

VMmark [®] 4.0.1 Disclosure											
Server Vendor & Model: Supermicro AS -2126HS-TN Storage Vendor & Model: PureStorage FlashArray FA-X90R2 Hypervisor: VMware ESXi 8.0 Update 3, Build 24022510 Server Management Software: VMware vCenter Server 8.0 Update 3, Build 24022515						VMmark 4.0.1 Score = 1.86 @ 2 Tiles					
Number of Hosts: 2			Uniform Hosts: yes				Total sockets/cores/threads in test: 4/128/256				
Tested By: Supermicro			Test Date: 11-05-2024				SUT Availability Date: 01-10-2025				
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	Geo.Mean
p0	14110.47	9230.73	3120.28	2335.32	1757.62	55662.45	55458.94	55671.32	71.99	1.00	
p1	14089.36	9241.77	3088.93	2344.18	1697.20	53901.39	53901.54	53901.79	71.29	1.00	
p2	14083.42	9221.16	3037.25	2194.90	1668.05	52261.45	52260.88	52261.48	71.31	1.00	
TILE_0_Ratios	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	Geo.Mean
p0	1.01	1.00	1.08	1.09	1.15	0.99	0.98	0.99	1.00	1.00	1.03
p1	1.01	1.00	1.07	1.09	1.11	0.95	0.95	0.95	0.99	1.00	1.01
p2	1.01	1.00	1.05	1.02	1.09	0.92	0.92	0.92	0.99	1.00	0.99
TILE_0_QoS	WVAuctionVM%	WVAuctionK8S%	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC			
p0	0.52 0.07	0.34 0.00	291.41	305.11	328.82	0.62	0.61	0.62			
p1	0.57 0.13	0.37 0.00	307.92	293.59	316.27	0.63	0.63	0.63			
p2	0.56 0.08	0.33 0.00	336.97	414.66	418.17	0.69	0.69	0.69			
TILE_1_Scores	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	Geo.Mean
p0	14088.90	9231.12	3139.03	2243.28	1694.25	55116.01	55118.90	55118.99	71.86	1.00	
p1	14093.10	9239.12	3101.62	2356.18	1751.88	52961.18	52961.12	52961.67	71.81	1.00	
p2	14093.95	9226.71	3079.62	2215.53	1639.90	51167.25	51167.21	51167.54	71.71	1.00	
TILE_1_Ratios	WVAuctionVM	WVAuctionK8S	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC	SocialNetwork	Standby	Geo.Mean
p0	1.01	1.00	1.08	1.04	1.11	0.98	0.98	0.98	1.00	1.00	1.02
p1	1.01	1.00	1.07	1.10	1.15	0.94	0.94	0.94	1.00	1.00	1.01
p2	1.01	1.00	1.06	1.03	1.07	0.91	0.91	0.91	1.00	1.00	0.99
TILE_1_QoS	WVAuctionVM%	WVAuctionK8S%	DVDStoreA	DVDStoreB	DVDStoreC	NoSQLBenchA	NoSQLBenchB	NoSQLBenchC			
p0	0.54 0.07	0.34 0.00	286.34	308.93	322.03	0.62	0.62	0.62			

p1	0.54 0.05	0.35 0.01	302.93	336.08	334.30	0.66	0.66	0.66				
p2	0.59 0.09	0.35 0.00	318.40	330.14	376.22	0.68	0.68	0.68				
p0_score:	2.05											
p1_score:	2.02											
p2_score:	1.98											
Infrastructure_Operations_Scores:					vMotion		SVMotion		XVMotion		Deploy	
Completed_Ops_PerHour					29.00		17.00		17.00		18.50	
Avg_Seconds_To_Complete					1.03		2.18		2.76		155.03	
Failures					0.00		0.00		0.00		0.00	
Ratio					0.98		1.31		1.31		1.28	
Number_Of_Threads					1		1		1		1	
Summary						Run_Is_Compliant				Median_Phase(p1)		
Unreviewed_VMmark4_Applications_Score						2.02						
Unreviewed_VMmark4_Infrastructure_Score						1.21						
Unreviewed_VMmark4_Score						1.86 @ 2 Tiles						

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 8.0 Update 3, Build 24022510 / 06-25-2024
Server Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 8.0 Update 3, Build 24022515 / 06-25-2024
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	Supermicro AS -2126HS-TN
Processor Vendor and Model	AMD EPYC 9375F
Processor Speed (GHz) / Turbo Boost Speed (GHz)	3.8 GHz / 4.8 GHz

Total Sockets/Total Cores/Total Threads	2 Sockets / 64 Cores / 128 Threads																																																																																																																																																																																					
NUMA Nodes	2																																																																																																																																																																																					
BIOS Version	1.1																																																																																																																																																																																					
Memory Size (in GB, Number of DIMMs)	Physical Memory (BIOS): 1536 GB Physical Memory (ESXi): 1536 GB Number of DIMMs: 24																																																																																																																																																																																					
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>P1-DIMMA1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMB1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMC1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMD1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMME1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMF1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMG1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMH1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMI1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMJ1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMMK1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P1-DIMML1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMA1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMB1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMC1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMD1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMME1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMF1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMG1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMH1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMI1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMJ1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMMK1</td><td>64 GB</td><td>6000 MT/s</td><td>6400 MT/s</td><td>2</td><td>DDR5</td><td>Synchronous, Registered</td></tr><tr><td>P2-DIMML1</td><td>64 GB</td><td>6000 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	P1-DIMMA1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMB1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMC1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMD1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMME1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMF1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMG1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMH1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMI1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMJ1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMMK1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P1-DIMML1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMA1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMB1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMC1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMD1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMME1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMF1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMG1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMH1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMI1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMJ1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMMK1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered	P2-DIMML1	64 GB	6000 MT/s	6400 MT/s	2	DDR5	Synchronous, Registered
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Number of SAS Devices	0																																																																																																																																																																																					
SAS Device Vendors and Models	None																																																																																																																																																																																					
Number of Virtual Host Bus	4																																																																																																																																																																																					

Datastores

Datastores	Type	Size	Storage Device
CSI	VMFS-6	35.2 TB	PURE Fibre Channel Disk
Deploy	VMFS-6	35.2 TB	PURE Fibre Channel Disk
OSDATA-66da2bff-e845cc5d-b881-905a08103d36	VMFSOS	25.5 GB	PURE Fibre Channel Disk
db0	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db1	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db2	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db3	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db4	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db5	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db6	VMFS-6	2.2 TB	PURE Fibre Channel Disk
db7	VMFS-6	2.2 TB	PURE Fibre Channel Disk
infra_source	VMFS-6	8.8 TB	PURE Fibre Channel Disk
infra_target	VMFS-6	8.8 TB	PURE Fibre Channel Disk
tile0	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile1	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile2	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile3	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile4	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile5	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile6	VMFS-6	2.2 TB	PURE Fibre Channel Disk
tile7	VMFS-6	2.2 TB	PURE Fibre Channel Disk

Number of Storage Devices

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Storage Device	Size	Type	Vendor	Model	Revision	Path Selection Policy	Path Selection Policy Config	# Working Paths
PURE Fibre Channel Disk (Boot Device)	34.4 GB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
Local NVMe Disk	500.1 GB	Direct-Access	NVMe	Samsung SSD 980 PRO 500GB	5B2QGXA7	FIXED	preferred=none	1
PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
PURE Fibre Channel		Direct-						

Storage Device Names, Sizes, Types, Vendors, Models, and Revisions	Disk	2.2 TB	Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
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	PURE Fibre Channel Disk	2.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	8.8 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	8.8 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
	PURE Fibre Channel Disk	35.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2
PURE Fibre Channel Disk	35.2 TB	Direct-Access	PURE	FlashArray	8888	VMW_PSP_RR	policy=iops,iops=1,bytes=10485760,useANO=0	2	
How Datastores Map to Storage Devices	All LUNs are backed by the same NVMe disks present on the PureStorage FlashArray FA-X90R2								
VMware vSAN Configuration (if used)	None								
RAID Configuration (if used)	None								
Server Management									
VMware vCenter Server	8								

Number of vCPUs																												
VMware vCenter Server Virtual Memory (in GB)	30																											
Clients																												
Total Client VMs (including Prime Client)	3																											
Number of Client Hosts (all subsequent fields in this section are per Client Host)	4																											
System Model(s)	- Client Host 1: Supermicro AS -1124US-TNRP - Client Host 2: Supermicro AS -1124US-TNRP - Client Host 3: Supermicro AS -1124US-TNRP - Client Host 4: Supermicro AS -1124US-TNRP																											
Processor Vendor(s) and Model(s)	- Client Host 1: AMD EPYC 7763 - Client Host 2: AMD EPYC 7763 - Client Host 3: AMD EPYC 7763 - Client Host 4: AMD EPYC 7763																											
Processor Speed(s) (GHz)	- Client Host 1: 2.45 GHz - Client Host 2: 2.45 GHz - Client Host 3: 2.45 GHz - Client Host 4: 2.45 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>128</td><td>256</td></tr><tr><td>Client Host 2</td><td>2</td><td>128</td><td>256</td></tr><tr><td>Client Host 3</td><td>2</td><td>128</td><td>256</td></tr><tr><td>Client Host 4</td><td>2</td><td>128</td><td>256</td></tr><tr><td>Total</td><td>8</td><td>512</td><td>1024</td></tr></table>				Client Host	Sockets	Cores	Threads	Client Host 1	2	128	256	Client Host 2	2	128	256	Client Host 3	2	128	256	Client Host 4	2	128	256	Total	8	512	1024
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Client Host 4	2	128	256																									
Total	8	512	1024																									
NUMA Nodes	- Client Host 1: 2 - Client Host 2: 2 - Client Host 3: 2 - Client Host 4: 2																											
Memory Size (in GB) per Client Host	<table><tr><th>Client Host</th><th>BIOS</th><th>ESXi</th></tr><tr><td>Client Host 1</td><td>1920 GB</td><td>1920 GB</td></tr><tr><td>Client Host 2</td><td>2048 GB</td><td>2036 GB</td></tr><tr><td>Client Host 3</td><td>2048 GB</td><td>2036 GB</td></tr><tr><td></td><td></td><td></td></tr></table>				Client Host	BIOS	ESXi	Client Host 1	1920 GB	1920 GB	Client Host 2	2048 GB	2036 GB	Client Host 3	2048 GB	2036 GB												
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Client Host 3	2048 GB	2036 GB																										

	<table><tr><td>Client Host 4</td><td>1920 GB</td><td>1920 GB</td></tr></table>	Client Host 4	1920 GB	1920 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>vmnic0</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.28.4000</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td>vmnic1</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.28.4000</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td rowspan="2">Client Host 2</td><td>vmnic0</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.27.1016</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td>vmnic1</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.27.1016</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td rowspan="2">Client Host 3</td><td>vmnic0</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.28.4000</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td>vmnic1</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.28.4000</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td rowspan="2">Client Host 4</td><td>vmnic0</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.27.1016</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr><tr><td>vmnic1</td><td>100 Gbps</td><td>Full</td><td>9000</td><td>20.27.1016</td><td>nmlx5_core</td><td>Mellanox Technologies MT28908 Family [ConnectX-6]</td></tr></table>	Client Host	Device	Speed	Duplex	MTU	Firmware	Driver	Description	Client Host 1	vmnic0	100 Gbps	Full	9000	20.28.4000	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	vmnic1	100 Gbps	Full	9000	20.28.4000	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	Client Host 2	vmnic0	100 Gbps	Full	9000	20.27.1016	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	vmnic1	100 Gbps	Full	9000	20.27.1016	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	Client Host 3	vmnic0	100 Gbps	Full	9000	20.28.4000	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	vmnic1	100 Gbps	Full	9000	20.28.4000	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	Client Host 4	vmnic0	100 Gbps	Full	9000	20.27.1016	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	vmnic1	100 Gbps	Full	9000	20.27.1016	nmlx5_core	Mellanox Technologies MT28908 Family [ConnectX-6]	
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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>vmnic0</td></tr><tr><td>vSwitch1</td><td>9216</td><td>128</td><td>9000</td><td>vmnic1</td></tr><tr><td rowspan="2">Client Host 2</td><td>vSwitch0</td><td>9216</td><td>128</td><td>9000</td><td>vmnic0</td></tr><tr><td>vSwitch1</td><td>9216</td><td>128</td><td>9000</td><td>vmnic1</td></tr><tr><td rowspan="2">Client Host 3</td><td>vSwitch0</td><td>9216</td><td>128</td><td>9000</td><td>vmnic0</td></tr><tr><td>vSwitch1</td><td>9216</td><td>128</td><td>9000</td><td>vmnic1</td></tr><tr><td rowspan="2">Client Host 4</td><td>vSwitch0</td><td>9216</td><td>128</td><td>9000</td><td>vmnic0</td></tr><tr><td>vSwitch1</td><td>9216</td><td>128</td><td>9000</td><td>vmnic1</td></tr></table>	Client Host	Switch	Ports	Configured Ports	MTU	Uplinks	Client Host 1	vSwitch0	9216	128	9000	vmnic0	vSwitch1	9216	128	9000	vmnic1	Client Host 2	vSwitch0	9216	128	9000	vmnic0	vSwitch1	9216	128	9000	vmnic1	Client Host 3	vSwitch0	9216	128	9000	vmnic0	vSwitch1	9216	128	9000	vmnic1	Client Host 4	vSwitch0	9216	128	9000	vmnic0	vSwitch1	9216	128	9000	vmnic1																			
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	<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></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Client Host	Device	Port Group/DVPort	MTU	TCP/IP Stack	Services																																																															
Client Host	Device	Port Group/DVPort	MTU	TCP/IP Stack	Services																																																																	

VMkernel Network Adapters, Port Groups, MTUs, TCP/IP Stacks, and Services	Client Host 1	vmk0	Management Network	1500	Default	Management
		vmk1	vmotion	9000	Default	vMotion
	Client Host 2	vmk0	Management Network	1500	Default	Management
		vmk1	vmotion	9000	Default	vMotion
	Client Host 3	vmk0	Management Network	1500	Default	Management
		vmk1	vmotion	9000	Default	vMotion
	Client Host 4	vmk0	Management Network	1500	Default	Management
		vmk1	vmotion	9000	Default	vMotion
Client Storage Notes	See Client Notes Section					
Other Hardware	2x 1200W Redundant power supplies Servers were air-cooled					
Other Software	VMware ESXi 8.0 Update 3, Build 24022510					

Notes for Workload

Template deployed with disk type: Thick Eager

Virtualization Software Notes

- vSphere DRS Enabled
- vSphere DRS Automation Level set to Fully Automated
- vSphere DRS Migration Threshold set to 1
- All Standby VMs had CPU shares set to low (default normal)
- All DS35DB, NoSQLBench, and AuctionK VMs had CPU shares set to High (default normal)
- All DS35DB VM memory shares set to High (default normal)
- Added sched.mem.lpage.enable1GPage to True for all DS35DB VMs (default normal)
- All memory reserved for DS35DB VMs (default non-reserved)
- Memory was pinned for all DS35DB VMs.
- CD/DVD device was removed from all VMs except PrimeClient. (default present)
- Logical CPU layout changed for all multi-CPU VMs to 1 socket with multiple cores except Template, PrimeClient, and Client VMs. (default single core per socket)
- Logging was disabled for all VMs except Template, PrimeClient, and Client VMs (default enabled)

SUT Host ESXi Advanced Settings:

Advanced Setting	Host 1	Host 2	Default
Cpu.CreditAgePeriod	1000	1000	3000
Cpu.HTWholeCoreThreshold	0	0	800
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.PreferHT	1	1	0
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

SUT Host ESXi Module Options:

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

Server Notes

Server BIOS Settings

- NUMA per Socket = 1 (Default Auto)
- APBDis = 1 (Default Auto)
- xGMI Link Width Control = Force (Default Unforce)
- xGMI Force Link Width = 2 (Default 1)
- xGMI Link Max Speed = 22 Gbps (Default Auto)

Networking Notes

- vSwitch0 configured for Management Network and vmotion
 - Connected to vmnic2
 - vSwitch0, vmk0, and vmnic2 set to MTU 9000 (default 1500)
- vSwitch1 configured for VM Network
 - Connected to vmnic3
 - vSwitch1 and vmnic3 set to MTU 9000 (default 1500)
 - All VMs connected to default portgroup VM Network

Storage Notes

- All client server OS installed on 64GB LUN PureStorage FA-X90R2 Array
- All SUT hosts OS installed on 32GB LUN PureStorage FA-X90R2 Array
- All FC ports regardless of model are running at 16Gbps
- FC LUN Folder configuration:
 - All LUNs are backed by the same NVMe disks present on the PureStorage FA-X90R2 Array

- All DS35DB and AuctionWebEDB VMs were stored on a 2TB LUN associated with a corresponding tile number.
 - All NoSQLBench and AuctionWebDNosql VMs were stored on a 32TB LUN named Deploy
 - The template VM was stored on an 8TB LUN named infra_source.
 - All DS35WebA VMs were stored on an 8TB LUN named infra_source.
 - All AuctionWebF VMs were stored on an 8TB LUN named infra_source.
 - All other VMs were stored on a 2TB LUN associated with a corresponding tile number.
 - All VM infrastructure operations were on an 8TB LUN called infra_target for its destination.
- All FC LUNs were configured with:
 - Round Robin Path Policy (Default: Most Recently Used)
 - IO Operations Limit 1 (Default: 1000)

Server Management Notes

VMware vCenter Server Appliance 8.0 Update 3, Build 24022515 was hosted on the Client Cluster and automatically load balanced along with the other Client VMs through DRS.

Operating System Notes

SUT Host ESXi Image Profile: ESXi-8.0U3-24022510-standard

Software Notes

None

Client Notes

- vSphere DRS Enabled
- vSphere DRS Automation Level set to Fully Automated
- vSphere DRS Migration Threshold set to 1

Client Host ESXi Advanced Settings:

Advanced Setting	Host 1	Host 2	Host 3	Host 4	Default
UserVars.SuppressShellWarning	1	1	1	1	0

Client Host ESXi Module Options:

Module	Host 1	Host 2	Host 3	Host 4	Default
tcpip4	ipv6=1	ipv6=1	ipv6=1	ipv6=1	ipv6=1

Client Host ESXi Image Profile: (Updated) ESXi-8.0U3-24022510-standard

Other Notes

None

VMmark4.properties Settings

- TileDelay = 15 (default 60)
- ReporterSkipNonCompliant = 1 (default 0)

Virtual Machines

SUT Host Virtual Machines

[illegible]

VMmark-4.0.1-208	4	1	32768	TRUE	TRUE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	infra_source	VM Network	17	12325
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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 Version	Tools Version
Client0	64	1	98304	TRUE	TRUE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Client	VM Network	17	12325
Client1	64	1	98304	TRUE	TRUE	Removed	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Client	VM Network	17	12325
PrimeClient	4	1	32768	TRUE	TRUE	Present	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Client	VM Network, VM Network	17	12325
VCSA8.0U3-IA	8	1	30720	FALSE	TRUE	Present	0	Unlimited	normal	0	Unlimited	normal	FALSE	FALSE	normal	Client	VM Network	10	12389

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