprise Server SP2
Other Hardware	None
Other Software	None

Notes for Workload

SUT Notes

- The onboard Adaptec RAID controller contained 1 x 146GB/10K drive for OS
- BIOS settings: Hardware Prefetcher Disabled (default enabled), Adjacent Cache Line Prefetch Disabled (default enabled)

Virtualization Platform Notes

- VMware ESX 3.5.0 (Build 63407)
- vmfs2 module was unloaded prior to the benchmark run
- Five switches, vSwitch0, vSwitch1, vSwitch2, vSwitch3, vSwitch6, bound to vmnic0, vmnic1, vmnic2, vmnic3, vmnic6(physical NICs) respectively
- Service Console was mapped to vSwitch6
- Each vSwitch was configured to 120 ports(default 56)
- All VMs (0-3), except webserver VM, were attached to vSwitch0, All VMs (4-7), except webserver VM were attached to vSwitch1, Webserver VMs(2,3,4,5) were attached to vSwitch2 and Webserver VMs(0,1,6,7) were attached to vSwitch3
- Database VMs were stored on LUN 9. All other VMs, each tile was stored on its own LUN.
- Network adapter type was set to enhanced vmxnet for all Windows-based VMs and Linux-based VMs
- Disk.MaxLUN = 64 (default 256)
- Disk.SchedNumReqOutstanding = 64 (default 32)

Operating System Notes

- KB 933360 was applied on all Microsoft Windows Server 2003 virtual machines

Software Notes

Client Notes

- KB 933360 was applied on all clients

Other Notes

This is a full disclosure report for a VMmark benchmark result. All published VMmark results must be from fully-compliant tests for which a full disclosure report is publicly available.

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