VMware® VMmark® V2.5.1 Results

Vendor and Hardware Platform: HUAWEI E9000 CH242 **Virtualization Platform: VMware ESXi 5.5.0 Build 1331820** **VMware vCenter Server : VMware vCenter Server 5.5.0 Build 1378903**	**VMmark V2.5.1 Score = 19.15 @ 16 Tiles**

Number of Hosts: 2	**Uniform Hosts [yes/no]: yes**	**Total sockets/cores/threads in test: 8/80/160**
Tested By: Huawei Technologies Co.,Ltd.	**Test Date: 12-08-2013**	

Performance Section	**Configuration Section**	**Notes Section**
Performance	Configuration	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	324.77	0.98	52.77	4742.23	1.02	109.03	4182.57	1.90	58.78	3131.10	2.06	63.42	2331.15	2.20	69.08	1.54
p1	324.57	0.98	60.15	4738.23	1.02	123.94	4186.45	1.90	58.65	2942.32	1.94	67.73	2126.50	2.01	70.08	1.49
p2	328.18	0.99	68.75	4683.48	1.01	182.95	4106.05	1.87	61.59	2972.78	1.96	71.66	2124.30	2.01	77.01	1.49
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.15	1.00	63.00	4723.85	1.02	94.22	4214.73	1.92	57.75	3089.93	2.03	60.97	2221.18	2.10	63.52	1.53
p1	325.80	0.99	63.00	4733.70	1.02	123.90	4017.12	1.83	64.89	3052.22	2.01	67.76	2194.70	2.07	72.32	1.50
p2	331.55	1.00	63.00	4581.85	0.99	282.18	3714.12	1.69	80.76	2661.75	1.75	88.20	2059.88	1.95	94.09	1.42
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.77	0.98	63.90	4730.70	1.02	102.33	3922.45	1.78	69.45	2818.80	1.86	74.86	1999.75	1.89	80.63	1.44
p1	321.70	0.97	63.00	4715.98	1.02	135.80	3887.10	1.77	70.30	2939.57	1.94	78.78	2197.78	2.08	79.10	1.48
p2	330.73	1.00	63.05	4591.00	0.99	268.50	3869.93	1.76	71.43	2713.00	1.79	81.41	2045.40	1.93	84.30	1.43
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.80	0.99	54.00	4730.48	1.02	98.70	4032.85	1.83	60.41	3041.68	2.00	84.58	2214.57	2.09	64.20	1.51
p1	330.30	1.00	56.92	4723.25	1.02	122.15	4052.20	1.84	63.60	3043.30	2.00	68.15	2262.57	2.14	67.54	1.52
p2	328.93	1.00	63.00	4657.15	1.00	213.97	3803.32	1.73	73.77	2741.80	1.81	79.42	2096.55	1.98	80.12	1.44
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.62	0.99	57.75	4740.15	1.02	97.95	4092.05	1.86	62.05	3164.40	2.08	66.71	2341.70	2.21	68.77	1.54
p1	328.77	1.00	64.00	4719.23	1.02	116.25	4088.45	1.86	62.27	2931.78	1.93	68.64	2198.90	2.08	71.63	1.50
p2	326.90	0.99	64.00	4647.20	1.00	215.28	3931.82	1.79	68.31	2899.22	1.91	70.50	2074.10	1.96	74.10	1.46
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

p0	326.88	0.99	64.00	4742.15	1.02	101.02	4195.70	1.91	58.46	3237.93	2.13	58.98	2416.25	2.28	64.08	1.57
p1	327.05	0.99	68.00	4711.90	1.02	130.05	4020.40	1.83	64.83	2920.62	1.92	69.32	2084.45	1.97	73.34	1.47
p2	328.68	1.00	74.00	4630.32	1.00	213.70	3704.93	1.68	80.45	2722.05	1.79	89.18	1926.00	1.82	96.58	1.40
TILE_6	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.60	1.00	63.00	4755.88	1.02	87.77	4101.70	1.87	61.65	3165.82	2.08	62.23	2186.00	2.07	65.72	1.52
p1	328.30	0.99	64.00	4724.77	1.02	112.29	4081.78	1.86	62.27	2974.18	1.96	66.53	2227.88	2.11	69.83	1.51
p2	326.43	0.99	64.00	4626.15	1.00	233.94	3913.12	1.78	68.61	3008.93	1.98	69.93	2279.55	2.15	73.00	1.50
TILE_7	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.48	0.99	63.00	4741.00	1.02	93.50	3941.03	1.79	68.28	2820.75	1.86	74.63	2035.30	1.92	77.29	1.45
p1	329.20	1.00	63.00	4731.85	1.02	120.81	3919.62	1.78	68.77	3020.25	1.99	74.21	2224.07	2.10	76.86	1.50
p2	327.40	0.99	73.17	4647.27	1.00	198.71	3834.80	1.74	72.11	2763.80	1.82	77.94	2090.78	1.98	80.09	1.44
TILE_8	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.45	0.99	74.00	4748.20	1.02	92.89	3908.72	1.78	70.17	2828.72	1.86	80.55	2028.20	1.92	86.04	1.45
p1	329.05	1.00	74.00	4735.20	1.02	112.15	3772.68	1.72	75.47	2812.70	1.85	81.53	2108.43	1.99	86.58	1.45
p2	323.23	0.98	74.00	4603.15	0.99	244.83	3736.43	1.70	77.23	2664.35	1.75	85.04	1910.05	1.81	88.76	1.39
TILE_9	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.10	0.99	61.38	4747.32	1.02	91.84	3712.57	1.69	70.10	2792.28	1.84	69.51	1956.05	1.85	98.39	1.42
p1	332.82	1.01	68.90	4705.65	1.01	112.01	3692.40	1.68	80.04	2621.85	1.73	88.51	1903.45	1.80	96.91	1.40
p2	319.90	0.97	73.65	4664.30	1.00	184.89	3630.53	1.65	82.24	2648.20	1.74	86.87	1831.65	1.73	96.05	1.37
TILE_10	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.15	0.98	53.55	4712.07	1.02	120.35	3866.30	1.76	71.54	2894.95	1.91	76.47	2216.93	2.10	78.13	1.47
p1	329.07	1.00	62.35	4714.38	1.02	125.96	3863.47	1.76	71.36	2801.07	1.84	76.92	1964.50	1.86	83.77	1.44
p2	327.85	0.99	64.00	4573.15	0.99	278.94	3753.30	1.71	76.12	2895.12	1.91	76.88	2053.03	1.94	83.99	1.44
TILE_11	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	332.10	1.01	106.47	4731.10	1.02	96.73	4073.75	1.85	62.60	2977.55	1.96	66.03	2254.28	2.13	68.06	1.51
p1	320.75	0.97	78.50	4723.40	1.02	110.82	4022.30	1.83	64.65	2952.32	1.94	67.68	2141.15	2.02	69.23	1.48
p2	323.90	0.98	74.00	4677.60	1.01	167.21	3765.10	1.71	75.11	2831.05	1.86	79.76	2154.05	2.04	82.42	1.45
TILE_12	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.05	0.99	73.05	4766.02	1.03	85.50	3916.40	1.78	68.82	2835.88	1.87	73.92	2075.38	1.96	74.42	1.46
p1	323.00	0.98	73.00	4718.32	1.02	116.46	3888.55	1.77	69.90	2851.50	1.88	78.41	2107.15	1.99	78.79	1.46
p2	329.62	1.00	73.12	4658.48	1.00	204.93	3860.03	1.76	71.27	2712.97	1.79	81.07	2064.10	1.95	82.17	1.44
TILE_13	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.98	0.98	148.97	4762.93	1.03	86.65	4070.65	1.85	62.81	2962.68	1.95	67.02	2153.15	2.04	68.44	1.49
p1	325.15	0.98	97.25	4733.10	1.02	110.04	4025.07	1.83	64.80	3008.72	1.98	69.50	2317.25	2.19	70.59	1.51
p2	323.95	0.98	92.25	4661.38	1.00	193.63	3786.18	1.72	74.50	2718.32	1.79	80.97	1967.05	1.86	82.69	1.41
TILE_14	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

p0	329.38	1.00	56.90	4743.88	1.02	102.35	4183.88	1.90	58.63	3266.55	2.15	57.35	2438.18	2.30	62.97	1.57
p1	326.62	0.99	63.75	4723.73	1.02	119.33	3908.35	1.78	69.57	2819.10	1.86	74.80	2139.22	2.02	76.56	1.46
p2	324.68	0.98	64.00	4631.07	1.00	213.66	3776.95	1.72	75.21	2792.28	1.84	77.09	1979.10	1.87	81.83	1.42
TILE_15	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	332.48	1.01	71.25	4744.95	1.02	94.98	4045.20	1.84	64.47	2947.88	1.94	72.96	2243.85	2.12	75.55	1.51
p1	328.12	0.99	63.00	4719.12	1.02	128.42	3994.40	1.82	65.95	2882.75	1.90	71.39	2076.50	1.96	74.18	1.47
p2	323.88	0.98	63.65	4668.80	1.01	161.16	3891.20	1.77	69.74	2900.57	1.91	75.46	2116.88	2.00	78.22	1.46

p0_score:	24.00
p1_score:	23.64
p2_score:	22.97

Infrastructure_Operations_Scores:	vmotion	svmotion	deploy
Completed_Ops_PerHour	17.50	11.00	5.50
Avg_Seconds_To_Complete	22.78	19.38	325.92
Failures	0.00	0.00	0.00
Ratio	1.09	1.22	1.38
Number_Of_Threads	1	1	1

Summary	Run_Is_Compliant	Turbo_Setting:0
	Number_Of_Compliance_Issues(0)*	Median_Phase(p1)
Unreviewed_VMmark2_Applications_Score	23.64	
Unreviewed_VMmark2_Infrastructure_Score	1.22	
Unreviewed_VMmark2_Score	19.15	

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 5.5.0 Build 1331820/09-22-2013
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 5.5.0 Build 1378903/10-01-2013
Supplemental Software	none
Servers	
Quantity	2

Server Manufacturer and Model	HUAWEI E9000 CH242
Processor Vendor and Model	Ten-core Intel Xeon E7-8870
Processor Speed (GHz)	2.40
Total Sockets/Total Cores/Total Threads	4 Sockets /40 Cores / 80 Threads
Primary Cache	32KB I + 32KB D on chip per core
Secondary Cache	256KB I+D on chip per core
Other Cache	30MB I+D on chip per chip L3
BIOS Version	OATYV0027
Memory Size (in GB, Number of DIMMs)	512GB,32x16GB
Memory Type and Speed	16GB-Dimms,Quad rank 1066 MHz Registered ECC DDR3
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	1 x LSI SAS2308
Number of Host Bus Adapters	3
Host Bus Adapter Vendors and Models	2 x Emulex LPe16000 with Dual Port 16Gb Fibre Channel HBA / 1 x Emulex OCe15100 with Dual Port 10Gb FCoe Adapter
Number of Network Controllers	4
Network Controller Vendors and Models	Emulex OneConnect OCI15104 with Quad Port 10Gb
Other Hardware	none
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	11-04-2013
Software Availability Date (MM-DD-YYYY)	11-04-2013
Network	
Network Switch Vendors and Models	HUAWEI E9000 CX911
Network Speed	10Gbps
Storage	
Array Vendors, Models, and Firmware Versions	2 x HUAWEI OceanStor Dorado 5100 (FW version V1R1C00) , 1 x HUAWEI OceanStor Dorado 2100 (FW version V1R1C00)
Fibre Channel Switch Vendors and Models	HUAWEI E9000 CX911
Disk Space Used	34600GB

Array Cache Size	HUAWEI OceanStor Dorado 5100:48GB HUAWEI OceanStor Dorado 2100:16GB
Total Number of Physical Disks Used	184 SSDs for VMs
Total Number of Enclosures/Pods/Shelves Used	3
Number of Physical Disks Used per Enclosure/Pod/Shelf	Internal: 2 disks per host
Total Number of Storage Groups Used	3
Number of LUNs Used	19
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	24xHuawei Dorado 2100-HSSD-D3220AS0100; 160xHuawei Dorado 5100-HSSD-322XAS0200; 4xTOSHIBA MBF2300RC

Datacenter Management Server	
System Model	A Virtual Server on Huawei Tecal RH5885 V2
Processor Vendor and Model	Intel Xeon E7-8860
Processor Speed (GHz)	2.26Ghz
Total Sockets/Total Cores/Total Threads	1 Sockets / 8 Cores / 8 Threads
Memory	32GB
Network Controller(s) Vendors and Models	Vmxnet3 Ethernet Adapter
Operating System, Version, Bitness, and Service Pack	Microsoft Windows 2008 R2 Enterprise SP1 (64bit)
Other Hardware	none
Other Software	none

Clients	
Total Number of Clients / Total Physical Clients / Total Virtual Client Hosts	16/1/2
System Model(s)	1xHuawei Tecal RH2288V2 (Prime Client),2xHuawei Tecal RH5885V2(Virtual Client Host)
Processor Vendor(s) and Model(s)	1xPrime Client: Intel Xeon E5-2620 1xVirtual Client Host: Intel Xeon E7-8860 1xVirtual Client Host: Intel Xeon E7-4830
Processor Speed(s) (GHz)	1xPrime Client: 2.0GHz 1xVirtual Client Host: 2.26GHz 1xVirtual Client Host: 2.13GHz

Total Sockets/Total Cores/Total Threads	1xPrime Client: 2 Socket / 12 Cores / 24 Threads 1xVirtual Client Host: 4 Socket / 40 Cores / 80Threads 1xVirtual Client Host: 4 Socket / 32 Cores / 64Threads
Memory per Physical Client	1xPrime Client: 96GB 1xVirtual Client Host: 512GB 1xVirtual Client Host: 512GB
Network Controller(s) Vendors and Models	Prime Client: 1 x Intel 1Gb 2-port 82580 Adapter, 1 x Intel 10Gb 2-port 82599 Adapter 1x Virtual Client Host: 1 x Intel 1Gb 2-port 82580 Adapter, 1 x Intel 10Gb 2-port 82599 Adapter 1x Virtual Client Host: 1 x Intel 1Gb 2-port 82580 Adapter, 1 x Intel 10Gb 2-port 82599 Adapter
Operating System, Version, Bitness, and Service Pack	Clients: Microsoft Windows 2008 R2 Enterprise SP1 (64bit) 1x Virtual Client Host: VMware ESXi 5.1.0 (Build 799733) 1x Virtual Client Host: VMware ESXi 5.1.0 (Build 799733)
Number of Virtual Clients	15
Number of vCPUs Per Virtual Client	6
Number of vMem (GB) Per Virtual Client	32GB
Virtual Client Networking Notes	All client VMs attached to port 1 of Intel 82599 card running at speed of 10Gb/s
Virtual Client Storage Notes	Client VMs stored on local media respective to their ESXi host
Other Hardware Notes	none
Other Software	none

Notes for Workload

Virtualization Software Notes

All multiprocessor VMs are using the CPU-scheme single socket with multiple cores (default one core per multiple virtual sockets)
Logging was disabled for all VMs (default Enabled)
SCSI adapter type PVSCSI used for all VMs (default LSI Logic SAS)
Ethernet adapter type set to VMXNET 3 for all VMs (default E1000)
Floppy and CDROM removed for all VMs (default enabled)
Cluster DRS Automation Level set to Fully Automated level 1
Firewall was disabled in the Console OS (default enabled)
Hardware version 10 used for all VMs
Jumbo Frames was used for vmotion
ALL VMs used VMware tools version 9344

Advanced Setting

Cpu.CoschedCrossCall = 0 (default 1)
Cpu.CreditAgePeriod = 1200 (default 3000)

Cpu.HTWholeCoreThreshold = 0 (default 200)
DataMover.HardwareAcceleratedInit = 0 (default 1)
DataMover.HardwareAcceleratedMove = 0 (default 1)
Irq.BestVcpuRouting = 1 (default 0)
Mem.BalancePeriod = 0 (default 15)
Mem.SamplePeriod = 0 (default 60)
Mem.ShareScanGHz = 0 (default 4)
Mem/VMOverheadGrowthlimit = 0 （default 4294967295）
Misc.TimerMaxHardPeriod = 4000 (default 100000)
Net.MaxNetifRxQueueLen = 500 (default 100)
Net.MaxNetifTxQueueLen =1000 (default 500)
Net.NetTxCompletionWorldlet = 0 (default 1)
Numa.LargeInterleave = 0 (default 1)
Numa.LTermFairnessInterval = 0 (default 5)
Numa.MigImbalanceThreshold =57 (default 10)
Numa.MonMigEnable = 0 (default 1)
Numa.PreferHT =1 (default 0)
Numa.RebalancePeriod = 60000 (default 2000)
Numa.SwapLoadEnable = 0 (default 1)
Numa.SwapLocalityEnable=0 (default 1)
Numa.SwapInterval = 1 (default 3)
Irq.IRQRebalancePeriod = 20000 (default 50)
VMFS3.HardwareAcceleratedLocking = 0 (default 1)
Net.NetTxWorldlet = 1 (default 2)
Power.CpuPolicy was set to "static" (default "Balanced")

Driver options:

/vmkernel/module/lpfc820.o/options="lpfc_lun_queue_depth=256 lpfc_cr_count=3 lpfc_cr_delay=1" (default 31,1,and0)

Server Notes

Server BIOS settings:

Turbo Boost Technology: Enabled (Intel Turbo Boost up to 2.8GHz , default enabled)
MLC Spatial Prefetcher : Disabled (default enable)
MLC Streamer Prefetcher : Disabled (default enable)
All C-States disabled (default enable)

Networking Notes

vSwitch0 for the service Console and standby at 10Gb/s on vmnic8
vSwitch1 for oliodb VMs from tiles 0,2,4,6,8,9,11 and olioweb VMs from tiles 0,2,,4,6,8,9,11,13,15 workloads at 10Gb/s on vmnic9
vSwitch2 for the DS2* workloads at 10Gb/s on vmnic12
vSwitch3 for the VMotion at 10Gb/s on vmnic13
vSwitch4 for the Mailserver* at 10Gb/s on vmnic14
vSwitch5 for oliodb VMs from tiles 1,3,5,7,10,12,13,14,15 and olioweb VMs from tiles 1,3,5,7,10,12,14 workloads at 10Gb/s on vmnic15

There have Broadcom NIC on the server but not used

Storage Notes

ESXi was install on two disk configured as RAID0 in the internal server storage bay
All FC LUNs configured for VMW_PSP_FIXED

2 x Dorado 5100（96 x 200GB SSDs） and Dorado 2100 (24 x 100GB SSDs)

LUN 0-15 : All VMs from Tile0 to Tile 16 (10 x200GB SSDs for RAID0 per LUN)
LUN 17: Deploy Template (8 x100GB SSDs for RAID0)
LUN 18: SVmotionTarget (8 x100GB SSDs for RAID0)
LUN 19: DeployTarget (8 x100GB SSDs for RAID0)
There are two extra LUNs, but were unused (10 x200GB SSDs for RAID0 per LUN)

Datacenter Management Server Notes

None

Operating System Notes

All Mailserver VMs running Microsoft Windows Server 2008 R2 Enterprise SP1(64-bit)
All Standby VMs running Microsoft Windows Server 2003 R2 Enterprise SP2(32-bit)
All SLES11 VMs were updated with SP2

Software Notes

Each Mailserver VM running Microsoft Exchange Server 2007 Enterprise SP3 (64-bit)

Client Notes

Prime client was running VMware vSphere PowerCLI 5.1 Release 1 Build 793510
All virtual client hosts were installed with VMware ESXi 5.1.0 (Build 1065491)

Other Notes

None
