VMware® VMmark® V2.5 Results

Vendor and Hardware Platform: HP ProLiant DL560 Gen8 Virtualization Platform: VMware ESX 4.1.0 U3 Build 800380 VMware vCenter Server: VMware vCenter Server 5.1.0 Build 799731	VMmark V2.5 Score = 20.35 @ 18 Tiles

Number of Hosts: 2	Uniform Hosts [yes/no]: yes	Total sockets/cores/threads in test: 8/64/128

Tested By: Hewlett-Packard	Test Date: 05-26-2013

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	328.48	0.99	63.73	4626.82	1.00	217.59	3719.28	1.69	76.34	2860.15	1.88	82.82	2095.18	1.98	86.34	1.44
p1	324.60	0.98	64.00	4624.75	1.00	217.19	3664.22	1.67	79.30	2606.32	1.72	87.91	1943.65	1.84	92.28	1.39
p2	323.05	0.98	64.00	4591.00	0.99	260.51	3651.38	1.66	79.65	2564.30	1.69	90.65	1824.75	1.72	95.45	1.36
TILE_1	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.70	0.99	53.00	4628.57	1.00	211.79	3590.10	1.63	84.20	2622.88	1.73	94.35	1953.97	1.85	99.74	1.39
p1	325.80	0.99	53.00	4654.82	1.00	179.91	3744.80	1.70	75.67	2720.70	1.79	80.37	1914.30	1.81	86.95	1.40
p2	323.98	0.98	53.00	4634.57	1.00	223.95	3655.88	1.66	80.45	2722.28	1.79	87.27	1917.12	1.81	95.16	1.40
TILE_2	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	325.48	0.99	64.00	4684.15	1.01	166.38	3696.03	1.68	78.10	2660.78	1.75	84.32	1999.53	1.89	87.63	1.41
p1	324.15	0.98	60.10	4663.98	1.00	167.90	3669.22	1.67	78.94	2644.88	1.74	84.88	1891.03	1.79	89.17	1.39
p2	325.35	0.99	53.15	4691.32	1.01	163.60	3722.40	1.69	76.48	2786.18	1.83	81.84	2104.03	1.99	85.63	1.44
TILE_3	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.62	0.99	57.15	4666.15	1.01	166.63	3725.38	1.69	76.38	2634.03	1.73	85.74	1889.38	1.79	89.59	1.39
p1	327.05	0.99	63.95	4668.62	1.01	167.53	3694.30	1.68	77.34	2723.68	1.79	85.35	2027.45	1.92	84.61	1.42
p2	329.75	1.00	64.00	4674.68	1.01	173.21	3646.50	1.66	79.92	2561.68	1.69	90.20	1944.92	1.84	91.86	1.39
TILE_4	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	322.82	0.98	63.52	4673.35	1.01	167.39	3703.03	1.68	77.75	2694.88	1.77	82.11	1930.90	1.82	85.68	1.40
p1	328.98	1.00	63.75	4679.65	1.01	171.72	3713.25	1.69	77.34	2776.55	1.83	82.22	2107.28	1.99	85.73	1.44
p2	328.70	1.00	64.00	4669.75	1.01	169.21	3568.32	1.62	84.30	2564.35	1.69	90.88	1834.78	1.73	94.47	1.37
TILE_5	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.85	0.99	53.00	4648.18	1.00	159.96	3625.20	1.65	80.96	2747.78	1.81	85.65	2020.12	1.91	86.53	1.41
p1	327.85	0.99	53.00	4666.48	1.01	163.14	3720.82	1.69	76.46	2773.85	1.83	76.91	2091.38	1.98	79.65	1.44

p2	327.35	0.99	53.00	4663.43	1.00	158.67	3587.35	1.63	82.68	2647.65	1.74	85.68	1909.30	1.80	88.53	1.39
TILE_6	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	333.32	1.01	84.00	4664.88	1.01	198.03	3565.03	1.62	81.91	2712.03	1.79	85.00	2080.55	1.97	86.40	1.42
p1	329.23	1.00	84.00	4642.60	1.00	202.94	3486.97	1.59	86.14	2545.05	1.68	90.45	1821.38	1.72	94.25	1.35
p2	326.75	0.99	84.00	4615.00	0.99	248.17	3460.85	1.57	87.19	2643.62	1.74	89.56	1949.70	1.84	90.36	1.38
TILE_7	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	326.65	0.99	84.00	4634.10	1.00	214.34	3512.82	1.60	86.92	2498.90	1.65	95.49	1833.03	1.73	102.88	1.35
p1	324.68	0.98	84.00	4622.45	1.00	231.01	3599.43	1.64	81.42	2580.35	1.70	88.51	1821.80	1.72	94.98	1.36
p2	330.07	1.00	84.00	4623.93	1.00	215.22	3523.68	1.60	85.58	2596.05	1.71	93.54	1950.92	1.84	98.86	1.38
TILE_8	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	321.90	0.97	64.00	4673.50	1.01	177.30	3693.60	1.68	77.24	2710.28	1.78	80.73	1977.55	1.87	81.69	1.41
p1	327.62	0.99	63.17	4678.88	1.01	178.30	3656.15	1.66	79.02	2775.85	1.83	82.08	2049.50	1.94	83.27	1.43
p2	331.32	1.00	62.73	4676.88	1.01	163.94	3569.15	1.62	83.09	2612.25	1.72	87.27	1996.45	1.89	87.41	1.40
TILE_9	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.73	0.99	94.25	4586.70	0.99	251.07	3639.65	1.66	78.42	2684.60	1.77	80.95	1937.12	1.83	83.42	1.39
p1	324.68	0.98	94.00	4575.93	0.99	268.20	3540.32	1.61	83.17	2662.28	1.75	88.17	2047.15	1.93	89.12	1.40
p2	325.30	0.99	93.00	4578.95	0.99	266.93	3578.40	1.63	81.79	2611.75	1.72	85.94	1877.08	1.77	89.04	1.37
TILE_10	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.00	0.99	341.75	4668.38	1.01	170.62	3682.40	1.67	78.04	2759.53	1.82	83.38	1971.53	1.86	89.62	1.41
p1	324.82	0.98	150.70	4678.43	1.01	175.29	3643.93	1.66	79.44	2623.10	1.73	86.52	1945.85	1.84	91.78	1.39
p2	329.52	1.00	109.75	4677.68	1.01	169.63	3694.05	1.68	77.59	2646.10	1.74	84.81	1833.40	1.73	94.68	1.39
TILE_11	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.00	0.98	63.00	4682.88	1.01	164.42	3543.30	1.61	85.19	2628.05	1.73	92.82	1993.33	1.88	96.68	1.39
p1	325.20	0.98	63.00	4669.57	1.01	176.43	3640.15	1.66	80.26	2633.30	1.73	85.71	1888.05	1.78	89.67	1.38
p2	321.77	0.97	63.00	4683.35	1.01	166.06	3506.90	1.59	87.26	2604.10	1.71	94.32	1885.92	1.78	98.63	1.37
TILE_12	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.98	0.99	64.00	4667.70	1.01	168.41	3646.43	1.66	80.04	2647.38	1.74	85.17	1965.00	1.86	90.79	1.40
p1	328.82	1.00	64.00	4657.35	1.00	180.76	3613.50	1.64	81.48	2635.10	1.74	85.73	1866.90	1.76	91.27	1.38
p2	330.15	1.00	64.00	4694.73	1.01	162.79	3554.22	1.62	84.83	2774.10	1.83	88.51	2005.33	1.90	94.96	1.41
TILE_13	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.90	0.98	78.50	4687.07	1.01	168.83	3600.60	1.64	81.91	2624.47	1.73	86.46	1913.92	1.81	87.64	1.38
p1	325.07	0.98	72.75	4657.90	1.00	175.40	3603.90	1.64	82.03	2682.12	1.77	88.28	1969.45	1.86	90.30	1.40
p2	323.43	0.98	64.25	4688.02	1.01	164.97	3545.40	1.61	84.50	2644.00	1.74	91.14	2041.92	1.93	91.63	1.40
TILE_14	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.57	0.99	63.83	4681.60	1.01	162.95	3740.38	1.70	75.86	2716.32	1.79	80.84	1965.08	1.86	83.25	1.41
p1	325.43	0.99	63.00	4668.32	1.01	178.23	3727.40	1.69	75.77	2906.75	1.91	79.79	2149.85	2.03	81.78	1.46

p2	325.57	0.99	63.02	4672.98	1.01	168.05	3732.10	1.70	75.83	2713.60	1.79	80.74	2050.00	1.94	82.72	1.42
TILE_15	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	324.88	0.98	61.25	4673.05	1.01	161.32	3511.35	1.60	87.11	2692.97	1.77	88.45	1915.03	1.81	95.63	1.38
p1	330.30	1.00	53.98	4665.27	1.01	171.74	3444.18	1.57	90.30	2520.50	1.66	93.98	1855.25	1.75	100.78	1.36
p2	325.43	0.99	54.00	4683.80	1.01	160.75	3407.93	1.55	92.42	2585.30	1.70	95.56	1836.62	1.74	103.00	1.35
TILE_16	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	328.15	0.99	240.38	4678.57	1.01	168.30	3649.55	1.66	80.22	2717.97	1.79	86.25	2024.47	1.91	92.67	1.42
p1	326.98	0.99	130.15	4651.80	1.00	173.17	3653.68	1.66	80.05	2718.47	1.79	86.28	1929.25	1.82	93.68	1.40
p2	331.20	1.00	101.33	4672.52	1.01	164.05	3530.85	1.61	86.31	2529.70	1.67	93.59	1762.72	1.67	102.42	1.35
TILE_17	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	Actual	Ratio	QoS	GM
p0	327.77	0.99	82.72	4663.15	1.00	161.84	3525.57	1.60	86.30	2539.50	1.67	93.46	1849.90	1.75	101.67	1.36
p1	325.80	0.99	73.50	4658.27	1.00	177.05	3668.65	1.67	78.53	2687.40	1.77	82.69	1907.08	1.80	87.93	1.39
p2	327.50	0.99	64.00	4655.25	1.00	173.37	3503.60	1.59	87.10	2731.47	1.80	91.82	1984.83	1.88	97.33	1.40

p0_score:	25.18
p1_score:	25.17
p2_score:	24.96

Infrastructure_Operations_Scores:	vmotion	svmotion	deploy
Completed_Ops_PerHour	16.50	11.00	4.00
Avg_Seconds_To_Complete	37.06	24.00	463.52
Failures	0.00	0.00	0.00
Ratio	1.03	1.22	1.00
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	25.17	
Unreviewed_VMmark2_Infrastructure_Score	1.08	
Unreviewed_VMmark2_Score	20.35	

Configuration

Virtualization Software

Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESX 4.1.0 U3 Build 800380 / 08-30-2012
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 5.1.0 Build 799731 / 09-10-2012
Supplemental Software	none
Servers	
Quantity	2
Server Manufacturer and Model	HP ProLiant DL560 Gen8
Processor Vendor and Model	Intel E5-4650
Processor Speed (GHz)	2.7
Total Sockets/Total Cores/Total Threads	4 Sockets / 32 Cores / 64 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	20 MB I+D on chip per chip
BIOS Version	P77 03-01-2013
Memory Size (in GB, Number of DIMMs)	256 GB, 16 x 16 GB DIMMs
Memory Type and Speed	dual rank PC3-12800 Registered DDR3/1600 MHz
Disk Subsystem Type	FC SAN
Number of Disk Controllers	1
Disk Controller Vendors and Models	HP SMART Array P420i
Number of Host Bus Adapters	1
Host Bus Adapter Vendors and Models	HP 82Q 2-Port 8Gb FC HBA
Number of Network Controllers	2
Network Controller Vendors and Models	HP Ethernet 1 Gb 4-port 331FLR Adapter HP Ethernet 10Gb 2-port 560SFP+ Adapter
Other Hardware	none
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	03-26-2013

Software Availability Date (MM-DD-YYYY)	04-02-2013
Network	
Network Switch Vendors and Models	H3C S5820X-28S, HP ProCurve 2824 J4903A
Network Speed	4x1Gb/s,2x10Gb/s
Storage	
Array Vendors, Models, and Firmware Versions	2xFusion-io ION Data Accelerator, FW 2.0.1
Fibre Channel Switch Vendors and Models	2xHP StorageWorks SAN Switch 8/24
Disk Space Used	15038.8 GB
Array Cache Size	N/A
Total Number of Physical Disks Used	6 HDDs (1 per SUT for OS, 2 per ION OS), 6 PCI-e Flash
Total Number of Enclosures/Pods/Shelves Used	2
Number of Physical Disks Used per Enclosure/Pod/Shelf	2 HDDs for OS 3 PCI-e Flash
Total Number of Storage Groups Used	0
Number of LUNs Used	12
LUN Size and Number of Disks Per LUN	All LUNs striped across 3 PCI-e Flash cards • 1 LUN at 1200GB (even DS2DBs) • 1 LUN at 600GB (odd DS2DBs) • 1 LUN at 800GB (even DS2Webs) • 1 LUN at 400GB (odd DS2Webs) • 1 LUN at 2100GB (even mailservers) • 1 LUN at 1100GB (odd mailservers) • 1 LUN at 400GB (even OlioDBs) • 1 LUN at 200GB (odd OlioDBs) • 1 LUN at 2000GB (even OlioWebs) • 1 LUN at 1000GB (odd OlioWebs) • 1 LUN at 200GB (standbys and DeployTemplate) • 1 LUN at 100GB (sVMotion and Deploy Target LUN)
RAID Type	SUT OS: RAID0 ION OS: RAID1 ION Flash: RAID0

Number of Members per RAID Set	SUT OS:1 ION OS: 2 ION Flash: 3
Disk Vendors, Models, and Speeds	6 x HP 146 GB 6G SAS 15K rpm SFF HD (P/N 652605-B21) 6 x Fusion-io 2.4 TB ioDrive2 Duo

Datacenter Management Server	
System Model	HP ProLiant BL465c G7
Processor Vendor and Model	AMD Opteron 6134
Processor Speed (GHz)	2.30
Total Sockets/Total Cores/Total Threads	2 Sockets / 16 Cores / 16 Threads
Memory	16 GB
Network Controller(s) Vendors and Models	Integrated NC551i Dual Port FlexFabric 10 Gb Converged Network Adapter
Operating System, Version, Bitness, and Service Pack	Microsoft® Windows® 2008 R2 Enterprise (64-bit)
Other Hardware	none
Other Software	none

Clients	
Total Number of Clients / Total Physical Clients / Total Virtual Client Hosts	19 / 1 / 12
System Model(s)	HP ProLiant BL465c Gen8
Processor Vendor(s) and Model(s)	AMD Opteron 6174
Processor Speed(s) (GHz)	2.20
Total Sockets/Total Cores/Total Threads	2 Sockets / 24 Cores / 24 Threads
Memory per Physical Client	64 GB
Network Controller(s) Vendors and Models	Prime Client: HP 551i embedded dual port FlexFabric 10Gb adapter, 1xHP NC542m dual port Flex-10 10 GbE adapter Physical Clients 1-12: HP NC551i embedded dual port FlexFabric 10 Gb adapter, 1xHP NC542m dual port Flex-10 10 GbE adapter, 1xHP NC552m dual port Flex-10 10GbE adapter
Operating System, Version, Bitness, and Service Pack	Prime Client: Microsoft® Windows® 2008 Enterprise SP2 (64-bit) Physical Clients 1-12: VMware ESXi 4.1 U1 (Build 348481) Virtual Clients 0-17: Microsoft® Windows® 2008 R2 Enterprise (64-bit)
Number of Virtual Clients	18
Number of vCPUs Per Virtual Client	4

Number of vMem (GB) Per Virtual Client	4
Virtual Client Networking Notes	All client VMs attached to port 1 of NC542m card running at speed of 10Gb/s
Virtual Client Storage Notes	Client VMs stored on local media respective to their ESX host. 1x300GB 6G 10K rpm SFF SAS disk per Physical Client
Other Hardware	HP BladeSystem c7000 Enclosure,2xHP VC Flex-10 Enet Modules (only one used),4xHP 10GbE Pass-Thru Modules (only one used)
Other Software	BladeSystem c7000 Onboard Administrator Version 3.31, HP Virtual Connect Manager Version 3.18

Notes for Workload

Virtualization Software Notes

- All VMs used virtual hardware V7
- Ethernet adapter type set to vmxnet3 for all VMs (default vmxnet2)
- Logging disabled for all VMs (default enabled)
- CD and floppy devices were removed from all VMs (default enabled)
- Firewall was disabled in the console OS (default enabled)
- All VMs besides standbys: Paravirtual Controller
- Cluster DRS Automation Level set to Fully Automated
- DrsMigrationThreshold set to level 1
- Logical CPU layout changed fro all multi-cpu VMs to 1 socket with multiple cores (default Single core per socket)

Advanced Settings:

- Cpu.CoschedCrossCall=0 (default: 1)
- Cpu.CreditAgePeriod=500 (default: 1)
- Cpu.HaltingMsecPenalty=0 (default: 800)
- DataMover.HardwareAcceleratedInit=0 (default: 1)
- DataMover.HardwareAcceleratedMove=0 (default: 1)
- Disk.SchedNumReqOutstanding=256 (default: 32)
- Irq.BestVcpuRouting=1 (default: 0)
- Irq.RoutingPolicy=0 (default: 2)
- Mem.BalancePeriod=0 (default: 15)
- Mem.SamplePeriod=0 (default: 60)
- Mem.ShareScanGHz=0 (default: 4)
- Misc.TimerMaxHardPeriod=4000 (default: 100000)
- Misc.TimerMinHardPeriod=2000 (default: 100)
- Misc.WorldletHTSharing=45 (default: 90)
- Net.AllowPT=1 (default: 0)
- Net.MaxNetifRxQueueLen=500 (default: 100)
- Net.MaxNetifTxQueueLen=1000 (default: 500)
- Net.NetTxCompletionWorldlet=0 (default: 1)
- Net.NetTxWorldlet=0 (default: 2)

- Numa.AutoSplitVM=0 (default: 1)
- Numa.LTermFairnessInterval=0 (default: 5)
- Numa.PageMigEnable=0 (default: 1)
- Numa.MonMigEnable=0 (default: 1)
- Numa.PreferHT=1 (default: 0)
- Numa.RebalancePeriod=60000 (default: 2000)
- Numa.SwapInterval=1 (default: 3)
- Numa.SwapLoadEnable=0 (default: 1)
- Numa.SwapLocalityEnable=0 (default: 1)
- VMFS3.HardwareAcceleratedLocking=0 (default: 1)

Driver Options:

- Updated Drivers:
  - bnx2x 1.54.1.v41.1
  - scsi-hpsa 400.4.1.0-18OEM
- /vmkernel/module/qla2xxx.o/options= "ql2xintrdelaytimer=10" (default 0)
- /vmkernel/module/ixgbe.o/options= "InterruptThrottleRate=2000,2000 VMDQ=16,16" (default 16000, 1)

Server Notes

Server BIOS Settings:

- HP Power Profile set to Maximum Performance (default: Balanced Performance)
- Thermal Configuration set to Maximum Cooling (default: Optimal Cooling)
- Hardware Prefetcher set to disabled (default: enabled)
- Adjacent Sector Prefetcher set to disabled (default: enabled)
- Processor Power and Utilization Monitoring set to disabled (default: enabled)
- Memory Pre-Failure Notification set to disabled (default: enabled)
- Memory Refresh Rate set to 1X Refresh (default: 2X Refresh)
- Intel Turbo Boost Enabled (frequency boost to 3.3 GHz)(default: enabled)

Networking Notes

vSwitch Configuration:

- vSwitch0 for the Service Console on vmnic0 at 1 Gb/s
- vSwitch1 for the mailsever workloads on vmnic1 at 10 Gb/s
- vSwitch2 for the standby and Deploy workloads on vmnic2 at 1 Gb/s
- vSwitch3 for the vMotion network on vmnic3 at 1 Gb/s
  - MTU set to 9000
- vSwitch4 for the Olio workloads on vmnic5 at 10 Gb/s
- vSwitch5 for the DS2 workloads on vmnic4 at 10 Gb/s

Storage Notes

- ESX was installed on one disk in the internal server storage bay

- All LUNs were striped across three 2.4 TB Fusion-io ioDrive2 Duo PCI-e Flash cards in RAID0 within one of two DL380p Gen8 running Fusion-io ION Data Accelerator software
- Physical configuration for Fusion-io ION Data Accelerators details as below:
    - HP ProLiant DL380p Gen8 server
        - 2 x Intel Xeon E5-2690 2.9 GHz processors
        - 256 GB memory (16 x 16 GB dual rank PC3-12800 Registered DDR3 / 1600 MHz DIMMS)
        - 2xHP 82Q PCIe dual port 8Gb Fibre HBA
        - 2 x 146 GB HDD RAID 1 (OS)
        - 3x 2.4TB Fusion-io ioDrive2 Duo PCI-e Flash Cards configured in RAID 0

- VM Layout on the ION Data Accelerators
    - ION #1
        - 1 LUN at 1200GB (even DS2DBs)
        - 1 LUN at 800GB (even DS2Webs)
        - 1 LUN at 2100GB (even mailservers)
        - 1 LUN at 400GB (even OlioDBs)
        - 1 LUN at 2000GB (even OlioWebs)
        - 1 LUN at 200GB (all standbys & DeployTemplate)
    - ION #2
        - 1 LUN at 600GB (odd DS2DBs)
        - 1 LUN at 400GB (odd DS2Webs)
        - 1 LUN at 1100GB (odd mailservers)
        - 1 LUN at 200GB (odd OlioDBs)
        - 1 LUN at 1000GB (odd OlioWebs)
        - 1 LUN at 100GB (Deploy and SVMotion target)
    - All LUNs were configured as block devices and no system memory is used for write caching.

Datacenter Management Server Notes

None

Operating System Notes

- All mailserver VMs running Microsoft® Windows® 2008 R2 Enterprise SP 1 (64-bit) and were updated with all critical updates via windows update on July 20, 2012
- Linux VMs all running SLES 11 SP2
- The Shell Hardware Detection service was not running on mailserver VMs
- All standby VMs running MicrosoftÂ® WindowsÂ® 2003 Enterprise SP2 (32-bit)

Software Notes

- Microsoft® Exchange Server 2007 Enterprise SP3 (64-bit) was installed on each mailserver VM

Client Notes

- Prime client functionality was split from the client0 driver and was run on a non-virtualized copy of MicrosoftÂ® WindowsÂ® 2003 Enterprise SP2 (32-bit).
- Prime client was running VMware vSphere PowerCLI 5.1 Release 1 build 793510
- All client drivers were run on virtual machines that were each defined with 4 virtual cpus, 4GB of memory, 1 vmxnet3 network, and 32GB of disk space.
- Twelve HP ProLiant BL465c G7 clients ran the 18 client virtual machines as folows:
    - system 1: hosted vclients: 0,12

    - system 2: hosted vclients: 1,13
    - system 3: hosted vclients: 2,14
    - system 4: hosted vclients: 3,15
    - system 5: hosted vclients: 4,16
    - system 6: hosted vclients: 5,17
    - system 7: hosted vclients: 6
    - system 8: hosted vclients: 7
    - system 9: hosted vclients: 8
    - system 10: hosted vclients: 9
    - system 11: hosted vclients: 10
    - system 12: hosted vclients: 11
- All virtual client operating systems were updated via Windows Update.

Other Notes

None
