

VMware® VMmark™ V1.0.0 Results

Vendor and Hardware Platform: Dell PowerEdge R905
Virtualization Platform: VMware ESX 3.5 Update 1 (build 82663)

VMmark V1.0.0 Score =
14.17 @ 10 Tiles

Tested By: Dell Inc.

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	1871.17	1.84	18093.33	1.09	1760.85	1.61	17.81	1.39	2134.22	1.43	1.45
p1	1854.92	1.82	18096.05	1.09	1923.15	1.75	17.87	1.39	2136.70	1.43	1.47
p2	1854.92	1.82	18093.15	1.09	1809.22	1.65	17.87	1.39	2130.68	1.43	1.45
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1895.58	1.86	18009.17	1.08	1450.20	1.32	18.00	1.40	2146.80	1.44	1.40
p1	1883.78	1.85	17992.05	1.08	1442.20	1.31	17.81	1.39	2151.22	1.44	1.39
p2	1877.85	1.84	17559.67	1.06	1266.08	1.15	17.95	1.40	2138.60	1.43	1.35
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1767.17	1.73	18090.88	1.09	1778.90	1.62	17.82	1.39	2142.32	1.44	1.44
p1	1752.92	1.72	17634.45	1.06	1919.83	1.75	17.96	1.40	2148.62	1.44	1.45
p2	1758.78	1.73	18088.90	1.09	1838.40	1.68	17.87	1.39	2145.62	1.44	1.45
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2026.88	1.99	17672.47	1.06	1753.05	1.60	18.49	1.44	2063.00	1.38	1.46
p1	2038.33	2.00	18117.05	1.09	1713.30	1.56	18.11	1.41	2075.53	1.39	1.46
p2	2033.33	2.00	18131.08	1.09	1791.53	1.63	18.11	1.41	2092.28	1.40	1.48
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1908.38	1.87	18086.38	1.09	1593.92	1.45	19.64	1.53	2020.08	1.35	1.44
p1	1901.95	1.87	18100.67	1.09	1477.22	1.35	19.71	1.54	2003.83	1.34	1.41
p2	1897.75	1.86	18108.33	1.09	1540.62	1.40	19.69	1.53	1996.42	1.34	1.42
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1790.85	1.76	18143.00	1.09	1613.17	1.47	17.60	1.37	2048.88	1.37	1.40
p1	1770.45	1.74	18123.50	1.09	1566.47	1.43	18.03	1.41	2064.75	1.38	1.39
p2	1767.22	1.73	17680.85	1.06	1491.90	1.36	17.87	1.39	2072.65	1.39	1.37
TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2043.83	2.01	18053.97	1.09	1556.95	1.42	17.50	1.36	1899.95	1.27	1.40
p1	2049.38	2.01	18029.45	1.09	1389.67	1.27	17.53	1.37	1893.67	1.27	1.37
p2	2047.17	2.01	17566.67	1.06	1278.50	1.17	17.24	1.34	1889.95	1.27	1.33
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2050.80	2.01	17905.60	1.08	1564.17	1.43	18.06	1.41	2063.60	1.38	1.43
p1	2048.28	2.01	17442.05	1.05	1751.45	1.60	17.75	1.38	2055.15	1.38	1.45
p2	2052.78	2.01	17888.42	1.08	1776.78	1.62	17.88	1.39	2052.57	1.38	1.46

TILE_8	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2048.95	2.01	17568.95	1.06	1426.78	1.30	17.45	1.36	1958.42	1.31	1.38
p1	2046.15	2.01	18111.20	1.09	1659.60	1.51	17.34	1.35	1938.35	1.30	1.42
p2	2050.15	2.01	18142.65	1.09	1753.25	1.60	17.20	1.34	1936.83	1.30	1.44
TILE_9	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1794.85	1.76	18048.72	1.09	1320.65	1.20	17.75	1.38	1999.83	1.34	1.34
p1	1794.03	1.76	17619.72	1.06	1614.88	1.47	17.39	1.36	1991.03	1.33	1.38
p2	1783.40	1.75	18082.75	1.09	1714.55	1.56	17.42	1.36	2037.95	1.37	1.41
p0_score:	14.13										
p1_score:	14.21										
p2_score:	14.17										
Unreviewed_VMmark_Score:	14.17										

Configuration

System Under Test (SUT)	
Processor Vendor and Model	Quad-Core AMD Opteron 8360 SE
Processor Speed (GHz)	2.50
# of Sockets/Cores per Socket	4 Sockets / 4 Cores per Socket (16 Cores Total)
Primary Cache	64 KB I + 64 KB D on chip per core
Secondary Cache	512 KB I+D on chip per core
Other Cache	2 MB I+D L3 on chip per chip
Memory	64 GB (16 x 4 GB) PC2-5300 667MHz Registered ECC DDR2 DIMM
Disk Subsystem	SAS (OS), FC SAN (VMs)
# of Disk Controllers	N/A
Host Bus Adapters Vendor and Model	1 x Dell PowerEdge Expandable RAID Controller (PERC) 6/i 2 x QLogic Corp QLE2462
# of Host Bus Adapters	3
# of Network Controllers	3
Network Controllers Vendor and Model	Intel PRO 1000PT Dual Port 1GbE
Network Switches Vendor and Model	Dell PowerConnect 5224
Network Speed	1000Base-T
Other Hardware	None
Other Software	None
Hardware Availability Date	Jun-2008
Software Availability Date	Apr-2008

Virtualization Platform	
Vendor, Product, and Version	VMware ESX 3.5 Update 1
Virtualization Type	Hardware Virtualization
Supplemental Software	None
Virtualization Platform Availability Date	Apr-2008

Storage

Array Vendor and Model/ Firmware Version	1. EMC CX300, version 02.26.300.5.005 2. EMC CX300, version 02.26.300.5.005 3. EMC CX300, version 02.26.300.5.005 4. EMC CX300, version 02.26.300.5.005
Fibre Channel Switches Vendor and Model	Brocade Silkworm 3800
Used GB	743
Array Cache GB	1. EMC CX300, 2048MB 2. EMC CX300, 2048MB 3. EMC CX300, 2048MB 4. EMC CX300, 2048MB
Number and Size of LUNs	LUN 1: 120GB LUN 2: 120GB LUN 3: 120GB LUN 4: 120GB LUN 5: 120GB LUN 6: 120GB LUN 7: 120GB LUN 8: 120GB LUN 9: 120GB LUN 10: 120GB LUN 11: 260GB
RAID Type	RAID10 (all LUNs)
Number of Members per RAID Set	LUN 1: 10 members LUN 2: 10 members LUN 3: 10 members LUN 4: 10 members LUN 5: 10 members LUN 6: 10 members LUN 7: 10 members LUN 8: 10 members LUN 9: 10 members LUN 10: 10 members LUN 11: 16 members
Disk Vendor and Model/Speed	Fujitsu Enterprise/15K

Clients

# of Clients	10
System Model	5 x PowerEdge 1650, 4 x PowerEdge 1750, PowerEdge 1850
Processor Vendor and Model	Intel Xeon
Processor Speed (GHz)	1.40 (1650), 2 x 3.20 (1750), 2 x 3.06 (1750), 2.80 (1850)
# of Sockets/# of Cores	2/2 (1650), 2/2 (1750), 2/4 (1850)
Memory	2 GB
Network Controller Vendor and Model	5 x Intel PRO/1000 XT Network Connection (1650), 4 x Broadcom NetXtreme Gigabit Ethernet (1750), Intel PRO/1000 MT Network Connection (1850)
Operating System, Version, and Service Pack	Microsoft Windows Server 2003 Enterprise Edition SP2
Other Hardware	None
Other Software	None

Notes for Workload

SUT Notes

- The PERC 6/i onboard controller contained 1 73GB/15K drive for OS.

- BIOS settings:
 - Optical Drive Controller = Off (default On)
 - User-Accessible USB Ports = Only back ports on (default All Ports On)
 - Embedded Gb NIC1-4 = Disabled (default Enabled)

Virtualization Platform Notes

- Six vSwitches (0-5) bound to six physical NICs, vmnic0-5, respectively.
- Each vSwitch was configured to 120 ports (default 56).
- Service Console was shared with vSwitch0.
- Database VMs attached to vSwitch0;
 - Standby, Web, JavaServer 0-2 VMs attached to vSwitch1;
 - Standby, Web, JavaServer 3-5 attached to vSwitch2;
 - Standby, Web, JavaServer 6-9 attached to vSwitch3;
- Fileserver VMs attached to vSwitch4;
- Mailserver VMs attached to vSwitch5.
- Database VMs were stored on LUN 11. For all other VMs, each tile was stored on its own LUN.
- Virtualized MMU Enabled on WebServer VMs (default Automatic)
- Ethernet Adapter Type set to Enhanced vmxnet for all VMs.
- vmfs2 module was unloaded prior to the benchmark run.
- Disk.SchedNumReqOutstanding 128 (default 32)

Operating System Notes

- Microsoft Windows Server 2003 virtual machines were updated to Service Pack 2, and [KB 933360](#) was applied.

Software Notes

Client Notes

- [KB 933360](#) was applied.

Other Notes

VMMARK.CONFIG changes:

- JavaServer/DELAYTIME="1140" (default 540)
- JavaServer/DELAYTIME="1140" (default 540)
- Standby/DELAYTIME="770" (default 170)
- WebServer/DELAYTIME="780" (default 180)
- Database/DELAYTIME="960" (default 360)
- FileServer/DELAYTIME="1050" (default 450)

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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