

VMmark® 3.0 Results

Vendor and Hardware Platform: Supermicro SuperServer SYS-2029BT-HNC0R
 Virtualization Platform: VMware ESXi 6.5 U1 (Build 5969303)
 VMware vCenter Server : VMware vCenter Server 6.5 U1d (Build 7312210)

**VMmark 3.0 Score =
7.70 @ 9 Tiles**

Number of Hosts: 4

Uniform Hosts [yes/no]: Yes

Total sockets/cores/threads in test: 8/128/256

Tested By: Supermicro, Inc.

Test Date: 01-28-2018

Performance Section
[Performance](#)

Configuration Section
[Configuration](#)

Notes Section
[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	3603.17	1.00	0.62 0.03	571.80	1.00	0.78 0.29	747.95	1.02	1647.91	486.32	0.97	1999.94	331.25	0.96	2204.80	0.99
p1	3595.23	1.00	0.58 0.00	573.42	1.00	0.67 0.24	713.27	0.97	1764.94	477.40	0.95	2130.41	317.52	0.92	2447.80	0.97
p2	3601.92	1.00	0.62 0.19	569.52	1.00	0.49 0.09	729.88	0.99	1685.66	476.45	0.95	2038.79	312.80	0.90	2374.08	0.97
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	3599.07	1.00	0.61 0.00	573.59	1.00	0.70 0.18	768.08	1.05	1467.49	533.23	1.07	1719.94	363.30	1.05	1980.28	1.03
p1	3602.45	1.00	0.63 0.07	571.90	1.00	0.62 0.16	754.92	1.03	1561.13	495.55	0.99	1883.77	344.62	0.99	2186.10	1.00
p2	3596.17	1.00	0.61 0.00	572.46	1.00	0.57 0.41	753.75	1.03	1539.03	503.38	1.01	1830.09	339.50	0.98	2063.45	1.00
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	3599.59	1.00	0.60 0.00	575.15	1.01	0.68 0.11	812.62	1.11	1237.08	578.17	1.16	1443.10	420.77	1.21	1603.06	1.09
p1	3601.05	1.00	0.73 0.39	573.01	1.00	0.63 0.24	758.38	1.03	1475.58	504.43	1.01	1777.74	345.82	1.00	1957.51	1.01
p2	3599.99	1.00	0.66 0.16	572.43	1.00	0.55 0.30	733.08	1.00	1588.32	508.10	1.02	1886.37	350.80	1.01	2104.20	1.01
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	3600.00	1.00	0.61 0.00	572.53	1.00	0.64 0.10	728.08	0.99	1677.84	473.20	0.95	2061.44	330.65	0.95	2346.76	0.98
p1	3595.77	1.00	0.59 0.00	572.74	1.00	0.55 0.16	793.85	1.08	1305.29	542.45	1.08	1520.09	368.85	1.06	1727.48	1.05
p2	3603.55	1.00	0.61 0.00	573.11	1.00	0.51 0.33	787.42	1.07	1332.59	553.48	1.11	1564.63	396.68	1.14	1775.98	1.06
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	3595.41	1.00	0.65 0.00	572.81	1.00	0.87 0.50	784.10	1.07	1326.11	526.08	1.05	1584.72	367.90	1.06	1728.99	1.04
p1	3607.34	1.00	0.58 0.00	571.90	1.00	0.71 0.23	765.90	1.04	1429.05	539.80	1.08	1660.95	377.80	1.09	1835.11	1.04
p2	3593.86	1.00	0.54 0.00	572.53	1.00	0.50 0.23	760.08	1.04	1465.99	502.60	1.00	1777.66	346.25	1.00	1955.18	1.01
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	3601.43	1.00	0.62 0.00	575.12	1.01	0.62 0.07	758.10	1.03	1543.68	496.82	0.99	1902.89	337.52	0.97	2123.80	1.00
p1	3600.13	1.00	0.71 0.03	572.35	1.00	0.58 0.06	733.48	1.00	1606.00	504.95	1.01	1885.68	363.48	1.05	2120.34	1.01
p2	3597.00	1.00	0.65 0.09	571.93	1.00	0.56 0.25	719.50	0.98	1749.25	461.35	0.92	2154.18	291.60	0.84	2456.00	0.95
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	3595.82	1.00	0.42 0.01	572.43	1.00	0.67 0.20	801.90	1.09	1320.92	560.02	1.12	1560.04	391.73	1.13	1722.18	1.07
p1	3595.60	1.00	0.47 0.00	571.24	1.00	0.67 0.17	751.67	1.02	1533.31	490.98	0.98	1885.05	357.38	1.03	2033.01	1.01

p2	3607.05	1.00	0.48 0.00	573.07	1.00	0.65 0.24	745.33	1.01	1574.63	490.05	0.98	1912.41	335.30	0.97	2120.61	0.99
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	3604.12	1.00	0.50 0.16	573.50	1.00	0.63 0.13	732.65	1.00	1659.68	499.68	1.00	1978.37	360.00	1.04	2221.00	1.01
p1	3600.20	1.00	0.48 0.18	572.29	1.00	0.55 0.05	791.60	1.08	1323.81	532.70	1.06	1582.73	364.05	1.05	1785.92	1.04
p2	3601.18	1.00	0.47 0.13	573.25	1.00	0.60 0.21	757.15	1.03	1471.11	532.52	1.06	1698.12	369.02	1.06	1894.44	1.03
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	3601.21	1.00	0.43 0.10	573.04	1.00	0.60 0.12	733.92	1.00	1698.65	478.27	0.96	2042.61	340.23	0.98	2265.13	0.99
p1	3603.08	1.00	0.53 0.02	574.48	1.00	0.72 0.32	825.70	1.12	1185.84	561.60	1.12	1411.57	390.40	1.13	1566.34	1.07
p2	3603.33	1.00	0.41 0.00	572.18	1.00	0.59 0.12	824.92	1.12	1184.41	584.05	1.17	1383.46	428.00	1.23	1547.92	1.10
p0_score:	9.19															
p1_score:	9.19															
p2_score:	9.12															

Infrastructure_Operations_Scores:	vMotion	SVMotion	XVMotion	Deploy
Completed_Ops_PerHour	49.00	30.00	24.00	18.00
Avg_Seconds_To_Complete	20.02	199.49	231.04	350.45
Failures	0.00	0.00	0.00	0.00
Ratio	1.88	1.67	1.33	2.25
Number_Of_Threads	2	2	2	2

Summary	Run_Is_Compliant	Turbo_Setting:0
	Number_Of_Compliance_Issues(0)*	Median_Phase(p0)
Unreviewed_VMmark3_Applications_Score	9.19	
Unreviewed_VMmark3_Infrastructure_Score	1.75	
Unreviewed_VMmark3_Score	7.70	

Configuration

Virtualization Software	
Hypervisor Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware ESXi 6.5 U1, Build 5969303 / 07-27-2017
Datacenter Management Software Vendor, Product, Version, and Build / Availability Date (MM-DD-YYYY)	VMware vCenter Server 6.5 U1d, Build number 7312210 / 12-19-2017
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-2029BT-HNC0R
Processor Vendor and Model	Intel Xeon Gold 6142
Processor Speed (GHz)	2.6GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 32 Cores / 64 Threads

Primary CPU Cache	32 KB I + 32 KB D on chip per chip
Secondary CPU Cache	1MBI + D on chip per chip
Other CPU Cache	22 MB I + D on chip per chip
BIOS Version	2.0a
Memory Size (in GB, Number of DIMMs)	384GB,12
Memory Type and Speed	32GB DDR4 2666MHz RDIMM
Disk Subsystem Type	VMware vSAN, NFS
Number of Disk Controllers	1
Disk Controller Vendors and Models	Supermicro 3008 SAS Controller
Total Number of Physical Disks for Hypervisor	1
Disk Vendors, Models, Capacities, and Speeds	Supermicro, 32GB SATADOM
Number of Host Bus Adapters	0
Host Bus Adapter Vendors and Models	None
Number of Network Controllers	1
Network Controller Vendors and Models	Supermicro SIOM AOC-MTG-i4TM
Other Hardware	None
Other Software	none
Hardware Availability Date (MM-DD-YYYY)	07-01-2017
BIOS Availability Date (MM-DD-YYYY)	12-16-2017
Software Availability Date (MM-DD-YYYY)	12-19-2017
Network	
Network Switch Vendors and Models	SSE-X3348T
Network Speed	10Gb/s 48 x 10GbE Ports
Storage	
Array Vendors, Models, and Firmware Versions	Supermicro SYS-2029BT-HNC0R with VMware vSAN 6.6.1 Supermicro SYS-1028U-TN10RT+ Running Ubuntu 16.04.3
Fibre Channel Switch Vendors and Models	None used
Disk Space Used	23.3TB (SYS-2029BT-HNC0R) 8.78TB (SYS-1028U-TN10RT+)
Array Cache Size	14TB (SYS-2029BT-HNC0R) No Cache used (SYS-1028U-TN10RT+)
Total Number of Physical Disks Used	24 (SYS-2029BT-HNC0R) 5 (SYS-1028U-TN10RT+)
Total Number of Enclosures/Pods/Shelves Used	Shelf: 24 Intel SATA SSD (SYS-2029BT-HNC0R) Shelf: 5 Intel NVME (SYS-1028U-TN10RT+)
Number of Physical Disks Used per Enclosure/Pod/Shelf	Shelf: 6 disk per node on SYS-2029BT-HNC0R Shelf: 5 disks on 1 shelf on SYS-1028U-TN10RT+
Total Number of Storage Groups Used	0
Number of LUNs Used	Refer to Storage Notes
LUN Size and Number of Disks Per LUN	Refer to Storage Notes
RAID Type	Refer to Storage Notes
Number of Members per RAID Set	Refer to storage notes
Disk Vendors, Models, and Speeds	8 x Intel SSD DC S4600 Series SSDSC2KG019T7 1.92TB, 16 x Intel SSD DC S3520 Series SSDSC2BB016T7 1.6TB, 5 x Intel P3700 SSDPE2MD800G4 800GB NVME 2.5"

Datacenter Management Server	
System Model	SYS-1028U-TN10RT+
Processor Vendor and Model	Intel Xeon E5-2699 v4
Processor Speed (GHz)	2.2GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 22 Cores / 44 Threads
Memory Size (in GB, Number of DIMMs)	256, 32
Network Controller(s) Vendors and Models	Supermicro AOC-STG-i2T
Operating System, Version, Bitness, and Service Pack	VMware ESXi 6.5 U1, Build 5969303
Virtual Center VM Number of vCPUs	8
Virtual Center VM Virtual Memory (in GB)	24GB
Virtual Center VM Operating System, Version, Bitness, and Service Pack	VMware vCenter Server 6.5 U1d, Build 7312210
Other Hardware	N/A
Other Software	N/A
Clients	
Total Number of Virtual Clients / Virtual Client Hosts	10 / 2
System Model(s)	SYS-1028U-TN10RT+
Processor Vendor(s) and Model(s)	Intel Xeon E5-2699 v4
Processor Speed(s) (GHz)	2.2GHz
Total Sockets/Total Cores/Total Threads	2 Sockets / 44 Cores / 88 Threads
Memory per Virtual Client Host	256GB
Network Controller(s) Vendors and Models	Supermicro STG-AOC-i2T
Virtual Client Networking Notes	1 vmnic for management, 1 vmnic for workload traffic
Virtual Client Storage Notes	Mounted on SYS-1028U-TN10RT+ via NFS
Other Hardware	NA
Other Software	VMware ESXi 6.5 U1, Build 5969303

Notes for Workload

Virtualization Software Notes

Power Management Policy was set to High Performance (Default: Balanced)
Cluster DRS Automation Level set to Fully Automated, DRS Migration Threshold set to level 2
Drivers installed: lsi-msgpt3 16.00.00.00-1OEM.650, net-ixgbe 4.5.3-1OEM.600.0.0
Power Management controlled by BIOS
/adv/Mem/VMOverheadGrowthLimit = 0 (default 4294967295)

Server Notes

Server BIOS Settings:
Intel Hyper Threading Enabled
Intel Turbo Boost Enabled (Frequency boost up to 3.70 GHz (default:Enabled)
C-States: Disabled
Power Management Setting: Extreme Performance (Default: OS Controls EPB)

Networking Notes

Distributed vSwitch Configuration:

Four port groups for different traffic types associated each with its own vmnic:

Management: Uplink 4, vmnic4 on SUT

VM Network: Uplink 2, vmnic1 on SUT

vMotion: Uplink 3, vmnic2 on SUT

vSAN: Uplink 1, vmnic0 on SUT

MTU Set to 9000 on Distributed vSwitch and Supermicro SSE-X3348T. No MTU change was made to the VMs.

Storage Notes

All OS installed on SATADOM

Systems Under Test configuration:

SYS-2029BT-HNC0R

•2 x Intel Gold 6142 2.6GHz Processors

•384GB Memory 12 x 32GB 2666MHz

•2 x Intel S4600 1.92TB SSD(Shelf)

•4 x Intel S3520 1.6TB SSD(Shelf)

Software Configuration:

All Flash vSAN with two disk groups per host. Each diskgroup contains 1 x Intel S4600 for caching and 2 x Intel S3520 for capacity. vSAN Default Storage Policy used.

Virtual Machine LUN Distribution:

LUN1(vsanDatastore) contains the following workloads:

Standby*,AuctionWebA*,AuctionWebB*,AuctionAppA*,AuctionAppB*,AuctionDB*,AuctionMSQ*,AuctionLB*,AuctionNoSQL*,DS3WebA*,DS3WebB*,DS3WebC*,DS3DB*,ElasticLB*,ElasticWebA*,ElasticWebB*,ElasticAppA*,ElasticAppB*,ElasticDB*

Secondary Shared Storage Device:

SYS-1028U-TN10RT+

2 x E5-2699v4 Processors

256GB Memory 16 x 16GB 2133MHz

5 x Intel P3700 2.5" NVME

Software Configuration:

Ubuntu 16.04.3 with HWE Kernel 4.10.0-40-generic

zfs 0.6.5.6-0ubuntu18

5 x Intel P3700 800GB in raidz

2 x X540 Intel ports bonded in LACP Active

NFS Default Changes: DPCNFSDCOUNT=32

4 NFS mounts to all Client servers and SUTs with the following Datastore names: vmmark, vmmark2, deploy, deploy2.

Workload configuration: vmmark3-template and vmmark3-template2 are located on deploy2 and deploy respectively.

Deploy LUN Contains the following workloads:

Deploy

Deploy2 LUN contains the following workloads:

Deploy2

vmmark LUN contains the following workloads:

xvmotion,svmotion

vmmark2 LUN contains the following workloads:

xvmotion2,svmotion2

Datacenter Management Server Notes

Supermicro SYS-1028U-TN10RT+ running VMware ESXi 6.5 U1, build 5969303 with VMware vCenter Server 6.5 U1d, build 7312210

8 vCPU

24GB memory

Operating System Notes

None

Software Notes

none

Client Notes

Clients, Primeclinet and vCenter Server hosted on SYS-1028U-TN10RT+ on the NFS datastore: vmmark

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.

VMware and VMmark are trademarks or registered trademarks of VMware, Inc. VMmark is a product of [VMware, Inc.](http://www.vmware.com) VMmark utilizes the SPEC Power and Temperature Daemon (SPEC PTDaemon), which is available from the Standard Performance Evaluation Corporation (SPEC®). VMmark results are not SPEC metrics and cannot be compared to SPEC metrics in any way.