

VMware® VMmark™ V1.1 Results

Vendor and Hardware Platform: HP ProLiant BL680c G5
Virtualization Platform: VMware ESX 3.5 U3 build 123630

VMmark V1.1 Score =
18.64 @ 14 Tiles

Tested By: HP

Test Date: 2/2/2009

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Performance

	webservers		javaserver		mailserver		fileserver		database		
TILE_0	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1615.85	1.59	17776.15	1.07	1555.28	1.42	16.60	1.29	2151.45	1.44	1.35
p1	1590.08	1.56	17855.53	1.07	1532.97	1.40	16.22	1.26	2162.62	1.45	1.34
p2	1634.95	1.60	17868.67	1.08	1421.80	1.30	16.09	1.25	2172.03	1.46	1.32
TILE_1	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1705.85	1.67	17359.15	1.04	1737.17	1.58	16.45	1.28	2154.22	1.44	1.39
p1	1631.33	1.60	17862.90	1.08	1608.70	1.47	16.28	1.27	2170.20	1.45	1.36
p2	1614.58	1.58	17858.12	1.07	1506.42	1.37	16.12	1.26	2164.78	1.45	1.34
TILE_2	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1726.28	1.69	17426.85	1.05	1677.70	1.53	16.10	1.25	2108.88	1.41	1.37
p1	1645.55	1.61	17881.03	1.08	1658.45	1.51	16.32	1.27	2096.38	1.40	1.36
p2	1595.78	1.57	17877.20	1.08	1530.28	1.40	15.51	1.21	2109.93	1.41	1.32
TILE_3	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1589.95	1.56	17488.72	1.05	1598.08	1.46	16.88	1.32	2163.62	1.45	1.35
p1	1551.62	1.52	17920.72	1.08	1458.72	1.33	16.49	1.29	2167.18	1.45	1.32
p2	1524.33	1.50	17944.28	1.08	1653.55	1.51	16.55	1.29	2167.57	1.45	1.35
TILE_4	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1641.53	1.61	17443.25	1.05	1580.25	1.44	16.37	1.28	2049.80	1.37	1.34
p1	1537.62	1.51	17896.92	1.08	1533.08	1.40	15.61	1.22	2063.70	1.38	1.31
p2	1588.20	1.56	17863.20	1.08	1472.03	1.34	15.75	1.23	2068.18	1.39	1.31
TILE_5	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1680.72	1.65	17830.50	1.07	1590.10	1.45	16.68	1.30	2141.80	1.44	1.37
p1	1651.47	1.62	17867.30	1.08	1545.60	1.41	15.94	1.24	2143.18	1.44	1.34
p2	1647.58	1.62	17384.97	1.05	1528.95	1.39	15.92	1.24	2154.20	1.44	1.33
TILE_6	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1588.97	1.56	17851.53	1.07	1574.10	1.44	16.15	1.26	2077.60	1.39	1.33

p1	1564.85	1.54	17885.83	1.08	1678.28	1.53	16.76	1.31	2076.68	1.39	1.36
p2	1515.58	1.49	17405.12	1.05	1487.80	1.36	16.10	1.25	2079.47	1.39	1.30
TILE_7	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1593.45	1.56	17806.70	1.07	1613.08	1.47	16.55	1.29	2063.93	1.38	1.34
p1	1585.55	1.56	17404.08	1.05	1499.83	1.37	16.51	1.29	2089.93	1.40	1.32
p2	1609.97	1.58	17886.25	1.08	1521.38	1.39	16.48	1.28	2075.43	1.39	1.33
TILE_8	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1708.25	1.68	17870.40	1.08	1530.33	1.40	16.41	1.28	2052.30	1.38	1.35
p1	1678.95	1.65	17852.97	1.07	1499.42	1.37	16.30	1.27	2066.25	1.38	1.34
p2	1710.28	1.68	17441.17	1.05	1500.45	1.37	16.05	1.25	2061.35	1.38	1.33
TILE_9	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1699.58	1.67	17843.53	1.07	1553.55	1.42	15.47	1.21	2153.35	1.44	1.35
p1	1602.85	1.57	17810.90	1.07	1467.85	1.34	16.08	1.25	2162.22	1.45	1.33
p2	1562.88	1.53	17855.85	1.07	1567.72	1.43	15.67	1.22	2176.62	1.46	1.33
TILE_10	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1599.72	1.57	17847.50	1.07	1360.30	1.24	15.80	1.23	2169.80	1.45	1.30
p1	1536.90	1.51	17857.38	1.07	1444.00	1.32	16.24	1.27	2185.57	1.46	1.32
p2	1569.53	1.54	17830.62	1.07	1476.40	1.35	15.93	1.24	2198.05	1.47	1.32
TILE_11	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1604.60	1.57	17833.97	1.07	1318.60	1.20	16.25	1.27	2077.12	1.39	1.29
p1	1594.70	1.57	17875.62	1.08	1478.75	1.35	15.32	1.19	2077.80	1.39	1.30
p2	1584.47	1.56	17867.47	1.08	1424.15	1.30	15.92	1.24	2081.78	1.39	1.30
TILE_12	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1686.65	1.66	17827.80	1.07	1292.03	1.18	16.02	1.25	2110.53	1.41	1.30
p1	1585.83	1.56	17863.85	1.08	1503.62	1.37	16.10	1.25	2109.85	1.41	1.32
p2	1597.38	1.57	17876.03	1.08	1508.17	1.38	16.20	1.26	2120.72	1.42	1.33
TILE_13	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	GM
p0	1660.65	1.63	17811.17	1.07	1200.22	1.09	15.68	1.22	2093.53	1.40	1.27
p1	1611.00	1.58	17841.20	1.07	1503.25	1.37	15.84	1.23	2079.50	1.39	1.32
p2	1569.33	1.54	17864.55	1.08	1515.00	1.38	15.90	1.24	2065.20	1.38	1.31
p0_score:	18.70										
p1_score:	18.64										
p2_score:	18.55										
Unreviewed_VMmark_Score:	18.64										

Configuration

Server and Network

Server Manufacturer and Model	HP ProLiant BL680c G5
Processor Vendor and Model	Six-core Intel Xeon E7458
Processor Speed (GHz)	2.4GHz
Number of Sockets/Cores per Socket	4 Sockets / 6 Cores per Socket (24 Cores Total)
Primary Cache	32KB I + 32KB D on chip per core
Secondary Cache	9MB I+D on chip per core pair
Other Cache	16MB I+D L3 on chip
Memory	96GB (12x8GB) 667MHz ECC FB DDR2
Disk Subsystem Type	Direct attach SAS for operating system, FC SAN for VMs
Number of Disk Controllers	1
Number of Host Bus Adapters	1
Host Bus Adapter Vendors and Models	1 QLogic QMH2462 dual port fibre channel HBA
Number of Network Controllers	2
Network Controller Vendors and Models	2xBroadcom BCM5715S Quad-port Gigabit Ethernet (4 ports used), 1xHP NC326i Integrated Dual-port Gigabit (1 port used), 1xBroadcom NetExtreme II BCM5708 Dual-port Gigabit (2 ports used)
Network Switch Vendors and Models	HP ProCurve 3400
Network Speed	1Gb/s
Other Hardware	None.
Other Software	None.
Hardware Availability Date	3/30/2009
Software Availability Date	11/2008

Virtualization Software

Vendor, Product, Version, and Build	VMware ESX 3.5 U3 build 123630
Virtualization Type	Hardware
Supplemental Software	None.
Virtualization Software Availability Date	11/2008

Storage

Array Vendor, Model, and Firmware Version	HP StorageWorks MSA 2000, firmware version J200P16
Fibre Channel Switch Vendors and Models	HP StorageWorks SAN Switch 4/32
Disk Space Used	1268.33GB for VM's
Array Cache Size	1GB
Number and Size of LUNs	9 LUNs, 1.6TB per LUN
RAID Type	RAID 0

Number of Members per RAID Set	12 drives per RAID set
Disk Vendor, Model, and Speed	HP 146GB 15K RPM SAS drive
Clients	
Number of Clients	14
System Model(s)	HP ProLiant DL360G5
Processor Vendor(s) and Model(s)	Intel Xeon
Processor Speed(s) (GHz)	2.83GHz
Number of Sockets/Cores per Socket	1 Sockets / 4 Cores per Socket (4 Cores Total)
Memory	2GB
Network Controller Vendor and Model	HP NC373i Gigabit adapter
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

- Server BIOS settings:
 - Power Regulator: Static High Performance (default Dynamic Power Savings Mode)
 - HW Prefetcher: disabled (default enabled)
 - Adjacent Sector Prefetch: disabled (default enabled)
 - No-Execute Memory Protection: disabled (default enabled)
 - Intel Virtualization Technology: enabled (default disabled)

- QLogic HBA BIOS settings:
 - Fibre Channel tape support disabled (default enabled)
 - Data rate option set to 3 (default 2)
 - Execution Throttle set to 64 (default 16)

- vSwitch Configuration:
 - vSwitch0 for the Service Console configured on vmnic0
 - vSwitch1 for all VMs except for Webserver configured with 120 ports (default 56) on vmnic1 & vmnic20
 - vSwitch2 for all Webserver VMs configured on vmnic2, vmnic21, vmnic22 & vmnic23

- Storage Configuration:
 - storage0 configured to store even-numbered database VMs
 - storage1 configured to store odd-numbered database VMs
 - storage2 configured to store all VMs other than database for tiles 0 & 1
 - storage3 configured to store all VMs other than database for tiles 2 & 3

- storage4 configured to store all VMs other than database for tiles 4 & 5
- storage5 configured to store all VMs other than database for tiles 6 & 7
- storage6 configured to store all VMs other than database for tiles 8 & 9
- storage7 configured to store all VMs other than database for tiles 10 & 11
- storage8 configured to store all VMs other than database for tiles 12 & 13

Virtualization Software Notes

- pegasus CIMOM server was unloaded prior to run
- firewall/iptables disabled for the COS
- virtualized MMU was enabled for all VMs (default Automatic)
- ethernet adapter type set to Enhanced vmxnet for all VMs
- logging was disabled for all VMs
- syncTime set to TRUE for all VMs except Mailserver11
- IDE & floppy devices were removed on all VMs except for Mailserver & Fileserver VMs (default enabled)
- sched.cpu.max set to 39548 on Mailserver6 (default unlimited)
- ql2xmaxqdepth=64
- Misc.RunningVCpuLimit set to 192 (default 128)
- BufferCache.SoftMaxDirty=85 (default 15)
- Disk.SchedNumOutstanding=128 (default 32)
- IRQ.RoutingPolicy = 0 (default 2)
- vmfs3.MaxHeapSize=64 (default 16)
- Vmkernel.Boot.cpuCellSize set to 6 (default 0)

Operating System Notes

- Microsoft Windows Server 2003 virtual machines were updated to Service Pack 2
- Microsoft Windows Server 2003 virtual machines were updated with KB933360
- Fileserver and Webserver VMs were updated to SLES 10 SP2

Software Notes

None.

Client Notes

- Microsoft Windows Server 2003 client machines were updated to Service Pack 2
- Microsoft Windows Server 2003 client machines were updated with KB933360
- TCP TOE chimney was disabled on all clients (default enabled)

Other Notes

None.

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