



Cisco UCS C240 M5 Server

TPC-H Rev. 3.0.0
 TPC-Pricing Rev. 2.7.0

Report Date: 4-June-2018

Total System Cost

Composite Query per Hour Metric

Price / Performance

\$481,900.98USD

1,029,593.5

\$468.05 USD

\$ / kQphH@3000GB

QphH@3000GB

Database Size

Database Manager

Operating System

Other Software

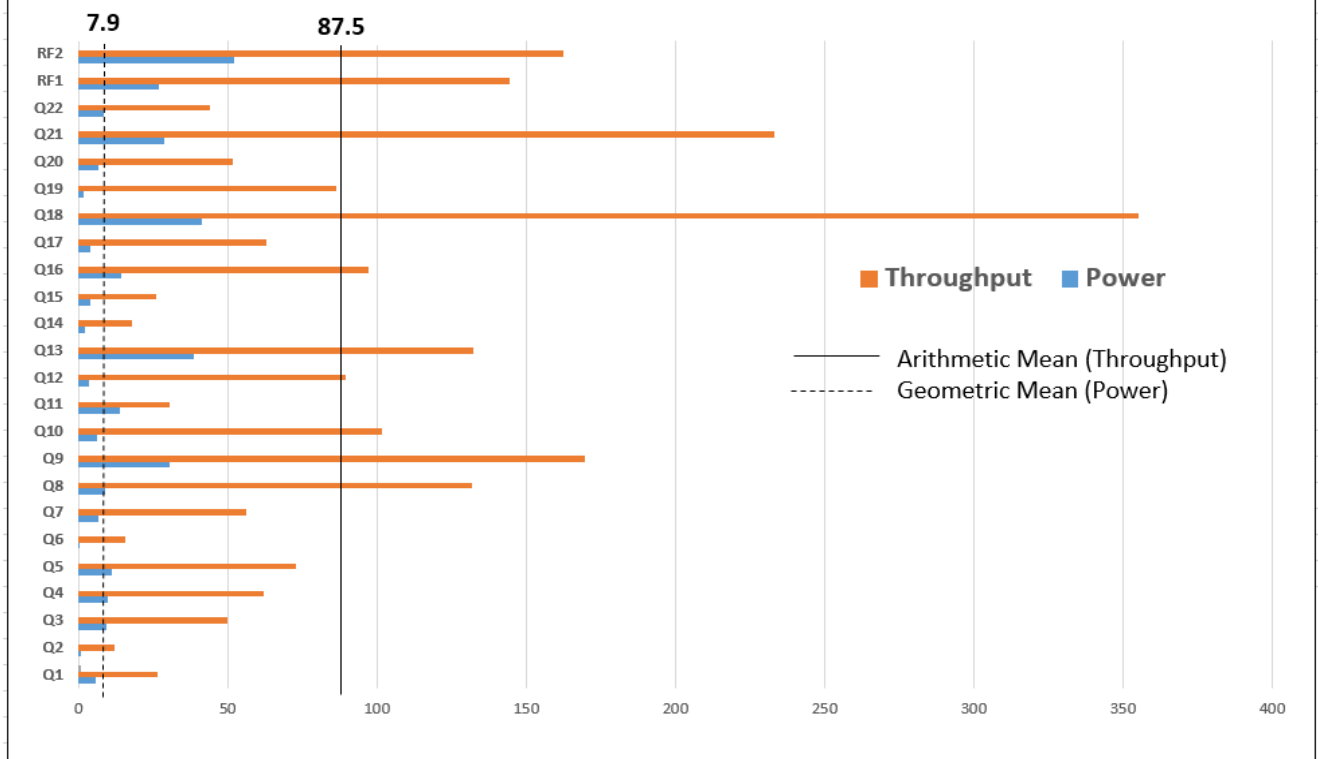
Availability Date

3000GB

Microsoft SQL Server 2017 Enterprise Edition

Red Hat Enterprise Linux 7.3

1-June-2018



Database Load Time = 3h 11m 31s

Storage Redundancy Level

Load Includes Backup: Y

Base Tables and Auxiliary Data Structures

0

Total Data Storage / Database Size = 7.1

DBMS Temporary Space

0

Percentage Memory / Database Size = 51.2%

OS and DBMS Software

1

System Configuration: Cisco UCS C240 M5 Server

Processors/Cores/Threads/Model: 2/56/112 Intel Xeon Platinum 8180 (2.5 GHz, 38.5MB cache)

Memory: 1.5 TB

Storage: 3 X 3.8TB 2.5 Inch Enterprise Value 6G SATA SSD

4 X Cisco HHHL AIC 3.2T HGST SN260 NVMe Extreme Perf High Endrnc

Table Storage: 11.9 TB



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Description	Part Number	Source	Unit Net Price	Qty	Extended Net Price	3 Year Maint. Price
UCS C240 M5 8 SFF + 2 rear drives w/o CPU,mem,HD,PCIe,PS	UCSC-C240-M5S	1	3,999.00	1	3,999.00	
3YR SNTC 24X7X4OS UCS C240 M5 8 SFF + 2 rear drives w/o CPU	CON-3OSP-CC240M5S	1	3,546.00	1		3,546.00
2.5 GHz 8180/205W 28C/38.50MB Cache/DDR4 2666MHz	UCSC-CPU-8180	1	30,750.00	2	61,500.00	
64GB DDR4-2666-MHz LRDIMM/PC4-21300/quad rank/x4/1.2v	UCS-ML-X64G4RS-H	1	4,230.00	24	101,520.00	
Riser 1B incl 3 PCIe slots (x8, x8, x8); all slots from CPU1	UCSC-PCI-1B-240M5	1	199.00	1	199.00	
Riser 2C incl 3 PCIe slots (3 x8) supports front+rear NVMe	UCSC-PCI-2C-240M5	1	199.00	1	199.00	
Cisco HHHH AIC 3.2T HGST SN260 NVMe Extreme Perf High Endrnc	UCSC-NVME-H32003	1	12,672.00	4	50,688.00	
Intel i350 quad-port MLOM NIC	UCSC-MLOM-IRJ45	1	671.00	1	671.00	
Cisco UCS 1600W AC Power Supply for Rack Server	UCSC-PSU1-1600W	1	929.00	2	1,858.00	
Cabinet Jumper Power Cord, 250 VAC 10A, C14-C13 Connectors	CAB-C13-CBN	1	0.00	2	0.00	
Ball Bearing Rail Kit for C220 & C240 M4 & M5 rack servers	UCSC-RAILB-M4	1	220.00	1	220.00	
IMC SW (Recommended) latest release for C-Series Servers.	CIMC-LATEST	1	0.00	1	0.00	
Heat sink for UCS C240 M5 rack servers CPUs above 150W	UCSC-HS2-C240M5	1	0.00	2	0.00	
UCS C-Series M5 SFF drive blanking panel	UCSC-BBLKD-S2	1	0.00	7	0.00	
Super Cap cable for UCSC-RAID-M5 on C240 M5 Servers	CBL-SC-MR12GM52	1	0.00	1	0.00	
Super Cap for UCSC-RAID-M5, UCSC-MRAID1GB-KIT	UCSC-SCAP-M5	1	0.00	1	0.00	
Cisco 12G Modular RAID controller with 2GB cache	UCSC-RAID-M5	1	2,156.00	1	2,156.00	
3.8TB 2.5 inch Enterprise Value 6G SATA SSD	UCS-SD38T61X-EV	1	9,888.00	2	19,776.00	
Cisco ONE Data Center Compute Opt Out Option	C1UCS-OPT-OUT	1	0.00	1	0.00	
1.2 TB 12G SAS 10K RPM SFF HDD	UCS-HD12TB10K12N	1	1,533.00	2	3,066.00	
Cisco R42612 standard rack, w/side panels	RACK2-UCS2	1	6,378.00	1	6,378.00	
IOGEAR GKM513 Spill Proof Keyboard & Mouse Combo	GKM513	3	16.43	1	16.43	
ASUS 19.5" VS207D-P Widescreen LED 1600x900 VGA	VS207D-P	3	73.90	1	73.90	
				Subtotal	252,320.33	3,546.00
Large Purchase discount	61% for hardware and 35% for service	1			-153,915.40	-1,241.10
				Hardware Subtotal	98,404.93	2,304.90
Software						
SQL Server2017 Enterprise Edition for Linux	NA	2	13,472.50	28	377,230.00	
Red Hat Enterprise Linux Server, 2 Sockets w/ Premium 24x7 support, with 28% discount on 3702.15	NA	1	3,702.15	1	3,702.15	
Microsoft Problem Resolution Services	NA	2	259.00	1		259.00
				Software Subtotal	380,932.15	259.00
				Total	479,337.08	2,563.90
Source: 1-Cisco, 2-Microsft, 3-Provantage						
Audited by Francois Raab from InfoSizing, Inc. (sizing.com)						
				Three-Year Cost of Ownership	481,900.98	USD
All discounts are based on US list prices and for similar quantities and configurations. The discounts are based on the overall specific components pricing from respective vendors in this single quotation. Discounts for similarly sized configurations will be similar to those quoted here, but may vary based on the components in the configuration.				QphH	1,029,593.50	
				\$/kQphH	\$468.05	
This Price Estimate does not constitute an offer by Cisco to sell products, but is instead an invitation to issue a purchase order to Cisco until the valid date specified in this Price Estimate. Such a purchase order will be subject to Cisco standard procedures, terms and conditions for the acceptance of purchase orders. This order may subject to sales tax, VAT, duty and freight charges even if not noted on this estimate.						



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Measurement Results

Database Scaling (SF/Size)	3,000
Total Data Storage/Database Size	7.1
Percentage Memory/Database Size	51.2
Start of Database Load Time	03/30/2018 04:20:30
End of Database Load Time	03/30/2018 07:32:01
Database Load Time	00d 03h 11m 31s
Query Streams for Throughput Test (S)	8
TPC-H Power	1,371,924.8
TPC-H Throughput	772,682.9
TPC-H Composite	1,029,593.5
Total System Price Over 3 Years	\$481,900.98
TPC-H Price/Performance Metric (\$/kQpH@3000GB)	\$468.05

Measurement Interval

Measurement Interval in Throughput Test (Ts)	2,460
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Duration of stream execution:

Power Run	Seed	Query Start Time	Duration (sec)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
	330073201	2018-03-30 08:54:59	257	2018-03-30 08:54:30	2018-03-30 08:59:19
		2018-03-30 08:59:16		2018-03-30 08:54:56	2018-03-30 09:00:11

Throughput Stream	Seed	Query Start Time	Duration (sec)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
1	330073202	2018-03-30 09:00:10	1,982	2018-03-30 09:00:10	2018-03-30 09:04:37
		2018-03-30 09:33:12		2018-03-30 09:04:37	2018-03-30 09:12:32
2	330073203	2018-03-30 09:00:10	1,944	2018-03-30 09:12:33	2018-03-30 09:20:39
		2018-03-30 09:32:34		2018-03-30 09:20:39	2018-03-30 09:28:17
3	330073204	2018-03-30 09:00:10	1,982	2018-03-30 09:28:17	2018-03-30 09:32:46
		2018-03-30 09:33:12		2018-03-30 09:32:46	2018-03-30 09:34:06
4	330073205	2018-03-30 09:00:10	1,916	2018-03-30 09:34:06	2018-03-30 09:34:34
		2018-03-30 09:32:06		2018-03-30 09:34:34	2018-03-30 09:35:35
5	330073206	2018-03-30 09:00:10	1,956	2018-03-30 09:35:36	2018-03-30 09:36:02
		2018-03-30 09:32:46		2018-03-30 09:36:02	2018-03-30 09:37:05
6	330073207	2018-03-30 09:00:10	1,944	2018-03-30 09:37:05	2018-03-30 09:37:32
		2018-03-30 09:32:34		2018-03-30 09:37:32	2018-03-30 09:38:36
7	330073208	2018-03-30 09:00:10	1,750	2018-03-30 09:38:36	2018-03-30 09:39:03
		2018-03-30 09:29:20		2018-03-30 09:39:03	2018-03-30 09:39:54
8	330073209	2018-03-30 09:00:10	1,939	2018-03-30 09:39:54	2018-03-30 09:40:21
		2018-03-30 09:32:29		2018-03-30 09:40:20	2018-03-30 09:41:10



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TPC-H Timing Intervals (in seconds)

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
0	5.6	1.0	9.2	10.0	11.2	0.4	6.6	8.8	30.7	6.3	14.0	3.5
1	7.4	6.6	33.0	17.6	89.4	14.3	45.0	203.5	147.2	113.7	33.7	125.8
2	28.3	8.2	100.9	65.9	37.0	32.2	133.9	175.3	137.7	117.5	23.6	93.0
3	25.0	27.8	25.1	72.0	73.3	21.5	51.4	97.0	211.4	142.8	29.8	91.0
4	38.2	3.3	67.1	76.3	66.8	5.8	48.3	153.3	213.6	97.7	23.6	49.0
5	25.3	16.0	53.8	76.1	72.3	13.6	41.6	164.0	129.4	74.1	30.7	160.5
6	23.4	12.3	39.2	34.4	71.1	9.5	38.4	89.2	153.5	72.2	33.3	61.5
7	26.1	9.0	52.5	83.9	81.2	14.7	53.8	87.8	243.5	59.5	39.0	74.0
8	38.8	12.3	28.2	68.9	90.6	13.5	38.1	86.5	120.5	136.7	32.0	63.1
Qi Min	5.6	1.0	9.2	10.0	11.2	0.4	6.6	8.8	30.7	6.3	14.0	3.5
Qi Avg	24.2	10.7	45.4	56.1	65.9	13.9	50.8	118.4	154.2	91.2	28.9	80.2
Qi Max	38.8	27.8	100.9	83.9	90.6	32.2	133.9	203.5	243.5	142.8	39.0	160.5

Stream ID	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
0	38.5	2.0	4.1	14.3	4.0	41.4	1.5	6.7	28.6	8.4	26.8	52.2
1	219.5	3.0	82.8	93.8	41.2	315.9	52.5	66.5	240.7	27.7	266.4	474.6
2	119.6	11.2	10.1	100.1	64.0	282.4	59.5	49.6	258.5	35.1	486.5	457.6
3	66.1	18.2	32.0	57.7	90.6	341.4	161.9	60.0	235.3	49.4	268.9	79.8
4	105.7	11.5	26.5	127.6	36.8	299.9	96.1	39.2	294.2	35.1	27.1	61.6
5	130.6	69.6	11.8	172.1	34.0	304.2	32.8	43.8	240.7	58.3	26.7	62.6
6	114.5	11.6	11.8	100.0	91.4	509.0	100.6	54.8	231.0	80.6	26.8	63.3
7	170.4	11.2	14.2	32.7	28.9	268.0	132.3	61.1	153.7	50.7	27.3	50.6
8	131.7	7.2	17.5	93.5	116.7	520.6	55.3	40.2	211.0	14.6	26.1	49.8
Qi Min	38.5	2.0	4.1	14.3	4.0	41.4	1.5	6.7	28.6	8.4	26.1	49.8
Qi Avg	121.8	16.2	23.4	88.0	56.4	320.3	76.9	46.9	210.4	40.0	131.4	150.2
Qi Max	219.5	69.6	82.8	172.1	116.7	520.6	161.9	66.5	294.2	80.6	486.5	474.6