

VMware®VMmark®V2.1.1 Results

Vendor and Hardware Platform: Fujitsu PRIMERGY RX300 S6
 Virtualization Platform: VMware ESX 4.1 U1 Build 348481
 VMware vCenter Server: VMware vCenter Server 4.1.0 build 258902

**VMmark V2.1.1 Score =
7.59 @ 7 Tiles**

Number of Hosts: 2	Uniform Hosts [yes/no]: yes	Total sockets/core/threads in test: 4 Sockets / 24 Cores / 48 Threads
Tested By: Fujitsu		Test Date: 10-02-2011
Performance Section Performance	Configuration Section Configuration	Notes Section Notes for Workload

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	326.62	0.99	104.00	4650.25	1.00	192.99	3317.25	1.51	98.12	2420.12	1.59	83.49	1814.38	1.71	68.28	1.33
p1	327.57	0.99	104.00	4646.98	1.00	195.78	3330.10	1.51	97.48	2348.80	1.55	80.57	1642.95	1.55	63.70	1.29
p2	327.23	0.99	110.00	4607.25	0.99	224.70	3148.97	1.43	111.14	2280.68	1.50	95.13	1628.30	1.54	74.07	1.27
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.52	0.99	104.00	4655.43	1.00	181.68	3340.28	1.52	96.33	2436.70	1.60	75.37	1746.33	1.65	64.92	1.32
p1	323.70	0.98	104.00	4636.60	1.00	198.63	3263.25	1.48	100.43	2393.57	1.58	78.00	1621.92	1.53	65.18	1.29
p2	322.30	0.98	107.50	4586.43	0.99	270.14	3018.45	1.37	121.03	2443.12	1.61	90.62	1728.78	1.63	74.16	1.28
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.45	0.99	107.72	4659.45	1.00	190.49	3167.95	1.44	105.93	2267.57	1.49	85.75	1607.60	1.52	66.20	1.27
p1	332.12	1.01	114.00	4640.23	1.00	200.17	3049.57	1.39	113.58	2247.85	1.48	95.33	1618.70	1.53	74.02	1.26
p2	330.25	1.00	114.00	4617.12	0.99	237.84	2676.97	1.22	144.37	1961.28	1.29	119.73	1479.50	1.40	95.74	1.17
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.48	0.99	94.20	4669.70	1.01	185.47	3463.93	1.58	88.81	2486.88	1.64	71.89	1807.58	1.71	53.52	1.35
p1	325.60	0.99	93.05	4636.18	1.00	196.73	3399.72	1.55	92.39	2516.68	1.66	77.33	1942.40	1.84	60.19	1.36
p2	327.52	0.99	101.03	4642.25	1.00	216.85	3182.72	1.45	109.65	2393.78	1.58	87.68	1699.55	1.61	60.83	1.29
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	331.77	1.00	114.75	4683.27	1.01	176.04	3425.78	1.56	91.46	2523.28	1.66	77.07	1839.15	1.74	58.95	1.35
p1	327.52	0.99	114.00	4667.70	1.01	190.89	3385.05	1.54	93.46	2504.20	1.65	78.28	1816.28	1.72	60.31	1.34
p2	328.38	0.99	114.00	4645.95	1.00	219.48	3229.60	1.47	105.39	2280.25	1.50	87.03	1704.35	1.61	69.22	1.29
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.23	0.99	109.00	4680.35	1.01	164.32	3435.45	1.56	91.04	2527.82	1.66	76.70	1953.38	1.85	59.78	1.37
p1	331.07	1.00	104.00	4664.60	1.00	179.83	3372.05	1.53	94.95	2389.62	1.57	77.91	1722.25	1.63	58.62	1.32

p2	325.32	0.99	107.25	4602.68	0.99	237.89	3206.68	1.46	106.12	2316.07	1.53	91.18	1645.90	1.56	74.53	1.28
TILE_6	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.68	0.99	121.50	4669.80	1.01	183.95	3462.50	1.57	90.50	2461.45	1.62	73.63	1817.35	1.72	60.06	1.34
p1	326.52	0.99	124.00	4648.30	1.00	207.70	3415.70	1.55	92.27	2505.70	1.65	78.67	1778.38	1.68	62.65	1.34
p2	331.93	1.01	124.00	4549.32	0.98	306.62	3312.12	1.51	97.93	2457.95	1.62	81.56	1735.15	1.64	65.49	1.32
p0_score:	9.32															
p1_score:	9.19															
p2_score:	8.89															
Infrastructure_Operations_Scores:										vmotion	svmotion	deploy				
Completed_Ops_PerHour										16.00	11.00	5.50				
Avg_Seconds_To_Complete										38.40	30.99	291.69				
Failures										0.00	0.00	0.00				
Ratio										1.00	1.22	1.38				
Number_Of_Threads										1	1	1				
Summary						Run_Is_Compliant	Number_Of_Compliance_Issues(0)*				Median_Phase(p1)					
Unreviewed_VMmark2_Applications_Score						9.19										
Unreviewed_VMmark2_Infrastructure_Score						1.19										
Unreviewed_VMmark2_Score						7.59										

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESX 4.1 Build 348481 / 02-10-2011
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 4.1 Build 258902 / 07-13-2010
Supplemental Software	none
Servers	
Quantity	2
Server Manufacturer and Model	Fujitsu PRIMERGY RX300 S6
Processor Vendor and Model	Six-core Intel Xeon X5690
Processor Speed (GHz)	3.46

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	Rev R1.10
Memory Size (in GB, Number of DIMMs)	96GB, 12x8GB
Memory Type and Speed	Dual rank 1333 MHz Registered ECC DDR3
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	Intel ICH10
Number of Host Bus Adapters	1
Host Bus Adapter Vendors and Models	Dual-channel Emulex LPe12002
Number of Network Controllers	2
Network Controller Vendors and Models	Integrated Intel 82575EB Dual Port 1GbE Adapter, Intel 82599EB Dual Port 10GbE Adapter
Other Hardware	none
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	07-04-2010
Software Availability Date (MM-DD-YYYY)	05-24-2011
Network	
Network Switch Vendors and Models	2xFujitsu PRIMERGY BX600 GbE Switch Blade 30/12, CISCO 4900M
Network Speed	1Gbps, 10Gbps
Storage	
Array Vendors, Models, and Firmware Versions	6xFujitsu ETERNUS DX80, Firmware version V10L20-0000
Fibre Channel Switch Vendors and Models	Brocade 5100
Disk Space Used	3031GB
Array Cache Size	2GB
Total Number of Physical Disks Used	109
Total Number of Enclosures/Pods/Shelves Used	11

Number of Physical Disks Used per Enclosure/Pod/Shelf	Details in section Storage Notes
Total Number of Storage Groups Used	7
Number of LUNs Used	35
LUN Size and Number of Disks Per LUN	Details in section Storage Notes
RAID Type	0
Number of Members per RAID Set	Details in section Storage Notes
Disk Vendors, Models, and Speeds	4xSeagate, ST3450856SS, 15krpm; 101xSeagate, ST3300656SS, 15krpm; 4xSTEC Zeus SSD, Z16IZF2D-100UCT-FUJ

Datacenter Management Server

System Model	Fujitsu PRIMERGY BX620S4
Processor Vendor and Model	Intel Xeon X5470
Processor Speed (GHz)	3.33
Total Sockets/Total Cores/Total Threads	2 Sockets / 8 Cores / 8 Threads
Memory	4GB
Network Controller(s) Vendors and Models	3xDual Port Broadcom NetXtreme, 5 Ports disabled
Operating System, Version, and Service Pack	Microsoft(R) Windows(R) Server 2003 R2 Enterprise x64 Edition, Service Pack 2
Other Hardware	none
Other Software	none

Clients

Number of Clients	8 (one Client used as a dedicated Benchmark Controller)
System Model(s)	Fujitsu PRIMERGY BX620S4
Processor Vendor(s) and Model(s)	Intel Xeon 5130 (excepted Benchmark Controller with Intel Xeon X5470)
Processor Speed(s) (GHz)	2
Total Sockets/Total Cores/Total Threads	2 Sockets / 4 Cores / 4 Threads
Memory per Client	4GB
Network Controller(s) Vendors and Models	3xDual Port Broadcom NetXtreme, 5 Ports disabled (excepted Benchmark Controller with only 4 disabled ports)
Operating System, Version, and Service Pack	Microsoft(R) Windows(R) Server 2003 R2 Enterprise Edition (32-bit), Service Pack 2
Other Hardware	none
Other Software	none

Notes for Workload

Virtualization Software Notes

- Hardware version 7 used for all VMs (default 7)
- Logging disabled for all VMs (default enabled)
- VMXNET3 enabled for all VMs (default VMXNET2)
- SCSI adapter type PVSCSI used for all Standby VMs (default LSI Logic parallel)
- SCSI adapter type PVSCSI used for all Mailserver VMs (default LSI Logic SAS)
- Floppy and CDROM removed for all VMs (default enabled)
- Firewall disabled for the Console OS (default enabled)
- Cluster DRS Automation Level was set to "Fully Automated", Level 1 ("Aggressive")
- Changes in esx.conf:
 - /adv/Cpu/CoschedCrossCall = 0 (default 1)
 - /adv/Cpu/HaltingIdleMsecPenalty = 0 (default 100)
 - /adv/Irq/RoutingPolicy = 0 (default 2)
 - /adv/Mem/BalancePeriod = 0 (default 15)
 - /adv/Mem/SamplePeriod = 0 (default 60)
 - /adv/Mem/ShareScanGHz = 0 (default 4)
 - /adv/Misc/TimerMaxHardPeriod = 4000 (default 100000)
 - /adv/Misc/TimerMinHardPeriod = 2000 (default 100)
 - /adv/Net/MaxNetifRxQueueLen = 500 (default 100)
 - /adv/Net/MaxNetifTxQueueLen = 1000 (default 500)
 - /adv/Net/NetTxWorldlet = 0 (default 2)
 - /adv/Numa/LTermFairnessInterval = 0 (default 5)
 - /adv/Numa/MonMigEnable = 0 (default 1)
 - /adv/Numa/PageMigEnable = 0 (default 1)
 - /adv/Numa/SwapLoadEnable = 0 (default 1)
 - /adv/Numa/SwapLocalityEnable = 0 (default 1)
 - /vmkernel/module/ixgbe.o/options = "VMDQ=1,1" (defaults 8,8)
 - /vmkernel/module/lpfc820.o/options = "lpfc_lun_queue_depth=64 lpfc_cr_count=3 lpfc_cr_delay=1" (defaults 31,1,0)

Server Notes

- Server BIOS settings:
 - Turbo Boost Technology: Enabled (Intel Turbo Boost up to 3.73GHz, default enabled)
- Emulex HBA BIOS settings:
 - defaults

Networking Notes

- One dedicated VLAN for the systems under test, vCenter Server and Benchmark Controller (SUT-VLAN)
- One dedicated VLAN for the VMs and Clients (Load-VLAN)
- vSwitch Configuration:
 - vSwitch0 on vmnic2 (1Gb) for Service Console
 - vSwitch1 on vmnic3 (1Gb) for VMotion
 - vSwitch2 on vmnic0 (10Gb) for all VMs (except Olio)
 - vSwitch3 on vmnic1 (10Gb) for all OlioWeb and OlioDB VMs

Storage Notes

- ETERNUS DX80[0] (1 shelf, total 4 disks)
 - RAID set 0: (4 disks)
 - LUN 0: Boot/Console OS for SUT1 (11GB)
 - LUN 1: Boot/Console OS for SUT2 (11GB)
- ETERNUS DX80[1] (2 shelves, total 24 disks)
 - RAID set 0: (6 disks)
 - LUN 1: All even numbered Standby VMs (110GB)
 - LUN 2: All odd numbered Standby VMs (110GB)
 - RAID set 1: (6 disks)
 - LUN 3: Source Deploy Template (50GB)
 - RAID set 2: (6 disks)
 - LUN 4: Target Storage VMotion (50GB)
 - RAID set 3: (6 disks)
 - LUN 5: Target Deploy Template (50GB)
- ETERNUS DX80[2] (2 shelves, total 24 disks)
 - RAID set 0: (6 disks)
 - LUN 1: For Tile 0 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 2: For Tile 0 OlioDB (20GB)
 - RAID set 1: (6 disks)
 - LUN 3: For Tile 2 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 4: For Tile 2 OlioDB (20GB)
 - RAID set 2: (6 disks)
 - LUN 5: For Tile 4 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 6: For Tile 4 OlioDB (20GB)
 - RAID set 3: (6 disks)
 - LUN 7: For Tile 6 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 8: For Tile 6 OlioDB (20GB)
- ETERNUS DX80[3] (2 shelves, total 18 disks)
 - RAID set 0: (6 disks)
 - LUN 1: For Tile 1 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 2: For Tile 1 OlioDB (20GB)
 - RAID set 1: (6 disks)
 - LUN 3: For Tile 3 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 4: For Tile 3 OlioDB (20GB)
 - RAID set 2: (6 disks)
 - LUN 5: For Tile 5 DS2WebA, DS2WebB, DS2WebC, Mailserver and first VHD from DS2DB (140GB)
 - LUN 6: For Tile 5 OlioDB (20GB)
- ETERNUS DX80[4] (2 shelves, total 20 disks and 2 SSDs)
 - RAID set 0: (5 disks)
 - LUN 1: For Tile 0 OlioWeb (180GB)
 - RAID set 1: (5 disks)
 - LUN 2: For Tile 2 OlioWeb (180GB)
 - RAID set 2: (5 disks)
 - LUN 3: For Tile 4 OlioWeb (180GB)
 - RAID set 3: (5 disks)

- LUN 4: For Tile 6 OlioWeb (180GB)
- RAID set 4: (2 SSDs)
 - LUN 5: For Tile 0 second VHD from DS2DB (37GB)
 - LUN 6: For Tile 2 second VHD from DS2DB (37GB)
 - LUN 7: For Tile 4 second VHD from DS2DB (37GB)
 - LUN 8: For Tile 6 second VHD from DS2DB (37GB)
- ETERNUS DX80[5] (2 shelves, total 15 disks and 2 SSDs)
 - RAID set 0: (5 disks)
 - LUN 1: For Tile 1 OlioWeb (180GB)
 - RAID set 1: (5 disks)
 - LUN 2: For Tile 3 OlioWeb (180GB)
 - RAID set 2: (5 disks)
 - LUN 3: For Tile 5 OlioWeb (180GB)
 - RAID set 4: (2 SSDs)
 - LUN 5: For Tile 1 second VHD from DS2DB (37GB)
 - LUN 6: For Tile 3 second VHD from DS2DB (37GB)
 - LUN 7: For Tile 5 second VHD from DS2DB (37GB)

Datacenter Management Server Notes

Operating System Notes

Mailserver VMs: Microsoft Windows 2008 Enterprise x64 Edition updated with SP2

Software Notes

Mailserver VMs: Microsoft Exchange 2007 Enterprise x64 Edition updated with SP3

Client Notes

Benchmark Controller was running VMware vSphere PowerCLI 4.1 build 264274

Other Notes

One Client used as a dedicated Benchmark Controller. This system was connected to the SUT- and the Load-VLAN.

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