

VMware® VMmark™ V1.1 Results

Vendor and Hardware Platform: HP ProLiant DL785 G5
Virtualization Platform: VMware ESX Server 3.5 Update 3 (build 121023)

VMmark V1.1 Score =
27.71 @ 19 Tiles

Tested By: Hewlett-Packard

Test Date: December-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	1749.72	1.72	18084.25	1.09	1835.05	1.67	17.95	1.40	2299.28	1.54	1.46
p1	1691.75	1.66	18080.62	1.09	1779.30	1.62	17.68	1.38	2309.65	1.55	1.44
p2	1647.78	1.62	18099.08	1.09	1855.58	1.69	17.59	1.37	2303.88	1.54	1.45
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1963.03	1.93	18044.90	1.09	1823.17	1.66	16.04	1.25	2340.35	1.57	1.47
p1	1963.70	1.93	18058.12	1.09	1882.40	1.72	15.68	1.22	2343.85	1.57	1.47
p2	1951.97	1.92	18060.45	1.09	1895.78	1.73	15.12	1.18	2342.05	1.57	1.46
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1995.38	1.96	18058.47	1.09	1856.83	1.69	18.30	1.43	2286.62	1.53	1.51
p1	2001.95	1.96	18087.15	1.09	1927.53	1.76	18.05	1.41	2298.10	1.54	1.52
p2	1996.53	1.96	18098.90	1.09	1817.92	1.66	17.80	1.39	2287.25	1.53	1.50
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1994.08	1.96	18092.58	1.09	1816.38	1.66	17.45	1.36	2260.35	1.51	1.49
p1	2002.75	1.97	18094.40	1.09	1790.20	1.63	16.83	1.31	2260.90	1.51	1.47
p2	1996.33	1.96	18095.47	1.09	1784.83	1.63	16.18	1.26	2264.40	1.52	1.46
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1777.60	1.74	17986.38	1.08	1733.95	1.58	17.33	1.35	2352.82	1.58	1.45
p1	1765.12	1.73	17555.53	1.06	1775.42	1.62	17.05	1.33	2364.55	1.58	1.44
p2	1748.05	1.72	17968.15	1.08	1641.92	1.50	16.71	1.30	2357.32	1.58	1.42
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	2006.75	1.97	18051.05	1.09	1684.35	1.54	18.48	1.44	2235.12	1.50	1.48
p1	1998.22	1.96	18055.83	1.09	1685.12	1.54	18.00	1.40	2254.62	1.51	1.47
p2	1978.03	1.94	18067.15	1.09	1576.12	1.44	17.93	1.40	2255.12	1.51	1.45
TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1883.83	1.85	18085.50	1.09	1681.75	1.53	17.42	1.36	2339.93	1.57	1.46
p1	1883.67	1.85	18110.53	1.09	1783.65	1.63	17.00	1.32	2346.30	1.57	1.47
p2	1873.05	1.84	18130.28	1.09	1767.78	1.61	16.59	1.29	2345.35	1.57	1.46
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1763.30	1.73	18048.03	1.09	1653.08	1.51	18.78	1.46	2275.35	1.52	1.45
p1	1702.72	1.67	17612.50	1.06	1814.88	1.65	18.69	1.46	2284.68	1.53	1.46
p2	1649.40	1.62	18039.88	1.09	1798.15	1.64	18.54	1.45	2276.03	1.53	1.45
TILE_8	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM

Unreviewed_VMmark_Score:

27.71

Configuration

Server and Network

Server Manufacturer and Model	HP ProLiant DL785 G5
Processor Vendor and Model	Quad-Core AMD Opteron™ 8384
Processor Speed (GHz)	2.7 GHz
Number of Sockets/Cores per Socket	8 Sockets / 4 Cores per Socket (32 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	6 MB I+D L3 on chip per chip
Memory	256 GB (32 x 8 GB) PC2-5300 667MHz Registered ECC DDR2 DIMM
Disk Subsystem Type	SAS (OS), FC SAN (VMs)
Number of Disk Controllers	N/A
Number of Host Bus Adapters	6
Host Bus Adapter Vendors and Models	6 x QLogic Corp QLA2432 Dual Port ; onboard Smart Array P400
Number of Network Controllers	3
Network Controller Vendors and Models	3 x HP NC364T PCI Express Quad Port Gigabit Server Adapter ; onboard 2 x NetXtremeII 5706 Gigabit Ethernet
Network Switch Vendors and Models	HP ProCurve 3500yl-48G-PWR Switch
Network Speed	Gigabit Ethernet TX
Other Hardware	None
Other Software	None
Hardware Availability Date	Nov-2008
Software Availability Date	Nov-2008

Virtualization Software

Vendor, Product, Version, and Build	VMware ESX 3.5 Update 3 (build 121023)
Virtualization Type	Hardware Virtualization
Supplemental Software	None
Virtualization Software Availability Date	Nov-2008

Storage

Array Vendor, Model, and Firmware Version	5 HP StorageWorks MSA2212fc with dual enhanced controller, Firmware Revision W420R35
Fibre Channel Switch Vendors and Models	None
Disk Space Used	1428GB
Array Cache Size	1024MB per controller
Number and Size of LUNs	19 LUNs, each 102GB 19 LUNs, each 33GB

RAID Type	RAID0 (all LUNs)
Number of Members per RAID Set	102GB LUNs: 6 members 33GB LUNs: 3 members
Disk Vendor, Model, and Speed	Seagate Cheetah 146GB 15K rpm

Clients

Number of Clients	19
System Model(s)	HP ProLiant DL360 G5
Processor Vendor(s) and Model(s)	Intel Xeon
Processor Speed(s) (GHz)	3.0 GHz
Number of Sockets/Cores per Socket	2 Sockets / 4 Cores per Socket (8 Cores Total)
Memory	4 GB
Network Controller Vendor and Model	HP NC373i Multifunction Gigabit Network Adapter
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 onboard controller contained 4 72GB/15K drives for OS.
- Server BIOS settings:
 - Ultra Low Power State: disabled (default enabled)
 - Power Regulator: Static High Performance (default Dynamic Power Savings Mode)
 - Hardware prefetch: disabled (default enabled)
- Qlogic HBA BIOS settings:
 - Fibre Channel tape support disabled (default enabled)
 - Data rate option set to 3 (default 2)
 - Execution Throttle set to 256 (default 16)
 - Operation Mode set to 5 (default 0)
 - Interrupt Delay Timer set to 10 (default 0)
- Storage Configuration:
 - Each tile (except for database VM) was stored on its own LUN
 - Each database VM was stored on its own LUN
- vSwitch Configuration:

- vSwitch0 attached to vmnic0 for the Service Console
- vSwitch9 attached to vmnic10 for all VMs (except for webserver VMs) of tiles 0,1,2,3
- vSwitch10 attached to vmnic11 for all VMs (except for webserver VMs) of tiles 4,5,6,7
- vSwitch11 attached to vmnic12 for all VMs (except for webserver VMs) of tiles 8,9,10,11
- vSwitch12 attached to vmnic13 for all VMs (except for webserver VMs) of tiles 12,13,14,15
- vSwitch1 attached to vmnic2 for all VMs (except for webserver VMs) of tiles 16,17,18
- vSwitch4 attached to vmnic5 for webserver VMs of tiles 0,1,2,3
- vSwitch5 attached to vmnic6 for webserver VMs of tiles 4,5,6,7
- vSwitch6 attached to vmnic7 for webserver VMs of tiles 8,9,10,11
- vSwitch7 attached to vmnic8 for webserver VMs of tiles 12,13,14,15
- vSwitch8 attached to vmnic9 for webserver VMs of tiles 16,17,18

Virtualization Software Notes

- Unloaded VMFS2 and Pegasus CIMOM server prior to run
- Disabled firewall and IPtables processes on the ESX host
- Disabled ESX logging on all VMs
- Used enhanced vmxnet for all VMs
- Enabled Virtualized MMU for all VMs
- Removed IDE and floppy devices from all VMs
- VMFS3.MaxHeapSizeMB = 64 (default 16)
- EtherswitchHashSize = 4 (default 1)
- Misc.RunningVCpuLimit = 192 (default 128)
- IRQ.RoutingPolicy = 0 (default 2)
- Disk.SchedNumReqOutstanding = 128 (default 32)
- COW.MaxHeapSizeMB = 64 (default 32)
- BufferCache.SoftMaxDirty = 85 (default 15)

Operating System Notes

- Microsoft Windows Server 2003 R2 Enterprise Edition Service Pack 2 on Windows-based VMs

Software Notes

Client Notes

- Microsoft Windows Server 2003 R2 Enterprise Edition Service Pack 2
- TCP TOE chimney was disabled (default enabled)

Other Notes

None

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