

VMware® VMmark™ V1.1.1 Results

Vendor and Hardware Platform: Dell PowerEdge R810
Virtualization Platform: VMware ESX version 4.0 Update 2 Build 258828

VMmark V1.1.1 Score =
59.21 @ 41 Tiles

Tested By: Dell Inc.

Test Date: 07-26-2010

Performance Section
[Performance](#)

Configuration Section
[Configuration](#)

Notes Section
[Notes for Workload](#)

Performance

	webserver		javaserver		mailserver		fileserver		database		
TILE_0	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1880.58	1.85	17656.17	1.06	1666.05	1.52	17.47	1.36	2199.82	1.47	1.43
p1	1927.17	1.89	18087.40	1.09	1661.08	1.51	17.35	1.35	2197.22	1.47	1.44
p2	1932.22	1.90	18087.30	1.09	1641.60	1.50	17.20	1.34	2186.40	1.47	1.43
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1950.38	1.91	18101.97	1.09	1709.30	1.56	18.15	1.41	2235.25	1.50	1.47
p1	1905.65	1.87	18085.88	1.09	1686.83	1.54	17.51	1.36	2227.50	1.49	1.45
p2	1885.03	1.85	17636.70	1.06	1569.62	1.43	17.38	1.35	2220.05	1.49	1.41
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1929.12	1.89	18145.28	1.09	1574.92	1.44	18.00	1.40	2271.82	1.52	1.45
p1	1900.22	1.86	17685.83	1.06	1620.65	1.48	17.65	1.38	2269.68	1.52	1.44
p2	1880.05	1.85	18145.75	1.09	1641.10	1.50	17.35	1.35	2252.20	1.51	1.44
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1632.67	1.60	18124.53	1.09	1600.78	1.46	18.66	1.45	2252.18	1.51	1.41
p1	1570.17	1.54	18123.80	1.09	1710.42	1.56	18.25	1.42	2244.55	1.50	1.41
p2	1553.80	1.52	17671.03	1.06	1675.85	1.53	17.94	1.40	2225.47	1.49	1.39
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1918.75	1.88	18124.62	1.09	1663.45	1.52	17.81	1.39	2216.38	1.49	1.45
p1	1906.05	1.87	17668.85	1.06	1687.75	1.54	17.67	1.38	2211.00	1.48	1.44
p2	1900.15	1.86	18123.62	1.09	1597.65	1.46	17.39	1.36	2207.00	1.48	1.43
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1893.10	1.86	18085.25	1.09	1592.40	1.45	18.73	1.46	2248.00	1.51	1.45
p1	1950.53	1.91	18106.20	1.09	1705.88	1.56	18.11	1.41	2242.12	1.50	1.47
p2	1954.17	1.92	18100.85	1.09	1643.10	1.50	17.88	1.39	2225.78	1.49	1.45

TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1788.45	1.76	18076.55	1.09	1570.60	1.43	18.58	1.45	2253.62	1.51	1.43
p1	1924.47	1.89	18119.10	1.09	1624.95	1.48	18.70	1.46	2255.20	1.51	1.46
p2	1940.62	1.90	17645.67	1.06	1600.88	1.46	18.62	1.45	2246.82	1.51	1.45
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1925.08	1.89	18100.05	1.09	1541.08	1.41	17.57	1.37	2238.30	1.50	1.43
p1	1920.92	1.89	18114.08	1.09	1673.25	1.53	17.63	1.37	2229.72	1.49	1.45
p2	1903.20	1.87	17642.10	1.06	1716.88	1.57	17.50	1.36	2224.10	1.49	1.45
TILE_8	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1970.10	1.93	18085.62	1.09	1636.78	1.49	18.72	1.46	2227.57	1.49	1.47
p1	1953.50	1.92	18132.03	1.09	1679.30	1.53	18.79	1.46	2222.70	1.49	1.48
p2	1715.90	1.68	18141.95	1.09	1735.97	1.58	18.88	1.47	2209.82	1.48	1.45
TILE_9	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1988.30	1.95	18115.38	1.09	1603.00	1.46	17.87	1.39	2278.72	1.53	1.46
p1	1966.80	1.93	18092.42	1.09	1672.00	1.52	17.64	1.38	2274.80	1.52	1.46
p2	1959.05	1.92	17611.90	1.06	1600.53	1.46	17.47	1.36	2262.62	1.52	1.44
TILE_10	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1922.25	1.89	18090.72	1.09	1586.47	1.45	17.79	1.39	2226.00	1.49	1.44
p1	1922.22	1.89	18100.22	1.09	1707.83	1.56	17.54	1.37	2223.95	1.49	1.45
p2	1906.95	1.87	18074.62	1.09	1507.60	1.37	17.37	1.35	2208.65	1.48	1.41
TILE_11	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1847.00	1.81	18112.45	1.09	1545.83	1.41	18.83	1.47	2223.70	1.49	1.44
p1	1937.00	1.90	18151.03	1.09	1666.22	1.52	18.22	1.42	2211.65	1.48	1.46
p2	1959.75	1.92	17694.45	1.07	1650.38	1.50	17.90	1.40	2200.47	1.47	1.45
TILE_12	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1978.15	1.94	18126.85	1.09	1642.62	1.50	18.25	1.42	2134.93	1.43	1.45
p1	1922.38	1.89	18104.62	1.09	1698.00	1.55	17.55	1.37	2142.12	1.44	1.44
p2	1908.92	1.87	17671.60	1.06	1698.50	1.55	17.38	1.35	2140.18	1.43	1.43
TILE_13	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1846.60	1.81	18127.15	1.09	1550.38	1.41	18.67	1.46	2223.62	1.49	1.43
p1	1921.40	1.89	18112.92	1.09	1699.15	1.55	18.22	1.42	2223.88	1.49	1.46
p2	1959.72	1.92	17656.78	1.06	1721.60	1.57	18.03	1.41	2205.43	1.48	1.46
TILE_14	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1980.45	1.94	18130.40	1.09	1464.40	1.34	18.60	1.45	2227.53	1.49	1.44
p1	1937.95	1.90	18080.33	1.09	1689.88	1.54	18.64	1.45	2223.90	1.49	1.47
p2	1922.92	1.89	18090.33	1.09	1768.28	1.61	18.73	1.46	2216.45	1.49	1.48

TILE_15	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1944.25	1.91	18066.22	1.09	1568.45	1.43	18.31	1.43	2220.53	1.49	1.45
p1	1933.83	1.90	18093.97	1.09	1652.62	1.51	17.63	1.37	2208.97	1.48	1.45
p2	1928.83	1.89	18069.55	1.09	1601.25	1.46	17.22	1.34	2200.93	1.47	1.43
TILE_16	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1987.78	1.95	18089.10	1.09	1500.03	1.37	18.68	1.46	2225.75	1.49	1.45
p1	1978.72	1.94	18104.80	1.09	1622.65	1.48	18.73	1.46	2222.75	1.49	1.47
p2	1975.90	1.94	18103.03	1.09	1692.80	1.54	18.78	1.46	2216.20	1.49	1.48
TILE_17	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1944.28	1.91	18120.12	1.09	1560.17	1.42	18.64	1.45	2241.62	1.50	1.45
p1	1931.85	1.90	18100.35	1.09	1638.65	1.49	18.70	1.46	2239.28	1.50	1.46
p2	1927.97	1.89	17666.75	1.06	1722.95	1.57	18.73	1.46	2223.05	1.49	1.47
TILE_18	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1941.65	1.91	18107.65	1.09	1581.97	1.44	18.51	1.44	2244.60	1.50	1.45
p1	1921.30	1.89	18113.33	1.09	1696.47	1.55	18.51	1.44	2237.28	1.50	1.47
p2	1923.62	1.89	18114.38	1.09	1650.78	1.51	18.65	1.45	2216.07	1.48	1.46
TILE_19	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1977.38	1.94	18107.03	1.09	1523.78	1.39	18.66	1.45	2223.60	1.49	1.45
p1	1979.28	1.94	18126.45	1.09	1672.78	1.53	18.18	1.42	2209.95	1.48	1.47
p2	1973.28	1.94	17657.30	1.06	1667.75	1.52	17.95	1.40	2195.10	1.47	1.45
TILE_20	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2012.15	1.97	18124.17	1.09	1528.60	1.39	17.77	1.38	2228.78	1.49	1.44
p1	1924.85	1.89	18118.88	1.09	1549.47	1.41	17.49	1.36	2221.28	1.49	1.43
p2	1992.92	1.96	17646.55	1.06	1585.33	1.45	17.24	1.34	2215.20	1.48	1.43
TILE_21	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1942.20	1.91	18089.12	1.09	1372.75	1.25	18.19	1.42	2247.05	1.51	1.41
p1	1926.95	1.89	18080.45	1.09	1634.15	1.49	17.70	1.38	2242.80	1.50	1.45
p2	1922.47	1.89	18098.35	1.09	1697.83	1.55	17.19	1.34	2233.35	1.50	1.45
TILE_22	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2000.90	1.96	18084.72	1.09	1408.67	1.28	18.29	1.43	2246.20	1.51	1.43
p1	1935.88	1.90	18081.88	1.09	1662.70	1.52	17.52	1.37	2239.40	1.50	1.45
p2	2011.28	1.97	18110.65	1.09	1502.08	1.37	17.36	1.35	2233.18	1.50	1.43
TILE_23	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1861.00	1.83	18117.55	1.09	1521.75	1.39	18.69	1.46	2230.15	1.49	1.43
p1	1753.75	1.72	18108.33	1.09	1650.72	1.51	18.63	1.45	2223.35	1.49	1.44
p2	1698.75	1.67	18085.78	1.09	1721.40	1.57	18.43	1.44	2214.25	1.48	1.43

TILE_24	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1938.42	1.90	18102.03	1.09	1312.25	1.20	18.57	1.45	2246.72	1.51	1.40
p1	1929.35	1.89	18114.20	1.09	1668.33	1.52	18.58	1.45	2240.88	1.50	1.47
p2	1925.72	1.89	18101.17	1.09	1730.03	1.58	18.65	1.45	2228.88	1.49	1.48
TILE_25	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2016.75	1.98	18147.58	1.09	1489.25	1.36	18.27	1.42	2249.78	1.51	1.45
p1	2009.58	1.97	18143.65	1.09	1579.62	1.44	17.55	1.37	2246.30	1.51	1.45
p2	2014.72	1.98	17678.70	1.06	1670.00	1.52	16.97	1.32	2234.12	1.50	1.45
TILE_26	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2001.95	1.96	18074.97	1.09	1402.50	1.28	18.53	1.44	2260.75	1.51	1.43
p1	1902.25	1.87	18089.72	1.09	1578.50	1.44	18.05	1.41	2251.53	1.51	1.44
p2	2003.33	1.97	18112.47	1.09	1699.42	1.55	17.85	1.39	2242.70	1.50	1.47
TILE_27	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1856.58	1.82	18102.78	1.09	1380.75	1.26	18.38	1.43	2135.25	1.43	1.39
p1	1816.92	1.78	18101.25	1.09	1610.60	1.47	18.61	1.45	2116.75	1.42	1.42
p2	1856.40	1.82	18089.97	1.09	1577.90	1.44	18.56	1.45	2093.40	1.40	1.42
TILE_28	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1985.10	1.95	18074.65	1.09	1348.67	1.23	17.84	1.39	2238.47	1.50	1.40
p1	1932.92	1.90	18100.85	1.09	1578.38	1.44	17.53	1.37	2237.15	1.50	1.44
p2	1917.60	1.88	18114.58	1.09	1651.33	1.51	17.52	1.37	2230.25	1.49	1.45
TILE_29	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1945.70	1.91	18086.00	1.09	1351.78	1.23	18.86	1.47	2259.32	1.51	1.42
p1	1904.58	1.87	18093.78	1.09	1597.05	1.46	18.19	1.42	2251.20	1.51	1.45
p2	1891.33	1.86	18086.12	1.09	1507.80	1.37	18.14	1.41	2233.15	1.50	1.43
TILE_30	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1932.40	1.90	18125.12	1.09	1318.62	1.20	18.24	1.42	2275.55	1.52	1.40
p1	1913.47	1.88	18135.05	1.09	1602.88	1.46	17.75	1.38	2266.80	1.52	1.44
p2	1908.97	1.87	18126.28	1.09	1724.33	1.57	17.55	1.37	2258.43	1.51	1.46
TILE_31	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1985.83	1.95	18102.05	1.09	1378.05	1.26	18.40	1.43	2258.35	1.51	1.42
p1	1921.97	1.89	18081.95	1.09	1641.10	1.50	18.22	1.42	2240.50	1.50	1.46
p2	1997.85	1.96	18082.88	1.09	1782.40	1.63	18.02	1.40	2233.47	1.50	1.49
TILE_32	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1928.92	1.89	18108.10	1.09	1326.95	1.21	18.62	1.45	2234.45	1.50	1.40
p1	1910.08	1.87	18134.60	1.09	1494.67	1.36	18.18	1.42	2225.60	1.49	1.43
p2	1967.78	1.93	18103.38	1.09	1658.30	1.51	17.93	1.40	2208.40	1.48	1.46

Configuration

Server and Network	
Server Manufacturer and Model	Dell PowerEdge R810
Processor Vendor and Model	Intel Xeon L7555
Processor Speed (GHz)	1.86 GHz
Total Sockets/Total Cores/Total Threads	4 Sockets / 32 Cores / 64 Threads
Primary Cache	32 KB I + 32 KB D on chip per core
Secondary Cache	256 KB I+D on chip per core
Other Cache	24 MB I+D on chip per chip L3
BIOS Version	1.0.3
Memory Size (in GB, Number of DIMMs)	256GB, 32x8GB
Memory Type and Speed	Quad rank 1066MHz Registered DDR3
Disk Subsystem Type	SAS DAS
Number of Disk Controllers	3
Disk Controller Vendors and Models	1x Dell PERC H700 integrated 2x Dell PERC H800 Adapter
Number of Host Bus Adapters	0
Host Bus Adapter Vendors and Models	N/A
Number of Network Controllers	6
Network Controller Vendors and Models	2x Dual-port Broadcom BCM5709C (onboard) 2x Single-port Intel 82598EB 10GbE SR
Network Switch Vendors and Models	2x Dell PowerConnect 6248
Network Speed	10Gbps for all Webserver VMs, 1Gbps for all remaining VMs and clients
Other Hardware	None
Other Software	None
Hardware Availability Date (MM-DD-YYYY)	07-07-2010
Software Availability Date (MM-DD-YYYY)	07-07-2010
Virtualization Software	
Vendor, Product, Version, and Build	VMware ESX 4.0 Update 2 Build 258828
Virtualization Type	Hardware
Supplemental Software	None
Virtualization Software Availability Date	06-10-2010

(MM-DD-YYYY)

Storage

Array Vendors, Models, and Firmware Versions	3x Dell PowerVault MD1220 version A.00
Fibre Channel Switch Vendors and Models	None
Disk Space Used	2542GB
Array Cache Size	N/A
Total Number of Physical Disks Used	59
Total Number of Enclosures/Pods/Shelves Used	3
Total Number of Physical Disks per Enclosures/Pods/Shelves Used	2(17x 146GB SSDs), 1(24x 146GB SAS 15k disks)
Total Number of Storage Groups Used	N/A
Number LUNs Used	39
LUN Size and Number of Disks Per LUN	34 LUNs at 138GB (MailServer + FileServer) each on 1x146GB SSD 4 LUNs at 816.5GB (Misc) over 6x146GB 15k disks 1 LUN at 66.5GB (boot) over 1 local 73GB 15k disk
RAID Type	RAID0
Number of Members per RAID Set	34 RAID sets each over 1x 146GB SSD 4 RAID sets over 6x146GB 15k disks 1 RAID set over 1x 73GB 15k disk
Disk Vendors, Models, and Speeds	Pliant LB 150S, Hitachi GST HUC151414CSS600

Clients

Number of Clients	41
System Model(s)	PowerEdge 1750: Clients 0-3,37 PowerEdge 1850: Clients 4,10-25,27 PowerEdge 1950: Clients 5-9,26,28-36,38-40
Processor Vendor(s) and Model(s)	Intel Xeon, P4, E5205
Processor Speed(s) (GHz)	3.06GHz: Clients 0,1 3.20GHz: Clients 2,3,37 2.80GHz: Clients 4 1.86GHz: Clients 5-9,26,28-36,38-40 3.40GHz: Client10 3.60GHz: Clients 11-25, 27
Total Sockets/Total Cores/Total Threads	2 Sockets / 1 Core per Socket / 4 Threads: Clients 0-4, 10-25, 27, 37 2 Sockets / 4 Cores per Socket / 4 Threads: Clients 5-9, 26, 28-36, 38-40

Memory per Client	2GB: Clients 0-4, 11-25, 37 4GB: Clients 5-10,26,28-36,38-40 8GB: Client 27
Network Controller Vendors and Models	Broadcom NetXtreme 5704 Gigabit Ethernet (PE1750) Intel PRO/1000 MT Network Controller (PE1850) Broadcom 5708 Gigabit Network Controller (PE1950)
Operating System, Version, and Service Pack	Windows Server 2003 Enterprise Edition SP2
Other Hardware	None
Other Software	None

Notes for Workload

Server and Network Notes

- Server BIOS settings:
 - Turbo Boost Technology: Enabled (Intel Turbo Boost up to 2.53GHz, default enabled)
 - Virtualization Technology=Enabled (default Disabled)
 - Embedded SATA=Off (default On)
 - Internal USB port=Off (default On)
 - User Accessible USB ports=Only back ports on (default All ports on)
 - Power Management: Maximum Performance (default Active Power Controller)

- PERC BIOS settings:
 - SSD virtual disks set to Write-Through, No Read Ahead (default Write-Back, Adaptive Read Ahead)
 - SAS virtual disks set to Write-Back, Read Ahead (default Write-Back/Adaptive Read Ahead)

- Network Settings:
 - Broadcom NICs (vmnic0,1,2,3) bound to vSwitch0,1,2,3 respectively
 - Intel 10GbE NICs (vmnic12,13) bound to vSwitch4,5 respectively
 - Service Console, Standby and FileServer VMs (except FileServer8) attached to vSwitch0
 - FileServer8 and MailServer VMs attached to vSwitch1
 - JavaServer VMs attached to vSwitch2
 - Database VMs attached to vSwitch3
 - WebServer 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40 VMs attached to vSwitch 4
 - WebServer 1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39 VMs attached to vSwitch 5
 - vSwitch0,1,2,3 configured with 128 ports (default 56)

- Storage Configuration:
 - 17 LUNs of 138GB were created (One LUN per hard drive) for FileServer VMs
 - LUN1 for FileServer 0,17,34
 - LUN2 for FileServer 1,18,35
 - LUN3 for FileServer 2,19,36
 - LUN4 for FileServer 3,20,37
 - LUN5 for FileServer 4,21,38
 - LUN6 for FileServer 5,22,39
 - LUN7 for FileServer 6,23,40
 - LUN8 for FileServer 7,24

LUN9 for FileServer 8,25
LUN10 for FileServer 9,26
LUN11 for FileServer 10,27
LUN12 for FileServer 11,28
LUN13 for FileServer 12,29
LUN14 for FileServer 13,30
LUN15 for FileServer 14,31
LUN16 for FileServer 15,32
LUN17 for FileServer 16,33
17 LUNs of 138GB were created (One LUN per hard drive) for MailServer VMs
LUN1 for MailServer 0,17,34
LUN2 for MailServer 1,18,35
LUN3 for MailServer 2,19,36
LUN4 for MailServer 3,20,37
LUN5 for MailServer 4,21,38
LUN6 for MailServer 5,22,39
LUN7 for MailServer 6,23,40
LUN8 for MailServer 7,24
LUN9 for MailServer 8,25
LUN10 for MailServer 9,26
LUN11 for MailServer 10,27
LUN12 for MailServer 11,28
LUN13 for MailServer 12,29
LUN14 for MailServer 13,30
LUN15 for MailServer 14,31
LUN16 for MailServer 15,32
LUN17 for MailServer 16,33
4 LUNs of 817GB were created across 6 SSD for Standby, Database, WebServer and JavaServer VMs
LUN0 for Tiles 0,4,8,12,16,20,24,28,32,36,40
LUN1 for Tiles 1,5,9,13,17,21,25,29,33,37
LUN2 for Tiles 2,6,10,14,18,22,26,30,34,38
LUN3 for Tiles 3,7,11,15,19,23,27,31,35,39

Virtualization Software Notes

- Hardware support for both CPU and MMU virtualization enabled on all VMs (default automatic)
- All VM's hardware upgraded to version 7
- Ethernet adapter type upgraded to VMXNET3 for all VM's
- Logging was disabled for all VMs
- IDE and Floppy devices were removed on all VMs(default enabled)
- iptables and firewall services were disabled at boot
- CPU.HaltingIdleMsecPenalty = "0" (default 100)
- CPU.Quantum=75 (default 50)
- Disk.SchedNumReqOutstanding set to 128 (default 32)
- IRQ.RoutingPolicy=0 (default 2)
- Mem.BalancePeriod = "0" (default 15)
- Mem.SamplePeriod = "0" (default 60)
- Mem.ShareScanGHz = "0" (default 4)
- Net.MaxNetifRxQueueLen=300 (default 100)
- Net.MaxNetifTxQueueLen=1000 (default 500)

- Net.MaxPortRxQueueLen = "256" (default 80)
- Net.TcpipHeapMax="120" (default 64)
- Net.vmxnetThroughputWeight="255" (default 0)
- Net.EtherswitchHashSize = "4" (default 1)
- Numa.PageMigEnable = "0" (default 1)
- JavaServer VMs use jrockit-R27.5.0-jdk1.5.0_15
- All mailserv data partitions have been expanded

Operating System Notes

- Microsoft Windows Server 2003 virtual machines were updated to Service Pack 2, and KB951072-v2 was applied
- SUSE Linux Enterprise Server 10 virtual machines were updated to Service Pack 2

Software Notes

- None

Client Notes

- KB951072-v2 was applied to all clients and overwrites KB933360

Other Notes

- VMmark Config
 - TILEDELAY=120 (Default="600")
 - MailServer/DELAYTIME="0" (Default="5")
 - JavaServer/DELAYTIME="25" (Default="540")
 - Standby/DELAYTIME="35" (Default="170")
 - WebServer/DELAYTIME="50" (Default="180")
 - Database/DELAYTIME="75" (Default="360")
 - FileServer/DELAYTIME="100" (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.

For information about VMmark and the rules regarding its usage visit www.vmware.com/products/vmmark.

VMware and VMmark are trademarks or registered trademarks of VMware, Inc. VMware® VMmark™ is a product of [VMware, Inc.](http://www.vmware.com). VMmark utilizes SPECjbb®2005 and SPECweb®2005, which are available from the [Standard Performance Evaluation Corporation \(SPEC®\)](http://www.spec.org).