VMware® VMmark® V2.5.2 Results

Vendor and Hardware Platform: Dell PowerEdge R730 **Virtualization Platform: VMware ESXi 5.5.0 U2 Build 2068190** **VMware vCenter Server : VMware vCenter Server 5.5.0 U2 Build 2001466**	**VMmark V2.5.2 Score = 25.46 @ 22 Tiles**

Number of Hosts: 2	**Uniform Hosts [yes/no]: yes**	**Total sockets/cores/threads in test: 4/72/144**
Tested By: Dell Inc.	**Test Date: 11-11-2015**	

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	326.50	0.99	53.92	4703.82	1.01	131.16	3907.85	1.78	68.36	2965.95	1.95	71.50	2254.00	2.13	74.01	1.49
p1	331.90	1.00	54.80	4719.93	1.02	142.48	3784.78	1.72	73.53	2762.62	1.82	77.46	1993.83	1.88	80.04	1.43
p2	330.35	1.00	64.00	4692.07	1.01	156.70	3669.12	1.67	78.34	2799.80	1.84	80.83	2029.60	1.92	84.38	1.43
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.07	0.99	63.00	4678.50	1.01	140.17	3825.68	1.74	71.61	2758.28	1.82	77.64	2156.25	2.04	74.78	1.45
p1	324.80	0.98	63.55	4671.75	1.01	153.67	3668.68	1.67	78.64	2678.53	1.76	82.59	1968.70	1.86	82.48	1.40
p2	324.77	0.98	77.50	4684.90	1.01	163.82	3405.53	1.55	91.27	2679.05	1.76	88.48	1992.58	1.88	95.66	1.39
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.40	1.00	51.27	4716.38	1.02	121.88	3940.20	1.79	66.96	2889.70	1.90	70.47	2090.53	1.98	72.50	1.47
p1	327.50	0.99	54.00	4700.18	1.01	131.24	3758.90	1.71	74.18	2885.03	1.90	75.86	2096.85	1.98	79.12	1.45
p2	327.75	0.99	61.75	4700.93	1.01	145.67	3665.95	1.67	78.40	2710.28	1.78	80.82	2047.92	1.94	83.33	1.42
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.52	0.99	65.20	4704.18	1.01	129.50	3742.78	1.70	74.98	2797.00	1.84	75.47	2047.78	1.94	75.67	1.44
p1	325.82	0.99	76.00	4709.77	1.01	143.34	3628.80	1.65	80.15	2768.32	1.82	83.11	2130.78	2.01	83.76	1.43
p2	332.32	1.01	82.25	4662.82	1.00	176.06	3553.12	1.62	83.83	2493.72	1.64	95.30	1821.47	1.72	95.92	1.36
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.40	0.99	53.00	4729.18	1.02	123.75	3911.55	1.78	68.14	2964.12	1.95	71.43	2178.75	2.06	73.00	1.48
p1	325.68	0.99	54.40	4706.55	1.01	134.74	3781.28	1.72	73.65	2758.95	1.82	77.71	2090.22	1.98	79.34	1.44
p2	328.35	0.99	64.00	4673.07	1.01	150.37	3666.75	1.67	78.54	2683.68	1.77	82.57	1943.47	1.84	84.20	1.40
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.20	1.00	63.98	4698.25	1.01	137.38	3819.93	1.74	72.00	2842.12	1.87	78.10	2192.60	2.07	78.76	1.47

p1	325.12	0.98	64.25	4693.00	1.01	147.71	3670.20	1.67	78.91	2666.85	1.76	83.25	1910.53	1.81	87.54	1.39
p2	328.52	0.99	77.25	4698.30	1.01	155.88	3406.18	1.55	91.77	2666.78	1.76	89.10	1850.50	1.75	101.27	1.37
TILE_6	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	333.38	1.01	43.00	4713.10	1.02	123.17	3931.32	1.79	67.34	2875.35	1.89	71.33	2172.00	2.05	73.20	1.48
p1	329.73	1.00	43.00	4706.77	1.01	134.80	3778.47	1.72	73.62	2778.32	1.83	76.56	2026.58	1.92	77.59	1.44
p2	325.15	0.98	43.00	4699.20	1.01	145.14	3659.88	1.66	78.67	2889.50	1.90	80.81	2146.28	2.03	82.49	1.45
TILE_7	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.70	0.99	67.00	4704.85	1.01	130.41	3820.78	1.74	71.59	2781.38	1.83	76.56	2001.75	1.89	79.21	1.43
p1	326.05	0.99	65.25	4711.93	1.02	147.36	3675.40	1.67	78.18	2797.78	1.84	80.73	2042.65	1.93	83.57	1.43
p2	325.12	0.98	77.50	4670.82	1.01	182.44	3416.68	1.55	90.33	2629.00	1.73	86.33	1965.62	1.86	90.19	1.38
TILE_8	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	323.62	0.98	53.02	4706.70	1.01	120.54	3926.65	1.79	67.34	2893.90	1.91	70.28	2104.78	1.99	71.42	1.46
p1	327.82	0.99	55.48	4718.40	1.02	132.50	3774.57	1.72	73.55	2874.43	1.89	76.12	2220.38	2.10	76.97	1.47
p2	318.35	0.96	63.92	4715.48	1.02	145.93	3671.00	1.67	78.17	2798.28	1.84	80.68	2067.78	1.95	81.67	1.43
TILE_9	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.65	1.00	73.72	4700.73	1.01	137.73	3719.72	1.69	75.82	2874.35	1.89	76.45	2101.10	1.99	78.64	1.45
p1	322.45	0.98	69.00	4684.25	1.01	151.87	3617.05	1.64	80.50	2662.03	1.75	83.98	2013.15	1.90	86.45	1.40
p2	324.55	0.98	79.75	4692.25	1.01	157.48	3529.50	1.60	84.55	2566.18	1.69	96.08	1868.38	1.77	99.65	1.37
TILE_10	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.35	0.98	54.00	4721.20	1.02	125.41	3926.53	1.79	67.27	2957.20	1.95	71.65	2270.85	2.15	73.00	1.49
p1	325.48	0.99	56.75	4707.23	1.01	135.51	3780.15	1.72	73.49	2862.62	1.89	76.81	2101.20	1.99	78.73	1.45
p2	328.50	0.99	64.00	4681.82	1.01	153.35	3670.20	1.67	78.33	2699.10	1.78	81.50	1950.75	1.84	83.68	1.41
TILE_11	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.65	0.99	66.12	4705.20	1.01	139.98	3717.47	1.69	76.22	2720.97	1.79	79.97	2045.72	1.93	83.37	1.42
p1	330.48	1.00	76.00	4691.85	1.01	151.17	3611.45	1.64	80.95	2653.50	1.75	84.23	1920.03	1.81	87.02	1.39
p2	323.27	0.98	74.00	4684.40	1.01	150.87	3483.75	1.58	87.08	2752.88	1.81	89.15	2148.88	2.03	82.85	1.42
TILE_12	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.48	0.99	53.83	4723.52	1.02	124.60	3920.00	1.78	67.58	2903.65	1.91	69.62	2106.40	1.99	71.27	1.47
p1	328.30	0.99	59.35	4707.52	1.01	135.45	3766.35	1.71	73.88	2941.03	1.94	72.94	2161.07	2.04	74.44	1.47
p2	326.32	0.99	64.00	4683.55	1.01	149.20	3637.68	1.65	79.55	2824.53	1.86	79.61	2167.50	2.05	80.73	1.44
TILE_13	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.45	0.98	70.25	4676.95	1.01	144.63	3730.40	1.70	75.51	2758.60	1.82	78.56	1993.67	1.88	80.30	1.42
p1	328.15	0.99	78.50	4684.35	1.01	156.28	3572.85	1.62	82.56	2868.85	1.89	82.73	2091.05	1.98	86.81	1.43
p2	327.57	0.99	84.00	4682.38	1.01	157.85	3469.80	1.58	87.48	2726.20	1.80	80.26	1973.30	1.87	89.28	1.40
TILE_14	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM

p0	330.77	1.00	62.90	4722.32	1.02	126.12	3950.85	1.80	66.70	2995.60	1.97	69.97	2190.35	2.07	71.80	1.50
p1	329.25	1.00	64.00	4689.40	1.01	137.25	3771.95	1.72	74.15	2849.53	1.88	77.80	2190.62	2.07	78.72	1.46
p2	322.68	0.98	64.00	4677.18	1.01	153.50	3674.45	1.67	78.18	2704.25	1.78	81.26	1961.33	1.85	82.66	1.40
TILE_15	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.48	0.99	73.75	4700.90	1.01	138.64	3720.90	1.69	76.09	2850.03	1.88	77.77	2192.55	2.07	78.53	1.46
p1	325.73	0.99	79.25	4717.65	1.02	149.69	3610.72	1.64	81.18	2751.95	1.81	83.49	2016.25	1.91	85.53	1.42
p2	322.25	0.98	74.25	4678.27	1.01	152.37	3499.35	1.59	86.40	2569.72	1.69	89.71	1850.50	1.75	92.64	1.36
TILE_16	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	329.20	1.00	63.62	4714.00	1.02	124.80	4046.43	1.84	63.09	2969.82	1.96	66.47	2325.78	2.20	69.40	1.52
p1	330.27	1.00	63.65	4713.25	1.02	137.55	3948.47	1.80	66.78	3007.38	1.98	69.35	2072.60	1.96	73.89	1.48
p2	329.05	1.00	71.75	4685.27	1.01	148.45	3809.20	1.73	72.35	2914.15	1.92	74.35	2103.90	1.99	78.46	1.46
TILE_17	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	322.93	0.98	77.38	4701.77	1.01	130.69	3437.72	1.56	72.57	2733.45	1.80	79.74	2034.05	1.92	84.64	1.40
p1	323.90	0.98	74.00	4690.98	1.01	140.54	3358.07	1.53	76.20	2765.93	1.82	83.53	1906.75	1.80	87.80	1.38
p2	322.27	0.98	79.75	4702.25	1.01	145.30	3407.40	1.55	73.94	2800.65	1.84	81.13	2114.05	2.00	85.24	1.41
TILE_18	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.35	0.99	56.50	4712.90	1.02	125.15	3944.28	1.79	66.88	2978.93	1.96	70.56	2090.15	1.98	72.34	1.47
p1	328.15	0.99	63.98	4718.52	1.02	139.04	3747.97	1.70	75.03	2874.30	1.89	76.65	2183.15	2.06	79.51	1.46
p2	330.12	1.00	64.00	4701.07	1.01	157.25	3668.72	1.67	78.27	2705.25	1.78	80.93	2043.80	1.93	83.22	1.42
TILE_19	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	332.12	1.01	77.40	4719.30	1.02	127.04	3746.05	1.70	75.18	2863.93	1.89	77.11	2125.38	2.01	77.52	1.46
p1	329.43	1.00	74.00	4692.10	1.01	141.86	3656.95	1.66	78.80	2758.28	1.82	83.34	2164.70	2.05	81.03	1.44
p2	328.57	0.99	83.00	4663.90	1.00	171.97	3724.65	1.69	76.14	2580.15	1.70	88.74	2012.72	1.90	78.85	1.40
TILE_20	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.30	0.99	56.25	4725.15	1.02	122.99	3956.53	1.80	66.52	3066.03	2.02	70.99	2272.95	2.15	72.64	1.51
p1	328.18	0.99	64.00	4713.57	1.02	135.90	3826.97	1.74	71.61	2776.93	1.83	76.66	2093.45	1.98	79.42	1.45
p2	321.82	0.97	64.00	4688.30	1.01	152.37	3720.28	1.69	76.32	2698.72	1.78	81.03	1945.53	1.84	83.91	1.40
TILE_21	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.52	0.99	87.83	4696.75	1.01	129.49	3829.20	1.74	71.71	2848.20	1.88	78.05	2212.65	2.09	77.63	1.47
p1	328.15	0.99	74.00	4690.45	1.01	141.77	3679.53	1.67	78.56	2662.20	1.75	83.77	1922.92	1.82	86.75	1.40
p2	326.95	0.99	81.00	4682.38	1.01	148.98	3422.12	1.56	91.02	2671.32	1.76	88.82	1872.30	1.77	99.36	1.37
p0_score:	32.21															
p1_score:	31.53															
p2_score:	30.88															

Infrastructure_Operations_Scores:	vmotion	svmotion	deploy
Completed_Ops_PerHour	17.00	11.00	5.50
Avg_Seconds_To_Complete	31.52	15.46	288.32
Failures	0.00	0.00	0.00
Ratio	1.06	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	31.53	
Unreviewed_VMmark2_Infrastructure_Score	1.21	
Unreviewed_VMmark2_Score	25.46	

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 5.5.0 U2 Build 2068190 / 09-09-2014
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 5.5.0 U2 Build 2001466 / 09-09-2014
Supplemental Software	None
Servers	
Quantity	2
Server Manufacturer and Model	Dell PowerEdge R730
Processor Vendor and Model	Intel Xeon E5-2699 v3
Processor Speed (GHz)	2.30
Total Sockets/Total Cores/Total Threads	2 Sockets / 36 Cores / 72 Threads
Primary Cache	32 KB I + 32 KB D on chip per core
Secondary Cache	256 KB I+D on chip per core
Other Cache	45 MB I+D on chip per chip L3
BIOS Version	1.3.6

Memory Size (in GB, Number of DIMMs)	512 GB, 16 x 32 GB
Memory Type and Speed	2Rx4 PC4-2133P ECC
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	Dell PERC H730p Mini
Number of Host Bus Adapters	1
Host Bus Adapter Vendors and Models	QLogic QLE2662 Dual-Port 16Gb Fibre Channel HBA
Number of Network Controllers	2
Network Controller Vendors and Models	Broadcom 5720 1Gb Quad Port NDC, Intel X520-2 10Gb Dual Port
Other Hardware	None
Other Software	None
Hardware Availability Date (MM-DD-YYYY)	09-08-2014
Software Availability Date (MM-DD-YYYY)	09-09-2014
Network	
Network Switch Vendors and Models	1 x Dell PowerConnect 6248, 1 x Dell PowerConnect 8024F
Network Speed	1 Gbps for vMotion, 10Gbps for rest
Storage	
Array Vendors, Models, and Firmware Versions	3 x SanDisk ION Data Accelerator, FW 2.5.1
Fibre Channel Switch Vendors and Models	Brocade 6505
Disk Space Used	19,000 GB
Array Cache Size	N/A
Total Number of Physical Disks Used	5 x HDDs, 8 x PCI-e Flash
Total Number of Enclosures/Pods/Shelves Used	3
Number of Physical Disks Used per Enclosure/Pod/Shelf	Details in section Storage Notes
Total Number of Storage Groups Used	0

Number of LUNs Used	18
LUN Size and Number of Disks Per LUN	Details in section Storage Notes
RAID Type	RAID 0
Number of Members per RAID Set	Details in section Storage Notes
Disk Vendors, Models, and Speeds	Dell 146GB, 300GB, 15K RPM SAS SanDisk 2.4TB ioDrive2 Duo, 3.2TB Fusion ioMemory SX350

Datacenter Management Server	
System Model	Dell PowerEdge 1950
Processor Vendor and Model	Intel Xeon E5450
Processor Speed (GHz)	3.00
Total Sockets/Total Cores/Total Threads	2 Sockets / 4 Cores / 4 Threads
Memory	16 GB
Network Controller(s) Vendors and Models	Integrated Broadcom BCM5708C NetXtreme II GigE
Operating System, Version, Bitness, and Service Pack	Microsoft Windows Server 2008 R2 Enterprise (64-bit)
Other Hardware	None
Other Software	None

Clients	
Total Number of Clients / Total Physical Clients / Total Virtual Client Hosts	23/1/8
System Model(s)	Dell PowerEdge R410
Processor Vendor(s) and Model(s)	Intel Xeon E5620
Processor Speed(s) (GHz)	2.40
Total Sockets/Total Cores/Total Threads	2 Sockets / 8 Cores / 16 Threads
Memory per Physical Client	Prime Client: 4 GB Clients 0-7: 24 GB
Network Controller(s) Vendors and Models	Prime Client: Intel PRO/1000 PT Dual Port Server Adapter Clients 0-7: 1 x Integrated Broadcom BCM5716 NetXtreme II GbE
Operating System, Version, Bitness, and Service Pack	Prime Client: Microsoft Windows Server 2008 R2 Enterprise 64-bit Virtual Client hosts: VMware ESX 4.1.0 (Build 260247) Virtual Clients: Microsoft Windows Server 2008 R2 Enterprise 64-bit
Number of Virtual Clients	22

Number of vCPUs Per Virtual Client	4
Number of vMem (GB) Per Virtual Client	4
Virtual Client Networking Notes	1 vSwitch for Service Console, 1 vSwitch for virtual clients
Virtual Client Storage Notes	Virtual client VMs used local storage. 1 x 160GB 7.2 RPM SATA
Other Hardware	None
Other Software	None

Notes for Workload

Virtualization Software Notes

- All VMs used virtual hardware V8, except V7 for Deploy template
- All VMs used VMware tools version 9354
- All VMs set to use Paravirtual Controller (default: LSI Logic Parallel for Standby, LSI Logic SAS for others), except LSI Logic Parallel for Deploy template
- Cluster DRS Automation Level set to "Fully Automated", Level 2
- CPU shares set to high for all DS2DB VMs (default normal)
- Ethernet adapter type set to VMXNET3 for all VMs (default VMXNET2)
- Floppy and CDROM removed for all VMs (default enabled)
- Logging was disabled for all VMs (default enabled)
- sched.mem.maxmemctl = 0 set for all VMs (disables Ballooning, default enabled), except Deploy template
- sched.mem.min and sched.mem.minsize set to VM memory size (default 0), except Deploy template
- sched.mem.pin = TRUE set all VMs (locks all Guest memory into physical memory, default FALSE), except Deploy template

Advanced Settings:

- /adv/Cpu/CreditAgePeriod = 1000 (default 3000)
- /adv/Cpu/HTWholeCoreThreshold = 0 (default 200)
- /adv/DataMover/HardwareAcceleratedInit = 0 (default 1)
- /adv/DataMover/HardwareAcceleratedMove = 0 (default 1)
- /adv/Mem/BalancePeriod = 0 (default 15)
- /adv/Mem/CtlMaxPercent = 0 (default 65)
- /adv/Mem/SamplePeriod = 0 (default 60)
- /adv/Mem/ShareScanGHz = 0 (default 4)
- /adv/Net/MaxNetifRxQueueLen = 500 (default 100)
- /adv/Net/MaxNetifTxQueueLen = 1000 (default 500)
- /adv/Numa/LTermFairnessInterval = 0 (default 5)
- /adv/Numa/MigImbalanceThreshold = 57 (default 10)
- /adv/Numa/MonMigEnable = 0 (default 1)
- /adv/Numa/PageMigEnable = 0 (default 1)
- /adv/Numa/RebalancePeriod = 60000 (default 2000)
- /adv/Numa/SwapLoadEnable = 0 (default 1)

- /adv/Numa/SwapLocalityEnable = 0 (default 1)
- /adv/VMFS3/HardwareAcceleratedLocking = 0 (default 1)

Server Notes

Server BIOS Settings:

- Intel Turbo Boost Technology up to 3.60 GHz (default)
- System Profile set to Performance in BIOS

Networking Notes

vSwitch Configuration:

- vSwitch0 for Service Console on vmnic0 (1Gb/s)
- vSwitch1 for vMotion vmnic1 (1Gb/s)
- vSwitch2 for DS2 and Deploy VMs on vmnic4 (10Gb/s)
- vSwitch3 for Olio, Mailserver and Standby VMs on vmnic5 (10Gb/s)

Storage Notes

- Host OS installed on 1 x 300GB 15K RPM HDD, for each host

- 2 x Dell PowerEdge R720 configured with 3 x 2.4TB SanDisk ioDrive2 Duo PCI-e Flash cards and ION Accelerator software
- Configuration for ION Accelerator:
    - Dell PowerEdge R720
        - 2 x Intel Xeon E5-2690 2.90 GHz
        - 256 GB (16 x 16 GB, 2Rx4 PC3-12800R-11 ECC)
        - 1 x QLogic QLE2662 16Gb Dual-Port Fibre Channel HBA
        - 1 x 146 GB 15K RPM HDD (for ION software)
        - LUNs stripped across all 3 flash cards

- LUN Layout
        - LUN 1: For Olio and Mailserver 0, 2, and all Standby VMs (900GB, on array 1)
        - LUN 2: For Olio and Mailserver 1, 3 (900GB, on array 1)
        - LUN 3: For Olio and Mailserver 4, 6 (900GB, on array 1)
        - LUN 4: For Olio and Mailserver 5, 7 (900GB, on array 1)
        - LUN 5: For Olio and Mailserver 8, 10 (900GB, on array 1)
        - LUN 6: For Olio and Mailserver 9, 11 (900GB, on array 1)
        - LUN 7: For Olio and Mailserver 12, 14 (900GB, on array 1)
        - LUN 8: For Olio and Mailserver 13, 15 (900GB, on array 1)
        - LUN 9: For Olio and Mailserver 16, 18 (900GB, on array 2)
        - LUN 10: For Olio and Mailserver 17, 19 (900GB, on array 2)
        - LUN 11: For Olio and Mailserver 20, 21 (900GB, on array 2)
        - LUN 12: Source LUN for Deploy (900GB, on array 2)
        - LUN 13: Target LUN for Deploy (900GB, on array 2)
        - LUN 14: Target LUN for Storage vMotion (900GB, on array 2)

- 1 x Dell PowerEdge R730 configured with 2 x 3.2TB Fusion ioMemory SX350 PCI-e Flash cards and ION Accelerator software

- Configuration for ION Accelerator:
  - Dell PowerEdge R730
    - 2 x Intel Xeon E5-2680 v3 2.50 GHz
    - 256 GB (16 x 16 GB, 2Rx4 PC4-2133P ECC)
    - 1 x QLogic QLE2662 16Gb Dual-Port Fibre Channel HBA
    - 1 x 146 GB 15K RPM HDD (for ION software)
    - LUNs stripped across both flash cards

- LUN Layout
    - LUN 1: For DS2 0, 4, 8, 12, 16, 20 (1600GB)
    - LUN 2: For DS2 2, 6, 10, 14, 18 (1600GB)
    - LUN 3: For DS2 1, 5, 9, 13, 17, 21 (1600GB)
    - LUN 4: For DS2 3, 7, 11, 15, 19 (1600GB)

- All LUNs were configured as block devices and no system memory was used for write caching

Datacenter Management Server Notes

None

Operating System Notes

- All MailServer VMs running Microsoft Windows Server 2008 R2 Enterprise (64-bit)
- All Standby VMs running Microsoft Windows Server 2003 R2 Enterprise SP2 (32-bit)
- All SLES11 VMs were updated with SP2
- VMXNET3 driver configured to use one receive and one request queue (Default: number of queues matches the number of vCPUs)

Software Notes

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

Client Notes

- Prime Client split from Client0
- Prime Client was running VMware vSphere PowerCLI-5.1 Release 1 b793510
- All clients were run on virtual machines that were each defined with 4 vCPUs, 4GB memory, 1 VMXNET3 network and 32GB disk space.
- Each client virtual machine was running Microsoft Windows Server 2008 R2 Enterprise (64-bit)
- 7 virtual client hosts ran 3 virtual clients each, and 1 ran 1 virtual client
- All virtual client hosts were installed with VMware ESX 4.1.0 (Build 260247)

Other Notes

None

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