

VMmark [®] 4.0.3 Disclosure											
Server Vendor & Model: Dell PowerEdge R6715 Storage Vendor & Model: Dell PowerMax 8000 Hypervisor: VMware ESX 9.0.0.0, Build 24755229 Server Management Software: VMware vCenter 9.0.0.0, Build 24755230						VMmark 4.0.3 Score = 3.14 @ 3.8 Tiles					
Number of Hosts: 2			Uniform Hosts: yes				Total sockets/cores/threads in test: 2/320/640				
Tested By: Dell Technologies			Test Date: 10-06-2025				SUT Availability Date: 09-02-2025				
Performance Section Performance		Configuration Section Configuration			Notes Section Notes for Workload			Virtual Machines Section Virtual Machines			

Performance

TILE_0_Scores	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	
p0	14167.04	9258.36	2748.43	2077.20	1573.60	64834.19	64835.08	64833.50	51.11	1.00	
p1	14169.99	9256.33	2691.85	1896.42	1474.33	62816.87	62817.28	62815.36	49.73	1.00	
p2	14160.30	9252.89	2713.25	2062.40	1554.58	61031.35	61031.32	61031.12	48.57	1.00	
TILE_0_Ratios	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	Geo.Mean
p0	1.01	1.01	0.95	0.97	1.03	1.15	1.15	1.15	0.71	1.00	1.00
p1	1.01	1.01	0.93	0.88	0.96	1.11	1.11	1.11	0.69	1.00	0.97
p2	1.01	1.01	0.94	0.96	1.02	1.08	1.08	1.08	0.67	1.00	0.97
TILE_0_QoS	WVAuctionVM%	WVAuctionK8S%	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC			
p0	0.32 0.00	0.35 0.00	520.80	571.09	537.28	0.52	0.51	0.51			
p1	0.37 0.02	0.38 0.00	555.50	615.20	572.22	0.55	0.55	0.55			
p2	0.46 0.08	0.39 0.00	545.37	584.70	557.67	0.56	0.56	0.56			
TILE_1_Scores	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	
p0	14119.15	9254.82	2622.07	1957.10	1514.78	52964.11	52964.50	52964.39	50.55	1.00	
p1	14070.15	9354.05	2624.45	1835.00	1327.90	50491.94	50492.21	50492.37	48.47	1.00	
p2	14061.60	9266.40	2580.25	1918.97	1474.60	48626.17	48626.19	48626.28	47.53	1.00	
TILE_1_Ratios	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	Geo.Mean
p0	1.01	1.01	0.90	0.91	0.99	0.94	0.94	0.94	0.70	1.00	0.92
p1	1.01	1.02	0.90	0.85	0.87	0.89	0.89	0.89	0.67	1.00	0.88
p2	1.00	1.01	0.89	0.89	0.96	0.86	0.86	0.86	0.66	1.00	0.88
TILE_1_QoS	WVAuctionVM%	WVAuctionK8S%	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC			
p0	1.21 0.12	0.73 0.01	621.77	694.69	686.31	0.66	0.66	0.66			
p1	1.53 0.18	0.76 0.01	617.88	684.75	684.49	0.72	0.73	0.73			
p2	1.52 0.25	0.82 0.02	657.97	741.04	746.37	0.73	0.73	0.73			
TILE_2_Scores	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	
p0	14128.45	9265.77	2720.55	1977.10	1537.12	58692.68	58690.09	58690.71	61.71	1.00	
p1	14136.29	9246.92	2718.70	1995.58	1468.40	56972.65	56971.82	56971.92	60.89	1.00	

Availability Date (MM-DD-YYYY)																																																																																												
Server Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESX 9.0.0.0, Build 24755230 / 06-17-2025																																																																																											
Supplemental Software	None																																																																																											
Servers																																																																																												
Number of Servers in System Under Test (all subsequent fields in this section are per Server)	2																																																																																											
Server Manufacturer and Model	Dell PowerEdge R6715																																																																																											
Processor Vendor and Model	AMD EPYC 9845																																																																																											
Processor Speed (GHz) / Turbo Boost Speed (GHz)	2.1 GHz / 3.7 GHz																																																																																											
Total Sockets/Total Cores/Total Threads	1 Sockets / 160 Cores / 320 Threads																																																																																											
NUMA Nodes	1																																																																																											
BIOS Version	1.3.3																																																																																											
Memory Size (in GB, Number of DIMMs)	Physical Memory (BIOS): 1152 GB Physical Memory (ESX): 1152 GB Number of DIMMs: 12																																																																																											
Memory Type and Speed	<table><tr><th>Location</th><th>Size</th><th>Speed</th><th>Max Speed</th><th>Rank</th><th>Type</th><th>Detail</th></tr><tr><td>A1</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A2</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A3</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A4</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A5</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A6</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A7</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A8</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A9</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A10</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A11</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>A12</td><td>96 GB</td><td>5200 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr></table>	Location	Size	Speed	Max Speed	Rank	Type	Detail	A1	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A2	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A3	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A4	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A5	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A6	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A7	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A8	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A9	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A10	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A11	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	A12	96 GB	5200 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered
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Number of SAS Devices	1																																																																																											
SAS Device Vendors and Models	<table><tr><th>Device</th><th>Model</th><th>Driver</th><th>Driver Version</th><th>Firmware</th></tr><tr><td>vmhba1</td><td>CN0D0VXGFCP0042M00HMX20</td><td>bcm_mpi3</td><td>8.11.6.0.0.0</td><td>8.8.0.200-00018-00002</td></tr></table>	Device	Model	Driver	Driver Version	Firmware	vmhba1	CN0D0VXGFCP0042M00HMX20	bcm_mpi3	8.11.6.0.0.0	8.8.0.200-00018-00002																																																																																	
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Number of Virtual Host Bus Adapters	4																																																																																											
Virtual Host Bus Adapter Vendors and Models	<table><tr><th>HBA</th><th>Model</th><th>Speed</th><th>Driver</th><th>Firmware</th></tr></table>	HBA	Model	Speed	Driver	Firmware																																																																																						
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	<table><tr><td>vmhba64</td><td>Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter</td><td>32 Gbps</td><td>lpfc</td><td>14.4.436.20</td></tr><tr><td>vmhba65</td><td>Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter</td><td>32 Gbps</td><td>lpfc</td><td>14.4.436.20</td></tr><tr><td>vmhba66</td><td>Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter</td><td>32 Gbps</td><td>lpfc</td><td>14.4.436.20</td></tr><tr><td>vmhba67</td><td>Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter</td><td>32 Gbps</td><td>lpfc</td><td>14.4.436.20</td></tr></table>					vmhba64	Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter	32 Gbps	lpfc	14.4.436.20	vmhba65	Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter	32 Gbps	lpfc	14.4.436.20	vmhba66	Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter	32 Gbps	lpfc	14.4.436.20	vmhba67	Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter	32 Gbps	lpfc	14.4.436.20															
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vmhba67	Emulex LPe37102-D 2-Port 32Gb Fibre Channel Adapter	32 Gbps	lpfc	14.4.436.20																																				
Power Supply Quantity, Name/Part Number, Wattage, Firmware, and Type (Voltage, AC/DC)	2, Dell-GRD17A00, 1500W, 8727, 208V, AC																																							
Cooling Type (Air Cooling, Closed Loop Cooling, Direct Liquid Cooling, or Other)	Air Cooling																																							
Other Hardware	Dell Connectrix DS6620B 32 Gb FC Switch																																							
Other Software	None																																							
BIOS Availability Date (MM-DD-YYYY)	08-11-2025																																							
Hardware Availability Date (MM-DD-YYYY)	06-25-2025																																							
Software Availability Date (MM-DD-YYYY)	09-02-2025																																							
Network																																								
Number of Virtual Network Controllers	4																																							
Virtual Network Controllers, Speeds, MTUs, Firmware, Drivers, Vendors, and Models	<table><tr><th>Device</th><th>Speed</th><th>Duplex</th><th>MTU</th><th>Firmware</th><th>Driver</th><th>Description</th></tr><tr><td>vmnic0</td><td>25 Gbps</td><td>Full</td><td>9000</td><td>229.2.62.0 /pkg 22.92.07.50</td><td>bnxtnet</td><td>Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter</td></tr><tr><td>vmnic1</td><td>25 Gbps</td><td>Full</td><td>9000</td><td>229.2.62.0 /pkg 22.92.07.50</td><td>bnxtnet</td><td>Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter</td></tr><tr><td>vmnic2</td><td>25 Gbps</td><td>Full</td><td>9000</td><td>229.2.62.0 /pkg 22.92.07.50</td><td>bnxtnet</td><td>Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter</td></tr><tr><td>vmnic3</td><td>25 Gbps</td><td>Full</td><td>9000</td><td>229.2.62.0 /pkg 22.92.07.50</td><td>bnxtnet</td><td>Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter</td></tr></table>					Device	Speed	Duplex	MTU	Firmware	Driver	Description	vmnic0	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter	vmnic1	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter	vmnic2	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter	vmnic3	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter
Device	Speed	Duplex	MTU	Firmware	Driver	Description																																		
vmnic0	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter																																		
vmnic1	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter																																		
vmnic2	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter																																		
vmnic3	25 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme E-Series Quad-port 25Gb OCP 3.0 Ethernet Adapter																																		
Number of Virtual Switches	2																																							
Virtual Switches, Ports, Port Groups, MTUs, and Uplinks	<table><tr><th>Switch</th><th>Ports</th><th>Configured Ports</th><th>MTU</th><th>Uplinks</th></tr><tr><td>vSwitch0</td><td>9216</td><td>128</td><td>9000</td><td>vmnic0, vmnic1</td></tr><tr><td>vSwitch2</td><td>9216</td><td>128</td><td>9000</td><td>vmnic2, vmnic3</td></tr></table> <table><tr><th>Switch</th><th>Port Group</th><th>VLAN ID</th><th>Uplinks</th></tr><tr><td>vSwitch0</td><td>Management Network</td><td>0</td><td>vmnic0, vmnic1</td></tr><tr><td>vSwitch0</td><td>VM Network</td><td>0</td><td>vmnic0, vmnic1</td></tr><tr><td>vSwitch2</td><td>VM Network 2</td><td>0</td><td>vmnic2, vmnic3</td></tr></table>					Switch	Ports	Configured Ports	MTU	Uplinks	vSwitch0	9216	128	9000	vmnic0, vmnic1	vSwitch2	9216	128	9000	vmnic2, vmnic3	Switch	Port Group	VLAN ID	Uplinks	vSwitch0	Management Network	0	vmnic0, vmnic1	vSwitch0	VM Network	0	vmnic0, vmnic1	vSwitch2	VM Network 2	0	vmnic2, vmnic3				
Switch	Ports	Configured Ports	MTU	Uplinks																																				
vSwitch0	9216	128	9000	vmnic0, vmnic1																																				
vSwitch2	9216	128	9000	vmnic2, vmnic3																																				
Switch	Port Group	VLAN ID	Uplinks																																					
vSwitch0	Management Network	0	vmnic0, vmnic1																																					
vSwitch0	VM Network	0	vmnic0, vmnic1																																					
vSwitch2	VM Network 2	0	vmnic2, vmnic3																																					
VMkernel Network Adapters, Port Groups, MTUs, TCP/IP Stacks, and Services	<table><tr><th>Device</th><th>Port Group/DVPort</th><th>MTU</th><th>TCP/IP Stack</th><th>Services</th></tr><tr><td>vmk0</td><td>Management Network</td><td>9000</td><td>Default</td><td>vMotion, Management</td></tr></table>					Device	Port Group/DVPort	MTU	TCP/IP Stack	Services	vmk0	Management Network	9000	Default	vMotion, Management																									
Device	Port Group/DVPort	MTU	TCP/IP Stack	Services																																				
vmk0	Management Network	9000	Default	vMotion, Management																																				
Physical Switch Vendors, Models, and Speeds	Dell PowerSwitch Z9264F-ON 200GbE																																							
Primary Storage																																								
Storage Category	FC SAN																																							

Datastores	Datastores		Type	Size	Storage Device					
	Deploy		VMFS-6	1.4 TB	EMC Fibre Channel Disk					
	OSDATA-68adb03e-e25ede95-fe00-04320136d8a0		VMFSOS	128.6 GB	Local NVMe Disk					
	Tile0		VMFS-6	2.3 TB	EMC Fibre Channel Disk					
	Tile1		VMFS-6	2.3 TB	EMC Fibre Channel Disk					
	Tile2		VMFS-6	2.3 TB	EMC Fibre Channel Disk					
	Tile3		VMFS-6	2.3 TB	EMC Fibre Channel Disk					
	Tile4		VMFS-6	2.3 TB	EMC Fibre Channel Disk					
	datastore1 (2)		VMFS-6	1.5 TB	Local NVMe Disk					
	svmotion		VMFS-6	1.5 TB	EMC Fibre Channel Disk					
	xvmotion		VMFS-6	1.6 TB	EMC Fibre Channel Disk					
Number of Storage Devices	9									
Storage Device Names, Sizes, Types, Vendors, Models, and Revisions	Storage Device		Size	Type	Vendor	Model	Revision	Path Selection Policy	Path Selection Policy Config	# Working Paths
	EMC Fibre Channel Disk		1.4 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		1.5 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	Local NVMe Disk (Boot Device)		1.6 TB	Direct-Access	NVMe	Dell Ent NVMe v2 AGN MU U.2 1.6TB	2.5.0	FIXED	preferred=none	1
	EMC Fibre Channel Disk		1.6 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		2.3 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		2.3 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		2.3 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		2.3 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		2.3 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
	EMC Fibre Channel Disk		2.3 TB	Direct-Access	EMC	SYMMETRIX	5977	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	8
How Datastores Map to Storage Devices	See Storage Notes Section									
VMware vSAN Configuration (if used)	None									
RAID Configuration (if used)	None									
Server Management										
VMware vCenter Server Number of vCPUs	8									
VMware vCenter Server Virtual Memory (in GB)	30									
Clients										
Total Client VMs (including Prime Client)	5									
Number of Client Hosts (all subsequent fields in this section are per Client Host)	2									
System Model(s)	- Client Host 1: Dell PowerEdge R7625 - Client Host 2: Dell PowerEdge R7625									

Processor Vendor(s) and Model(s)	- Client Host 1: AMD EPYC 9754 - Client Host 2: AMD EPYC 9654																																																											
Processor Speed(s) (GHz)	- Client Host 1: 2.25 GHz - Client Host 2: 2.4 GHz																																																											
Total Sockets/Total Cores/Total Threads	<table><tr><th>Client Host</th><th>Sockets</th><th>Cores</th><th>Threads</th></tr><tr><td>Client Host 1</td><td>2</td><td>256</td><td>512</td></tr><tr><td>Client Host 2</td><td>2</td><td>192</td><td>384</td></tr><tr><td>Total</td><td>4</td><td>448</td><td>896</td></tr></table>	Client Host	Sockets	Cores	Threads	Client Host 1	2	256	512	Client Host 2	2	192	384	Total	4	448	896																																											
Client Host	Sockets	Cores	Threads																																																									
Client Host 1	2	256	512																																																									
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Total	4	448	896																																																									
NUMA Nodes	- Client Host 1: 2 - Client Host 2: 2																																																											
Memory Size (in GB) per Client Host	<table><tr><th>Client Host</th><th>BIOS</th><th>ESX</th></tr><tr><td>Client Host 1</td><td>6144 GB</td><td>6144 GB</td></tr><tr><td>Client Host 2</td><td>1536 GB</td><td>1344 GB</td></tr></table>	Client Host	BIOS	ESX	Client Host 1	6144 GB	6144 GB	Client Host 2	1536 GB	1344 GB																																																		
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Virtual Network Controllers, Speeds, MTUs, Firmware, Drivers, Vendors, and Models	<table><tr><th>Client Host</th><th>Device</th><th>Speed</th><th>Duplex</th><th>MTU</th><th>Firmware</th><th>Driver</th><th>Description</th></tr><tr><td rowspan="2">Client Host 1</td><td>vmnic4</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>229.2.62.0 /pkg 22.92.07.50</td><td>bnxtnet</td><td>Broadcom NetXtreme-E P2100D BCM57508 2x100G QSFP PCIE Ethernet</td></tr><tr><td>vmnic5</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>229.2.62.0 /pkg 22.92.07.50</td><td>bnxtnet</td><td>Broadcom NetXtreme-E P2100D BCM57508 2x100G QSFP PCIE Ethernet</td></tr><tr><td rowspan="2">Client Host 2</td><td>vmnic2</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>22.36.1010</td><td>nmlx5_core</td><td>Mellanox Technologies MT2892 Family [ConnectX-6 Dx]</td></tr><tr><td>vmnic3</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>22.36.1010</td><td>nmlx5_core</td><td>Mellanox Technologies MT2892 Family [ConnectX-6 Dx]</td></tr></table>	Client Host	Device	Speed	Duplex	MTU	Firmware	Driver	Description	Client Host 1	vmnic4	100 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme-E P2100D BCM57508 2x100G QSFP PCIE Ethernet	vmnic5	100 Gbps	Full	9000	229.2.62.0 /pkg 22.92.07.50	bnxtnet	Broadcom NetXtreme-E P2100D BCM57508 2x100G QSFP PCIE Ethernet	Client Host 2	vmnic2	100 Gbps	Full	9000	22.36.1010	nmlx5_core	Mellanox Technologies MT2892 Family [ConnectX-6 Dx]	vmnic3	100 Gbps	Full	9000	22.36.1010	nmlx5_core	Mellanox Technologies MT2892 Family [ConnectX-6 Dx]																					
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Client Host 2	vmnic2	100 Gbps	Full	9000	22.36.1010	nmlx5_core	Mellanox Technologies MT2892 Family [ConnectX-6 Dx]																																																					
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Virtual Switches, Ports, Port Groups, MTUs, and Uplinks	<table><tr><th>Client Host</th><th>Switch</th><th>Ports</th><th>Configured Ports</th><th>MTU</th><th>Uplinks</th></tr><tr><td rowspan="2">Client Host 1</td><td>vSwitch0</td><td>9216</td><td>128</td><td>9000</td><td>vmnic4</td></tr><tr><td>vSwitch1</td><td>9216</td><td>128</td><td>9000</td><td>vmnic5</td></tr><tr><td rowspan="2">Client Host 2</td><td>vSwitch0</td><td>9216</td><td>128</td><td>9000</td><td>vmnic2</td></tr><tr><td>vSwitch1</td><td>9216</td><td>128</td><td>9000</td><td>vmnic3</td></tr></table> <table><tr><th>Client Host</th><th>Switch</th><th>Port Group</th><th>VLAN ID</th><th>Uplinks</th></tr><tr><td rowspan="3">Client Host 1</td><td>vSwitch0</td><td>Management Network</td><td>0</td><td>vmnic4</td></tr><tr><td>vSwitch0</td><td>VM Network</td><td>0</td><td>vmnic4</td></tr><tr><td>vSwitch1</td><td>VM Network 2</td><td>0</td><td>vmnic5</td></tr><tr><td rowspan="3">Client Host 2</td><td>vSwitch0</td><td>Management Network</td><td>0</td><td>vmnic2</td></tr><tr><td>vSwitch0</td><td>VM Network</td><td>0</td><td>vmnic2</td></tr><tr><td>vSwitch1</td><td>VM Network 2</td><td>0</td><td>vmnic3</td></tr></table>	Client Host	Switch	Ports	Configured Ports	MTU	Uplinks	Client Host 1	vSwitch0	9216	128	9000	vmnic4	vSwitch1	9216	128	9000	vmnic5	Client Host 2	vSwitch0	9216	128	9000	vmnic2	vSwitch1	9216	128	9000	vmnic3	Client Host	Switch	Port Group	VLAN ID	Uplinks	Client Host 1	vSwitch0	Management Network	0	vmnic4	vSwitch0	VM Network	0	vmnic4	vSwitch1	VM Network 2	0	vmnic5	Client Host 2	vSwitch0	Management Network	0	vmnic2	vSwitch0	VM Network	0	vmnic2	vSwitch1	VM Network 2	0	vmnic3
Client Host	Switch	Ports	Configured Ports	MTU	Uplinks																																																							
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Client Host 2	vSwitch0	Management Network	0	vmnic2																																																								
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VMkernel Network Adapters, Port Groups, MTUs, TCP/IP Stacks, and Services	<table><tr><th>Client Host</th><th>Device</th><th>Port Group/DVPort</th><th>MTU</th><th>TCP/IP Stack</th><th>Services</th></tr><tr><td>Client Host 1</td><td>vmk0</td><td>Management Network</td><td>9000</td><td>Default</td><td>vMotion, Management</td></tr><tr><td>Client Host 2</td><td>vmk0</td><td>Management Network</td><td>9000</td><td>Default</td><td>vMotion, Management</td></tr></table>	Client Host	Device	Port Group/DVPort	MTU	TCP/IP Stack	Services	Client Host 1	vmk0	Management Network	9000	Default	vMotion, Management	Client Host 2	vmk0	Management Network	9000	Default	vMotion, Management																																									
Client Host	Device	Port Group/DVPort	MTU	TCP/IP Stack	Services																																																							
Client Host 1	vmk0	Management Network	9000	Default	vMotion, Management																																																							
Client Host 2	vmk0	Management Network	9000	Default	vMotion, Management																																																							
Client Storage Notes	See Client Notes Section																																																											
Other Hardware	None																																																											

Notes for Workload

Template deployed with disk type: Thick Lazy

Virtualization Software Notes

- vSphere DRS Enabled
- vSphere DRS Automation Level set to Fully Automated
- vSphere DRS Migration Threshold set to 1
- Logical CPU layout changed for all multi-CPU VMs to 1 socket with multiple cores (default single core per socket) except Prime Client, Template, Client and AuctionK* VMs
- Logging was disabled for all VMs except Prime Client and the template (default enabled)
- All DS35DB, AuctionK* and NoSQLBench* VMs had CPU shares set to High (default Normal)
- All DS35DB VMs had Memory shares set to High (default Normal)
- All memory reserved (LockedToMax) for all DS35DB VMs
- All Standby VMs had CPU shares set to Low (default Normal)
- sched.mem.lpage.enable1GPage set to TRUE for all DS35DB VMs (default FALSE)
- CD/DVD device was removed from all VMs except Prime Client (default present)
- All AuctionWebEDB, DS35DB and SocialNetwork VMs were thin provisioned

SUT Host ESX Advanced Settings:

Advanced Setting	Host 1	Host 2	Default
Cpu.CreditAgePeriod	1000	1000	3000
Cpu.HTWholeCoreThreshold	0	0	800
DataMover.HardwareAcceleratedInit	0	0	1
DataMover.HardwareAcceleratedMove	0	0	1
Disk.IdleCredit	64	64	32
Disk.ReqCallThreshold	1	1	8
Mem.CtlMaxPercent	0	0	65
Mem.ShareScanGHz	0	0	4
Numa.LocalityWeightActionAffinity	0	0	130
Power.CpuPolicy	Performance	Performance	Balanced
UserVars.HostClientCEIPOptIn	2	2	0
UserVars.SuppressShellWarning	1	1	0

SUT Host ESX Module Options:

Module	Host 1	Host 2	Default
tcpip4	ipv6=1	ipv6=1	ipv6=1

Server Notes

- Server BIOS Settings:
- Memory Settings - DRAM refresh Delay : Performance
 - Processor settings - ACPI CST C2 Latency - 18
 - System Profile Settings - System profile : Custom
 - System Profile Settings - CPU Power management : OS DBPM

- System Profile Settings - C States : Disabled
- System Profile Settings - PCI ASPM L1 Link Power Management : Disabled
- System Profile Settings - Periodic Directory Rinse (PDR) Tuning : Blended
- System Profile Settings - Determinism Control : Manual
- System Profile Settings - Determinism Slider : Power Determinism
- Optimizer mode : Enabled (default Disabled)
- Adaptive Allocation (AA) : Enabled
- Thermal Profile : Max Performance
- Thermal Profile - Fan speed offset : Maximum

Networking Notes

- SUTs:
- vSwitch0: Management Network (vmk0), vMotion (vmk0) and VM Network using vmnic0, vmnic1
 - vSwitch2: VM Network 2 using vmnic2, vmnic3
- All vSwitches, vmk0, and vmnic0, vmnic1, vmnic2, vmnic3 set to MTU 9000

- Client Hosts:
- Client Host1:
- vSwitch0: Management Network (vmk0) and VM Network using vmnic4
 - vSwitch1: VM Network 2 using vmnic5
- All vSwitches, vmk0 and vmnic4, vmnic5 set to MTU 9000

- Client Host2:
- vSwitch0: Management Network (vmk0) and VM Network using vmnic2
 - vSwitch1: VM Network 2 using vmnic3
- All vSwitches, vmk0 and vmnic2, vmnic3 set to MTU 9000

Storage Notes

- Primary Storage : Dell PowerMax 8000, Dell PowerMax OS 5978.479.479
- Single default Storage Resource Pool (SRP) with 2xDisk Groups (factory pre-configured)
 - Disk Group 1 : 9x750 GB Intel SSDs configured in RAID 5 (7+1) with one spare drive (Usable capacity 4880.9 GiB)
 - Disk Group 2 : 25x7.68 TB Samsung NVMe drives configured in RAID 5 (7+1) with one spare drive (Usable capacity 150217.6 GiB)

Server Management Notes

VMware VMware vCenter 9.0.0.0 - build 24755230 is hosted as a VM on ClientHost1

Operating System Notes

SUT Host ESX Image Profile: DEL-ESXi_9000.24755229-A01

Software Notes

None

Client Notes

- vSphere DRS Disabled

Client Host ESX Advanced Settings:

Advanced Setting	Host 1	Host 2	Default
Cpu.CreditAgePeriod	1000	1000	3000

Cpu.HTWholeCoreThreshold	0	0	800
DataMover.HardwareAcceleratedInit	0	0	1
DataMover.HardwareAcceleratedMove	0	0	1
Disk.IdleCredit	64	64	32
Disk.ReqCallThreshold	1	1	8
Mem.CtlMaxPercent	0	0	65
Mem.ShareScanGHz	0	0	4
Numa.LTermFairnessInterval	0	0	5
Numa.LocalityWeightActionAffinity	0	0	130
Numa.MigImbalanceThreshold	57	57	10
Numa.PageMigEnable	0	0	1
Numa.RebalancePeriod	60000	60000	2000
Numa.SwapLoadEnable	0	0	1
Numa.SwapLocalityEnable	0	0	1
Power.CpuPolicy	Performance	Performance	Balanced
UserVars.HostClientCEIPOptIn	2	2	0
UserVars.SuppressShellWarning	1	1	0

Client Host ESX Module Options:

Module	Host 1	Host 2	Default
tcpip4	ipv6=1	ipv6=1	ipv6=1

Client Host ESX Image Profile: DEL-ESXi_9000.24755229-A01

Client Host VMs:

- Client Host 1: Client1, Client2, vcsa
- Client Host 2: Client0, Client3, Primeclient

Other Notes

None

VMmark4.properties Settings

- Default Settings

Virtual Machines

SUT Host Virtual Machines

VM	vCPUs	Cores Per Socket	Memory (MB)	Sync Time	Logging	CD/DVD	CPU Res	CPU Limit	CPU Shares	Mem Res	Mem Limit	Mem Shares	Mem Pin	Mem 1G Page	Disk Shares	Datastore	Port Group	vHW	VMTools	Scoreboard
AuctionAppA0	4	4	8192	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile0	VM Network 2	17	12325	TRUE
AuctionAppA1	4	4	8192	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile1	VM Network 2	17	12325	TRUE
AuctionAppA2	4	4	8192	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile2	VM Network 2	17	12325	TRUE

NoSQLBenchC0	8	8	8192	TRUE	FALSE	Removed	0	Unlimited	high	0	Unlimited	normal	FALSE	FALSE	normal	Tile0	VM Network 2	17	12325	TRUE
NoSQLBenchC1	8	8	8192	TRUE	FALSE	Removed	0	Unlimited	high	0	Unlimited	normal	FALSE	FALSE	normal	Tile1	VM Network 2	17	12325	TRUE
NoSQLBenchC2	8	8	8192	TRUE	FALSE	Removed	0	Unlimited	high	0	Unlimited	normal	FALSE	FALSE	normal	Tile2	VM Network 2	17	12325	TRUE
NoSQLBenchC3	8	8	8192	TRUE	FALSE	Removed	0	Unlimited	high	0	Unlimited	normal	FALSE	FALSE	normal	Tile3	VM Network 2	17	12325	TRUE
VM	vCPUs	Cores Per Socket	Memory (MB)	Sync Time	Logging	CD/DVD	CPU Res	CPU Limit	CPU Shares	Mem Res	Mem Limit	Mem Shares	Mem Pin	Mem 1G Page	Disk Shares	Datastore	Port Group	vHW	VMTools	Scoreboard
SocialNetwork0	36	36	16384	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile0	VM Network 2	17	12325	TRUE
SocialNetwork1	36	36	16384	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile1	VM Network 2	17	12325	TRUE
SocialNetwork2	36	36	16384	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile2	VM Network 2	17	12325	TRUE
SocialNetwork3	36	36	16384	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Tile3	VM Network 2	17	12325	TRUE
VM	vCPUs	Cores Per Socket	Memory (MB)	Sync Time	Logging	CD/DVD	CPU Res	CPU Limit	CPU Shares	Mem Res	Mem Limit	Mem Shares	Mem Pin	Mem 1G Page	Disk Shares	Datastore	Port Group	vHW	VMTools	Scoreboard
Standby0	1	1	2048	TRUE	FALSE	Removed	0	Unlimited	low	0	Unlimited	normal	FALSE	FALSE	normal	Tile0	VM Network 2	17	12325	TRUE
Standby1	1	1	2048	TRUE	FALSE	Removed	0	Unlimited	low	0	Unlimited	normal	FALSE	FALSE	normal	Tile1	VM Network 2	17	12325	TRUE
Standby2	1	1	2048	TRUE	FALSE	Removed	0	Unlimited	low	0	Unlimited	normal	FALSE	FALSE	normal	Tile2	VM Network 2	17	12325	TRUE
Standby3	1	1	2048	TRUE	FALSE	Removed	0	Unlimited	low	0	Unlimited	normal	FALSE	FALSE	normal	Tile3	VM Network 2	17	12325	TRUE
VM	vCPUs	Cores Per Socket	Memory (MB)	Sync Time	Logging	CD/DVD	CPU Res	CPU Limit	CPU Shares	Mem Res	Mem Limit	Mem Shares	Mem Pin	Mem 1G Page	Disk Shares	Datastore	Port Group	vHW	VMTools	Scoreboard
VMmark-4.0.3-212	4	1	32768	TRUE	TRUE	Present	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Deploy	VM Network 2	17	12325	TRUE

Client Host Virtual Machines

VM	vCPUs	Cores Per Socket	Memory (MB)	Sync Time	Logging	CD/DVD	CPU Res	CPU Limit	CPU Shares	Mem Res	Mem Limit	Mem Shares	Mem Pin	Mem 1G Page	Disk Shares	Datastore	Port Group	vHW	VMTools	Scoreboard
Client0	64	1	98304	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	ClientsDS	VM Network 2	17	12325	TRUE
Client1	64	1	98304	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	ClientsDS	VM Network 2	17	12325	TRUE
Client2	64	1	98304	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	ClientsDS	VM Network 2	17	12325	TRUE
Client3	64	1	98304	TRUE	FALSE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	ClientsDS	VM Network 2	17	12325	TRUE
Primeclient	4	1	32768	TRUE	TRUE	Present	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	ClientsDS	VM Network, VM Network 2	17	12325	TRUE
vcsa	8	1	30720	FALSE	TRUE	Present	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	ClientsDS	VM Network	10	12421	TRUE

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