VMware® VMmark® V2.5.1 Results

Vendor and Hardware Platform: HUAWEI Tecal RH5885 V2 **Virtualization Platform: VMware ESXi 5.1.0 U1 Build 1065491** **VMware vCenter Server : VMware vCenter Server 5.1.0 Build 799731**	**VMmark V2.5.1 Score = 19.17 @ 17 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: [11-03-2013]**

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	329.35	1.00	74.00	4723.38	1.02	122.97	3728.78	1.70	77.43	2836.65	1.87	84.85	2070.10	1.96	89.22	1.44
p1	328.52	0.99	74.00	4691.25	1.01	159.36	3728.28	1.70	77.53	2657.97	1.75	84.97	1971.92	1.86	90.59	1.41
p2	327.88	0.99	80.97	4629.55	1.00	224.70	3564.10	1.62	86.04	2536.35	1.67	94.34	1698.00	1.60	110.12	1.34
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.75	0.98	60.98	4719.40	1.02	119.80	3848.05	1.75	73.67	2723.70	1.79	82.09	1974.17	1.87	91.12	1.42
p1	326.02	0.99	64.00	4695.32	1.01	134.31	3726.70	1.69	79.28	2678.43	1.76	85.64	1831.70	1.73	96.89	1.39
p2	322.57	0.98	66.50	4629.32	1.00	208.51	3544.65	1.61	88.61	2709.53	1.78	95.86	1879.08	1.78	108.69	1.38
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.77	1.00	84.00	4734.68	1.02	124.95	3584.65	1.63	85.08	2547.07	1.68	93.81	1821.45	1.72	98.68	1.37
p1	331.70	1.00	84.00	4685.27	1.01	159.48	3539.05	1.61	87.46	2592.20	1.71	96.85	1883.97	1.78	101.33	1.38
p2	326.30	0.99	84.00	4585.35	0.99	259.09	3370.65	1.53	98.56	2313.12	1.52	119.03	1806.65	1.71	118.76	1.31
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	330.90	1.00	74.00	4711.10	1.02	112.85	3947.68	1.80	68.61	2797.38	1.84	77.23	1953.97	1.85	84.35	1.44
p1	324.40	0.98	74.00	4713.12	1.02	121.95	3885.80	1.77	71.75	2943.97	1.94	79.80	2104.57	1.99	87.19	1.47
p2	328.32	0.99	74.00	4662.80	1.00	184.84	3582.93	1.63	90.18	2421.88	1.59	107.91	1725.25	1.63	120.41	1.33
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.45	0.99	74.00	4716.70	1.02	130.91	3427.95	1.56	94.04	2444.00	1.61	107.43	1725.15	1.63	116.20	1.33
p1	322.27	0.98	74.00	4684.93	1.01	147.70	3398.90	1.55	95.57	2405.88	1.58	110.24	1745.53	1.65	121.74	1.32
p2	329.75	1.00	79.47	4556.15	0.98	281.53	3399.45	1.55	95.61	2220.18	1.46	119.64	1599.45	1.51	122.33	1.27
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.27	0.98	73.00	4723.27	1.02	118.31	4177.35	1.90	59.32	3211.68	2.11	64.73	2292.70	2.17	72.03	1.54
p1	328.25	0.99	73.00	4730.50	1.02	127.47	3959.47	1.80	68.43	2834.80	1.87	74.74	2054.53	1.94	83.48	1.46
p2	332.68	1.01	73.40	4617.32	0.99	225.87	3903.10	1.77	70.75	2807.70	1.85	76.28	1925.00	1.82	86.96	1.43
TILE_6	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

p0	325.35	0.99	73.38	4715.10	1.02	123.24	3591.05	1.63	85.47	2653.93	1.75	93.65	1958.97	1.85	102.09	1.40
p1	331.70	1.00	80.50	4703.18	1.01	139.90	3270.00	1.49	105.08	2275.82	1.50	118.86	1530.50	1.45	135.85	1.27
p2	329.85	1.00	84.50	4654.00	1.00	203.89	3376.03	1.54	98.67	2499.75	1.65	106.77	1670.90	1.58	126.02	1.32
TILE_7	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	330.43	1.00	64.97	4719.38	1.02	117.09	4081.07	1.86	62.45	3149.55	2.07	63.27	2230.07	2.11	69.51	1.53
p1	328.15	0.99	63.98	4693.93	1.01	134.91	4082.00	1.86	62.45	3070.07	2.02	61.72	2159.88	2.04	67.83	1.50
p2	328.48	0.99	63.48	4659.48	1.00	181.80	4029.18	1.83	64.36	3155.72	2.08	62.91	2296.05	2.17	72.06	1.53
TILE_8	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.75	0.98	80.25	4711.02	1.01	120.10	3472.57	1.58	92.45	2374.72	1.56	106.79	1662.67	1.57	114.77	1.31
p1	325.48	0.99	87.38	4712.88	1.02	140.87	3378.80	1.54	96.89	2484.95	1.64	110.29	1784.75	1.69	117.71	1.34
p2	325.80	0.99	94.00	4625.15	1.00	238.77	3433.35	1.56	94.60	2227.75	1.47	118.74	1718.33	1.62	117.07	1.30
TILE_9	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.70	0.98	69.50	4728.05	1.02	117.30	4183.93	1.90	58.50	3087.95	2.03	65.43	2267.07	2.14	67.25	1.53
p1	329.25	1.00	74.00	4703.50	1.01	134.98	4224.35	1.92	57.05	3099.93	2.04	65.06	2376.82	2.25	66.44	1.55
p2	329.38	1.00	75.00	4686.10	1.01	158.16	4224.32	1.92	57.15	2973.38	1.96	66.29	2101.22	1.99	71.95	1.50
TILE_10	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.95	0.98	74.00	4688.82	1.01	122.84	3538.90	1.61	89.10	2695.45	1.78	95.84	1931.72	1.83	104.53	1.39
p1	325.93	0.99	74.25	4686.90	1.01	138.53	3193.32	1.45	112.36	2167.38	1.43	128.14	1511.25	1.43	145.88	1.24
p2	329.18	1.00	97.00	4634.35	1.00	222.20	3163.35	1.44	111.39	2335.80	1.54	113.97	1594.20	1.51	127.34	1.27
TILE_11	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.27	0.99	63.75	4744.82	1.02	101.80	3808.90	1.73	75.59	2768.95	1.82	84.97	2046.92	1.93	92.19	1.44
p1	328.88	1.00	63.27	4723.82	1.02	120.32	3734.50	1.70	79.76	2609.95	1.72	90.49	1786.40	1.69	101.33	1.38
p2	326.48	0.99	73.72	4692.05	1.01	143.53	3577.45	1.63	88.31	2579.80	1.70	98.80	1782.62	1.68	110.50	1.36
TILE_12	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.52	0.99	82.50	4727.15	1.02	111.10	3583.57	1.63	84.03	2581.20	1.70	90.27	1935.30	1.83	94.71	1.39
p1	328.82	1.00	88.00	4717.00	1.02	133.37	3520.43	1.60	87.45	2531.97	1.67	94.29	1819.35	1.72	98.01	1.36
p2	328.75	1.00	94.00	4668.65	1.01	194.33	2967.15	1.35	125.65	2132.20	1.40	140.10	1583.65	1.50	148.64	1.23
TILE_13	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.38	0.99	64.00	4731.10	1.02	107.05	4149.73	1.89	60.73	2989.65	1.97	65.87	2180.28	2.06	66.63	1.51
p1	322.65	0.98	64.00	4704.75	1.01	132.74	4145.98	1.89	60.68	3110.43	2.05	65.17	2267.07	2.14	67.44	1.52
p2	328.07	0.99	70.75	4681.02	1.01	158.96	4040.25	1.84	64.72	2902.10	1.91	70.74	2260.55	2.14	67.83	1.50
TILE_14	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.95	0.99	74.00	4732.43	1.02	118.42	3078.78	1.40	94.47	2388.78	1.57	105.50	1723.08	1.63	116.49	1.29
p1	333.68	1.01	74.00	4687.18	1.01	170.17	3028.05	1.38	97.49	2375.35	1.56	112.50	1767.33	1.67	119.23	1.30
p2	327.27	0.99	98.75	4618.27	1.00	246.30	2922.95	1.33	103.43	2344.55	1.54	109.07	1566.08	1.48	126.50	1.25
TILE_15	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.25	0.99	63.90	4741.88	1.02	104.05	4137.50	1.88	60.78	3107.15	2.05	64.75	2323.57	2.20	70.26	1.54
p1	329.12	1.00	64.00	4700.12	1.01	122.56	3938.53	1.79	68.94	2775.45	1.83	78.11	2064.22	1.95	83.12	1.45
p2	325.12	0.98	64.00	4696.85	1.01	152.72	3924.72	1.78	69.62	2708.72	1.78	78.04	1933.42	1.83	86.56	1.42
TILE_16	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

p0	327.70	0.99	76.75	4707.02	1.01	118.00	3607.25	1.64	84.11	2632.97	1.73	93.46	1953.67	1.85	100.53	1.40
p1	326.12	0.99	74.00	4712.12	1.02	140.11	3568.32	1.62	86.79	2457.28	1.62	101.71	1743.75	1.65	107.10	1.34
p2	322.27	0.98	74.25	4536.93	0.98	336.15	2916.40	1.33	133.69	2045.83	1.35	153.54	1384.12	1.31	174.25	1.17

p0_score:	24.25
p1_score:	23.67
p2_score:	22.91

Infrastructure_Operations_Scores:	vmotion	svmotion	deploy
Completed_Ops_PerHour	17.00	11.00	5.00
Avg_Seconds_To_Complete	32.52	20.13	396.63
Failures	0.00	0.00	0.00
Ratio	1.06	1.22	1.25
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	23.67	
Unreviewed_VMmark2_Infrastructure_Score	1.18	
Unreviewed_VMmark2_Score	19.17	

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 5.1.0 U1 Build 1065491/04-25-2013

Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 5.1.0 Build 799731 / 11-19-2012
Supplemental Software	none
Servers	
Quantity	2
Server Manufacturer and Model	HUAWEI Tecal RH5885 V2
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	RGPUC-BIOS-V035
Memory Size (in GB, Number of DIMMs)	1024GB,64x16GB
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 SAS2208
Number of Host Bus Adapters	3
Host Bus Adapter Vendors and Models	QLogic QLE2562 Dual Port 8Gb Fibre Channel HBA
Number of Network Controllers	2
Network Controller Vendors and Models	1 x Intel 1Gb 2-port 82576 Adapter, 1 x Intel 10Gb 2-port 82599 Adapter
Other Hardware	none
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	03-25-2012
Software Availability Date (MM-DD-YYYY)	08-21-2013
Network	
Network Switch Vendors and Models	HUAWEI CE6850-48T4Q-EI for 10GE;HUAWEI S5700 for 1GE
Network Speed	1Gbps for SUT management, 10Gbps for VMotion and all VMs
Storage	

Array Vendors, Models, and Firmware Versions	2 x HUAWEI OceanStor Dorado 5100, 1 x HUAWEI OceanStor Dorado 2100 Firmware Version:V100R001C00
Fibre Channel Switch Vendors and Models	None(hosts were directly cabled to the storage)
Disk Space Used	5100GB
Array Cache Size	HUAWEI OceanStor Dorado 5100:48GB HUAWEI OceanStor Dorado 2100:16GB
Total Number of Physical Disks Used	194 SSDs for VMs, 2 SSDs per SUT OS
Total Number of Enclosures/Pods/Shelves Used	1
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	20
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; 192xHuawei Dorado 5100-HSSD-322XAS0200；4xHSSD-322XAS0200 for SUT

Datacenter Management Server	
System Model	A Virtual Server on Huawei Tecal RH5885 V2
Processor Vendor and Model	Intel Xeon E7-8860
Processor Speed (GHz)	2.4Ghz
Total Sockets/Total Cores/Total Threads	1 Sockets / 4 Cores / 4 Threads
Memory	16GB
Network Controller(s) Vendors and Models	Intel® PRO/1000 MT Network
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	17/1/2
System Model(s)	1xHuawei Tecal RH2288V2 (Prime Client), 1xHuawei Tecal RH5885V2(Virtual Client Host), 1xHuawei Tecal RH2288V2(Virtual Client Host)
Processor Vendor(s) and Model(s)	1xPrime Client: Intel Xeon E5-2620 1xVirtual Client Host: Intel Xeon E5-8860 1xVirtual Client Host: Intel Xeon E5-2690

Processor Speed(s) (GHz)	1xPrime Client: 2.0GHz 1xVirtual Client Host: 2.3GHz 1xVirtual Client Host: 2.9GHz
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: 2 Socket / 16 Cores / 32 Threads
Memory per Physical Client	1xPrime Client: 96GB 1xVirtual Client Host: 512GB 1xVirtual Client Host: 256GB
Network Controller(s) Vendors and Models	1x 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) 2x Virtual Client Hosts:VMware ESXi 5.1.0 (Build 799733)
Number of Virtual Clients	16
Number of vCPUs Per Virtual Client	8
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	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 9 used for all VMs
ALL VMs used VMware tools version 9221

Advanced Setting

Cpu.CoschedCrossCall = 0 (default 1)

Cpu.CreditAgePeriod = 533 (default 3000)
Cpu.HTWholeCoreThreshold = 0 (default 200)
DataMover.HardwareAcceleratedInit = 0 (default 1)
DataMover.HardwareAcceleratedMove = 0 (default 1)
Disk.SchedNumReqOutstanding = 256 (default 32)
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)
Misc.TimerMinHardPeriod = 2000 (default 30)
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)
Numa.SwapLocalityEnable = 0 (default 1)
Irq.IRQRebalancePeriod = 20000 (default 50)
VMFS3.HardwareAcceleratedLocking = 0 (default 1)
Power.CpuPolicy was set to "static" (default "Balanced")

Driver options:

/vmkernel/module/qla2xxx/options = “ql2xmaxqdepth=256 ql2xintrdelaytimer=2 ql2xenablemsix=1” (default 64,0,and0)
/vmkernel/module/ixgbe/options = “MQ=0,0 InterruptThrottleRate=2000,2000 InterruptType=2,2” (default 1,16000,and 2)

Server Notes

Server BIOS settings:

Turbo Boost Technology: Enabled (Intel Turbo Boost up to 2.8GHz , default enabled)
Adjacent Cache Line Prefetch : Disabled (default Enable)
Hardware Prefetch : Disabled (default Enable)

Networking Notes

vSwitch0 for the service Console and vMotion at 1Gb/s
vSwitch1 for all the VMs except DS2* workloads at 10Gb/s

vSwitch2 for the DS2* workloads at 10Gb/s

Storage Notes

ESXi was install on two disk configured as RAID0 in the internal server storage bay

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

20 LUNS(Tile VMs:10 x SSDs per LUN for RAID0;others:8 x SSDs per LUN for RAID0)
LUN 0-16 : 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)
All FC LUNs configured for VMW_PSP_FIXED

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
