

# VMware® VMmark™ V1.1 Results

**Vendor and Hardware Platform: Sun Microsystems Sun Fire X4240**  
**Virtualization Platform: VMware ESX 3.5.0 Update 1 (build 82663)**

**VMmark V1.1 Score =**  
**7.92 @ 6 Tiles**

Tested By: Sun Microsystems

Test Date: Sept-2008

Performance Section  
[Performance](#)

Configuration Section  
[Configuration](#)

Notes Section  
[Notes for Workload](#)

## Performance

	webservers		javaserver		mailserver		fileservers		database		
TILE_0	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1576.90	1.55	18045.67	1.09	1481.10	1.35	17.05	1.33	2171.03	1.45	1.34
p1	1561.22	1.53	17583.72	1.06	1501.05	1.37	17.37	1.35	2157.78	1.45	1.34
p2	1561.12	1.53	18020.03	1.08	1446.08	1.32	17.79	1.39	2126.07	1.42	1.34
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1765.67	1.73	17495.67	1.05	1187.80	1.08	15.31	1.19	2202.53	1.48	1.28
p1	1752.08	1.72	17886.42	1.08	1295.47	1.18	15.55	1.21	2199.75	1.47	1.31
p2	1745.03	1.71	17907.78	1.08	1122.60	1.02	16.10	1.25	2155.40	1.44	1.28
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1625.25	1.60	17574.60	1.06	1398.70	1.28	16.07	1.25	2216.20	1.49	1.32
p1	1610.12	1.58	17959.90	1.08	1456.08	1.33	16.12	1.26	2214.47	1.48	1.33
p2	1607.53	1.58	17958.67	1.08	1389.55	1.27	16.27	1.27	2176.95	1.46	1.32
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1789.28	1.76	18048.78	1.09	1249.38	1.14	17.32	1.35	2214.85	1.48	1.34
p1	1778.28	1.75	18001.38	1.08	1382.05	1.26	17.03	1.33	2204.20	1.48	1.36
p2	1768.62	1.74	17996.70	1.08	1334.97	1.22	17.26	1.35	2191.28	1.47	1.35
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1636.97	1.61	17965.20	1.08	1154.67	1.05	17.25	1.34	2160.30	1.45	1.29
p1	1622.65	1.59	17974.75	1.08	1353.88	1.23	17.07	1.33	2155.18	1.44	1.33
p2	1621.10	1.59	17981.65	1.08	1395.90	1.27	16.83	1.31	2147.07	1.44	1.33
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1650.60	1.62	17959.60	1.08	1171.85	1.07	16.12	1.26	2156.78	1.45	1.28
p1	1632.60	1.60	17957.65	1.08	1154.92	1.05	15.71	1.22	2153.45	1.44	1.26
p2	1629.00	1.60	17866.58	1.08	1295.58	1.18	16.04	1.25	2147.05	1.44	1.30
p0_score:	7.86										
p1_score:	7.94										
p2_score:	7.92										
Unreviewed_VMmark_Score:	7.92										

# Configuration

<b>Server and Network</b>	
Server Manufacturer and Model	Sun Microsystems Sun Fire X4240
Processor Vendor and Model	Quad Core AMD Opteron 2360SE
Processor Speed (GHz)	2.5GHz
Number of Sockets/Cores per Socket	2 Sockets / 4 Cores per Socket (8 Cores Total)
Primary Cache	64KB I + 64KB D on chip per core
Secondary Cache	512KB I+D L2 on chip per core
Other Cache	2MB I+D L3 on chip per chip
Memory	32GB(8 x 4 GB)PC2-5300 DDR2 667MHz Registered DIMMs
Disk Subsystem Type	SAS(OS), FC SAN (VMs)
Number of Disk Controllers	1
Number of Host Bus Adapters	3
Host Bus Adapter Vendors and Models	2x QLogic Corp QLE2462 1x Emulex LPe11002
Number of Network Controllers	3
Network Controller Vendors and Models	2x Intel PRO 1000 PT Dual Port 1GbE NIC 4x Embedded NVidia 1Gbit ports Ethernet Controller
Network Switch Vendors and Models	Netgear GSM-7224
Network Speed	1000Base-T
Other Hardware	None
Other Software	None
Hardware Availability Date	May-2008
Software Availability Date	May-2008

<b>Virtualization Software</b>	
Vendor, Product, Version, and Build	VMware ESX 3.5.0 Update 1 Build 82663
Virtualization Type	Hardware Virtualization
Supplemental Software	None
Virtualization Software Availability Date	Apr-2008

<b>Storage</b>	
Array Vendor, Model, and Firmware Version	1. Sun StorageTek 2540 with 2501 SAS Expansion Tray IOM, Version 06.17.52.10 2. Sun StorageTek 2540 with 2501 SAS Expansion Tray IOM, Version 06.17.52.10 3. Sun StorageTek 2540 with 2501 SAS Expansion Tray IOM, Version 06.17.52.10 4. Sun StorageTek 2540 with 2501 SAS Expansion Tray IOM, Version 06.17.52.10
Fibre Channel Switch	Brocade 5000
Disk Space Used	413GB
Array Cache Size	1. Sun StorageTek 2540, 1024MB 2. Sun StorageTek 2540, 1024MB 3. Sun StorageTek 2540, 1024MB 4. Sun StorageTek 2540, 1024MB
Number and Size of LUNs	LUN 1: 415GB LUN 2: 416GB LUN 3: 405GB

	LUN 4: 405GB LUN 5: 460GB LUN 6: 462GB LUN 7: 410GB LUN 8: 411GB
RAID Type	RAID10 (all LUNs)
Number of Members per RAID Set	LUN 1: 12 LUN 2: 12 LUN 3: 12 LUN 4: 12 LUN 5: 12 LUN 6: 12 LUN 7: 12 LUN 8: 12
Disk Vendor, Model, and Speed	Seagate Cheetah, 15K

### Clients

Number of Clients	6
System Model(s)	Sun Blade 8000 Chassis with 6 Sun Blade X8420
Processor Vendor(s) and Model(s)	AMD Opteron
Processor Speed(s) (GHz)	2.8
Number of Sockets/Cores per Socket	4 Sockets / 2 Cores per Socket (8 Cores Total)
Memory	32GB
Network Controller Vendor and Model	Sun Microsystems 20-Port Gigabit Ethernet Network Express Module (NEM)
Operating System, Version, and Service Pack	Microsoft Windows Server 2003 Enterprise Edition SP2
Other Hardware	None
Other Software	None

## Notes for Workload

### Server and Network Notes

- Used one internal 73GB SAS/15K drive for OS
- Embedded Ethernet controller port 1,2,3 (respectively vmnic 1,4,5) not used

### Virtualization Software Notes

- Standby, JavaServer VMs 1,4 and WebServer 4 stored on LUN 1;  
Tile 5 VMs (except Database) stored on LUN 2;  
Database 0,1,2 VMs and FileServer4 stored on LUN 3;  
Database 3,4,5 VMs and FileServer1 stored on LUN 4;  
Tile 2 VMs (except Database) stored on LUN 5;  
Tile 3 VMs (except Database and mailserver VMs) stored on LUN 6;  
MailServer 0,1,3,4 stored on LUN 7;  
Tile 0 VMs (except Database and MailServer VMs)and WebServer1 VM stored on LUN 8.
- Four vSwitches (2,3,6,1) bound to four physical NICs, vmnic 2,3,6,7 respectively
- vSwitch0 bound to one embedded Ethernet port 0, vmnic0
- vSwitch 2,3,6 configured with 120 ports (default 56)
- vSwitch0 was dedicated to Service Console;  
Standby, Web, JavaServer 2,4,5 VMs and FileServers attached to vSwitch2;

Standby, Web, JavaServer 0,1,3 VMs attached to vSwitch6;

MailServer VMs attached to vSwitch3;

Database VMs attached to vSwitch1.

- Ethernet Adapter Type set to Enhanced vmxnet for all VMs
- vmfs2 module was unloaded before the benchmark run
- Disk SchedNumReqOutstanding 128 (default 32)
- Stopped firewall, iptables and pegasus services before the benchmark was run

## Operating System Notes

- Microsoft Windows Server 2003 virtual machines were updated to SP2 and KB 933360 was applied

## Software Notes

## Client Notes

- KB 933360 was applied

## Other Notes

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