

VMware® VMmark™ V1.1.1 Results

Vendor and Hardware Platform: Lenovo R525 G2
Virtualization Platform: VMware ESX 4.0(build 164009)

**VMmark V1.1.1 Score =
24.35 @ 17 Tiles**

Tested By: Lenovo

Test Date: 06/05/2009

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Performance

	webserver		javaserver		mailserver		fileserver		database		
	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
TILE_0											
p0	1806.03	1.77	18124.75	1.09	1551.47	1.41	15.88	1.24	2340.72	1.57	1.40
p1	1731.92	1.70	18129.22	1.09	1634.80	1.49	16.18	1.26	2335.05	1.56	1.40
p2	1740.30	1.71	18124.40	1.09	1590.22	1.45	16.21	1.26	2335.43	1.56	1.40
TILE_1											
p0	1808.50	1.77	18131.00	1.09	1667.55	1.52	15.78	1.23	2331.45	1.56	1.41
p1	1819.60	1.79	18146.90	1.09	1669.17	1.52	16.11	1.26	2323.72	1.56	1.42
p2	1830.17	1.80	17681.30	1.06	1687.33	1.54	16.12	1.26	2320.05	1.55	1.42
TILE_2											
p0	1949.70	1.91	18121.00	1.09	1690.60	1.54	15.80	1.23	2337.68	1.57	1.44
p1	1945.20	1.91	18130.55	1.09	1697.38	1.55	16.22	1.26	2336.68	1.57	1.45
p2	1940.97	1.90	18140.65	1.09	1682.15	1.53	16.15	1.26	2334.55	1.56	1.44
TILE_3											
p0	1942.30	1.91	18170.03	1.09	1615.70	1.47	16.27	1.27	2340.22	1.57	1.44
p1	1941.28	1.91	18160.70	1.09	1597.90	1.46	16.61	1.29	2336.93	1.57	1.44
p2	1943.45	1.91	18160.10	1.09	1558.00	1.42	16.76	1.31	2336.75	1.57	1.43
TILE_4											
p0	1934.78	1.90	18159.58	1.09	1635.12	1.49	16.05	1.25	2340.55	1.57	1.43
p1	1933.30	1.90	18147.95	1.09	1613.72	1.47	16.30	1.27	2335.50	1.56	1.43
p2	1935.60	1.90	17716.47	1.07	1633.00	1.49	16.34	1.27	2331.65	1.56	1.43
TILE_5											
p0	1940.10	1.90	18126.70	1.09	1621.38	1.48	15.91	1.24	2334.10	1.56	1.43
p1	1939.92	1.90	18141.17	1.09	1585.20	1.45	16.19	1.26	2319.72	1.55	1.43

p2	1938.10	1.90	18165.40	1.09	1555.12	1.42	16.19	1.26	2324.70	1.56	1.42
TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1934.60	1.90	18126.40	1.09	1775.45	1.62	16.30	1.27	2347.68	1.57	1.46
p1	1931.92	1.90	18145.85	1.09	1719.95	1.57	16.38	1.28	2345.43	1.57	1.45
p2	1934.12	1.90	18147.47	1.09	1698.17	1.55	16.61	1.29	2343.65	1.57	1.46
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1930.20	1.89	17705.85	1.07	1647.70	1.50	16.37	1.28	2349.20	1.57	1.44
p1	1933.55	1.90	18151.28	1.09	1695.95	1.55	16.30	1.27	2348.15	1.57	1.45
p2	1934.10	1.90	18170.60	1.09	1610.85	1.47	16.65	1.30	2348.05	1.57	1.44
TILE_8	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1929.30	1.89	18163.70	1.09	1739.80	1.59	16.14	1.26	2342.90	1.57	1.45
p1	1933.47	1.90	18162.17	1.09	1711.33	1.56	16.15	1.26	2335.43	1.56	1.45
p2	1924.25	1.89	18164.60	1.09	1706.83	1.56	16.52	1.29	2333.22	1.56	1.45
TILE_9	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1935.55	1.90	18163.35	1.09	1660.62	1.51	16.98	1.32	2342.88	1.57	1.46
p1	1933.35	1.90	18129.22	1.09	1661.92	1.52	17.21	1.34	2334.25	1.56	1.46
p2	1933.88	1.90	18129.85	1.09	1767.92	1.61	17.39	1.36	2331.43	1.56	1.48
TILE_10	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1928.97	1.89	18125.70	1.09	1560.10	1.42	16.20	1.26	2364.75	1.58	1.43
p1	1931.05	1.90	18120.42	1.09	1699.58	1.55	16.56	1.29	2359.32	1.58	1.46
p2	1938.40	1.90	18119.28	1.09	1753.47	1.60	16.60	1.29	2365.90	1.59	1.47
TILE_11	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1888.50	1.85	18120.12	1.09	1588.12	1.45	16.11	1.26	2301.30	1.54	1.41
p1	1891.38	1.86	18116.15	1.09	1662.72	1.52	16.28	1.27	2300.78	1.54	1.43
p2	1891.90	1.86	18125.92	1.09	1767.30	1.61	16.30	1.27	2309.05	1.55	1.45
TILE_12	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1933.22	1.90	18166.20	1.09	1512.22	1.38	16.24	1.27	2303.53	1.54	1.41
p1	1928.20	1.89	18163.58	1.09	1755.20	1.60	16.47	1.28	2305.68	1.54	1.46
p2	1936.83	1.90	17710.25	1.07	1813.45	1.65	16.40	1.28	2299.45	1.54	1.46
TILE_13	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1918.58	1.88	18137.85	1.09	1500.42	1.37	15.98	1.25	2335.18	1.56	1.41
p1	1906.92	1.87	18144.10	1.09	1636.28	1.49	16.23	1.26	2323.38	1.56	1.43
p2	1916.03	1.88	17690.22	1.06	1732.03	1.58	16.13	1.26	2317.45	1.55	1.44
TILE_14	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1943.20	1.91	18113.92	1.09	1437.75	1.31	16.11	1.26	2356.53	1.58	1.40
p1	1941.30	1.91	18137.58	1.09	1643.05	1.50	16.16	1.26	2351.70	1.58	1.44

p2	1940.97	1.90	18133.22	1.09	1737.90	1.58	16.45	1.28	2346.25	1.57	1.46
TILE_15	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1854.03	1.82	17683.22	1.06	1372.20	1.25	14.67	1.14	2251.45	1.51	1.33
p1	1858.42	1.82	18132.25	1.09	1665.28	1.52	14.09	1.10	2184.40	1.46	1.37
p2	1861.47	1.83	18151.15	1.09	1690.42	1.54	13.63	1.06	2138.45	1.43	1.36
TILE_16	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1634.20	1.60	18110.90	1.09	1326.03	1.21	15.92	1.24	2306.20	1.55	1.32
p1	1715.00	1.68	18123.12	1.09	1570.50	1.43	15.89	1.24	2300.72	1.54	1.38
p2	1789.60	1.76	17679.50	1.06	1735.28	1.58	16.11	1.26	2305.30	1.54	1.42
p0_score:	24.07										
p1_score:	24.35										
p2_score:	24.43										
Unreviewed_VMmark_Score:	24.35										

Configuration

Server and Network	
Server Manufacturer and Model	Lenovo R525 G2
Processor Vendor and Model	Quad-core Intel Xeon X5570
Processor Speed (GHz)	2.93GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 4 Cores per Socket (8 Cores Total) / 2 Threads per Core(16 Threads Total with Intel Hyper- Threading Capability)
Primary Cache	32KB(I)+32KB(D) on chip per core
Secondary Cache	256KB per core
Other Cache	8MB L3
BIOS Version	S5500.86B.01.00.0037 (build date: 05/05/2009)
Memory Size (in GB, Number of DIMMs)	96GB (12x8GB)
Memory Type and Speed	1066MHz Registered ECC DDR3
Disk Subsystem Type	SAS HDD for operating System, FC SAN for VMs
Number of Disk Controllers	1
Disk Controller Vendors and Models	LSI1078
Number of Host Bus Adapters	1 (dual-port)

Host Bus Adapter Vendors and Models	QLogic QLE2462 fibre channel HBA
Number of Network Controllers	3
Network Controller Vendors and Models	1 x Intel 82575EB Gigabit Ethernet Connection (dual-port) 2 x Intel 82571EB Gigabit Ethernet Controller (dual-port)
Network Switch Vendors and Models	Cisco Linksys SR2024
Network Speed	Gigabit Ethernet
Other Hardware	None.
Other Software	None.
Hardware Availability Date (MM-DD-YYYY)	05/31/2009
Software Availability Date (MM-DD-YYYY)	05/21/2009

Virtualization Software

Vendor, Product, Version, and Build	VMware ESX 4.0(build 164009)
Virtualization Type	Hardware Virtualization
Supplemental Software	None
Virtualization Software Availability Date (MM-DD-YYYY)	05/21/2009

Storage

Array Vendors, Models, and Firmware Versions	EMC CX3-40f, version 03.24.040.5.011
Fibre Channel Switch Vendors and Models	None
Disk Space Used	1122GB for VMs
Array Cache Size	4GB
Total Number of Physical Disks Used	55
Total Number of Enclosures/Pods/Shelves Used	4
Total Number of Physical Disks per Enclosures/Pods/Shelves Used	#1: 10 #2: 15 #3: 15 #4: 15
Total Number of Storage Groups Used	1
Number LUNs Used	17
LUN Size and Number of Disks Per LUN	100GB per LUN 10 disks for LUN#0, LUN#7 and LUN#14, 15 disks for other LUNs

RAID Type	RAID0
Number of Members per RAID Set	Set#1: 10 Set#2: 15 Set#3: 15 Set#4: 15
Disk Vendors, Models, and Speeds	Hitachi 146GB 15K RPM, FC HDD
Clients	
Number of Clients	17
System Model(s)	EDATA ISP 1340
Processor Vendor(s) and Model(s)	Intel Xeon
Processor Speed(s) (GHz)	3.0
Total Sockets/Total Cores/Total Threads	2 Sockets / 4 Cores / 4 Threads
Memory per Client	2GB
Network Controller Vendors and Models	Intel PRO/1000 EB Network Connection
Operating System, Version, and Service Pack	Microsoft Windows Server 2003 Enterprise Edition, Service Pack 2
Other Hardware	None.
Other Software	None.

Notes for Workload

Server and Network Notes

- 1 Server:
 - ┆ Processor Speed: Intel Turbo Boost Technology up to 3.33GHz
- 1 Storage settings:
 - ┆ Storage Processor cache High/Low watermark: 40/20 (default 80/60)
 - ┆ Path policy of each LUN storage set to “fixed” (default “most recently used”)
 - ┆ each LUN contains all VMs of one tile
- 1 Network settings:
 - ┆ vSwitch0 bound to vmnic0 – Service Console, 13 Database VMs (tile#0 – tile#9, tile#14 – tile#16)
 - ┆ vSwitch1 bound to vmnic1 – 5 Java VMs, 5 Standby VMs and 5 Web VMs (tile#0 – tile#3 and tile#14)

- ┆ vSwitch2 bound to vmnic2 – 17 Mail VMs, 4 Database VMs (tile#10 – tile#13), 2 Java VMs, 2 Standby VMs and 2 Web VMs (tile#15 and tile#16)
- ┆ vSwitch3 bound to vmnic3 – 17 File VMs
- ┆ vSwitch4 bound to vmnic4 – 5 Java VMs, 5 Standby VMs and 5 Web VMs (tile#4 – tile#8)
- ┆ vSwitch5 bound to vmnic5 – 5 Java VMs, 5 Standby VMs and 5 Web VMs (tile#9 – tile#13)

Virtualization Software Notes

- 1 Ethernet Adapter Type set to Enhanced vmxnet for all VMs
- 1 Disable ESX logging for all VMs
- 1 IDE and floppy devices removed (default enabled)
- 1 Firewall was disabled

Operating System Notes

None

Software Notes

None

Client Notes

None

Other Notes

None

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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