VMmark® 3.1.1 Results

Server Vendor & Model: Supermicro SYS-221BT-DNTR **Storage Vendor & Model: VMware vSAN 8.0 Update 2 - All Flash** **Hypervisor: VMware ESXi 8.0 Update 2, Build 22380479** **Datacenter Management Software: VMware vCenter Server 8.0 Update 2, Build 22385739**	**VMmark 3.1.1 Score = 18.12 @ 17 Tiles**

Number of Hosts: 4	**Uniform Hosts [yes/no]: yes**	**Total sockets/cores/threads in test: 8/256/512**
Tested By: Supermicro	**Test Date: 03-12-2024**	

Performance Section	**Configuration Section**	**Notes Section**
Performance	Configuration	Notes for Workload

Performance

	weathervane			weathervaneE			dvdstoreA			dvdstoreB			dvdstoreC			
TILE_0	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3563.14	0.99	0.88 | 0.08	567.91	0.99	0.95 | 0.05	1081.75	1.47	463.18	818.95	1.64	512.22	626.75	1.81	530.32	1.34
p1	3543.47	0.98	1.04 | 0.09	568.50	0.99	1.08 | 0.11	1064.97	1.45	488.28	785.62	1.57	536.57	542.73	1.56	554.05	1.28
p2	3530.40	0.98	1.00 | 0.07	563.48	0.98	0.94 | 0.10	1068.28	1.45	499.46	812.35	1.62	524.18	620.12	1.79	553.87	1.32
TILE_1	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3570.39	0.99	0.84 | 0.07	565.84	0.99	0.90 | 0.05	1100.75	1.50	438.21	805.85	1.61	482.84	608.98	1.76	513.39	1.33
p1	3558.14	0.99	0.96 | 0.09	559.89	0.98	0.97 | 0.10	1081.72	1.47	460.55	801.95	1.60	493.99	578.27	1.67	523.77	1.31
p2	3534.10	0.98	0.91 | 0.09	555.94	0.97	0.87 | 0.06	1092.85	1.49	455.50	828.38	1.66	487.90	633.90	1.83	518.42	1.34
TILE_2	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3555.91	0.99	0.86 | 0.07	568.16	0.99	0.86 | 0.08	1083.75	1.48	458.73	798.15	1.59	500.32	576.10	1.66	531.63	1.31
p1	3544.87	0.99	1.02 | 0.09	563.11	0.98	0.95 | 0.08	1072.90	1.46	478.27	820.40	1.64	510.45	600.33	1.73	532.65	1.32
p2	3536.83	0.98	0.99 | 0.09	565.38	0.99	0.92 | 0.06	1076.50	1.47	470.17	795.40	1.59	512.85	601.40	1.73	533.01	1.31
TILE_3	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3573.72	0.99	0.81 | 0.07	560.72	0.98	0.81 | 0.07	1100.42	1.50	437.42	805.52	1.61	475.26	585.05	1.69	503.45	1.32
p1	3547.58	0.99	0.97 | 0.08	560.61	0.98	0.95 | 0.06	1087.97	1.48	463.39	827.45	1.65	501.21	630.70	1.82	517.96	1.34
p2	3531.91	0.98	0.89 | 0.09	556.33	0.97	0.88 | 0.07	1091.75	1.49	453.53	801.90	1.60	495.55	577.70	1.67	523.56	1.31
TILE_4	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3570.77	0.99	0.89 | 0.10	564.30	0.99	0.83 | 0.06	1086.03	1.48	457.32	824.45	1.65	500.27	604.83	1.74	523.21	1.33
p1	3566.26	0.99	1.01 | 0.11	564.54	0.99	0.99 | 0.05	1069.42	1.46	483.05	783.27	1.56	533.43	595.17	1.72	557.80	1.31
p2	3544.78	0.99	0.97 | 0.09	556.74	0.97	0.88 | 0.09	1075.62	1.46	476.62	789.85	1.58	519.59	571.58	1.65	554.33	1.30
TILE_5	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM

p0	3581.26	1.00	0.89 | 0.07	570.43	1.00	0.85 | 0.05	1086.60	1.48	449.74	831.20	1.66	488.31	634.25	1.83	511.04	1.35
p1	3564.70	0.99	1.03 | 0.09	565.58	0.99	0.94 | 0.05	1078.70	1.47	468.75	791.27	1.58	508.11	576.27	1.66	534.45	1.30
p2	3545.90	0.99	0.98 | 0.08	569.20	0.99	0.91 | 0.04	1085.88	1.48	465.01	822.42	1.64	498.44	604.35	1.74	521.09	1.33
TILE_6	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3582.32	1.00	0.83 | 0.08	571.59	1.00	0.92 | 0.07	1090.38	1.48	448.28	801.65	1.60	490.58	604.38	1.74	515.62	1.33
p1	3565.61	0.99	1.00 | 0.14	567.99	0.99	1.07 | 0.16	1084.15	1.48	459.90	797.27	1.59	497.01	574.90	1.66	522.98	1.31
p2	3553.23	0.99	0.91 | 0.10	564.00	0.99	0.88 | 0.08	1004.15	1.37	427.37	829.25	1.66	488.37	633.05	1.83	512.65	1.32
TILE_7	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3573.29	0.99	0.81 | 0.05	567.96	0.99	0.86 | 0.07	1100.45	1.50	438.76	806.10	1.61	484.14	579.77	1.67	509.87	1.32
p1	3550.77	0.99	0.97 | 0.06	561.18	0.98	0.97 | 0.09	1084.22	1.48	465.62	828.08	1.65	499.33	605.05	1.74	524.51	1.33
p2	3535.87	0.98	0.92 | 0.06	557.02	0.97	0.88 | 0.08	1085.20	1.48	461.31	802.85	1.60	500.32	604.27	1.74	528.40	1.32
TILE_8	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.82	0.99	0.83 | 0.06	561.93	0.98	0.80 | 0.06	1108.40	1.51	425.74	819.48	1.64	455.00	587.67	1.69	478.87	1.33
p1	3560.38	0.99	1.00 | 0.09	564.21	0.99	0.96 | 0.10	1090.05	1.48	454.93	823.88	1.65	500.34	629.45	1.82	512.26	1.34
p2	3543.48	0.98	0.94 | 0.06	560.19	0.98	0.90 | 0.05	1097.45	1.49	440.62	803.90	1.61	480.02	584.77	1.69	499.14	1.31
TILE_9	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3569.14	0.99	0.79 | 0.06	564.90	0.99	0.83 | 0.05	1100.67	1.50	435.75	836.30	1.67	475.19	612.15	1.77	494.92	1.34
p1	3542.93	0.98	0.96 | 0.09	563.67	0.99	0.96 | 0.09	1094.97	1.49	453.09	802.52	1.60	490.55	606.67	1.75	521.17	1.32
p2	3526.52	0.98	0.89 | 0.07	559.20	0.98	0.84 | 0.08	1098.83	1.50	446.57	802.08	1.60	487.39	578.73	1.67	512.00	1.31
TILE_10	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3571.51	0.99	0.83 | 0.09	570.66	1.00	0.92 | 0.09	1103.72	1.50	436.35	836.85	1.67	472.98	641.85	1.85	497.35	1.36
p1	3554.27	0.99	0.99 | 0.10	570.32	1.00	1.05 | 0.11	1092.47	1.49	447.17	805.05	1.61	481.32	580.12	1.67	512.37	1.32
p2	3544.16	0.99	0.91 | 0.09	565.98	0.99	0.90 | 0.09	1095.75	1.49	447.62	831.05	1.66	482.68	606.15	1.75	515.03	1.33
TILE_11	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3568.80	0.99	0.86 | 0.07	565.86	0.99	0.80 | 0.02	1093.28	1.49	447.45	807.75	1.61	488.56	607.65	1.75	509.30	1.33
p1	3551.30	0.99	1.01 | 0.09	560.44	0.98	1.00 | 0.07	1083.38	1.48	467.04	796.85	1.59	501.15	573.23	1.65	533.11	1.30
p2	3534.49	0.98	0.95 | 0.06	554.05	0.97	0.88 | 0.07	1078.72	1.47	474.43	819.62	1.64	506.11	632.58	1.82	527.60	1.33
TILE_12	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3581.21	1.00	0.84 | 0.06	569.05	0.99	0.91 | 0.03	1097.67	1.49	442.25	804.30	1.61	478.78	586.02	1.69	501.44	1.32
p1	3568.42	0.99	0.99 | 0.08	565.88	0.99	1.05 | 0.06	1077.03	1.47	474.45	818.83	1.64	506.29	602.83	1.74	524.33	1.33
p2	3557.81	0.99	0.95 | 0.08	562.34	0.98	0.95 | 0.05	1087.62	1.48	460.53	798.27	1.59	499.39	608.15	1.75	516.34	1.32
TILE_13	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3572.46	0.99	0.86 | 0.07	571.78	1.00	0.93 | 0.12	1091.12	1.49	449.16	753.80	1.51	470.38	580.95	1.68	513.63	1.30
p1	3557.28	0.99	1.05 | 0.09	570.35	1.00	1.07 | 0.06	1071.88	1.46	477.06	820.27	1.64	512.46	627.80	1.81	537.31	1.34
p2	3544.97	0.99	0.97 | 0.07	559.07	0.98	0.88 | 0.08	1079.17	1.47	466.68	794.88	1.59	504.48	576.02	1.66	527.86	1.30

TILE_14	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3581.81	1.00	0.87 | 0.07	570.26	1.00	0.86 | 0.06	1089.22	1.48	459.82	800.02	1.60	495.19	605.40	1.75	520.35	1.33
p1	3564.78	0.99	1.02 | 0.10	566.96	0.99	0.90 | 0.12	1081.28	1.47	474.48	793.12	1.58	509.63	599.67	1.73	529.62	1.32
p2	3556.61	0.99	0.95 | 0.09	564.11	0.99	0.91 | 0.17	1083.90	1.48	468.57	795.30	1.59	506.60	573.98	1.66	529.40	1.30
TILE_15	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3586.31	1.00	0.86 | 0.06	565.71	0.99	0.85 | 0.03	1097.85	1.50	442.10	860.60	1.72	472.32	635.95	1.83	498.38	1.36
p1	3577.40	0.99	1.01 | 0.10	557.72	0.97	0.95 | 0.03	1080.33	1.47	465.98	769.23	1.54	503.40	574.73	1.66	532.73	1.29
p2	3555.33	0.99	0.96 | 0.10	552.87	0.97	0.96 | 0.07	1081.70	1.47	465.32	823.23	1.64	504.23	597.83	1.72	533.95	1.32
TILE_16	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(nRT|MaxPctF)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	Actual	Ratio	QoS(ms)	GM
p0	3583.66	1.00	0.87 | 0.13	565.70	0.99	0.86 | 0.08	1096.30	1.49	444.55	832.65	1.66	485.68	606.20	1.75	509.37	1.34
p1	3574.00	0.99	1.02 | 0.09	555.68	0.97	0.95 | 0.07	1080.38	1.47	468.92	764.65	1.53	509.64	569.90	1.64	535.27	1.29
p2	3553.01	0.99	1.08 | 0.12	554.81	0.97	0.93 | 0.08	1084.15	1.48	467.22	852.05	1.70	501.38	625.62	1.80	533.34	1.34

p0_score:	22.61
p1_score:	22.34
p2_score:	22.42

Infrastructure_Operations_Scores:	vMotion	SVMotion	XVMotion	Deploy
Completed_Ops_PerHour	40.00	18.00	12.00	6.00
Avg_Seconds_To_Complete	41.34	276.94	484.05	749.76
Failures	0.00	0.00	0.00	0.00
Ratio	1.54	1.00	0.67	0.75
Number_Of_Threads	2	2	2	2

Summary	Run_Is_Compliant	Turbo_Setting:0
	Number_Of_Compliance_Issues(0)*	Median_Phase(p2)
Unreviewed_VMmark3_Applications_Score	22.42	
Unreviewed_VMmark3_Infrastructure_Score	0.94	
Unreviewed_VMmark3_Score	18.12	

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 8.0 Update 2, Build 22380479 / 09-21-2023
Datacenter Management Software Vendor, Product, Version, and Build /	VMware vCenter Server 8.0 Update 2, Build 22385739 / 09-21-2023

Availability Date (MM-DD-YYYY)	
Supplemental Software	None
Servers	
Number of Servers in System Under Test (all subsequent fields in this section are per server)	4
Server Manufacturer and Model	Supermicro SYS-221BT-DNTR
Processor Vendor and Model	Intel Xeon Gold 6548Y+
Processor Speed (GHz) / Turbo Boost Speed (GHz)	2.50 / 4.10
Total Sockets/Total Cores/Total Threads	2 Sockets / 64 Cores / 128 Threads
Primary CPU Cache	32KB I + 48KB D on chip per core
Secondary CPU Cache	2MB I+D on chip per core
Other CPU Cache	60MB I+D on chip per chip
BIOS Version	2.1
Memory Size (in GB, Number of DIMMs)	1024GB, 16
Memory Type and Speed	64GB 2Rx4 DDR5-5600MHz RDIMM (Run at 5200 MT/s)
Disk Subsystem Type	VMware vSAN 8.0 Update 2 ESA, NFS
Number of Disk Controllers	1
Disk Controller Vendors and Models	Supermicro SCC-A2NM2241G3-B1
Total Number of Physical Disks for Hypervisor	2
Disk Vendors, Models, Capacities, and Speeds	Micron, 7450 MTFDKBA400TFS, 400GB, 16.0 GT/s
Number of Host Bus Adapters	0
Host Bus Adapter Vendors and Models	None
Number of Network Controllers	2
Network Controller Vendors and Models	Mellanox MCX516A-CCAT based controller (100Gbps dual-port QFP28) Intel X710 based controller (10Gbps)
Other Hardware	None
Other Software	None
Hardware Availability Date (MM-DD-YYYY)	12-15-2023
BIOS Availability Date (MM-DD-YYYY)	12-07-2023
Software Availability Date (MM-DD-YYYY)	09-21-2023
Network	
Network Switch Vendors and Models	• Supermicro SSE-C3632S • Supermicro SSE-X3348T
Network Speed	• 32x QSFP28 Ethernet ports (100Gbps) • 48x RJ-45 Ethernet ports (10Gbps)
Primary Storage	

Storage Category	vSAN-ESA-AF-8
Storage Vendors, Models, and Firmware Versions	4x Supermicro SYS-221BT-DNTR with VMware vSAN 8.0 Update 2
Storage Configuration Summary	VMware vSAN 8.0 Update 2 • 7 x Intel D7-P5620 Series, SSDPF2KE064T1, 6.4TB

Datacenter Management Server	
System Model	Supermicro SuperServer SYS-2029BT-HNR
Processor Vendor and Model	Intel Xeon Gold 6240
Processor Speed (GHz)	2.6
Total Sockets/Total Cores/Total Threads	2 Sockets / 36 Cores / 72 Threads
Memory Size (in GB, Number of DIMMs)	768, 12
Network Controller(s) Vendors and Models	Supermicro AOC-MTG-i4TM
Operating System, Version, Bitness, and Service Pack	VMware ESXi 8.0 GA, Build 20513097
Virtual Center VM Number of vCPUs	4
Virtual Center VM Virtual Memory (in GB)	21
Virtual Center VM Operating System, Version, Bitness, and Service Pack	VMware vCenter Server 8.0 Update 2, Build 22385739
Other Hardware	None
Other Software	None

Clients	
Total Number of Virtual Clients / Virtual Client Hosts	18 / 2
System Model(s)	Supermicro SYS-220U-TNR
Processor Vendor(s) and Model(s)	Intel Xeon Platinum 8352Y
Processor Speed(s) (GHz)	2.20
Total Sockets/Total Cores/Total Threads	4 Sockets / 128 Cores / 256 Threads
Memory per Virtual Client Host	Hosts 1-2 : 1024GB
Network Controller(s) Vendors and Models	Supermicro AOC-2UR68G4-i4XTS
Virtual Client Networking Notes	All management traffic and workload traffic running on vmnic2
Virtual Client Storage Notes	All clients mounted on NFS datastore
Other Hardware	None
Other Software	VMware ESXi 8.0 Update 2, Build 22380479

Security Mitigations

Vulnerability	CVE	Exploit Name	Public Vulnerability Name	Mitigated		
				Server Firmware	ESXi	Guest OS
Spectre	2017-5753	Variant 1	Bounds Check Bypass	N/A	Yes	Yes
Spectre	2017-5715	Variant 2	Branch Target Injection	Yes	Yes	Yes

Meltdown	2017-5754	Variant 3	Rogue Data Cache Load	N/A	Yes	Yes
Spectre-NG	2018-3640	Variant 3a	Rogue System Register Read	Yes	N/A	N/A
Spectre-NG	2018-3639	Variant 4	Speculative Store Bypass	N/A	Yes	Yes
Foreshadow	2018-3615	Variant 5	L1 Terminal Fault - SGX	N/A	N/A	N/A
Foreshadow-NG	2018-3620	Variant 5	L1 Terminal Fault - OS	N/A	N/A	Yes
Foreshadow-NG	2018-3646	Variant 5	L1 Terminal Fault - VMM	N/A	Yes	N/A

Notes for Workload

Template deployed with disk type: Thin

Virtualization Software Notes

- All DS3DB VMs had CPU shares set to High (default normal)
- DS3DB0 was configured to not use the third virtual disk before building additional tiles
- All DS3DB VMs had memory reserved via the vSphere Client (default non-reserved)
- CDROM removed from all VMs except for PrimeClient, client, and template VMs
- CPU shares set to low for all Standby VMs (default normal)
- Logical CPU configuration changed for all multi-CPU VMs except for PrimeClient and client VMs to 1 socket with multiple cores (default single core per socket)
- Logging was disabled for all VMs except for PrimeClient, client, and template VMs (default enabled)
- vSAN Default Storage Policy has been modified: Failures to Tolerate field was set to 1 failure - RAID-5 (Erasure Coding)
- Cluster DRS Automation level set to Fully Automated
- vSphere DRS Migration Threshold set to Fully Automated level 2

Server Notes

BIOS Settings:

- Hardware Prefetcher = Disabled (default Enabled)
- Adjacent Cache Prefetch = Disabled (default Enabled)
- DCU Streamer Prefetcher = Disabled (default Enabled)
- DCU IP Prefetcher = Disabled (default Enabled)
- LLC Prefetch = Enabled (default Disabled)
- Power Technology = Custom (default Energy Efficient)
- Power Performance Tuning = BIOS Controls EPB (default)
- ENERGY_PERF_BIAS_CFG mode = Maximum Performance (default)
- Package C State = C0/C1 state (default=Auto)

Advanced Settings:

- Cpu.CoschedCrossCall = 0 (default 1)
- Cpu.CreditAgePeriod = 1000 (default 3000)
- Cpu.HTWholeCoreThreshold = 0 (default 800)
- DataMover.HardwareAcceleratedInit = 0 (default 1)

- DataMover.HardwareAcceleratedMove = 0 (default 1)
- Disk.IdleCredit = 64 (default 32)
- Disk.ReqCallThreshold = 1 (default 8)
- Mem.CtlMaxPercent = 0 (default 65)
- Mem.ShareScanGHz = 0 (default 4)
- Numa.LargeInterleave = 0 (default 1)
- Numa.LocalityWeightActionAffinity = 0 (default 130)
- Numa.LTermFairnessInterval = 0 (default 5)
- Numa.MigImbalanceThreshold = 57 (default 10)
- Numa.MigPreventLTermThresh = 20 (default 0)
- Numa.MigThreshold = 0 (default 2)
- Numa.MonMigEnable = 0 (default 1)
- Numa.PageMigEnable = 0 (default 1)
- Numa.PreferHT = 1 (default 0)
- Numa.RebalancePeriod = 60000 (default 2000)
- Numa.SwapLoadEnable = 0 (default 1)
- Numa.SwapLocalityEnable = 0 (default 1)
- Power.CpuPolicy = High Performance (default Balanced)
- UserVars.HostClientCEIPOptIn = 2 (default 0)
- UserVars.SuppressShellWarning = 1 (default 0)
- VMkernel.Boot.hyperthreadingMitigation = TRUE (default FALSE)

Networking Notes

Server

- Single Standard vSwitch0 with one uplink at vmnic2 (Intel 10Gbps)
- Single Standard vSwitch1 with one uplink at vmnic0 (Mellanox 100Gbps)
- vSwitch0 used vmk0 consisted of Management Network, vMotion, and VMNetwork services
- vSwitch1 used vmk1 consisted of vSAN services
- All virtual machines used VMNetwork for traffic
- MTU set to 9000 (default 1500) for both vSwitch, vmk0, vmk1, and all uplinks
- ipv6 set to 0 (default 1)

Client

- Single Standard vSwitch0 with one uplink at vmnic2 (10Gbps)
- MTU set to 9000 (default 1500)
- ipv6 set to 0 (default 1)

Storage Notes

- All client hosts OS installed on SATADOM
- All SUT hosts OS installed on M.2 drive
- All Templates and VMs on NFS datastore

- NFS Folder configuration:
    - All folders are backed by the same NFS server on a single striped zfs array, mounted storage device detailed in the "Secondary Storage section."

    - Deploy1 datastore -> /data/Eddie/VMmark/Deploy1
    - Deploy2 datastore -> /data/Eddie/VMmark/Deploy2
    - NFS datastore -> /data/Eddie/VMmark/NFS
    - vMotion1 datastore -> /data/Eddie/VMmark/Motion1
    - vMotion2 datastore -> /data/Eddie/VMmark/Motion2

- Software configuration

    - All Flash VMware vSAN 8.0 Update 2 ESA
    - vSAN Default Storage Policy has been modified: Failures to Tolerate field was set to 1 failure - RAID-5 (Erasure Coding)

- Virtual Machine LUN Distribution:

    - vsanDatastore contains the following workloads:
    - AuctionAppA*
    - AuctionAppB*
    - AuctionDB*
    - AuctionLB*
    - AuctionMSQ*
    - AuctionNoSQL*
    - AuctionWebA*
    - AuctionWebB*
    - DS3DB*
    - DS3WebA*
    - DS3Webb*
    - DS3WebC*
    - ElasticAppA*
    - ElasticAppb*
    - ElasticDB*
    - ElasticLB*
    - ElasticWebA*
    - ElasticWebB*
    - Standby*

Secondary Shared Storage Device:

- Hardware:

    - SuperServer SYS-1029P-N32R
    - 768GB Memory 12x 72ASS8G72LZ-2G6D2 64GB 2666 DIMM @ 2666MHz; 1DPC
    - 2x MCX455A-ECAT - Single Port; bonded 100G LACP
    - 2x Xeon 6230; Turbo Enabled, H0 Stepping
    - 24x Intel 4TB P4500 (SSDPE2KX040T7) NVMe SSD's
    - 1x Supermicro SSD 32GB SATADOM

- Firmware:

    - BIOS - 3.1a
    - IPMI - 1.56
    - MCX455A-ECAT - 12.27.1016 (MT_2180110032)
    - 4TB P4500 (SSDPE2KX040T7) - QDV101D0

    - Supermicro SSD 32GB SATADOM - SOB20R

- Software:

    - Ubuntu 18.04.4 w/ Updates as of 04/09/2020
    - Kernel 4.15.0-91-generic
    - zfs module - 0.7.5-1ubuntu16.11
    - zfs release - 0.7.5-1ubuntu16.11

- Configuration:

    - 3x raidz3 pools on one large pool over all 24 disks, mounted to /data
    - MCX455A-ECAT set to MTU 9000
    - LACP Bond of MCX455A-ECAT set to MTU 9000
    - ufw disabled
    - nfs-kernel-server modified /etc/default/nfs-kernel-server `RPCNFSDCOUNT=40`

- Virtual Machine LUN Distribution:

    - Deploy1 contains the following workload: Deploy1
    - Deploy2 contains the following workload: Deploy2

Datacenter Management Server Notes

None

Operating System Notes

None

Software Notes

None

Client Notes

- General

    - NFS contains all the client and PrimeClient virtual machines.
    - MTU set to 9000 (default 1500) for the Standard Switch
    - Host1 : Client1, Client2, Client4, Client6, Client8, Client10, Client12, Client14, Client16
    - Host2 : Client0, Client3, Client5, Client7, Client9, Client11, Client13, Client15, Primeclient

- Advanced Settings

    - UserVars.HostClientCEIPOptIn = 2 (default 0)
    - UserVars.SuppressShellWarning = 1 (default 0)

Other Notes

None

This is a full disclosure report for a VMmark® benchmark result. All published VMmark results must be from fully-compliant tests for which a full disclosure report is publicly available.

For information about VMmark and the rules regarding its usage visit www.vmware.com/products/vmmark.