

VMware® VMmark™ V2.0 Results

Vendor and Hardware Platform: Cisco UCS B200 M2
Virtualization Platform: VMware ESX 4.1.0 Build 260247

VMmark V2.0 Score =
6.51 @ 6 Tiles

Tested By: Cisco Systems

Test Date: 12-22-2010

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Performance

	mailserver			olio			dvdstoreA			dvdstoreB			dvdstoreC			
TILE_0	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.70	0.98	79.22	4688.93	1.01	155.37	3213.62	1.46	103.49	2407.40	1.59	109.07	1809.00	1.71	114.92	1.31
p1	328.65	1.00	74.00	4678.68	1.01	168.15	3258.25	1.48	101.12	2421.25	1.59	107.94	1741.78	1.65	113.91	1.31
p2	326.73	0.99	83.50	4662.18	1.00	178.81	3218.65	1.46	103.13	2351.25	1.55	107.39	1670.80	1.58	113.36	1.29
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.68	0.98	84.00	4697.00	1.01	148.00	3362.45	1.53	95.52	2438.47	1.61	100.93	1792.70	1.69	108.33	1.33
p1	326.07	0.99	83.25	4669.65	1.01	166.27	3398.32	1.55	92.93	2475.85	1.63	97.24	1748.53	1.65	104.14	1.33
p2	325.40	0.99	83.25	4665.52	1.01	169.32	3348.03	1.52	95.47	2627.97	1.73	98.62	1882.80	1.78	106.61	1.36
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.52	0.98	85.75	4672.45	1.01	166.47	3304.85	1.50	97.86	2368.40	1.56	105.49	1705.42	1.61	108.63	1.30
p1	327.70	0.99	84.00	4676.80	1.01	176.07	3335.75	1.52	96.41	2467.55	1.62	104.15	1786.12	1.69	108.71	1.33
p2	324.85	0.98	84.00	4662.68	1.00	179.45	3359.18	1.53	95.17	2472.05	1.63	104.16	1862.62	1.76	109.12	1.34
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.20	0.99	83.00	4687.32	1.01	141.88	3312.72	1.51	97.51	2365.07	1.56	105.89	1712.05	1.62	108.32	1.31
p1	327.45	0.99	83.40	4675.32	1.01	155.48	3299.53	1.50	98.19	2551.82	1.68	104.09	1859.00	1.76	109.23	1.35
p2	328.15	0.99	83.97	4675.93	1.01	161.87	3329.05	1.51	96.45	2401.68	1.58	102.79	1797.20	1.70	107.80	1.32
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.75	0.99	85.38	4696.85	1.01	155.85	3203.55	1.46	103.03	2335.60	1.54	108.40	1788.55	1.69	108.83	1.30
p1	330.57	1.00	84.00	4669.00	1.01	170.24	3172.35	1.44	105.49	2418.88	1.59	108.69	1822.67	1.72	113.74	1.32
p2	325.50	0.99	84.00	4653.48	1.00	178.61	3181.32	1.45	104.20	2419.15	1.59	108.10	1687.12	1.59	111.24	1.29
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.60	0.98	84.00	4700.98	1.01	143.51	3177.45	1.44	106.33	2319.78	1.53	116.57	1752.78	1.66	121.31	1.29
p1	329.88	1.00	84.00	4691.82	1.01	154.03	3229.68	1.47	103.32	2350.25	1.55	113.56	1699.28	1.61	118.54	1.30
p2	324.27	0.98	83.75	4655.02	1.00	179.90	3216.60	1.46	103.67	2269.55	1.49	114.09	1623.55	1.53	118.53	1.27

p0_score:	7.85				
p1_score:	7.93				
p2_score:	7.88				
Infrastructure_Operations_Scores:		vmotion	svmotion	deploy	
Completed_Ops_PerHour		14.50	10.00	4.50	
Avg_Seconds_To_Complete		31.47	41.94	341.73	
Failures		0.00	0.00	0.00	
Ratio		0.91	1.11	1.12	
Number_Of_Threads		1	1	1	
Summary		Run_Is_Compliant	Number_Of_Compliance_Issues(0)*		Median_Phase(p2)
Unreviewed_VMmark2_Applications_Score		7.88			
Unreviewed_VMmark2_Infrastructure_Score		1.04			
Unreviewed_VMmark2_Score		6.51			

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESX 4.1.0 Build 260247/ 07-13-2010
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 4.1.0 build 258902/ 07-13-2010
Supplemental Software	None
Servers	
Quantity	2
Server Manufacturer and Model	Cisco UCS B200 M2
Processor Vendor and Model	Intel Xeon X5680
Processor Speed (GHz)	3.33 GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 12 Cores / 24 Threads
Primary Cache	32KB I + 32KB D on-chip per core
Secondary Cache	256KB I + D on chip per core
Other Cache	12MB I + D on chip per chip L3
BIOS Version	S5500.1.3.1c.0.052020101544

Memory Size (in GB, Number of DIMMs)	96GB, 12x8GB
Memory Type and Speed	Dual rank 1333MHz Registered DDR3
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1 (unused)
Disk Controller Vendors and Models	LSI Logic embedded
Number of Host Bus Adapters	1 dual-port (on the Converged Network Adapter)
Host Bus Adapter Vendors and Models	Cisco UCS M71KR-Q Converged Network Adapter
Number of Network Controllers	1 dual-port (on the Converged Network Adapter)
Network Controller Vendors and Models	Cisco UCS M71KR-Q Converged Network Adapter
Other Hardware	None
Other Software	None
Hardware Availability Date (MM-DD-YYYY)	06-15-2010
Software Availability Date (MM-DD-YYYY)	07-13-2010
Network	
Network Switch Vendors and Models	(2) Cisco UCS-6120XP, (1) Cisco Nexus 5010
Network Speed	10Gbps
Storage	
Array Vendors, Models, and Firmware Versions	EMC CX4-240 (version 04.29.000.5.003)
Fibre Channel Switch Vendors and Models	Cisco MDS 9134
Disk Space Used	1633GB
Array Cache Size	2522MB
Total Number of Physical Disks Used	46
Total Number of Enclosures/Pods/Shelves Used	4
Number of Physical Disks Used per Enclosure/Pod/Shelf	Three enclosures with 14 each (12x73GB SSDs + 2x450GB 15K disks), and one enclosure with 4 (4x450GB 15K disks)
Total Number of Storage Groups Used	2
Number of LUNs Used	18

LUN Size and Number of Disks Per LUN	1 LUN at 55GB (Deploy Source), set over 1x73GB SSD 1 LUN at 55GB (Deploy Target), set over 1x73GB SSD 1 LUN at 55GB (Standby Source), set over 1x73GB SSD 1 LUN at 55GB (Standby Target), set over 1x73GB SSD 6 LUNs at 150GB (DS2 Webserver), set over 1x450GB 15K disk 6 LUNs at 278GB (DS2 DB, Olio DB, Olio Web, Mailserver), set over 5x73GB SSDs 2 LUNs at 139GB (boot), set over 2x450GB 15K disks
RAID Type	RAID 0 for 278GB LUNs, RAID 1 for VMware ESX 4.1 O/S, JBOD for 55GB and 150GB LUNs
Number of Members per RAID Set	6 RAID0 RAID sets each over 5x73GB SSDs 2 RAID1 RAID sets each over 2x450GB 15K disks
Disk Vendors, Models, and Speeds	STEC ZIV2A074 CLAR72, SEAGATE ST345085 CLAR450

Datacenter Management Server

System Model	Cisco UCS C250 M2
Processor Vendor and Model	Intel Xeon X5650
Processor Speed (GHz)	2.67GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 12 Cores / 24 Threads
Memory	192GB
Network Controller(s) Vendors and Models	Intel X520-DA2 Dual Port 10 Gigabit Server Adapter
Operating System, Version, and Service Pack	Microsoft Windows Server 2008 R2 Enterprise
Other Hardware	None
Other Software	None

Clients

Number of Clients	6
System Model(s)	Cisco UCS B200 M1
Processor Vendor(s) and Model(s)	client0: Intel Xeon X5570 client1: Intel Xeon E5540 client2: Intel Xeon E5520 client3: Intel Xeon X5570 client4: Intel Xeon E5520 client5: Intel Xeon X5570
Processor Speed(s) (GHz)	client0: 2.93GHz client1: 2.53GHz client2: 2.27GHz client3: 2.93GHz client4: 2.27GHz client5: 2.93GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 8 Cores / 16 Threads

Memory per Client	client0: 24GB client1: 24GB client2: 24GB client3: 48GB client4: 48GB client5: 24GB
Network Controller(s) Vendors and Models	Intel 82598EB 10 Gigabit Ethernet Controller
Operating System, Version, and Service Pack	Microsoft Windows Server 2003 Enterprise, Service Pack 2
Other Hardware	None
Other Software	None

Notes for Workload

Virtualization Software Notes

- Virtual hardware for all VMs was set to V7
- Ethernet adapter type set to vmxnet3 for all VMs
- Logging was disabled for all VMs
- CPU.HaltingIdleMsecPenalty=0 (default 100)

Server Notes

- Intel Turbo Boost enabled up to 3.6GHz
- Hardware Prefetcher Disabled (default enabled)
- Adjacent Sector Prefetcher Disabled (default enabled)

Networking Notes

- Virtual Machine Port Groups and Service Console Ports were all connected to vSwitch0.
- VMkernel ports were all connected to vSwitch1.
- For SUT1, vmnic3 was on vSwitch0 and vmnic4 was on vSwitch1; for SUT2, vmnic3 was on vSwitch0 and vmnic0 was on vSwitch1.
- Jumbo frames was enabled for vSwitch1.

Storage Notes

- There were 2x55GB JBOD LUNs, each created over a single 73GB SSD. These LUNs contained the VMs used for deployment operations.
- There were 2x55GB JBOD LUNs, each created over a single 73GB SSD. These LUNs contained the standby VMs used for Storage VMotion operations of the Standby VMs.
- There were 6x150GB JBOD LUNs, each created over a single 450GB 15K disk. These LUNs contained the DS2 Webserver VMs.
- There were 6x278GB RAID 0 LUNs, each created over five 73GB SSDs. These LUNs contained the DS2DB, OlioDB, OlioWeb, and Mailserver VMs. Each LUN contains VMs from the same tile.
- There were 2x139GB RAID 1 LUNs, each created over two 450GB 15K disks. These LUNs were used for booting ESX over SAN.

Datacenter Management Server Notes

None

Operating System Notes

- All Mailservers running Microsoft Windows Server 2008 R2 Enterprise
- Storage Controller for all Exchange Database Virtual Disks set to Paravirtual
- Microsoft Exchange Information Store for all Mailservers restored from backup script

Software Notes

None

Client Notes

Microsoft Windows Server 2003 clients updated with KB942763

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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